

Helen Lewer  
and Leslie Robertson

NEW  
EDITION

# Care of the Child

Second Edition



**The Essentials of Nursing**

## Care of the Child

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# Care of the Child

Helen Lewer  
Leslie Robertson

SECOND EDITION

  
MACMILLAN

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# Contents

<i>Foreword to the series</i>	viii
<i>Preface to the second edition</i>	ix
<i>Acknowledgements</i>	xi
<i>A note on the series style</i>	xi

## Part 1 The Developing Child

<b>1 Introduction</b>	3
<b>2 The infant (birth–1 year)</b>	5
Physical characteristics	5
Explanation of the differing anatomical and physiological features	6
First measurements and observations	7
Emotional development	8
Development of social skills	9
Motor development	9
Development of play skills	12
Safety	12
Infant feeding	12
Elimination and changes in stools	15
<b>3 The toddler (1–2½ years)</b>	16
Physical characteristics	16
Motor development	17
Play	18
Safety	18
Psychological development	19
Development of social skills	20
Typical toddler day	21
<b>4 The pre-school child (2½–4½ years)</b>	23
Physical characteristics	23
Motor development, play and safety	24
Psychological development	25
Development of social skills and intellectual ability	26
<b>5 The school child (4½–5 years to 10–11 years)</b>	28
Physical characteristics	28
Nutrition	29
Motor and cognitive development	30
Play and safety	33
Psycho-social development	33
<b>6 The adolescent (11–18 years)</b>	37
Introduction: some views on adolescence, past and present	37
Puberty	38
Nutrition	39
Mental growth and education	40
Psycho-social development	41
Fact Sheet 1: Jean Piaget's stages of cognitive development	45
Fact Sheet 2: Five stages of development: a comparison	46

<b>7 Ensuring healthy development</b>	47
Care of mother and baby	47
Medical examinations and assessments	49
<b>8 When there is failure of care</b>	50
Accidents	50
Child abuse	51
Identification of illness and defects	52
<b>9 The ill child at home</b>	53
Primary health care team	53
Common symptoms and how they develop	53
<b>10 Why children come into hospital</b>	56
Children admitted with infections	56
Children admitted as a result of trauma/poisoning	56
Planned admissions	57
Emergency admissions	57
Social admissions	58
The child with malignancy	58
Children with congenital abnormalities	58
Developmental problems	59
<b>Part 2 Principles of Nursing Sick Children</b>	
<b>11 Preparing the child for hospital</b>	63
How parents can prepare their child	63
The child's view of hospital	64
How hospital may affect the child	65
<b>12 Why nursing children is different</b>	67
Limitations in understanding	67
Emotional immaturity	67
Developmental needs	68
Working with the family	68
Families from other countries	70
<b>13 Creating the right environment</b>	71
Where children are nursed	71
Communication	72
Safety	74
Play	75
Education	77
Theory into practice	78
<b>Part 3 The Sick Child</b>	
<b>14 Nursing the acutely ill child and the child admitted for surgery</b>	83
Acute illness	83
The planned admission	83
The child admitted in an emergency	86
Day surgery	86
Observation and investigations	87
Replacement therapy	90
Fluid administration	90
Infant feeding	91

Elimination	92
Child hygiene	93
Administration of medicines	94
Preparation for surgery	96
Discharge from hospital	96
Nursing care plans for the child who is acutely ill	97
Nursing care plan for the child undergoing a planned adenotonsillectomy using an activities of living model	98
Nursing care plan for the child undergoing an emergency appendicectomy for a non-perforated appendix	109
Nursing care plan for the toddler undergoing day surgery for circumcision	116
Nursing care plan for the infant with gastro-enteritis using a self-care model	122
Fact Sheet 3: Principles of isolation nursing	129
Formulation of a care plan for the child with a head injury	132
<b>15 Living with a long-term illness</b>	<b>135</b>
Long-term disease/disorder	135
The diagnosis, causation and parental acceptance	135
Children's attitudes and ways of coping with long-term disorders	136
Recreation and education	137
The family	137
Support available	138
Hospital admission, assessment and nursing care	138
Nursing care plans for the child with a long-term illness	139
The pre-school child with cystic fibrosis	140
The adolescent with diabetes mellitus	147
<b>16 Nursing the child who is terminally ill</b>	<b>156</b>
Terminal illness: definition, causes and acceptance	156
Principles of caring for the terminally ill child	157
Causes of death	158
Accepting the news that the child will die or has died	159
Attitudes to death	159
The child who dies in hospital	160
The child who dies at home	160
Bereavement	161
Nursing care plan for the terminally ill child	161
<b>17 The handicapped child</b>	<b>168</b>
What is a handicap?	168
Living with a handicap: effects on child and family	169
Support, facilities and care	170
Nursing care plans/histories for the handicapped child	172
Nursing care plan/history for the adolescent with a multiple physical handicap	172
Nursing care plan/history for the school child with a sensory handicap	184
Nursing care plan for the baby with a mental handicap (by Daphne Hill)	190
Evaluation of progress for the baby/child with Down's Syndrome (by Daphne Hill)	196
<b>Names and head office addresses of relevant societies and organisations</b>	<b>201</b>
<b>Index</b>	<b>203</b>



# Foreword to the series

This series of textbooks offers a fresh approach to the study of nursing. The aim is to give those beginning a career in nursing, and those already qualified, opportunities for reflection to broaden their approach to nursing education and to identify their own nursing values. The text includes material currently required by those preparing for qualification as a nurse and offers a basis for developing knowledge by individual studies. It should also assist qualified nurses returning to nursing, and those wishing to gain further insight into the nursing curriculum.

The authors of each book in the series are from widely differing nursing backgrounds, and, as experienced teachers of nursing or midwifery, they are all well aware of the difficulties faced by nursing students searching for meaning from a mass of factual information. The nurse has to practise in the real world, and in reality nursing students need to learn to practise with confidence and understanding. The authors have therefore collaborated to illustrate this new perspective by making full use of individual nursing care plans to present the knowledge required by the nursing student in the most appropriate and relevant way. These textbooks can therefore be used in a wide variety of nursing programmes.

The practice of nursing — as a profession and as a career — and the education of the nurse to fulfil her role are both affected by national and international trends. The Nurses, Midwives and Health Visitors Act 1979 in the United Kingdom, the Treaty of Rome and the European Community Nursing Directives 1977, as well as the deliberations and publications of the International Council of Nurses and the World Health Organization, all make an impact upon the preparation and the practice of the nurse throughout the world.

Nursing values may not have changed over the past hundred years, but society and the patterns of both life and care have changed, and are constantly changing. It is particularly important, therefore, to restate the essentials of nursing in the light of current practice and future trends.

Throughout this series the focus is on nursing and on the individual — the person requiring care and the person giving care — and emphasises the need for continuity between home and hospital care. *Neighbourhood Nursing — A Focus for Care*, the Report of the Community Nursing Review under the chairmanship of Julia Cumberlege (HMSO, 1986), has drawn attention to this need. The developing role of the nurse in primary care and in health education is reflected throughout this series. The authors place their emphasis on the whole person, and nursing care studies and care plans are used to promote understanding of the clinical, social, psychological and spiritual aspects of care for the individual.

Each book introduces the various aspects of the curriculum for general nursing: the special needs of (1) those requiring acute care; (2) the elderly; (3) children; (4) the mentally ill; and (5) the mentally handicapped. The last category is a new text book in the Essentials of Nursing Series and is edited by a well-known and respected nurse for the mentally handicapped, with the help of contributors who are experienced in differing aspects of caring for people with mental handicap. The text on maternity and neonatal care, written by a midwifery teacher, provides the required material for nursing students and would be helpful to those undertaking preparation for further health visiting education.

The authors wish to acknowledge their gratitude for the assistance they have received from members of the Editorial Board and from all those, too numerous to mention by name, who have contributed to their work: patients and their relatives, students, qualified nurses and colleagues. To all those nurse teachers who have read some of the texts, offering constructive criticism and comment from their special knowledge, we offer our grateful thanks. Lastly, we thank Elizabeth Horne for her contribution to the physiology material in the text, and Mary Waltham for her help with this second edition.

# Preface to the second edition

Experience in a children's ward or department may be your first introduction to children sick or well. Some of you may have grown up with brothers, sisters and cousins while others may have baby-sat, run a Sunday School class or looked after younger children at school. All of you will have observed children in the streets, in playgrounds and in shops. Although you may not realise it, all these experiences can contribute to your understanding of children. Paediatric nursing is often approached with more than a little apprehension. This is understandable as children cannot always express their problems verbally and usually need their family around them. Many of your skills will be enhanced, particularly those of communication and observation. Paediatric nursing involves the whole family and you may find that it takes time to establish your role within this setting.

Children *are* different! This fact is insufficiently appreciated both in society and within the nursing profession. Children are not 'mini-adults'. They are often refreshingly honest, accepting factual information readily, and they can be a joy to work with.

The Nurses, Midwives and Health Visitors Approval Order 1983, Section 18, states that: '... courses leading to a qualification, the successful completion of which shall enable an application to be made to the parts of the Register, shall provide opportunities to enable the student to accept responsibility for her personal professional development and to acquire the competencies required.'

Courses leading to entry to the general parts of the Professional Register include the study of the care of the child and his family, so providing an insight into the skills which would be required to nurse children. All the competencies are highlighted in this book and those of you undertaking a course for entry to the Sick Children's Nursing part of the Professional Register will also find this book useful. References for further reading are included, together with suggested exercises to aid self-directed learning.

Use this book discerningly: you will not necessarily meet examples of all the nursing care plans. Hopefully it will guide you in your approach to children in making (and breaking!) relationships with them and their families and in caring for children who have varying needs.

You may well be familiar with the 'Nursing Process'. The problem-solving/-reasoning approach is most suitable for use with children. The principles are discussed here. The assessment, planning, implementation and evaluation of nursing care is a logical process whereby the order of priorities of care are adjusted according to the patient's requirements. The 'process of nursing' is based on philosophy and should be a dynamic concept and not a paper exercise. There are a variety of approaches, ranging from the more generalised problem-solving approach to the more explicit use of specific nursing models/conceptual frameworks, e.g. Roper, Logan and Tierney, and Orem. This edition has been updated to include care plans based on each of these frameworks. They should not be used as rigid examples on which to plan care for your patients, but as an aid to developing your thought processes.

Use the knowledge you have already gained about the process of nursing and various models of care, together with the information given both in this book (including other aspects of child care, e.g. child development) and in other books in the Essentials of Nursing Series, in order to plan for the very individual needs of children and their families.

The philosophy of child care is influenced by the environment in which children grow up. The effects include cultural and sociological factors such as altered family dynamics, unemployment, and drug and alcohol abuse. Technological advances — computers, microchips, the Space Age — and advances in medical care, surgery and drugs, all have implications for the nurse in planning care and decision making.

Children, wherever possible, should be cared for at home. Two reports

discuss the provision of care in the community: *Fit for the Future*, Committee on Child Health Services (Chairman S.D.M. Court) 1976; and *Neighbourhood Nursing – A focus for care*, Report of the Community Nursing Review (Chairman J. Cumberlege), 1986.

What of the future? The nursing profession has become increasingly aware of the constraints of the present nurse education system and the need to plan for the provision of care and nursing practices appropriate for future needs.

Important reports have recently been published by the professional and statutory bodies:

The Education of Nurses: A New Dispensation. Commission on Nursing Education, Royal College of Nursing of the United Kingdom, 1985.

Professional Education/Training Courses, English National Board, 1985.

Project 2000: A New Preparation for Practice, United Kingdom Central Council, 1986.

They are essential reading for all nurses as they make recommendations for the future of the nursing profession (including paediatric nursing) and they may well affect you!

Paediatric nursing is challenging and rewarding. We hope you will enjoy it.

1987

H.L.

L.R.

# Acknowledgements

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In the preparation of the second edition the authors are grateful to Mrs Deborah Fisher, BA, ALA for updating the references and to Mrs Betty Parramore for typing the manuscript.

## A note on the series style

Throughout this book, in keeping with the other titles in this series, the term *nursing student* has been used to mean *both* student or pupil nurses *and* trained nurses who are undertaking post-basic training or who are keeping up to date with the recent literature. For clarity and consistency throughout the series the nurse is described as *she*; this is done without prejudice to men who are nurses or nursing students. Similarly, the patient is sometimes referred to as *he*, when the gender is not specifically mentioned.

Care plans, which are used throughout the books in this series, are indicated by a coloured corner flash to distinguish them from the rest of the text.

## **Part 1**

# **The Developing Child**

# Chapter 1

# Introduction

All children are born with the potential to develop both physically and emotionally. During the first years of life, the rate at which the child develops physically is very fast. However, by the school years this physical development has slowed to a more steady pace, while the child is rapidly increasing in psycho-social awareness. The onset of puberty initiates another growth spurt and with it the developing psycho-social characteristics of adolescence.

It is important to note that most severely handicapped children have some degree of potential development. The rate at which this happens is variable, and can be very slow, with some developmental stages never achieved.

Important consideration must be given to the fact that the way in which each child develops is very individual. It depends on his innate abilities which are inherited, i.e. 'nature', and the environment in which he is brought up, i.e. 'nurtured'. The nurturing elements in the early formative years have been shown to be vitally important in later childhood and adolescence, in individuals forming relationships, and in employment and social awareness (Bowlby, 1965).

For the purposes of studying child development in this book, certain age groups and stages are considered. In a conducive environment, the child will proceed through a series of milestones (or stepping stones) and will not 'jump' from one stage to the next. Milestones are defined as being age-linked behaviours, both physical and psycho-social.

The *stages* described here are:

- The infant
- The toddler
- The pre-school child
- The school child
- The adolescent

- Birth to 1 year
- 1 year to 2½ years
- 2½ years to 4½ years
- 4½/5 years to 10 years
- 11 years to 18 years

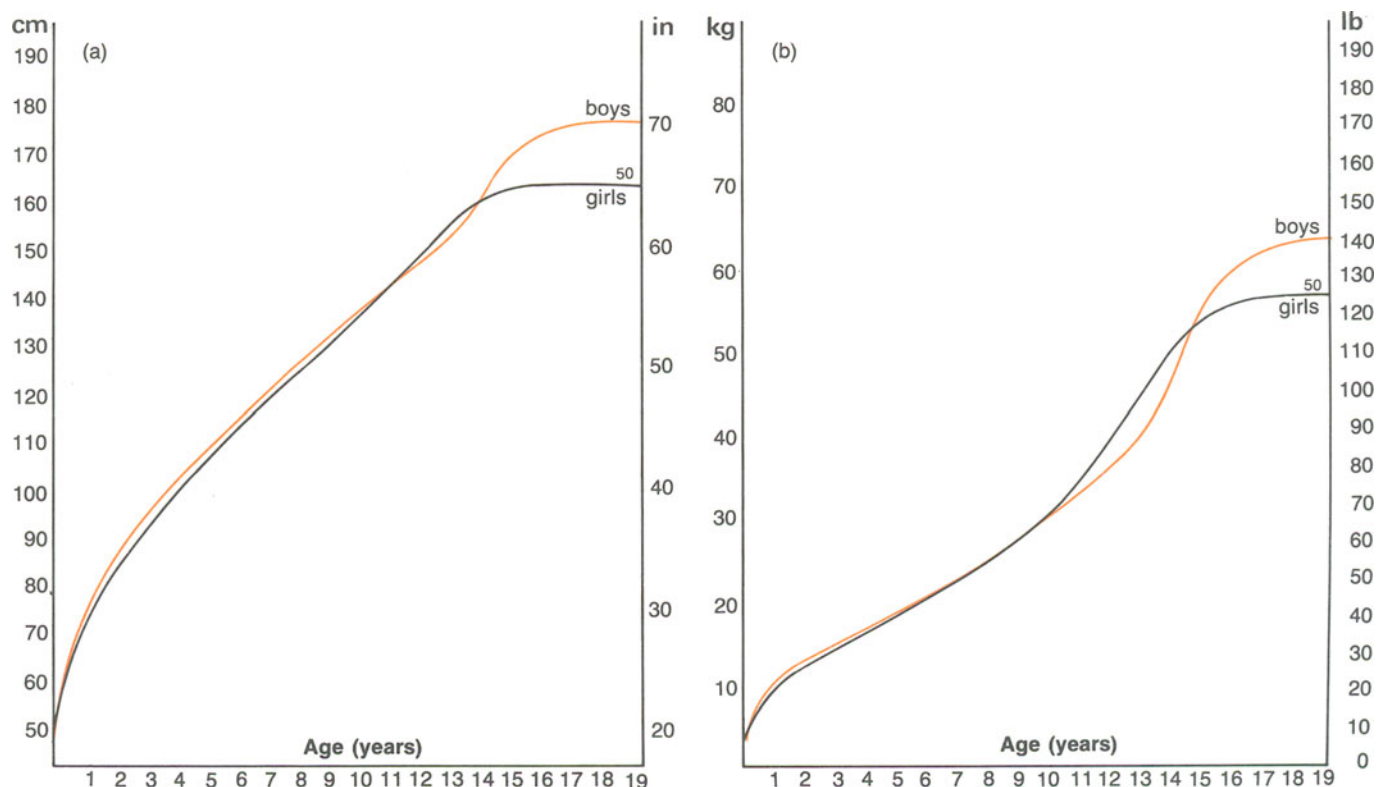


Figure 1.1 Growth of an average boy and girl. (a) Height and (b) weight

Different texts may give slightly altered age ranges. Remember that it is the development the child achieves related to himself and in comparison to others that is important.

To introduce the changing physical proportions of the infant, toddler, school child and adolescent, a chart (Figure 1.1) showing average growth rates is shown.

Many developmental changes are noted by the family at home, such as the first smile, 'first steps' and recognisable communication.

Assessment and care of the developing child is carried out by the Health Visitor and General Practitioner, often within a health centre clinic. Health Visitors spend time with families in their own surroundings and General Practitioners visit the home where a child is too ill or unable to attend a doctor's surgery.

As most of the early childhood years are spent at home, rather than hospital, families derive a lot of support from the community, both in services offered and in knowing their own community personnel.

#### **Further reading**

Lansdown, R. (1984). *Child Development Made Simple*, Heinemann, London.  
Sylva, K. and Lunt, I. (1982). *Child Development: A First Course*, Grant McIntyre, London.

Burns, R. B. (1986). *Child Development: A Text for the Caring Professions*, Croom Helm, London.

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## Chapter 2

## The infant (birth – 1 year)

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At birth one of the most important features in the nurturing of the infant is to 'bond' him with his parents. This can be achieved by touch and cuddling as soon as the infant is born and by contact during breast or bottle feeding.

The early physical characteristics of the infant (Figure 2.1) do not usually bear a strong resemblance to the parents, except in skin colour, though parents and relatives do like to look for resemblances at this early stage.

### Physical characteristics



Figure 2.1 An infant, aged 1 month

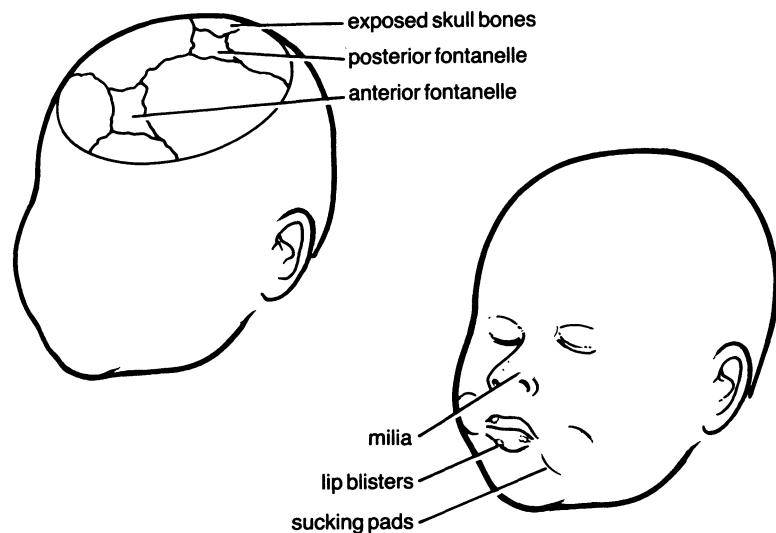


Figure 2.2 An infant's head, showing (a) fontanelles and (b) facial features

Some important characteristics are illustrated in Figure 2.2, and outlined in the lists below.

#### (a) Head and face

- 'Soft' spot felt on skull (i.e. the anterior fontanelle; occasionally the posterior fontanelle).
- Head larger in comparison to body than in adult (see Figure 2.4).
- Colour of hair.
- Colour of eyes.
- No tears when crying.
- Milia on nose (white spots due to blocked sebaceous glands).
- Lip blisters.
- Sucking pads in cheeks.

#### (b) Trunk, limbs and genitalia

- Skin folds and creases especially around neck and thighs.
- Skin pigmentations (Mongolian 'blue spot' in certain races).
- Umbilical cord 'stump'.
- Nails soft.
- Genitalia formed.

#### Suggested exercise

When bathing, feeding, changing the nappy or playing with the infant, try to observe the physical characteristics described above.

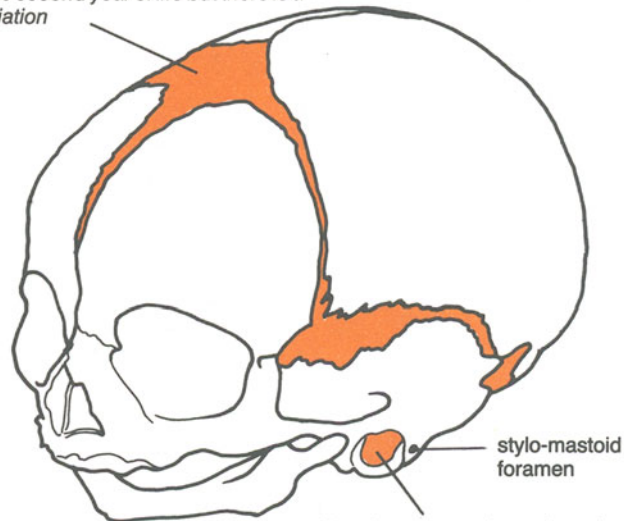


# Explanation of the differing anatomical and physiological features

## (a) The fontanelles

When the infant is born the bones (sutures) of the skull have not fused at the anterior or posterior part of the crown. These 'soft spots' are the anterior and posterior fontanelles (Figure 2.3). It may be possible to feel the posterior fontanelle, which is triangular in shape, and in some infants does not fuse until 6 weeks after the birth. It is more likely that you will be able to feel the anterior fontanelle, a diamond shape, as the fusion of the bones on the anterior aspect of the crown is usually not complete until the baby is 12 to 18 months old.

*The ANTERIOR FONTANELLE usually closes during the second year of life but there is a wide variation*



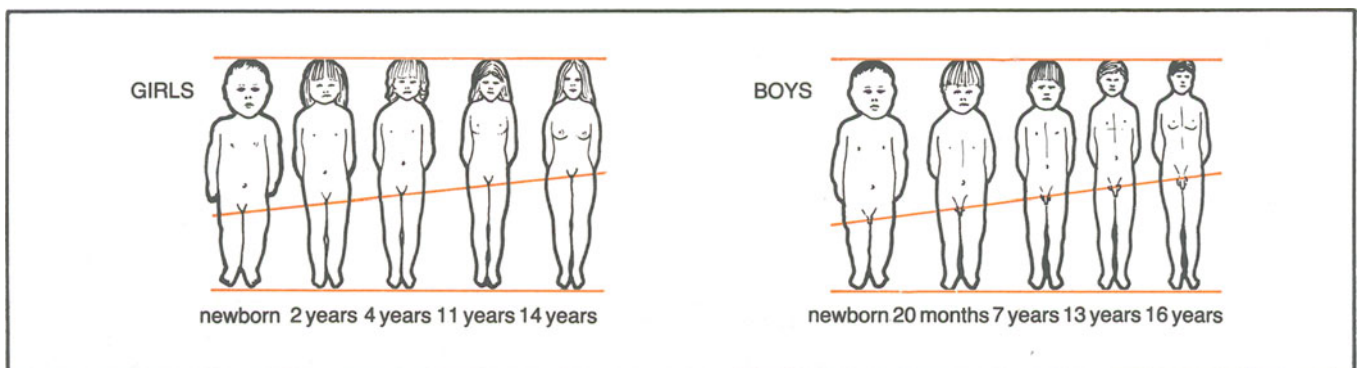
*Note how near to the surface the eardrum is (take care cleaning babies' ears), and the lack of a mastoid process and the vulnerability of the facial nerve as it emerges from the STYLO-MASTOID FORAMEN.*

**Figure 2.3** The fontanelles. At birth, ossification is not complete and the bones of the vault are still joined by soft membranes called the fontanelles. These allow the bones to overlap during birth so that changes of pressure on the brain as the baby passes down the birth canal are minimised. There is a great deal of brain growth during the first year of life and the fact that the skull bones are not joined allows this to occur while still protecting the soft tissue

The importance of the anterior fontanelle in the infant is that it assists in the recognition of dehydration (the fontanelle depresses) and in raised intracranial pressure (the fontanelle may 'bulge').

## (b) Head to body ratio

You may notice how unsteady the infant's head is: at first he cannot hold up his head without support. By looking at the *head to body ratio* you can see that the size of the head is disproportionately large when compared with that of an adult; it may be approximately one third of the baby's total length (see Figure 2.4).



**Figure 2.4** Normal percentage of total height (or length) assumed by the upper segment of the body with age

Unlike adults, the infant may lose a lot of heat through his head, due to disproportionately large weight to surface area ratio. Regulation of temperature is considered later.

(c) Eye colour and vision

The nervous system of the infant is immature. This accounts for the lack of genetically determined pigmentation in the eyes of the newborn. The nerve endings in the retina (rods and cones) are not fully developed, and although the infant can see his parents, the images tend to be blurred and colourless, until his vision has completed its development a few weeks later.

(d) Tears

When the infant cries he will not shed *tears* until he is a few months old. Tears are not produced initially as the lacrimal ducts are not properly formed at birth. Young infants may be more prone to eye infections (sticky eyes), partly due to tear deficiency, the tears assisting in the protection of the eyes.

(e) Body temperature

Another example of the immaturity of the infant's nervous system is the *inability to regulate his body temperature* in relation to his surroundings. The hypothalamus in the brain is not fully developed and this together with the larger surface area to weight of the infant can give rise to extremes of temperature. The infant can easily lose heat, so care is taken by providing suitable clothing, a warm bedroom, and minimal exposure at bath times. Temperature rise in the infant can cause a febrile convulsion.

(f) Other characteristics

Other physical characteristics include:

1. *Hair*, which gradually takes on the genetically determined colour.
2. The *blocked sebaceous glands* (milia) on the nose, which will disappear without interference.
3. *Lip blisters*, which will disappear without interference.
4. *Sucking pads*, which have an obvious use in feeding.
5. *Skin pigmentations*, which may be a result of birth trauma or of soreness. Persistent marks such as 'strawberry naevus' should be noted but left alone unless causing distress or harm to the infant. 'Blue' spots are mainly seen on West Indian, African and Asian babies, usually on the back and buttocks. These tend to fade during the first years of life.

## First measurements and observations

(a) Weight, height and head circumference

Together with the observations of physical characteristics, the infant is measured to provide a basis for future developmental statistics. These measurements include: weight, height and head circumference.

	<i>At birth (average)</i>	
Weight	3.4 kg (7½ lb)	Compare with a baby you have observed
Height	50 cm (20 in)	
Head circumference	33-35.5 cm (13-14 in)	

These may be plotted by the health visitor or doctor on a centile chart. The rate at which these measurements change will relate to inherited characteristics, as well as to environmental factors such as:

- Love and affection.
- Feeding.
- Illness or disability.

(b) Pulse, respiration and blood pressure

While measuring the infant for growth rates, it may be useful to note other vital signs such as pulse (heart rate), respiration and blood pressure. Average values are given below.

	<i>At birth (average)</i>	
Heart rate (pulse)	130–150/min	Compare with a baby you have observed
Respirations	30-60/min (irregular)	
Blood pressure	90/50 mm Hg (approx.)	

Blood pressure is difficult to record accurately in the infant since the diastolic pressure may be difficult to hear and the infant may not be keen to keep still!

(c) Apgar score

At birth, the infant will have been assessed by the midwife or doctor using the *Apgar score*. This includes the assessment of:

- Infant's colour.
- Heart rate.
- Respiratory effort.
- Muscle tone.
- Reflex irritability.

(See Ball, H, Beacroft, M, and Davies-Johns, E, (1987), *Maternity and Neonatal Care*, The Macmillan Press, London for further reading.)

## Emotional development

(a) First communication

Although much has been said of the physical appearance of the infant, his emotional development is vital to his well-being. The infant usually makes his physical needs of warmth, hunger, elimination/cleanliness, and sleep and pain, known to his parents by crying. This is his only method of communication until he learns to smile, gurgle, babble and form words.

Crying may also signal feelings of insecurity, lack of love and stimulation. An infant who lies quietly in his cot, causing his parents no problems, may also be lacking in the provision of emotional security. Most parents, and nurses too, find the giving of love and affection to an infant very enjoyable and rewarding. Time spent cuddling the infant, talking to him and providing him with play items all assist in his development.

The touch, smell and voice of the infant's main care-giver (usually his mother) is probably recognised soon after birth. Usually the infant is brought up by his natural parents; however, he can be happily reared by substitute parents if the need arises.

An infant who feels secure and loved usually wakes when he is hungry, wet, uncomfortable or has 'the wind'. He is usually pacified by attention to these needs and by the presence of his mother or father. Rest and sleep is the only occupation between feed, bath and play times, and averages 20 hours per day.

As the infant's vision matures, he looks attentively towards his mother's face.

### Suggested exercise

When next feeding a baby who is a few weeks old, watch his face for signs of expression related to yours. Facial expressions will be established by eye-to-eye contact. The infant is easily distracted by new sounds and often stops feeding to listen.

(b) Smiling

Perhaps the most important emotional development is the first social smile. This appears at two months, although it may be earlier, and is sometimes accompanied by 'wind'. When the infant smiles, his mother or father smiles in return and thereby reinforce this behaviour. Smiling develops throughout the first year and becomes related to pleasurable experiences. The pleasure is two way and parents consider this an important milestone.

### (c) Early language

The development of language often begins with gurgles and chuckles. By the age of four months (approximately) the infant will open his mouth to form sounds in response to the expressions and mouth shapes seen on the face of his care-giver. These are the beginnings of primitive language. He progresses through a number of indistinguishable noises and squeals until the very special day when he may say 'mama', 'baba' or even 'dada'. Not all infants say the same words first, or in the same order, although these are the most common.

Vocalisation may be expected around nine months, but will largely depend on environment and stimuli. Language development progresses at an extraordinary rate after the first year.

## Development of social skills

Some of the aspects already considered under the heading Emotional development also relate to this section. These include smiling and vocalisation. Other developing social skills are those related to feeding. By the end of the first year the infant will probably be eating, with the assistance of a spoon, and drinking from a cup. He has been developing independence with feeding and has also begun to recognise what tastes he likes and dislikes. Refer to the section on Infant feeding (pages 12–15) for a more detailed discussion.

Other social skills such as sphincter control (see page 20), cleanliness and safety have yet to be acquired.

The first year is very much concerned with the present; the infant is egocentric especially in play and needs a secure environment in which to develop.

The reader should refer to the chart on page 45, outlining Piaget's theory of development of cognitive skills (Fact Sheet 1), and to Erikson's stages of psycho-social development (Fact Sheet 2). Piaget and Erikson are two of many psychologists who have studied and described psycho-social and cognitive development in some depth.

It is important to note that the development of the infant in all fields may be related to specific aspects of his environment. An example of this is his cultural background — some West Indian infants, for example, demonstrate head control, sitting upright and walking at much earlier ages than Caucasian babies. The norms which relate to West Indian babies are head control generally by four weeks and walking hand held by seven months.

*Remember that every infant is very much an individual*

## Motor development

Before reading the next section try the following suggested exercise.

### Suggested exercise

Observe the young infant for motor skill development.

Motor development may be as follows:

1. At birth and in the first few weeks, the infant, when *prone*, lies with legs drawn up and pelvis raised (Figure 2.5). All limbs are flexed and the hands usually grasped.
2. *Head control* This is not apparent and it is necessary to place a hand behind the head when moving or lifting him.

Within the first two months of life, he will learn to lift his head especially when in the prone position. This is at first momentary, but with the strengthening of muscles he learns to hold his head up for longer periods. The position of the body changes so that the pelvis is lowered and lower limbs outstretch to provide balance. (See the motor development chart, Figure 2.8.)



Figure 2.5 An infant, aged 1 month, lying prone

3. *Limbs* It should be noted that these all move independently and are not co-ordinated.

Certain primitive reflexes can be elicited within the first 3-4 months of life. These are primitive as they are usually seen as an automatic response to a stimulus, rather than as a learned behaviour. As the infant develops physically and emotionally these reflexes are suppressed and the nervous system matures.

An example of this is the *walking/stepping reflex* (Figure 2.6), usually seen only in the first 3-4 weeks of life, and which then disappears.



Figure 2.6 The walking–stepping reflex in a 1 month old infant

Other reflexes include the grasp, Moro (Figure 2.7), rooting and tonic neck.

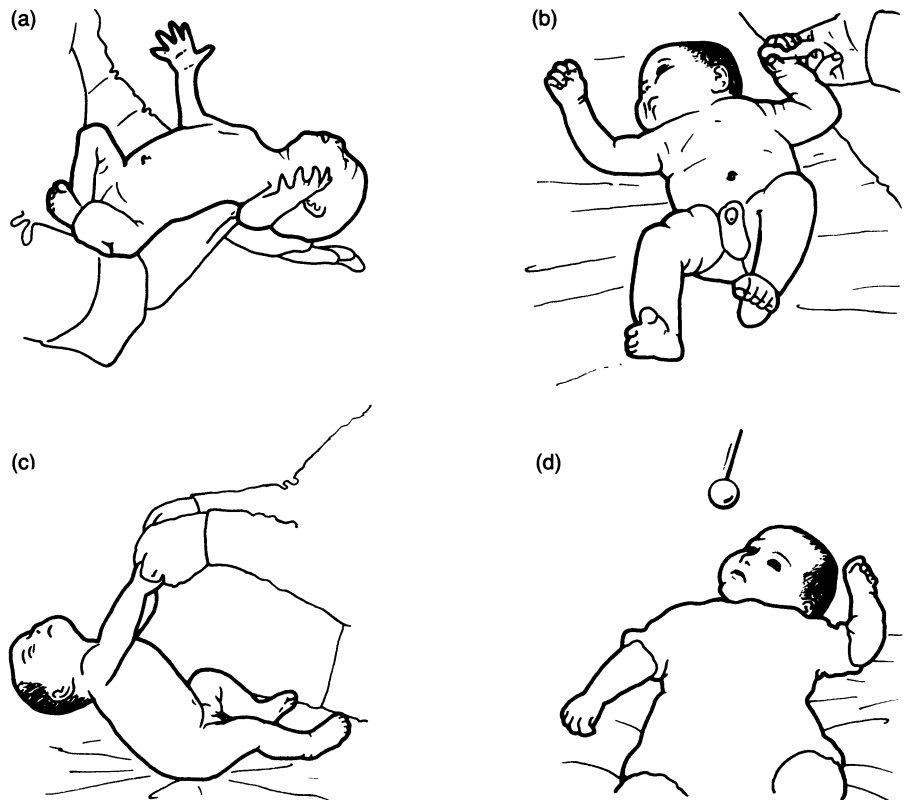


Figure 2.7 Primitive reflexes: (a) Moro, (b) grasping, (c) reaction when pulled to sitting position, (d) eyes follow a moving ball

These are only a few of the reflexes present. Most appear to be associated with satisfying physiological needs (rooting, grasp) or are concerned with safety (Moro).

The infant can suck, gag, sneeze, blink and react to light; these reflexes continue throughout life.

The reader should refer to Sheridan, M., *Children's Developmental Progress* (NFER) for further reading regarding primitive reflexes.

After the first months, the infant makes dramatic advances with regard to motor skills. Figure 2.8 illustrates a few such skills which you may be able to observe in infants.

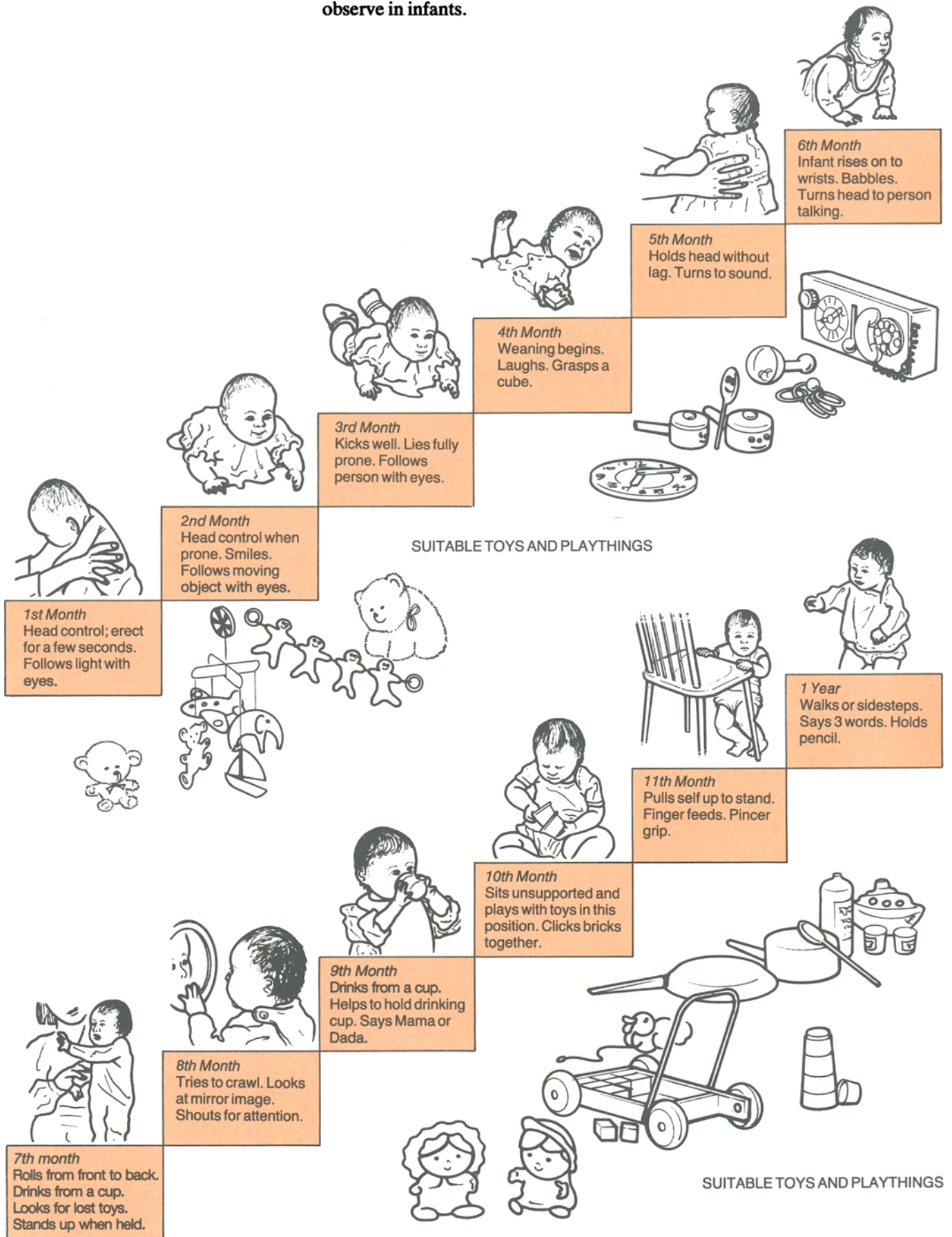


Figure 2.8 Stages in motor development from birth to 1 year

## Development of play skills

Play is important in every aspect of the infant's development. Some examples relating to motor abilities are included on the chart. You will find it useful to refer to Chapter 13 Creating the right environment (page 71) or to read *Spontaneous Play in Early Childhood* by Mary Sheridan or *The Other Side of Paediatrics* by June Jolly.

## Safety

Protecting the infant from visible and invisible factors in the environment is a necessary aspect of care. Although the infant develops physically very rapidly in the first year, his thinking abilities have not developed sufficiently to protect him from danger. The factors shown in Figure 2.9 should be considered with regard to safety.

warmth  
protection from contact with infection  
provision of an immunisation programme  
protection from inquisitive children and animals  
safe toys  
firm and safe handling  
cot with sides in which to sleep



no pillows  
cat net if outside  
correct strength feeds  
sterile feeding equipment  
safe position in cot after feeding and 'winding' of baby

Figure 2.9 Providing a safe environment

## Infant feeding

Prior to the birth of their infant, most mothers have decided whether they will breast or bottle feed. The factors to consider are given below. Both methods provide the infant with the correct nutritional requirements and calorific content for growth and development. 'Bonding' between both parents and their infant can be strengthened during feed times.

### (a) Breast feeding

Breast feeding is considered nutritionally adequate for the first six months of life (DHSS, 1980).

The advantages of this method may be summarised as follows:

1. The presence of immune factors in colostrum and milk which may prevent the infant from acquiring gastroenteritis and respiratory infections. The factors are T and B lymphocytes and IGA (immunoglobulin A). Antibodies to certain diseases are passed to the baby in milk and last approximately 3–6 months.
2. Once feeding is established, the milk is available on a 'supply and demand' schedule. The infant is fed when hungry and demanding, and this gradually coincides with milk 'coming into' the mother's breasts.
3. The milk is at the right temperature.
4. The milk is virtually sterile.
5. No preparation is necessary (except the mother washing her breasts).
6. The mother's uterus may return to its former shape and size more quickly due to the hormonal effect of oxytocin\* from the pituitary gland.

\* This hormone is concerned with milk production and uterine contractions.

- Therefore, mothers may regain their shape more quickly.
- Probably cheaper than buying milk powders, but the mother's diet has to be adequate.

**Practical hints concerned with breast feeding**

- Most mothers like to have privacy.
- Mother's fluid and protein requirements need to be adequate.
- Spicy diet, garlic, some drugs and alcohol may pass into the milk and hence to the infant, in which case they may cause colic (wind), or have more serious effects.
- Mothers should be relaxed and happy about breast feeding. If too little milk is produced mothers should not be allowed to feel a failure if they have to bottle feed their baby.
- Breast feeding does tend to 'tie' the mother to the infant. To allow some freedom, mothers periodically express their milk into a sterile bottle, so that another person can then feed the infant.
- There is no easy way of estimating how much feed the infant has taken. His growth and development are the best indicators. Test weighing before and after a feed, including weighing with nappy and contents, provides an indication of weight gain, usually in grams. These can be converted by various calculations to relate to millilitres of feed taken.

**(b) Bottle feeding**

The modified milks available for infants who are bottle fed contain similar nutrients to those in breast milk.

Complete the following chart by referring to DHSS Pamphlet *Present Day Practice in Infant Feeding*, 1980, and to any available infant feed packets:

	<i>Breast</i>	<i>Modified</i>	<i>Cow's</i>
Protein			
CHO			
Fats			
Na <sup>+</sup>			
Iron			

Cow's milk is not suitable for infants under six months (DHSS, 1980) as they are unable to break down and digest some constituents. Electrolyte levels are also unsuitable for the infant. Modified milks are therefore based on a process of drying and altering cow's milk in order to make it digestible for the infant. The choice is wide and there are also specialised milks, such as those made from soya bean protein, which are especially useful for cow's milk allergy. Others may be free of certain substances such as lactose for those infants who are intolerant to this sugar.

The advantages of bottle feeding may be summarised as follows:

- All the family can participate in feeding the infant, including Dad.
- Bottle feeding is socially acceptable in all places.
- The mother can eat any diet (breast milk can be affected by certain foods) and the milk is not affected by changes in the mother's well-being (breast milk flow can be altered by factors such as tiredness or menstruation).
- The mother can see how much fluid the infant has taken.
- The mother is physically unaffected (e.g. no risk of sore breasts).

**Practical hints concerned with bottle feeding**

Weight gain and development are the indicators of sufficient calories and nutritional requirements.

- Feeds should be made up as and when required. If it is necessary to make up several feeds, these may be stored in the fridge, but for no longer than 24 hours.
- Sterile equipment should be used when feed making. A hypochlorite solution is commonly used to soak utensils.



3. Correct disposal and cleansing of equipment is essential.
4. The instructions on the packet *must* be followed in order to achieve correct dilution and concentration.
5. In health clinics and hospitals, a method of calculating feed requirements based on expected weight gain, is used. For the full term, normally developed infant, weight gain is expected to be in the region of 200 g per week during the first three months of life, disregarding the first two weeks when the infant is adapting to the environment. In order to achieve this weight gain the infant is offered 150 ml/kg of expected body weight every 24 hours.

Refer to page 91: Nursing the acutely ill child, Infant feeding.

### (c) Weaning

Between three and four months (DHSS, 1980) small amounts of semi-solid baby food can be introduced into the diet. Weaning means 'to accustom' and the reasons for weaning are as follows:

1. The calorific content of milk alone is insufficient for growth and development. After three months the estimated weight gain of the infant should be in the region of 120 g per week for the next nine months.
2. Milk, whether breast or bottle, has a low iron content. From the chart you may notice that modified milks have slightly more iron content than breast. The infant accumulates a 'store' of iron due to transference from the mother during the third trimester of pregnancy (this is not so if he is premature). During the first months of life the iron is not replenished in a quantity great enough to prevent a decrease in the stored amount. The introduction of baby cereals and strained dinners will increase the iron content in the blood.
3. Taste buds, which at first are immature, become more sensitive to differing tastes. A selection of tastes is gradually introduced to the infant.
4. In the second half of the first year, primary dentition may begin to erupt (Figure 2.10). This is another reason why weaning should begin, as a more solid diet provides a stimulus for chewing, which should help new teeth through the gums and assist with forming words later on in the year.

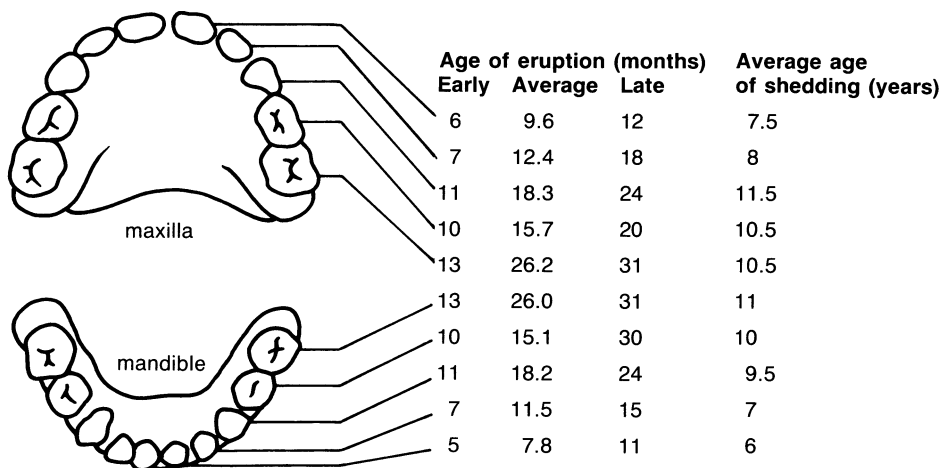


Figure 2.10 Primary dentition

#### 1 Introducing a weaning diet

During the first year gradual changes in diet and feeding take place (see Figure 2.11).

1. Introduce one new taste at a time.
2. Offer a half teaspoonful at a time of, for instance, cereal mixed with the infant's milk. Start with runny cereal and gradually increase the consistency.
3. Select one common time of the day, e.g. 10 am.
4. Establishing this diet may take 1–2 weeks. When the infant enjoys the cereal and readily eats it, another taste may be introduced — preferably a savoury taste. Introducing savoury tastes before sweet tastes helps to prevent the development of a 'sweet' tooth.

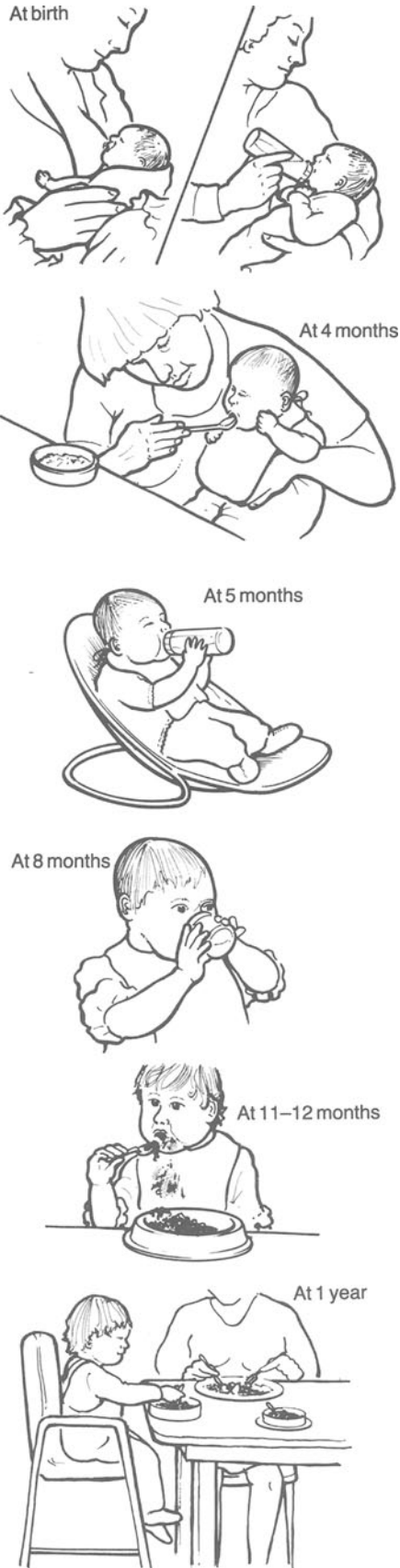


Figure 2.11 Changes in diet and feeding during the first year

5. A 'savoury' tooth is not usually as easy to develop as a 'sweet' tooth and can take longer to establish with the infant. The introduction of this second taste could be with the 2 pm or 6 pm feed. The same principles apply as were employed for the cereal — half to one teaspoonful (mixed with boiled and cooled water if necessary) is given.
6. The weaning diet is gradually established at all daytime feeds and is also gradually increased in amount.
7. Feed times may be changed by the eighth to ninth month to be more in keeping with the meal times of the rest of the family.
8. Weaning can continue in the last few months of the first year, with the introduction of a liquidised 'adult' diet, e.g. mince, vegetables. Alternatively, tins or jars of junior foods are acceptable.
9. Cow's milk can be given once the infant is over six months of age (DHSS). However, many mothers prefer to wait until later in the first year.
10. A teacher beaker for fluids can be introduced in the latter part of the first year.
11. Fruit juices may be given at one or two feeds instead of milk. This largely depends on the time and content of the infant's weaning diet and will increase the vitamin content.

Weaning, like feeding, is individual to each family. You may find the weaning diets shown below useful when assisting in planning a regime.

*Infant at four months* (birth weight 3.4 kg (approx. 8lb))

*Time*  
 0600 180 ml modified milk or breast milk  
 1000 180 ml modified milk or breast milk + ½ teaspoonful of cereal mixed with milk from allowance  
 1400 180 ml modified milk/breast milk  
 1800 180 ml modified milk/breast milk  
 2200 180 ml modified milk/breast milk

*Infant at eight months* (expected weight approx. 8 kg (approx. 18lb))

*Time*  
 0600 Cow's milk, offer 240 ml  
 0900 Cow's milk, offer 240 ml plus cereal  
 1300 Fruit juice (240 ml) plus puréed dinner plus pudding  
 1700 Offer cow's milk (240 ml) plus puréed dinner or egg. A light pudding may be desired.  
 2100 Offer cow's milk (240 ml)

## Elimination and changes in stools

The type of the infant's milk feeds and his weaning diet will determine the colour and consistency of his stools.

At birth and for the first days of life he passes *meconium*. This is a black/green sticky stool which is composed of intestinal cells, bacteria and amniotic fluid. When milk feeds become established towards the end of the first week of life, the stools 'change'. At first some of the meconium colour remains together with a paler stool. This is called a *changing stool*.

*Breast-fed* babies tend to produce stools more frequently, and they are pale in colour and soft in consistency. They may be more acidic than stools of bottle-fed babies.

*Bottle-fed* babies' stools tend to be darker in colour and firmer. It is possible that they may become constipated.

When weaning commences, the stools will become darker and firmer and are reflective of the type of diet that the infant is receiving. By the end of the first year, stools are brown and are passed once or twice a day.

### Further reading

Francis, D.E.M. (1986). *Nutrition for Children*, Blackwell Scientific, Oxford.  
 National Advisory Committee on Nutrition Education (1983). A discussion paper on proposals for nutritional guidelines for health education in Britain. Health Education Council, London.

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## Chapter 3

## The toddler (1–2½ years)

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During the first year of life the infant moves positively forward in his learning of some social skills. Amongst other abilities, he has learned to assist with his own feeding, to vocalise in order to attract attention and to walk, albeit somewhat precariously. He has also learned the beginnings of manipulating his world and those around him. He likes to be the centre of attention—he enjoys activities where he can stimulate laughter. This reinforces the activity and so he repeats it many times. In thought he is still egocentric, and although wishing to develop autonomy he will only be independent when his mother or father are in view.

By the end of the second year, the toddler may have become negative in his psycho-social development, having learned to say ‘no’ repeatedly. This second year is a contrast to the rather passive and easily satisfied infant. The toddler laughs, jumps, runs unsteadily and develops some social awareness.

### Physical characteristics

#### (a) Head, trunk and limbs

The toddler often appears chubby in face, limbs and abdomen and his facial characteristics usually lend appeal to his rather active and cuddly shape. Eyes and hair (which is usually abundant) have adopted their genetically determined colour. When the toddler walks, his gait is exaggerated and accompanied by curving of the spine (early lordosis) and a protuberant abdomen. By the end of the second year he appears more in proportion and has lost much of the subcutaneous fat which gave him chubby wrinkles and folds (Figure 3.1).



Figure 3.1 A toddler



#### (b) Measurable characteristics

The child's measurable characteristics now include details on dentition and bowel actions, as well as information on previously measured characteristics such as height and weight (see Table 3.1).

Table 3.1 Measurable characteristics

Characteristic	End of first year	End of second year	Add your own observations	
			End of first year	End of second year
Head to body ratio	Refer to Figure 2.4.			
Anterior fontanelle	Closed by 18 months	Closed		
Height: by the end of the second year 35 cm (14–15 in) added to height	75 cm (30 in)	85 cm (35 in)		
Weight: approx. trebled by end of first year	Boys 10.3 kg (22¾ lb) Girls 9.6 kg (21½ lb)	12.7 kg (27 lb) 12.0 kg (26½)		
First dentition	4–8 teeth	15–20 teeth		
Bowel actions	2/day	1–2/day		
Pulse rate	115/min	100–110/min		
Respiratory rate	25–30/min	25–30/min		
Blood pressure	100/60 mm Hg approx.			

Note: extremes of temperature are still possible and pyrexia can be a cause of febrile convulsions.

### (c) Developmental assessments

Throughout the first year the infant is assessed by the health visitor or doctor. During the toddler years this is still necessary, but less frequently. Assessment includes measurements such as those detailed in table 3.1, and observations of abilities in motor skills and co-ordination (e.g. mobility, hand-eye co-ordination and hearing). In addition, the emotional and social development of the toddler are noted (see page 19).

The health visitor or doctor will also be involved with advising and administering immunisation against measles.

## Motor development

Motor skills are usually more co-ordinated in the second year than in the first. Movement is concerned with satisfying needs, and has no regard for personal safety. The toddler is curious about himself and the outside world. Independence is 'the name of the game', and this can be a very worrying time for parents. 'Eyes in the back of the head' are needed to ensure constant vigilance.

Toddler motor ability is shown in Figure 3.2.



(a) Walks alone, feet apart, arms assisting balance



(b) Balances uneasily in squatting position to pick up toys and can rise easily without using hands



(c) Walks up and down stairs with help



(d) Pushes large wheeled toy on level



(e) Grasps crayon in palm and scribbles to and fro



(f) Manipulates blocks and builds tower of two

Figure 3.2 Toddler motor ability

## Play

Play becomes more constructive and is concerned with the dimensions of balance, fine movement, animism (see Piaget) and pleasure. The toddler indulges in parallel play. This means that he is happy to play close to another toddler, but not actually to play with him or to share his toys. Have you noticed 'toddler squabbles' over play items?

Some play is imitative, e.g. the doll pushed in the pram or 'cooking' in a make-believe kitchen with make-believe equipment. Many toddlers have imaginary friends; these should not be discouraged as they will fade of their own accord.

### (a) Suitable play items

It is important to remember that most exploration still concerns using the mouth, so avoid beads, toys with insecure (removable) eyes, and items small enough to be eaten! Suitable toys include:

- Dolls (dressed as boy or girl).
- Large toys with wheels.
- Musical toys, such as drums, xylophones.
- Large-piece tray jigsaws.
- Board books.

The types of toys offered at this age may have much to do with the socialisation of the child. While many children are given toys suitable for boy or girl, e.g. soft toys in animal shapes, bricks for building, some toys will be given according to gender: dolls for girls, cars, lorries and trains for boys.

## Safety

### (a) Protection from the environment

In learning about his world the toddler needs to experiment. However, in doing this, regard for danger is mainly absent and the toddler still needs careful protection (Figure 3.3).

Parents attempt to prevent any accidents happening; but if the toddler is over restricted he tends to disregard his parents' guidance and repeat the action many times. Examples include:

- Switching on and off lights.
- Playing with buttons and knobs on electrical equipment.
- Opening and shutting doors.
- Climbing on and off chairs.

Parents need to be firm in their guidance and eventually most toddlers grow out of this phase.

Protection from infectious diseases  
(continuation of immunisation programme)

Protection from electrical equipment and hot  
water



Safe toys

Protection from falling from heights  
or into water

Figure 3.3 The potential dangers in a toddler's environment

### (b) Accidents

In the toddler age range accidents include the following:

- Ingestion of household liquids (usually found under the sink).
- Ingestion of tablets, e.g. sleeping tablets.
- Burns or scalds (hot tea in cups on table—cloth pulled).
- Falling downstairs causing head injury or fracture.

The inability to understand dangers in the environment has much to do with the limitations in psychological development.

## Psychological development

### (a) Dependence on parent

At the beginning of the second year the toddler is mother-dependent and responsive. His behaviour may still be clinging, especially if mother tries to move out of his sight. As the second year progresses he begins to alternate between clinging and resistant behaviour. Clinging usually occurs at times of fear or fatigue or affection. The toddler is demanding of his mother's attention; but if this is not in keeping with his wishes he may become frustrated and resistant to her. Frustration can arise from the toddler being thwarted in carrying out tasks himself. It may also arise due to limitations in verbalisation, especially in making his wishes known!

Temper tantrums may appear and although they may be expected at this age, parents need to establish some form of guidance. It is not without justification that toddlers are sometimes referred to as 'the terrible two's'.

### (b) Skills and emotions

Acquisition of skills and emotions are mainly learned through imitation. The toddler learns by watching, touching, tasting and hearing. His immediate reference group is his parents: they are his role models. He believes that what they are doing is correct and copies them. Toddlers do not have the ability to follow a task through to a logical conclusion for they are concerned with the 'here and now' and not the consequences.

Development of thinking skills indicates some advance, in so much as the toddler is not content to 'lose' a toy; for example, if the toy falls out of reach, he attempts to search for it. Likewise if his parents move out of eyesight, he may yell and run to find them. Many of these ideas are incorporated in the game 'hide and seek'. See Fact Sheet 1, page 45, Piaget's stages of cognitive development, Stage I, Sensori motor phase.

### (c) Effects of other siblings

Another important factor in the toddler's psychological development is that of a new infant in the family. This may cause regressive behaviour, temper tantrums and general attention seeking. Perhaps more than anything the toddler is jealous (Figure 3.4).



Figure 3.4 The problem of rivalry

If he is part of a family with brothers and sisters he may be influenced by them in physical and psychological development. If a toddler sees his older sibling playing football, climbing a tree or behaving badly he is apt to copy—often with disastrous results! Alternatively, siblings can have a positive effect on their younger brother or sister. Certain milestones may be achieved earlier than in the toddler who has no one to copy.

# Development of social skills

This is summarised in Figure 3.5.

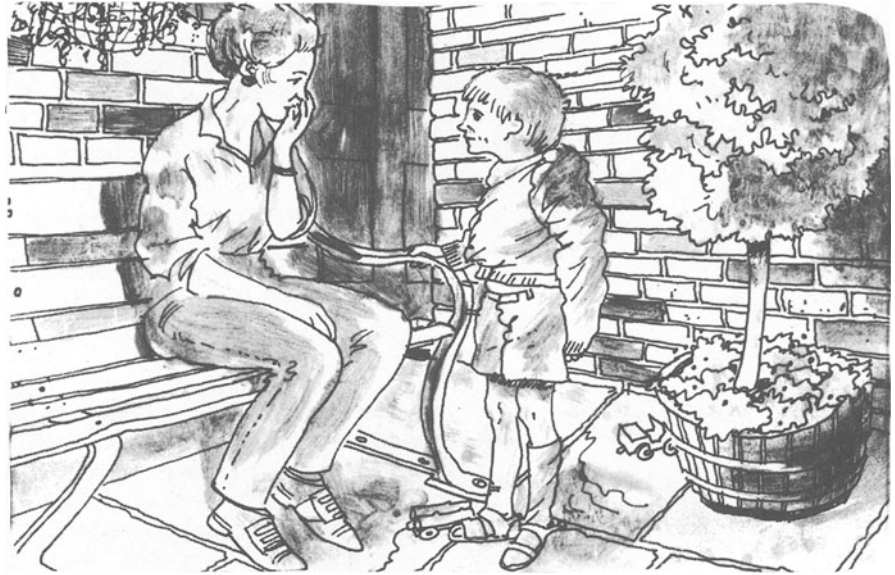


Figure 3.5 The development of independence

## (a) Vocalisation

The toddler responds to his own name, usually with a smile. He can name objects with which he is familiar, e.g. teddy, and he may also name his siblings.

### 1 Talking to himself

The toddler continually jabbars to himself. His vocabulary may be 200–300 words but approximately 50 are usually intelligible. He forms short sentences and understands simple commands from others, e.g. ‘pick up your shoe’.

The ability to talk to himself is usually noticed in play. He may talk to toys, wooden boxes and other inanimate objects that he considers real! (Piaget’s animism—all life and form have meaning.)

### 2 Echolalia

One very noticeable development is that the toddler continually asks ‘what, when, why, how’ and so on, and although his questions are usually answered, he repeats them frequently, to the frustration of his parents. This repetition is called echolalia.

## (b) Diet and eating

The toddler enjoys eating meals with the rest of the family. He likes to feed himself with a spoon, usually with little mess, and by the second year he can usually drink from a cup providing both hands are used for support. A diet which requires chewing is given: by 2–2½ years he has the full set of 20 deciduous teeth. The toddler displays a lot of independence in eating.

## (c) Sphincter control

This is a subject which usually raises discussion. Physiologically the toddler is able to be trained to eliminate at certain times as his nervous system has matured (Figure 3.6).

### 1 Toilet training

Toilet training should be introduced gradually and with minimal fuss. Siblings may act as role models or the toddler starts to verbalise his toilet needs. A potty is usually first tried after meals (gastro-colic reflex). Praise should be given for defaecation or urination or a dry nappy, but scolding is not necessary if he is unsuccessful or wet. Some toddlers take a long time to potty train, others may be clean and dry by the time they reach their second birthday.

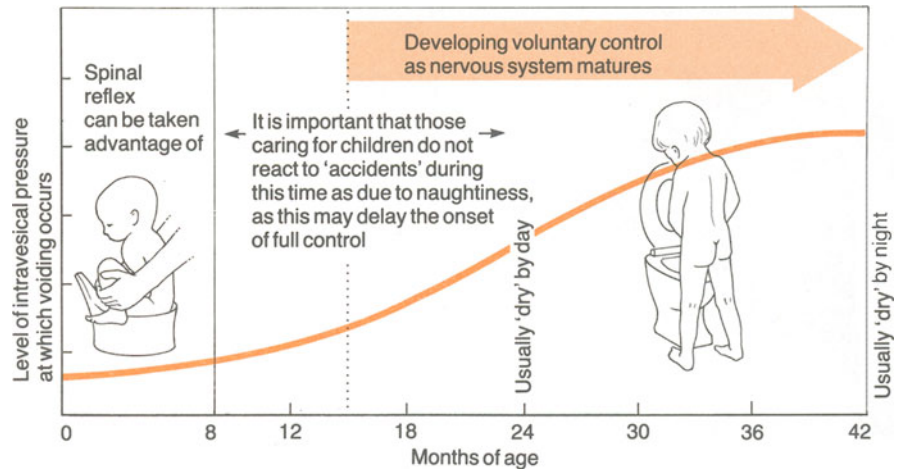


Figure 3.6 Development of control over micturition

(d) Cleanliness and clothing

The toddler will attempt to wash and dress himself although attempts may be largely unsuccessful. Clothes may be put on back-to-front and buttons and shoes may be too difficult to cope with yet. He learns how to clean teeth. When the toddler is the centre of attraction he sometimes dresses and undresses indiscriminately—much to parental dismay!

(e) Social groups

Although at this age the toddler is wary of strangers, it is possible to slowly socialise him by introducing him to other children and adults.

**1 Toddler clubs and nursery schools**

Nursery schools and toddler clubs can provide this introduction and be a welcome rest for mother, possibly allowing her to return to work. For the toddler, mixing with others helps to develop a more sharing attitude. Primarily, however, these social groups teach different dimensions of his world: how to relate to others, how to draw, play games and develop further independence. At first, the toddler may only be left for 2 or 3 hours but, gradually, this may lengthen to a short day. At first, he may be upset about leaving his mother; but with time he should enjoy this aspect of independence and run eagerly to meet his mother or father once the day is over. His language skills may develop dramatically!

**Typical toddler day**

A typical day in the life of a toddler is outlined in Table 3.2. Observe a toddler that you know and add your own notes.

Table 3.2 Typical/observed toddler day

Activity	Add your own comparison with toddler observed
Sleeps 10–12 hours	
Wakes early	
Likes a drink—milk/squash	
Plays with toys or goes into adults' bed	
Breakfast	
cereal	
egg 'soldiers'	
milk/tea/squash	



Table 3.2 (cont.)

Activity	Add you own comparison with toddler observed
Uses toilet/nappy	
Has a wash or bath	
Cleans teeth	
Mid-morning drink and maybe a snack	
Uses toilet/nappy	
Toddler club or play activities at home or shopping with mother	
Lunch	
meat, vegetables, potatoes	
pudding	
Uses toilet/nappy	
May need a rest/sleep or play activities or visits other toddlers with mother	
Teatime drink—milk/tea/squash	
Uses toilet/nappy	
Supper—light snack, e.g. egg if not at breakfast, drink and light pudding	
Father 'figure' usually home: may read a story or give toddler wash or bath	
Cleans teeth	
Uses toilet/nappy	
Drink if not at supper (avoided if 'dry night' being encouraged)	
Bedtime 6–7 pm with favourite toys and/or 'cuddly'	

## Chapter 4

# The pre-school child (2½–4½ years)

The pre-school child should develop through the negative phase identified in toddlerhood to an obedient and co-operative person. He still has many limitations to his cognitive and behavioural abilities. Motor skills show increasing co-ordination and finesse. Vocabulary enlarges in both number of words and expression. The beginnings of writing skills can be observed and drawings take on a recognisable form.

Kaluger and Kaluger wrote:

2 years: 'What's mine is mine; what's yours is mine'

3 years: 'What's mine is mine; what's yours is yours'

4 years: 'What's mine is mine; but you can play with it sometimes'

5 years: 'What's mine is mine; you can have it anytime, I don't want it'

These observations illustrate not only developing play, but also social interaction and the beginnings of elementary conscience which governs behaviour—the 'caring and sharing' which is considered a desirable quality in human society.

The pre-school child gradually learns that he can play and move away out of his mother's sight; but he understands that she will still be near him. The development of confidence in gaining independence is an important one. The pre-schooler needs the security of a family to encourage him to further his independence in readiness for school days.

## Physical characteristics

### (a) Body proportions

The pre-school child appears more in proportion than the toddler. Usually he is not so chubby, his limbs are more muscular and he moves steadily and with balance.

### (b) Measurable characteristics

These are given in Table 4.1.

Table 4.1 Measurable characteristics

Characteristic	End of third year	End of fourth year	End of fifth year
Body proportions	Legs 34% of body length	Legs 44% of body length	
Height	Adds approx. 8 cm (3 in) per year	Adds approx. 8 cm (3 in) per year	Adds approx. 8 cm (3 in) per year
Weight gain	2 kg (5 lb) or more per year until age 5 years		
First dentition	Complete (20) (All second molars have erupted)	Complete (20)	Complete (20)

Note: add the measurements you have noted in a pre-school child at 3 and 4 years.

### (c) Pulse, respiration and blood pressure

Pulse and respiratory rates become nearer to the adult range. Blood pressure is easier to record. Extremes of temperature, especially pyrexia, may still cause febrile convulsions especially in the earlier age group (2–3 years).

### (d) Developmental assessments

Between the toddler and school years, assessments become less frequent. However, it is important that the pre-school child is assessed before commencing school at 4½ or 5 years. This assessment should include: movement and co-ordination; speech; eyesight; and hearing.

## 1 Immunisation

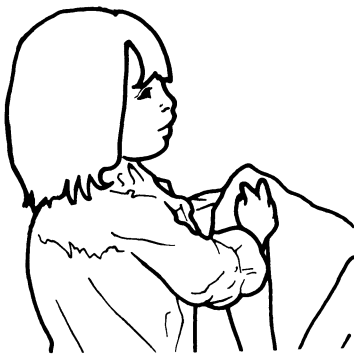
Booster doses of vaccine are given: diphtheria and tetanus (intramuscular) and polio (oral).

## Motor development, play and safety

Motor skills tend to be more adventurous, e.g. climbing trees, but the pre-school child still has a limited concept of safety and this requires careful consideration in play. He is relatively happy to move away from parents and play with friends. He may join a nursery class or pre-school play group.

The pre-school child's activities are shown in Figure 4.1 and can be summarised as follows:

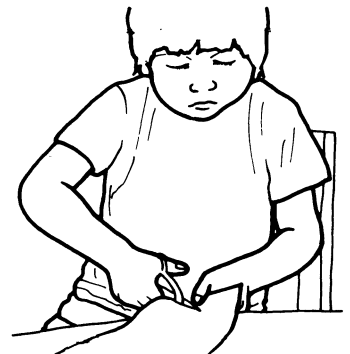
1. Rides a tricycle with pedals.
2. Throws a ball overhand.
3. Climbs ladders and trees.
4. Balances and hops on one foot.
5. Threads large wooden beads on to shoe laces.



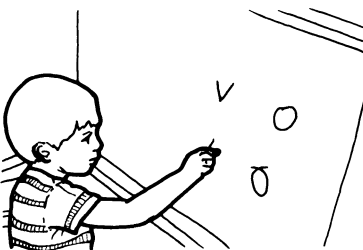
(a) Washes and dries hands



(b) Builds tower of bricks



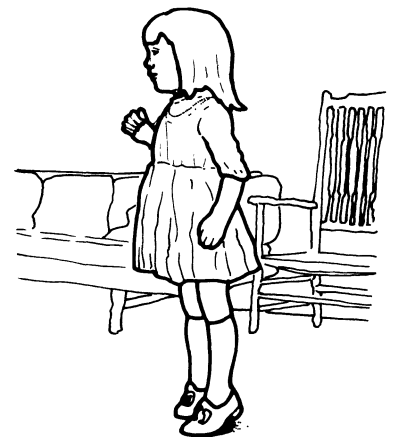
(c) Cuts with scissors



(d) Copies circle and V



(e) Vivid make-believe social play



(f) Stands and runs on tiptoe



(g) Walks up and down stairs in adult fashion



(h) Climbs trees

Figure 4.1 Activities of a pre-school child

(a) Suitable play and equipment

Play has become more constructive. The pre-school child enjoys the following:

- Glueing pictures onto paper (with supervision).
- Simple 2–6 piece jigsaws.
- Reading picture books.
- Making shapes with play dough.
- Hand/finger painting.
- Water play.
- Assisting with domestic work.

(b) Safety and play

The selection of toys should still consider the problems of possible ingestion and injury.

### 1 Outdoor play

As the pre-school child is very active and enjoys outdoor play, the possibility of accidents related to the outside environment is important to consider. The pre-schooler may become engrossed in his play and not see danger or be led into an unsafe situation by his playmates. Examples of this are running into a moving swing in the playground, playing on pavements and stepping out into the road without thought for his own safety. Teaching of the Green Cross Code should be started in order to develop awareness of such dangers. It is very difficult to stop children of this age from climbing trees and fences, riding tricycles and generally running about. Some accidents, such as grazes to knees, are usually not preventable. The child eventually learns to avoid the more common unsafe situations.

### 2 Preventable accidents

However, some dangers, such as those presented by polythene bags causing suffocation if pulled over the head, are largely preventable by sensible adult awareness.

## Psychological development

(a) Egocentric viewpoint

The pre-schooler is still egocentric in thought and behaviour, although by the time he reaches school this may be less evident. His thoughts and questions are literal such as: 'Grandad, why doesn't your skin fit?' The pre-school child sees the world from his own viewpoint and is unable to imagine that other views exist. He also refuses to recognise that there may be other viewpoints. This is probably because he focuses his thoughts in one dimension only. When he does transpose his thinking to another situation, he often makes mistakes. This is called 'transductive reasoning' (refer to Fact Sheet 1, page 45). An example of this type of reasoning is 'all men are daddies'.

(b) Limitations to understanding

When explaining something to a pre-schooler, you need to consider his inability to understand in several dimensions. For instance the statement: 'medicine to *drink* will make a *headache* better'. The child understands that medicine goes to the stomach, so how does it improve his headache? Better to say: 'medicine will make him well'. You may also notice that the word 'better' has been omitted. Pre-school children do not usually understand degrees of good, bad, ill and so on. If something hurts, as in a tummyache, it hurts badly, not a little or a lot. It is important to remember at this age that children tend to exaggerate, although aches and pains should never be totally disregarded.

Another limitation to understanding is that of time. Present and some aspects of the past may be understood; but the future not so easily. When explaining activities planned for the future to a child of this age, some measurable guidelines are necessary. For instance children count the number of 'sleeps' or the number of 'dinners' before a special day. Birthdays never seem to come!

A child of pre-school age begins to comprehend simple explanations of cause and effect. He still continues to ask 'why' and this will continue for many more years. At other times it is still noticeable that he shows more toddler-like behaviour. An example of this is the continuation of 'imaginary' play fellows and that toys and objects have 'life and intention'.

Generally, however, by the end of the pre-school years the child is more sociable and affectionate, co-operates in play, is generous with his toys and protects younger children.

The years between 2 and 7 are called 'preoperational phase' as described by Piaget (refer to Fact Sheet 1, page 45).

## Development of social skills and intellectual ability

### (a) Language

By the ages of 3 and 4 years, the child has increased his vocabulary from approximately 900 to 1500 words. By 5 years he may know approximately 2100 words. He puts the words into comprehensible sentences using plurals. Some difficulty is still experienced with words with the same pronunciation, for example, see and sea, and with words that have ph, th, f in them.

When prompted, the pre-schooler knows his name, address, age and sex. He is also becoming aware of the differences between the sexes. Nursery rhymes and numbers are learned by rote and he is pleased to recite these. By 4 years old he may be able to count up to 20.

Language becomes very varied with the introduction of mild profanities and humour. The child of age 4 years and more enjoys simple jokes and tries to recite them but he doesn't always remember or puts the emphasis in the wrong place. At other times he argues with friends but uses words more than blows!

### (b) Reading, writing and drawing

The pre-school child enjoys books, where he can read the print and identify the pictures. He also likes to listen to stories and is able to concentrate for a much longer time than formerly.

He begins to write: initially, this takes the form of printing and usually the first printed words are his name and address.

With regard to drawing, he likes to use colour, although usually still cannot colour within lines. The pre-schooler knows the primary colours and enjoys mixing up paints to create other colours. This requires some supervision. Figure 4.2 is a typical example of a pre-schooler's artwork.



Figure 4.2 Drawing of a person by a pre-school child

## **1 Benefits of nursery school or pre-school play group**

### **(c) Social groups**

Many of the advances made in speech, reading, writing and artwork may be influenced by attending a nursery school or pre-school play group. The child learns to play and work with others of a similar age. The leader of the pre-school group organises creative play, which stimulates learning and also provides differing skills for children of different abilities. He or she exercises patience and affection but with a sense of discipline, for a group of pre-schoolers can be noisy, argumentative and easily 'get out of hand'. More than anything the pre-school group prepares the child for formalised schooling: it takes him away from the family, introduces him to a new peer group and usually makes him less shy.

### **(d) Diet and eating skills**

At this age the child is able to feed himself well, using a spoon and fork. Food, such as meat, may need cutting up into small pieces. Knives may still be unsafe at this age. A variety of drinks are enjoyed, especially those liked by adults, such as tea. Many drinks are taken by a straw, especially if out shopping, at the seaside, at parties or at Granny's. This may be a more hygienic way of drinking in communal places than from cups. At Granny's it is usually a novelty!

### **(e) Sphincter control**

Control of bowel and bladder in the daytime should continue. In the early pre-school years sphincter control may regress temporarily, for example, at night time, at times of illness, anxiety or in a strange environment. 'Accidents' can still happen. Children should be encouraged to wipe their bottoms clean and always to wash hands.

### **(f) Cleanliness and clothing**

The pre-schooler likes to wash and bathe himself but still needs to be supervised. Hot water scalds and drowning are still possible accidents, the latter especially if the child likes 'deep-sea diving' in the bath.

## **1 Teeth**

Teeth should be brushed after meals or twice a day. Skill is required in manipulating the toothbrush into the mouth at this age, especially as the pre-schooler may be looking in the mirror. More often he sucks the toothpaste off the brush before cleaning the teeth.

## **2 Clothes**

Children of this age know some of the clothes which they like to wear. They are able to dress and undress but shoe laces and many buttons are still a problem. Clothes and footwear should be a suitable size for growth and activities. Warmth, especially of limbs, when playing outside is necessary. Tights, mittens or gloves, scarves and hats should be worn in cold weather. The pre-school child should have acquired many skills in action and thought in order to prepare himself for formalised schooling.

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## Chapter 5

# The school child (4½–5 to 10–11 years)

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The first day of school is an important milestone in any child's life. He may have previously attended toddler groups and/or pre-school playgroups; now, however, he will have his first introduction to formalised learning.

Preparation for school, e.g. attending pre-school playgroups, reading about and discussing school with parents, often helps to ease the child into the more formal school routine. Sometimes, however, the first days may bring disruption and perhaps upset for the whole family. This may be due to the child's inability to understand the reasons why he has to leave home and go to school. On his mother's part, it may be sadness at losing her 'companion' for the day or because the child is no longer her 'baby'. Parental feelings are often a mixture of pride, achievement and sadness.

By the time he reaches school age, the child is a very active human being with some understanding of safety factors. He is able to communicate intelligibly, thought becomes more logical and he usually has a restless urge to increase his knowledge. The beginning of formalised schooling is often welcomed by parents as they frequently feel unable to devote enough time to teaching the child to the level now required.

Starting school can be helped if the child feels secure in the knowledge of a caring, supportive family. Until now his family has been his main focal group. He is about to form relationships with school friends which will become important to him but could cause conflict between him and his family.

## Physical characteristics

### (a) Appearance

The school child appears taller and slimmer, and his face and features are more adult-like. Movements are well co-ordinated due to neuromuscular and skeletal development. His growth rate tends to be slow and steady until puberty.

### (b) Measurable characteristics

These are outlined in Table 5.1

*Table 5.1 Measurable characteristics*

Characteristic	Expected gain or change
Weight:	3.18 kg (7 lb) per year gain
Height:	6.25 cm (2½ in) per year increase
First dentition:	starts to lose deciduous (milk) teeth (see Figure 5.1)
Second dentition:	appearance of permanent teeth — four teeth per year between the ages of 7 and 14 years
Vision:	full 20/20
Vital signs:	temperature, pulse, respiration and blood pressure approach adult values

#### Suggested exercise

Compare the stated measurements with a school child whom you know or are nursing. It would be helpful to have some indication of his growth since infancy, to see if he reaches his growth expectations.

### (c) School health service

The health of the child is monitored and assessed by a team of medical practitioners who regularly visit schools, and by the school nurse and/or district nurse.

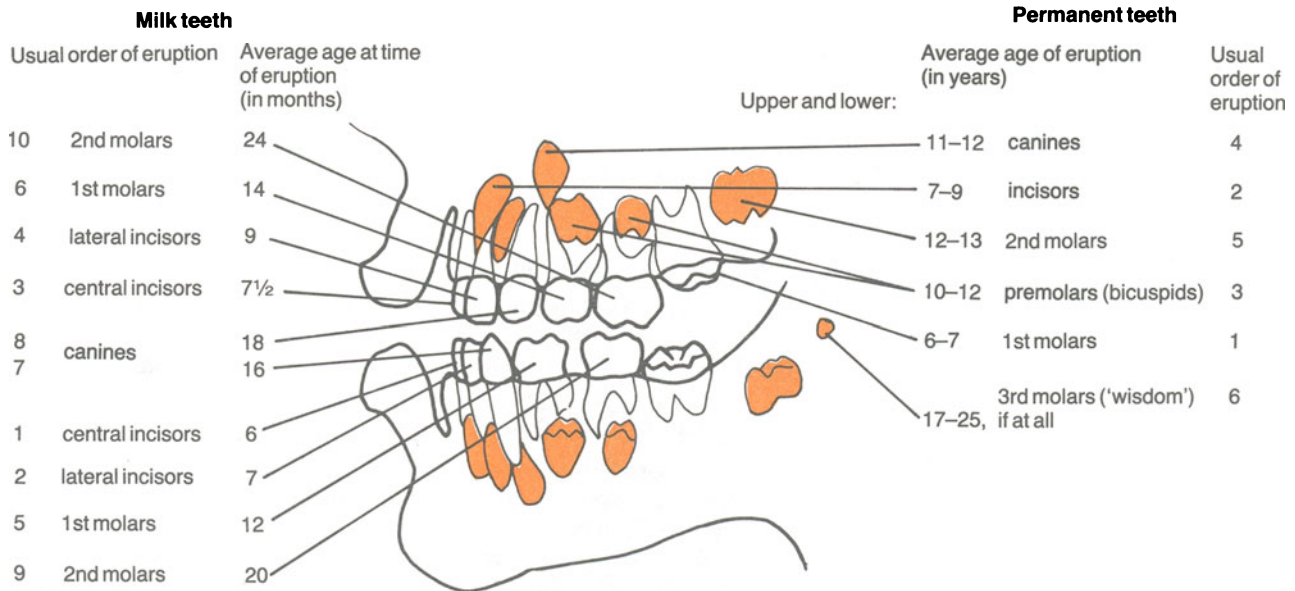
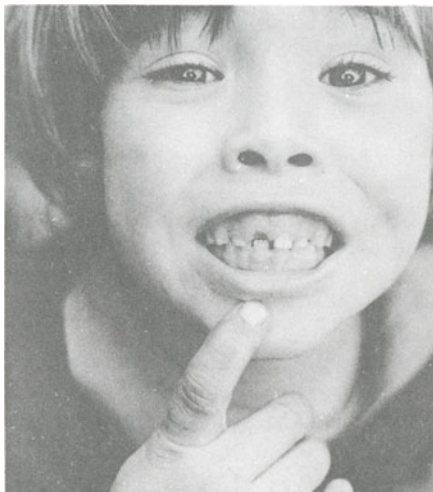


Figure 5.1 Dentition of a child aged about 6 years



## 1 Tests and assessments

The child is tested for hearing and vision. He is assessed for mobility, balance and co-ordination. His general bodily health is examined for growth rates, development, condition of teeth and feet. If any problems are revealed, such as hearing difficulties, defective vision or teeth, he may be referred to an appropriate specialist for further examination.

## 2 Immunisation programme

The first part of the immunisation programme is usually complete by school age (see page 48). Booster doses of diphtheria, tetanus and polio vaccines should have been given before school entry. If the need arises, for example, tuberculosis occurring in the family, the child may be immunised with BCG vaccine which, otherwise, is given in adolescence.

## Nutrition

Although diet and eating skills are part of social development, it is important to consider this area individually. Particularly in relation to physical and mental growth and energy requirements during school days, an adequate and nourishing diet should be eaten.

### (a) Variation in diet

The type of diet the school child eats will largely depend upon his family background, culture and availability of school meals. The amount, in calorific value, does not need to be as great as in previous years until the growth spurt at puberty. However, the child still needs the essentials of proteins, fibre, carbohydrates, some fats, vitamins and minerals. How he receives this balance may vary. Find out for yourself what the diet might be for an Asian family and a West Indian family.

### (b) Family meals

Food (amount and type) will be largely governed by what the family can afford and the time allowed for the preparation of meals. If parents are both working, the use of convenience foods may be an important part of the school child's diet. The popular hamburger, fish fingers and chips can provide a lot of nourishment, but consumption of such items should be balanced by encouraging the child to eat other foods including vegetables, fruit and wholemeal bread which provide different nutrients.



(c) School meals

Until recent years most schools provided a lunch which was considered to be a balanced meal; a dietician was usually involved in the planning of the menus. Many children now have to cater for themselves or return home for lunch. Some schools are starting to provide proper lunches again, though snack meals are often an alternative. Difficulties may therefore arise especially if parents have full-time jobs and are away from home a lot.

(d) Inadequate diet

Inadequacy in diet may be apparent in:

- 1. Growth: bone formation affected, poor height increase, tooth decay.
- 2. Mental ability: poor concentration, tiredness and hunger affecting performances.
- 3. General health: predisposition to infection, poor healing ability.

An example of a disease due to poor diet is rickets which is common in the 6 months to 2 years age group and is found particularly in the Asian communities who tend to live in urban centres. Rickets is due to a lack of vitamin D, which is formed in the skin due to exposure to sunlight or found in dietary constituents such as herring. A diet low in calcium and phosphorus will contribute to the development of rickets.

(e) Habit and skills associated with eating

Eating habits are largely acquired from the child’s primary peer group: his family. These habits may include:

- 1. Choice of food: preferences, likes and dislikes, e.g. ‘greens’.
- 2. Amount of food consumed.
- 3. Numbers of meals per day: parents and siblings may influence, e.g. missing breakfast.
- 4. Eating between meals.
- 5. Different members of the family eating at separate times, so not all sitting down together.
- 6. Distractions at meal times, e.g. watching TV, reading newspaper: food and eating therefore not the primary factors.
- 7. Use of utensils with regard to skills and safety. Knife and fork can be used, but guidance needed about not eating from the knife!
- 8. Social graces, such as washing hands before eating, not overfilling the mouth and not talking with the mouth full of food.

School children are often so busy learning that eating tends to be of secondary importance because it takes up time! When they do eat, they may need to be curbed from chattering about new things they have learned and to get on with the job in hand.

This brief discussion about nutrition and eating habits also highlights aspects of motor development, cognition and psycho-social abilities. It may be difficult to isolate one aspect from another, i.e. what the child thinks and what he is actually capable of doing.

## Motor and cognitive development

(a) Five to nine years

A comparative chart (Table 5.2) is shown here to indicate cognitive and motor development for the age group 5 to 9 years.

Table 5.2 Motor and cognitive development in 5- to 9-year-olds

Motor development	Cognitive development
5 years Climbs and jumps well Prints familiar words, e.g. name, address, age Walks backwards	Approximately 2100 word vocabulary Adds names to items drawn (approximately three) Likes definitions of new words Identifies objects of different weights Imaginative

Table 5.2 (cont.)

Motor development	Cognitive development
<p><b>6 years</b> Active and impulsive in play and development Good balance Manipulates objects with skill and dexterity</p>	<p>Learns to read with understanding Understands home and neighbourhood Uses clearly constructed sentences May use swear language</p>
<p><b>7 years</b> Less active, more tranquil Fine movements with hands, e.g. 'dog-ears' books Prints sentences May become nervous, e.g. nailbiting, stammering Muscular skills improved, noted in sport</p>	<p>Has a good time appreciation — past, present and some future Likes to have logical endings to work or task Understands money values. Knows 'rules' of games and does not always want to be 'first'</p>
<p><b>8 years</b> In sport, good co-ordination: moves with skill and agility Beginning to script write rather than print</p>	<p>Less self-centred Thought is logical and based on a degree of reasoning Appreciates 'degrees' of things, e.g. light, pain, time May still have fears of animals, dark, etc.</p>
<p><b>9 years</b> Uses both hands independently, e.g. playing musical instruments Skilled in hand – eye co-ordination, e.g. sewing, art, sport such as football and tennis The use of cognition, including undertaking problems in elementary mathematics, becomes apparent in the 9 year old</p>	<p>Often labelled 'impossible' as he likes to think through problems and to act upon his own decision Parents may still wish to protect growing child and place obstacles in the way of what he thinks. Hence the sometimes stated phrase 'rebellious 9 year old' Breaks the organisation of tasks into a series of logical steps with a conclusion Likes to participate in family discussions and can keep secrets</p>

**(b) Ten years**

By the age of 10 years the child may be poised between completion of childhood and onset of puberty. Many girls show physical characteristics of puberty, their growth spurt and sexual changes appearing between 10 and 12 years. Generally, boys reach puberty 2 years later.

The 10-year-old's motor skills are really a culmination of all that he has learnt through childhood. He now works to perfect such skills, as in writing, art and sports activities.

In thought the child likes learning and reasoning. He has developed the ability to memorise facts (necessary for examinations). His thought is probably still concrete, that is, he is yet unable to hypothesise or think in the abstract.

Generally, at 10 years, there is a 'rounding off' period before adolescence. Children are sociable, emotionally stable and share their experiences with family and friends. This must of course be a generalisation and each child will reach this age according to his innate abilities and, more importantly, the environment in which he has grown up.

**(c) Changes in cognition**

Certain specific changes have been outlined in the comparative chart and in the description of the 10-year-old. Important changes are further elaborated below.

**1 Development of thought**

Generally, the changes in cognition include the ability of the child to recognise that other people have viewpoints and these must be incorporated in his own thinking. He becomes more realistic; this is partly due to time comprehension and also the experiences he gains at school.

School is very important in developing the child's ability to think. Lessons that are part of the daily curriculum are mainly geared to developing logical thought, encouraging individual expression and learning about the world, past and present through subjects such as mathematics, English, history, geography and religious studies.

Activities such as handicrafts, music and sports are included in the curriculum to teach the child the logical steps of skilled processes and provide enjoyable learning experiences.

## 2 Development of communication

Perhaps, most noticeably, the school child perfects his ability to communicate with others. His language becomes clear and meaningful, his expression helps others to understand his thinking. Such expressions may be seen in, for instance, degrees of feelings as in affection, pain and upset.

## 3 Development of writing

Writing, which starts as large print without uniformity of size or need to keep straight lines, develops to a definite style by 10 years. Writing is both to recall facts and express feeling towards others. For example, see Figure 5.2 and refer to Nanette Newman, *Lots of Love*, with selections of writing at different ages.

I have a cat called  
Smokey  
we have some red and  
yellow flowers  
we made some cards at  
sunday school  
from gymon  
age 5 years

By CATHERINE  
AGE 8  
My name is Catherine  
I have brown hair  
I have blue eyes  
I have a mum who  
does lovely cooking.  
I have a dad who  
does magic.  
I go to brownies on  
monday  
I play the violin and  
the piano

a boy called Ben  
he had a friend he  
was called Simon  
Bens mummy took  
to Ben go and play  
with Simon whilst  
I got the tea  
they played and  
played until Bens mummy  
called him. Joanna  
age 6

Arlison, Age 9  
Thursday 2nd November  
My ship is called RMS Queen  
Elizabeth 2nd. I am the captain of it.  
We set sail on a lovely sunny day  
it was so warm and there wasn't even  
a cloud in the sky. Most of my  
passengers want to go to America  
but some want to stop off at a  
little island called Tubby Slug island  
My name is Captain Hoola-Hoops  
But my crew call me Hoola for  
short. I have a red log book in  
which I write every thing that happens  
in the day. On the day that we set  
sail every thing was fine except that  
a man fell over board when he  
was trying to save his wives  
best hat apart from that and half  
of the passengers saying they  
felt sick. So I wrote it all  
in my log book.

Figure 5.2 Writing by children of different ages

You may like to refer to Fact Sheet 1, Piaget's *Stages of Cognitive Development*, Phase I Preoperational, 2–7 years and Phase III Concrete operations, 7–11 years (see page 45).

## Play and safety

Play is still an important part of the school child's life. Every child, irrespective of age, needs to play.

### (a) Variation in play

In the early school years, the child's play may be influenced by his friends and by what he learns. Boisterous outdoor play includes tree climbing, bike riding and making 'dens'. There is usually an oblivion to becoming dirty and to hunger. Later, the child has a more orderly routine and is not keen to indulge in play where clothes are torn, limbs grazed or meals missed. This may be related to a developing conscience and the known consequences of arriving home late or in a dishevelled state!

School age examples of play might include:

'Acting out' stories	Card games and board games
Sewing	Swimming
Woodwork	Horse-riding
Reading	Looking after pets
Drawing and painting	Collecting things (stamps, flowers)
Watching TV	

Variation in play changes from child to child. However, degrees of skill in play are very much related to physical and mental development.

### (b) Developing an awareness of safety

The child is developing an awareness of safety. However, in the young school child, excitement, distraction and involvement may override his sense of maintaining a safe environment. Accident figures include the high number of school children who suffer road traffic accidents. School tries to continue and encourage use of the Green Cross Code devised by RoSPA, as does the media. Various safety officers may visit the school to talk about safety and show suitable films. The older school child can be taught what action to take in the event of an accident, fire or drowning.

### (c) Limits to responsibilities

It is perhaps a point worth remembering that older school children who 'baby sit' or look after younger children may not be able to deal with accidents in quite the orderly way expected from adults. Responsibilities are usually enjoyed but should be viewed in relation to safety awareness.

### (d) Prevention of harmful influences

As the older school child approaches adolescence, he can be influenced by his peers into activities which may be harmful to himself. An extreme example might include 'glue sniffing'. This may relate to the lack of understanding or communication, or ignorance of the consequences of such an activity. Parental and school guidance is needed, not only to protect the child from the environment but also to protect him from harmful influences.

## Psycho-social development

It is perhaps implicit that the child needs constancy and recognition for all the new experiences he will meet during school days.

His family should be the constancy factor. However, to the school child, his more important relationships are with his friends. The family are more or less taken for granted, that is, except at times of illness, injury, anxiety or loneliness. Some school children pass through a love-hate relationship with their parents. The latter can become very upset about this, but with patience and understanding the child should grow out of this behaviour.

(a) Peer groups

School provides several new peer groups which may affect the child's learning. School teachers are his new role model and they may be viewed favourably or unfavourably. Children vie for attention from the teacher, who has to try and treat every child's abilities as individual.

Older school children are an important and often influential peer group. Although classes at school tend to accommodate children of similar ages, the playground and sports field may not! Next time you see boys playing football, look carefully to see if there is a younger child attempting to imitate similar skills — usually without the same success.

Relationships between younger and older school children may be all right at home or on a one-to-one basis. However, in a group, different behaviour may be exhibited to younger colleagues, such as bossiness, avoidance or treating 'as a baby'.

(b) Schoolfriends

Many friends made in the early days at school remain with the child throughout life. Initially, friends may be of either sex, but as the child grows older they are usually the same sex. By the time the child reaches 9–10 years, he may have 'special' friends or 'chums'. These are children with whom he has secrets, plays special games and often goes to for comfort when in distress or difficulty. When a group of school children need to be divided for an activity, special friends like to stay together. Encouraging the child to meet many different children can help him with relationships, social interaction and employment in later life. It may also discourage him from being shy.

(c) Routine

The school child likes to have a flexible routine. This relates to, for instance, mealtimes, sleep, school day and visiting relatives. He gains a sense of security from a routine but this must allow for new experiences and achievements.

(d) Hygiene and clothing

By mid-school years (7–8 years) the child is able to wash and dress, to tie shoe laces and fasten back buttons and bows.

**1 Hygiene: standards and guidance**

His expertise in performing hygiene may not reach the standards required by his parents, for instance, dirt may linger on knees, under fingernails or behind the ears! Guidance should still be given about the use of running hot water, its relation to scalding, and depth of water with regard to drowning. Supervision may be necessary but this often has to be discreet in order for the child to develop independence. Teeth need careful brushing, especially as sweets and other 'goodies' are offered by school friends. Regular dental check-ups should be planned.

**2 Clothes: preferences and guidance**

The school child often has likes and dislikes with clothes. He often needs guidance on colour and emphasis on the importance of keeping warm in cold weather. What he wears will also depend on what his family can afford to buy. Children's clothes generally do not become 'worn out', except perhaps elbows and knees. Younger siblings can be very sensitive to wearing clothes that are 'handed down' from older brothers and sisters. As these clothes often have many years wear left in them, the way in which they are offered has to be quite tactful.

When playing outside in cold weather, school children may become so engrossed in play that they do not notice the cold. Parents need to consider warmth to help prevent lowered resistance to infection (coughs, colds) and as an aid to good circulation.

(e) Elimination

Control of bladder and bowel should be achieved by commencement of school. Children who for some reason cannot control their elimination, can become the butt of teasing by schoolmates. Usually school toilets are easily accessible, warm (not in the playground) and provide privacy. Encouragement in social hygiene after elimination should continue.

## 1 Regression in sphincter control

If a child is unhappy in the early school days, it may be manifested by regression in sphincter control. Parents and teachers need tactfulness and time to resolve this problem. If the child has a definite physical or psycho-social problem which affects elimination, then the advice of a doctor or specialist should be sought.

### (f) Rest and sleep

In most children, school can be a tiring activity. Children need adequate sleep in order to have an alert mind ready to learn. As the child grows older he may have homework to complete in the evenings, so he needs reserves of energy and a quiet place to work. Children who for one reason or another have inadequate sleep soon show inattentiveness, lack of concentration, poor co-ordination and dull facial expressions.

### (g) Special fears

Children of school age have fears such as those mentioned earlier, darkness and imaginary horror animals and people. Special fears include loss or injury to part of their body or loss of control of body functions. These factors should be borne in mind when explaining pre-operative care and operation technique. For instance 'taking a part of the body away' is a misunderstood concept in most children and may cause much anxiety. School children, too, have an exaggerated fear of dying. Whether child or adult, death is a very difficult concept to understand. The school child's fear of 'not coming back' from death, or the actual process of dying, perhaps interpreted as mutilation, needs special consideration if encountered in hospital.

### (h) Gender and sexual roles

Gender roles have been mentioned earlier in choosing toys suitable for boy and girl (page 18). See Figure 5.3. At the school age, children may be channelled into certain areas of learning depending on gender, e.g. boys may be encouraged to be more adept at problem-solving while girls may be more practical. However, many schools do not delineate between gender and most subjects are available for boy or girl to pursue.

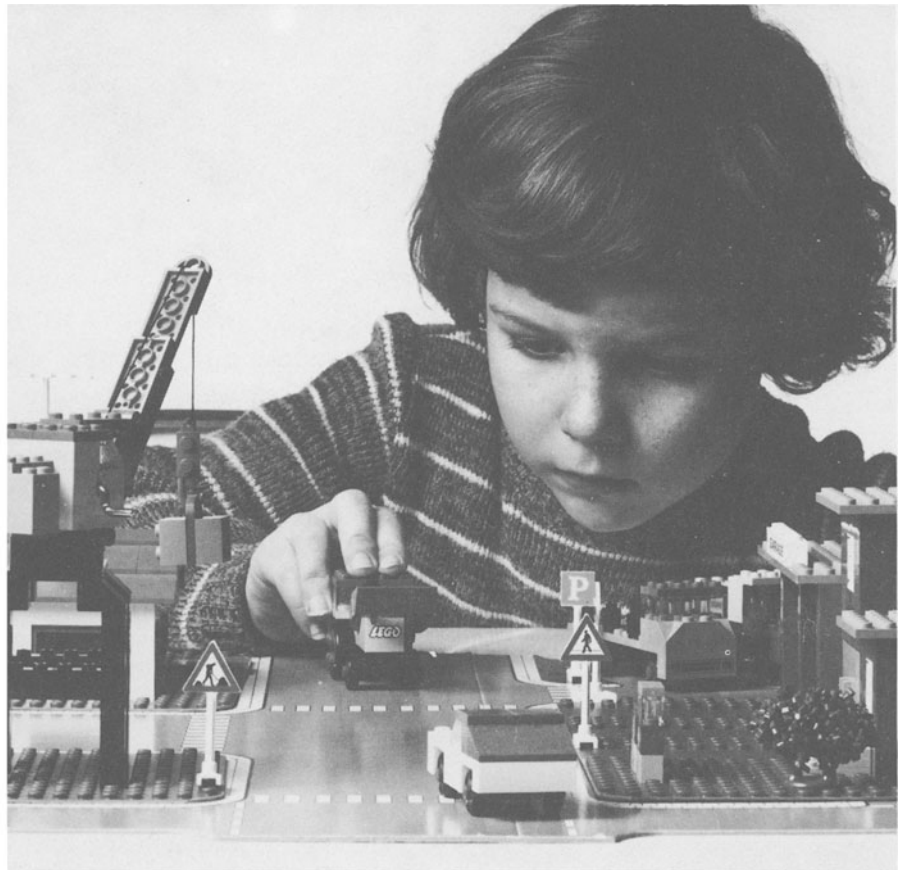


Figure 5.3



Figure 5.3 (cont.)

## 1 Behaviour differences

In terms of friendship, girls usually pick girls for friends and boys pick boys. There is a definite difference in behaviour between the sexes: boys are often aggressive, boastful and energetic, especially when in groups, while girls are often quieter but may be sneaky and fickle in their friendships. A group of girls can be just as difficult as a group of boys, though not usually in a physical manner! Of course these observations are very general and these sort of school impressions are usually a passing phase. However, there is contempt for the sexes: girls are usually considered 'sissy' and boys 'rude'. Although, as in families, boys and girls may have a good relationship, when in front of others and especially at school, this relationship must not be seen to be apparent.

### (i) Parents

By the end of the school years, parents have watched their children mature in growth, mental ability and psycho-social behaviour. Their child is largely a product of themselves and their influence on his schooling.

Parents may feel that their guidance has largely been ignored. However, the stability of a secure and loving family background will help the child through the upheaval of adolescence.

Adolescence may be a dramatic period of change for the child both physically and psychologically.

No matter what type of relationship he has previously enjoyed with his parents, he has, to date, mainly remained dependent on them and their world.

### **Introduction: some views on adolescence, past and present**

The physical changes which occur in adolescence are due to the effect of hormones triggering pubertal development. Psychologically the adolescent is learning to think in the abstract, to idealise and to develop his own identity and independence. This period of development is also concerned with experimentation, noted in extremes of dress, hair and social behaviour. Adolescents resent interference from their parents in what they consider to be 'their world'. It can be a challenging time for teenagers and parents alike. The former needs the independence to discover his own identity in preparation for his adult role; sayings such as 'Who am I?' or 'Where do I fit?' are illustrative of such feelings. Parents need to continue some degree of discipline and guidance but this has to be less obvious than previously. Parents may also resent their child growing up, as it can be illustrative of their own age and the 'generation gap'.

School should continue to play an important part in the adolescent years. Although learning is sometimes restrictive in nature, most adolescents enjoy the opportunity to widen their knowledge and develop a competitive approach to school work, often promoted through examinations.

Different cultures view adolescence in a variety of ways. In New Guinea, for instance, an adolescent Arapesh girl may have already been chosen as a wife by her future husband's parents. Puberty and adolescence may often be less of an upheaval in such communities where bodily and mental changes are often more easily accepted as a normal part of maturing to adulthood.



Figure 6.1



In Victorian times, children often did not have the opportunity to ‘grow’ through adolescence for many were sent to work at an early age, for long hours, with little reward. There was little leisure and enjoyment.

During the years 11–18, an adolescent can become a parent, leave home, ride a motorcycle or drive a car. He may be influenced by others to experiment with smoking, drinking and drugs. At the age of 18 years he can vote.

To put adolescence in perspective, the changes discussed here are for the most part, normal development. The majority of teenagers pass through adolescence without demonstrating abnormal behaviour — although parents may find this hard to believe!

## Puberty

Puberty literally means ‘age of manhood’. Physical changes are brought about by production of oestrogen and androgens in both sexes. Secretion of these hormones probably occurs for several years prior to appearance of physical characteristics. In girls oestrogen production rises. In boys testosterone production increases.

### (a) Puberty in girls

In girls the changes associated with puberty start at approximately 10–12 years and include the following:

- Growth spurt in height.
- Breast development.
- Appearance of pubic and axillary hair.
- Broadening of hips.
- Redistribution of fat.
- Menarche—commencement of the menstrual cycle, which often appears after other characteristics.

The onset of these characteristics brings an acute awareness of changing body image and often embarrassment. For instance, adolescent girls may become round-shouldered to hide breast development, alternatively they may ‘pad’ bras to increase their breast measurement. Menstruation is sometimes considered ‘unclean’ and adolescent girls need guidance from their mothers in how to cope with this, and preferably an explanation before the cycles start. Both parties may find this difficult to discuss.

Physical changes together with a monthly menstrual cycle can give rise to behaviour changes, some of which are considered later.

### (b) Puberty in boys

In boys the changes associated with puberty start at approximately 12–14 years and include:

- Growth spurt in height.
- Enlargement of testes, scrotum and penis.
- Appearance of pubic, chest and axillary hair.
- Elongation of limbs, broadening of shoulders.
- Appearance of facial hair.
- Deepening (‘breaking’) of voice.
- Capacity to ejaculate by nocturnal emission or masturbation.

Like girls, boys can be acutely embarrassed by these physical changes. The growth spurt in boys may last longer than in girls. A boy stops growing out of his trousers (at least in length) a year before he stops growing out of his jackets. This might help to explain the sometimes lanky, awkward appearance of the adolescent boy. The change in voice can be unreliable at first, that is, may fluctuate between high and low, often at inopportune moments.

## 1 Acne

Both adolescent boys and girls can be prone to acne especially on the face. Acne is due to androgen production in both sexes, leading to increased

sebaceous secretions which can block the pores in the skin and cause inflammation. This may not be helped by the need to shave the face for boys and application of facial make up in girls.

(c) Some measurable characteristics

Table 6.1 Changes in height and weight and related calorific requirements

Age (years)	Weight	Height	Calories
(a) <i>Girls</i>			
11–14	44 kg/97 lb	155 cm/62 in	2100
14–18	54 kg/119 lb	162.5 cm/65 in	2100
(b) <i>Boys</i>			
11–14	44 kg/97 lb	157.5 cm/63 in	2800
15–18	60 kg/134 lb	172.5 cm/69 in	3000

From the chart (Table 6.1 (a), (b)) it should be noted that at the onset of puberty girls and boys are similar in weight and height. However, the increase in height and weight by 18 years is greater in boys than in girls and this requires a greater calorie intake of up to 3000 calories (see Figure 2.4, page 6).

**1 Secondary dentition**

This should be complete by mid-adolescence and wisdom teeth can appear in late adolescence or early adulthood.

(d) School health services

The adolescent continues to be assessed by the school health service. In addition to checking the physical aspects mentioned in childhood, the assessment must also include pubertal changes.

Adolescents are often not keen to attend these examinations, because of embarrassment about undressing, especially in front of members of the opposite sex (doctors/nurses).

**1 Immunisation programme**

The immunisation schedule, which should have been commenced in infancy, is completed in adolescence. Girls receive the rubella (german measles) vaccination, usually between ages 11–13 years. It is mainly given because of the effects of rubella on the fetus if the girl becomes pregnant. Boys and girls receive the BCG vaccination against tuberculosis between the ages of 12 and 14 years. This is given providing that the preliminary test for TB (the Mantoux) is negative (negative result if no contact with disease or previous BCG).

Immunisations given in adulthood are generally booster doses, usually prior to employment, or given in relation to specific diseases, especially when travelling abroad, e.g. cholera vaccine.

**Nutrition**

(a) Importance of a balanced diet

In order that adolescent boys and girls have sufficient energy for physical and mental growth, a balanced diet should be encouraged. The adolescent may have learned from parents the correct foods to eat but likes the freedom to experiment. He may consider a balanced diet consists of fish and chips, hamburgers, beans on toast or salads. Guidance from parents or school is not always accepted.

**1 Diet and body image**

One of the factors important when diet is being chosen is the adolescent's picture of his own body image. There may be a pre-occupation with the appearance of fat on waist and hips. Acne on the face may be attributed to diet, such as taking too many fats. Eating may be used to cover up depression about changing body image, or parental restriction on activity. Very commonly, eating may become compulsive as the adolescent feels he is not attractive to members of the opposite sex, so he takes refuge and comfort in food.

## 2 Special problems related to diet

Two special problems that occur during adolescence are anorexia nervosa and obesity. You may be knowledgeable about the background to obesity. Anorexia is now becoming better understood.

### Suggested exercise

Using the headings below write a balanced diet for 24 hours, which you consider adequate for an adolescent boy or girl (refer to calorific chart on page 154).

### Balanced diet for an adolescent

Breakfast:

Mid-morning:

Lunch:

Supper:

Bedtime:

Compare the diet you have written with one *constructed by an adolescent* you know or have nursed.

## Mental growth and education

During adolescence there is a rapid expansion of knowledge, mainly due to schooling and society. The adolescent should become skilled in the ability to write, solve problems and understand changes in the world, historically and geographically. Development of practical skills can also be observed in, for instance, art, handicrafts, cookery, needlecraft and sports. The adolescent may be given the opportunity to choose such subjects. His choice will depend on the curriculum and his own interests.

### (a) Job interests

Another contributory factor to the subjects studied in the curriculum are the job interests of the adolescent. By mid to late adolescence (14–18 years), some girls and boys have chosen their future occupation. Some are ‘channelled’ by parents into making a choice of career. Examples of this may be medicine and nursing. Other adolescents do not have the chance to choose a career, either due to lack of guidance, area of employment (where, for example, job choice may be limited or lacking), lack of finances or just lack of incentive to work.

Schooling is important in providing the adolescent with a direction and goal towards his future. Those who wander aimlessly through their secondary education or play truant may not understand the benefit of formalised learning, subsequently they may experience difficulty in finding a job. Some adolescents leave school as quickly as possible at the legal age of 16 years, either to work because they are unhappy at school or because of parental influence.

### (b) Development of logical thought

Many adolescents, however, enjoy learning at this age: they are able to logically think through ideas and problems and attempt to solve them. This is the goal of Piaget’s development of cognitive thinking. He describes the adolescent as being able to perform ‘formal operations’, that is, the ability to think things through in the mind; the ability to abstract and hypothesise. You may like to refer to Fact Sheet 1 (page 45). An example of such thinking may be observed in the game of chess.

### (c) Intelligence

In the Western world, much is made of intelligence. In school, the objective means of measuring intelligence is by setting homework and school and education board examinations. Competition may also be encouraged by such exams, especially if there are grades to be gained or a position in the class. An element of competition is not bad at this age; but in some adolescents it can

cause feelings of despair and stupidity. Most adolescents are reaching their adult intelligence potential which can be measured using various I.Q. tests.

At the beginning of the adolescent period boys and girls show no consistent difference in overall intelligence. From 11 years, girls tend to outscore boys in verbal ability tests while boys tend to do better in visual/spatial tasks. From 12 to 13 years onwards boys are supposedly better at mathematics.

## (d) Emotional growth

### 1 Effects of changes in emotions

The adolescent is often described as 'moody'. This relates to frequent changes in emotions which can fluctuate between being very happy and being bored. These changes should be considered as normal emotional growth, although parents, relatives and other older peer groups may find this difficult to understand. 'Moodiness' relates to the ability of the adolescent to think abstractedly and, therefore, he begins to idealise about his world. It is the inability to pursue ideals which may lead to frustration, boredom and oversensitivity.

The adolescent may also be shy and introspective, a very private person in thought and action. He may show anxieties about social life, work and schooling. The 'drop out' so often related to adolescence is not the 'norm'; dropping out does not usually happen unless he is experiencing problems at home or in society and this reaction may then be a defence mechanism, i.e. 'opting out'.

### 2 Conflict with parents

Most adolescents have some conflict with their parents. This may relate to freedom, school work marks, fashion trends or social and sexual activities. It is natural that the boy or girl of this age will 'test' their parents. A firm even-handed approach is required, but this can be quite difficult. However, the adolescent does need guidance although this should not be over-restrictive or oppressive in nature. Parents who can laugh with their adolescent child about mistakes in experimentation, can be quite surprised with the affection they receive in return.

The adolescent wants to be independent and go his own way, but needs parents on whom to rely when experimentation and autonomy go wrong. Some 'rows' with parents are an inevitable part of emotional growth. Behaviour patterns at this age are influenced by environment and people present. For instance, the adolescent may withdraw, look bored and remain isolated from a family gathering or an organised trip. However, when in the company of school friends, he may be the 'life and soul' of the party: humorous, outgoing and full of energy.

## Psycho-social development

### (a) Identity searching

E. Erikson (see Fact Sheet 2, page 46) describes adolescence as the period of searching for identity. Through all his experimentation, this is what the adolescent is doing—seeking his own identity. In order to discover this he tries out many different roles, sometimes becoming confused as to who he is. At other times, the adolescent is said to have reached 'an identity crisis'. There is a very fine line between normal crisis and confusion in role identity, based on experimentation, and such anti-social behaviour as delinquency.

The adolescent is often called a 'rebel'; he has his own political point of view which he can clearly express but he must not become a revolutionary. He may dress to attract the opposite sex, be expected to befriend intimately members of the opposite sex—but not to have sexual intercourse.

Bandura and Walters (1959) wrote:

The view that adolescence is a period of rebellion is often supported by references to superficial and external signs of non-conformity, such as the adolescent's fondness for unorthodox clothing, mannerisms and language.

Social change is considered in more detail as individual topics.

**(b) Legal status of the adolescent**

See Steinberg (1981).

- 10 years: Child reaches age of criminal responsibility.
- 12 years: May buy a pet.
- 14 years: See a film classified for 'Parental Guidance'.  
Own an airgun.  
Be taken into a bar by an adult but not bought an alcoholic drink.
- 16 years: Buy cigarettes.  
Consent/withhold consent to medical treatment.  
Girls may be given contraceptive help without parental involvement.
- 17 years: Can live away from home without parental consent.  
Can be given a prison (or Borstal) sentence.
- 18 years: Full adult rights including marrying without parental consent.  
Buying and consuming intoxicating drinks in a public house.  
The right to vote.  
No longer be taken into care by the local authority.

**(c) Responsibility**

As the child has grown through the school years he has usually had the opportunity to take responsibility. This may have been as a school prefect or monitor. The adolescent should be able to take greater responsibilities, such as organising teams of colleagues in sports events. Many teenagers 'look after' those in the younger school by overseeing lunchtimes and generally providing guidelines for behaviour. At home, the opportunity to assist with adult responsibilities, such as cooking, housework and mending the car should be made available. However, if the full weight of adult responsibility such as 'running' the house is placed on the adolescent's shoulders, he may not be able to cope. There needs to be a balance between too much and too little responsibility, either of which can tip the scales towards irresponsible behaviour.

**(d) Language**

The adolescent may be fluent in English, written and spoken (but perhaps we should note that there is still illiteracy in the UK). Many teenagers are learning to be fluent in other languages such as French, German and Latin.

There is no doubt that the adolescent enjoys discussing topics with colleagues and peers. He can often 'tie the latter up in knots'. Discussions or debates at school on current issues demonstrate the ability of the adolescent to think subjects through in his mind and verbalise quite articulately in speech. Such debates are usually lively and the teenagers are totally absorbed.

Language often demonstrates their idealistic view of the world. Experimentation with language is very common. Whereas the school child uses slang and swear words inappropriately, the adolescent usually has a basic understanding of the words he uses and he may include these in everyday language. This is especially so if his role model has been his parents in this. Swearing can be used to attract attention or just purely to say 'I'm different'.

**(e) Parents**

So far brief consideration has been given to parents in connection with the adolescent's emotional growth.

## **1 Continuation of guidance and support**

The continuing guidance of parents throughout this period is essential in all aspects of the teenager's development.

Socially, whether he likes it or not, by the end of adolescence his social standards are very much a reflection of his parents. They, too, may need some understanding at this time for many reach a mid-life crisis at the time their child becomes a teenager. It may be quite difficult for a mother who has always been the centre of attention to be usurped by a physically attractive daughter. Some of the restrictions which parents put on their teenagers may stem from the fact that they do not want them to become adult yet. There may be a definite jealousy element, e.g. today's teenagers often have more opportunities and freedom than they themselves had. A natural occurrence is that one parent is usually more of a favourite than the other, and if special favours are needed then it is usually the 'favourite' parent who is approached. This can sometimes lead to one parent being 'played off' against the other, from which parental rows may arise. However, the adolescent needs to be aware of parental love for him, in order that he may develop self-esteem and confidence in his own identity.

## (f) Peer groups

The most influential peer groups are friends and idols. Although the school child relates to different peer groups, he is not totally influenced by them but in adolescence the influence usually over-rides parental guidance.

### 1 The need to belong

There is a need to 'belong' to a peer group. In boys, these groups may be gangs and in girls, cliques. This sense of belonging is sought by wearing similar clothes, listening to the same records and frequenting the same places. However, although the adolescent wants to belong, he also wants to be different and this is often seen in clothes and hairstyles. He still needs to seek his own identity but not to the point of being outcast from the group. Heroes and idols in, say, sport and music, are followed implicitly, for example, you may have noticed worship of football stars or a cult figure in music.

### 2 Idols

Teenage girls may have crushes on the schoolmaster or a new friend's brother. Boys likewise, may secretly admire a peer of the opposite sex; this may be the schoolmistress or a girl in a more senior class.

The behaviour of the peer group acts as the adolescent's role model. If his hero or idol is aggressive, noisy and uses swear words, then this is seen as acceptable. If the role model is a kind, caring, generous person then it is likely that the adolescent will adopt these qualities.

## (g) Fashion trends and influences

The outward display of clothes, hairstyles and make-up often appears extreme to the adult. Although there is acute awareness of physical appearance, this must fit the trend rather than suit the individual. Clothes are often uncoordinated, either extremely bright or very sombre in colour. Different fabrics go in and out of fashion, such as denim and tweed, while hair and accessory items worn such as hats, gloves and jewellery are usually influenced by the general trend of fashion set by the media and also the adolescent's heroes. This can be an expensive time for parents if their teenager is not earning. It is often necessary to limit the number of new clothes and hairstyles he or she can have, in order to develop awareness of economy.

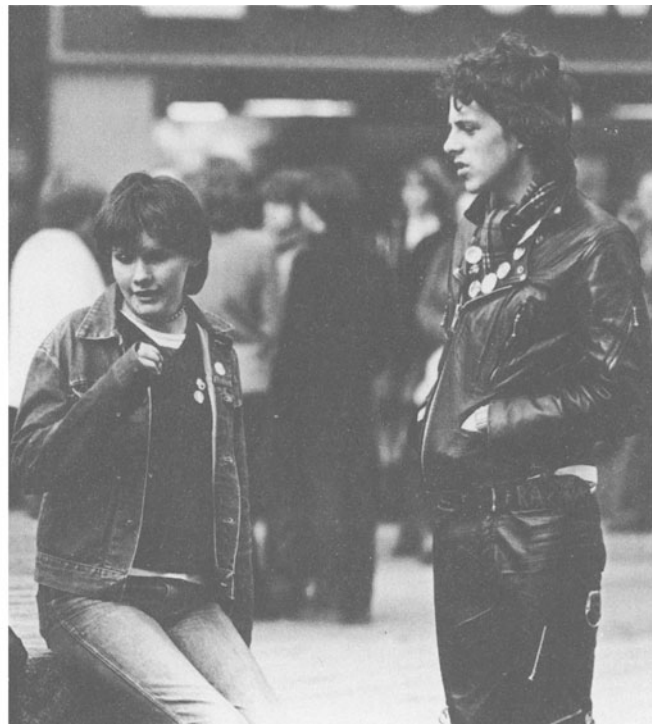


Figure 6.2

## (h) Social clubs

Social clubs are often viewed as a welcome break from homelife. The adolescent can meet with friends and express his views without parental restriction. He may develop his ability in sports such as snooker or in music.

Many clubs arrange trips to parts of the country or participation in Duke of Edinburgh's award schemes. Such schemes encourage a commitment and determination to follow a project through to completion in a thorough fashion.

Adolescents can arrange to help an elderly person by visiting, shopping or cooking meals. With school guidance some teenagers visit hospitals as voluntary workers. In order to raise money for charity, social clubs may organise jumble sales, raffles and sponsored walks.

## (i) Sexual experimentation and education

One of the greatest worries for most parents is their teenager's involvement with sexual experiences. At the beginning of adolescence, both sexes do not mix easily, possibly partly due to changes in body image and embarrassment. During the middle phase of adolescence, with gangs of the same sex developing, there is often interaction between the groups of gangs, but not much between individual boys and girls. Those who do have boyfriends or girlfriends tend to be looked upon as very experienced and are usually envied, while other couples may only have secret liaisons in case the group finds out.

### 1 Relationships

Later in adolescence there is an expectation to meet and 'go out' with a member of the opposite sex. Some relationships remain stable and the couples marry but very often the relationship is a changing one, as new and different people enter the adolescent's life.

Parents often only suspect the type of relationships their teenager is having. It is difficult for them to intervene — either the discipline is considered too strict and the adolescent rebels or, alternatively, if no restrictions are imposed their experimentation may lead to problems, such as unwanted pregnancy.

### 2 Open discussion and sex education

Ideally, parents should be open in their discussions with their children about sex; often the teenagers outward bravado of 'knowing all the facts' covers a lack of knowledge. Sex education should be started before puberty and adolescence and then gradually knowledge increased. Many parents do not like to talk about their bodies and the teenager learns from others by word or practice. Information gained in this way, may be misleading and incorrect. In modern society in the Western world, promiscuity is becoming the 'norm'. Teenagers are not as protected as in previous years and to experiment with sex is considered an essential part of learning.

Parents should not only assist with education about body changes, but also in such aspects as contraception. Family planning clinics may also be involved in this.

The adolescent is also becoming aware as to whether he or she wants a heterosexual or homosexual relationship. The latter may be particularly difficult for parents to understand and sometimes expert advice is needed.

## (j) Marriage and pregnancy

Some teenage relationships progress to marriage. In other relationships, if the teenage girl becomes pregnant, marriage may be seen as a necessity. Pregnancy does not always influence the couple to marry; some adolescents plan to stay together and bring up their child. Very often the child is born to a single parent family and requires understanding and help from the adolescent's parents.

### 1 Teenage marriages

Teenage marriages can be happy and secure but, in many, difficulties arise from assuming too much responsibility too soon, in fact before adolescent learning is complete. Suddenly the couple may realise the freedom they have missed and this can lead to family disharmony and sometimes divorce in early adulthood.

As with many aspects of adolescence, the subject of marriage and pregnancy are very sensitive ones. Decisions made by those concerned will be largely

based on social background, parental involvement and, very prominently, economy.

## (k) Anti-social behaviour

This term encompasses what the parent considers anti-social in their teenager and what the public and the law thinks is anti-social.

### 1 Drinking and smoking

Alcoholic drinking and smoking may not be what the parents want their children to do, therefore they may consider this anti-social. Often drinking and smoking are experimented with and deliberately tried against parental wishes. Except for the legal ages involved, in buying alcohol and cigarettes, what the adolescent is doing is not against the law.

### 2 Drugs and criminal offences

However, the misuse of drugs and criminal offences are against the law. Often teenagers are not fully aware of the consequences of their actions, and at other times they may be seeking to attract attention as they are unhappy or insecure. Parents find acceptance of taking drugs or criminal offences very difficult to understand, unless they have been the child's role model; the average teenager does not go to such extremes, and expert help should be sought in such cases. It is worth remembering that delinquency has been with us since early times; more than 2000 years ago an Egyptian Priest carved on a stone 'our earth is degenerate, children no longer obey their parents . . .' (P. Hill, 1981).

## (l) Occupation

Many adolescents have a part-time job before leaving school. This may be a paper round or working in a shop on Saturdays. This can teach him responsibility, economy and interaction with many social groups. Primarily it is a way of earning money to buy all the clothes, records and other items he wants. Working before leaving school can help to create an awareness of expectations in full-time employment.

### 1 Preparation and motivation

It has been mentioned that school plays an important part in preparing the child for a career. This preparation must be in the realistic light of unemployment. Qualifications gained at school do not automatically guarantee work.

The adolescent needs to be motivated to seek a job but needs the knowledge and reassurance that there is a vacancy open to him. Many school leavers at present cannot feel motivated in the current economic climate and have to accept money from the Department of Social Security. It would be better to be optimistic about employment prospects, as the adolescents of today are the adults of the future.

## Fact Sheet 1: Jean Piaget's stages of cognitive development

### *Stage I Sensorimotor: birth–2 years*

Child preoccupied with co-ordination of sensory perception and motor activity. Has a lack of complex mental images of the world. Egocentric.  
Particular feature: object permanence.

### *Stage II Preoperational: 2–7 years*

Subgroups (i) Preconceptual 2–4 years  
(ii) Intuitive 4–7 years

Child sees world strictly from his own viewpoint.  
Unable to imagine any other way and refuses to accept other's views.  
Particular features: animism, transductive reasoning.

### *Stage III Concrete operations: 7–11 years*

Child views world more objectively.  
Understands other viewpoints.  
Language communicates thoughts to others.  
Relates conservation, i.e. mass and weight.  
Particular features: reversibility.

### *Stage IV Formal operations: 11 years onwards*

Child able to hypothesise.  
Abstract thought.  
Can see the ideal.  
Able to carry out activities in his imagination = operation.



## Fact Sheet 2: Five stages of development: a comparison

Erikson	Age	Freud
1. Sense of trust Mothering important—relationship with one person.	0–1 years	Oral stage
2. Sense of autonomy Autonomy symbolised by the holding or letting go of the sphincter muscles. Increasing ability to control themselves and their bodies and environment.	1–3 years	Anal stage
3. Sense of initiative Strong imagination. Conscience develops. Guilt develops. Freud says Oedipal phase—child forms an attachment to parent of opposite sex.	3–6 years	Genital/phallic
4. Sense of industry Ready to be workers and producers. Want to carry tasks through to completion.	6–12 years	Latency
5. Sense of identity Rapid physical change. Over-occupied with appearance in sight of others.	12–18 years	Puberty

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Nurses all too often think of themselves in a curative role. When nursing children, however, it is particularly important to promote and maintain health and development. The health visitor and GP play major roles in these. Parenthood brings much responsibility and many anxious moments, so advice and support can promote a happy childhood and family life. A knowledge of normal physical and emotional child development helps the GP and health visitor in these tasks and indeed will help you, while caring for children.



Figure 7.1 Information on health education

### Care of mother and baby

Healthy development commences *in utero* and is influenced by genetic and embryological factors. Ante-natal care is thus vital, as is the care the baby receives during the birth process itself. Within the first 10 days mother and child are under the care of the hospital and domiciliary midwifery services.

The baby will be fully examined and screened after his birth while in hospital, after which the parents will have to register his birth. Such statistical information helps the state to provide health care, education and other facilities for his development, as he takes his place in society.

At the age of 10 days the baby and his mother come under the care of the health visitor. She visits at intervals until the child is 5 years old and ready to start school. The health visitor monitors the child's physical and mental development, carrying out assessments to check hearing, sight and motor development, for example. The child is also regularly assessed by the GP or clinic doctor.

His weight is monitored and advice on feeding, parenthood and prevention of home accidents is given.

### (a) Immunisation programme

An immunisation programme is implemented (see Table 7.1); it must be safe and effective. The health visitor and GP play a vital role in ensuring that immunisation is safely carried out and is not given if a child is unwell, if there has been a reaction to the first injection in the series or, in the case of whooping

Table 7.1 Schedule of vaccination and immunisation procedures\*

Age	Vaccine†	Interval	Notes
During the first year of life	DTPer/Vac/Ads and oral polio vaccine (1st dose) DTPer/Vac/Ads and oral polio vaccine (2nd dose) DTPer/Vac/Ads and oral polio vaccine (3rd dose)	Preferably after an interval of 6–8 weeks Preferably after an interval of 4–6 months	The first dose of triple vaccine (DTPer/Vac/Ads) together with oral poliomyelitis vaccine (Pol/Vac/(Oral)) should be given at 3 months of age. If pertussis vaccine is contra-indicated or declined by the parent diphtheria/tetanus vaccine (DT/Vac/Ads) should be given
During the second year of life	Measles vaccine	After an interval of not less than 3 weeks following another live vaccine	
At school entry or entry to nursery school	DT/Vac/Ads and oral polio vaccine	It is preferable to allow an interval of at least 3 years after completing the basic course	
Between the 10th and 14th birthdays	BCG vaccine	There should be an interval of not less than 3 weeks between BCG and rubella vaccination	For tuberculin-negative children. For tuberculin-negative contacts at any age
Between the 10th and 14th birthdays	Rubella vaccine, girls only		All girls of this age should be offered rubella vaccine whether or not there is a past history of an attack of rubella
On leaving school or before employment or entering further education	Polio vaccine (oral or inactivated) and tetanus vaccine (Tet/Vac/Ads)		
Adult life	Polio vaccine (oral or inactivated) for previously unvaccinated adults	A course for previously unvaccinated adults consists of: Oral polio vaccine. 3 doses with an interval of 6–8 weeks between the first and second doses and of 4–6 months between the second and third; or: Inactivated vaccine: 2 doses at intervals of 6–8 weeks followed by a third dose 4–6 months later	For travellers to countries where poliomyelitis is endemic. Unvaccinated parents of a child being given oral polio vaccine should also be offered a course of oral polio vaccine
	Rubella vaccine for susceptible women of child-bearing age		Adult females of child-bearing age should be tested for rubella antibodies. Sero-negative women should be offered rubella vaccination. Pregnancy must be excluded before vaccination and the patient must be warned not to become pregnant for 3 months after immunisation
	Active immunisation against tetanus (Tet/Vac/Ads) for previously unvaccinated adults	A course for previously unvaccinated adults consists of 3 doses with an interval of 6–8 weeks between the first and second dose followed by a third dose 6 months later	

\*This table is taken from *Immunisation and Infectious Disease* and is reproduced with the kind permission of the Department of Health and Social Security

†D=Diphtheria, T=Tetanus and Per=Pertussis (whooping-cough)

cough vaccine, if there is a family history of convulsions (DHSS, 1984). To maintain levels of antibodies, booster doses are given when the child starts school to help protect him from the wider exposure of antigens.

## Medical examinations and assessments

A full assessment is made on the child as he starts school. The school child's development will be under the care of the school medical officer and school nurse (Figure 7.2). The aim of the School Health Service is that each child will have the maximum benefit possible from his education.

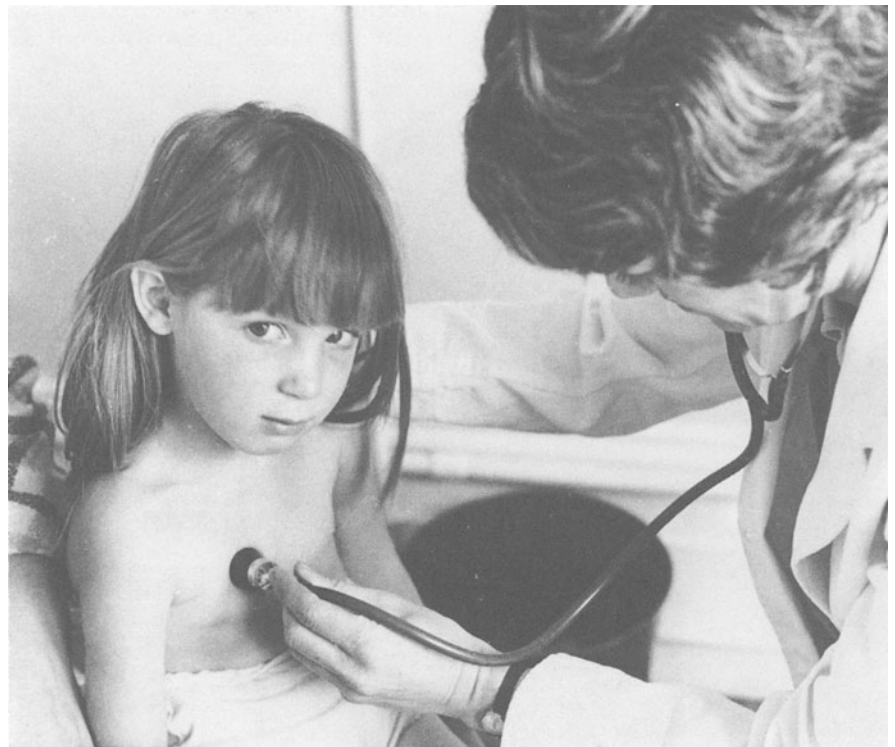


Figure 7.2 The school nurse

A full medical is undertaken at entry and upon leaving school. The latter helps to ensure that he will be fit for his future employment. In between, at regular intervals, questionnaires are completed by the parents about their child's health and followed up if necessary. Hearing, sight and deportment are all checked, as well as looking for infestation (e.g. head lice). Dental and chiropody check services are provided.

The school nurse can play a vital role in health education in preparation for adulthood and even parenthood. Her influence can extend to the prevention of illness due to alcohol, drugs, smoking and promiscuous sexual behaviour.

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Having outlined some of the ways in which we try to ensure healthy childhood development, what happens when things go wrong?

Accidents are preventable but the mortality rate is rising (whereas the mortality rate for diseases is decreasing (HMSO, 1982)). Children are adventurous and parents are not always able to be constantly diligent in their supervision and care.

## Accidents

### (a) In the home

At home, accidents may result in the following ways.

1. Unlocked medicine cabinets.
2. Polythene bags being left around which could smother a child.
3. Safety gates not being placed at the top of the stairs.
4. Upstairs windows being left open.
5. Children left alone in a house, often with paraffin heaters alight, causing fire risk.
6. Matches (and fireworks) within children's reach and unsupervised.

RoSPA, Health Education Councils, health visitors, TV and press media all can play a vital role in educating the public and so help to prevent accidents.

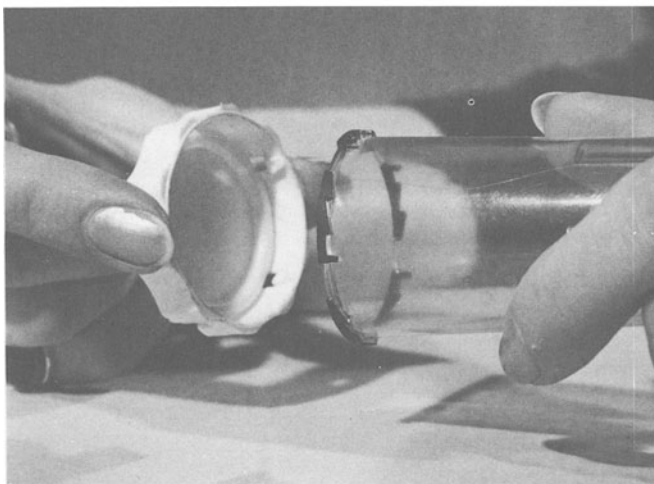
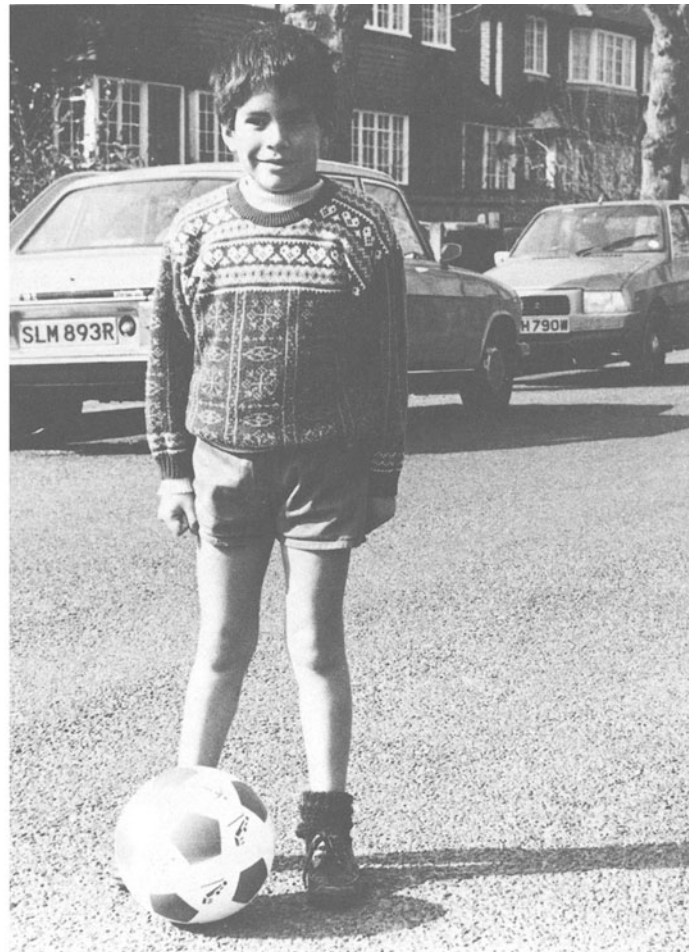


Figure 8.1 Child-proof tablet container

**(b) At play**

Children become immersed in what they are doing and may not see danger or heed warnings, such as 'deep water' notices on the river bank. Playgrounds with safe play equipment are needed in heavily built-up areas so that children do not play amongst traffic. 'Lollipop ladies' help children use road crossings and the 'Green Cross Code' advertising and police training in road sense and cycle riding increase the children's awareness of preventing accidents.

## **Child abuse**

**(a) The family unit**

A child requires the stimulation of the family and the environment around him. Both, at times, can affect him adversely. When there is failure within the family unit child abuse may result. Not all bruises indicate accidents but some may be indicative of child abuse. Children may be harmed by physical injury, neglect, emotional ill-treatment, sexual abuse or potential abuse. Recently sexual abuse has been shown to be on the increase. Children should in the first instance be believed if they describe such occurrences, until proved otherwise. Particular sensitivity is required in such circumstances and it should be remembered that these children may continue to find it difficult to develop trusting relationships.

**(b) Diagnosis**

The diagnosis for child abuse must be made with certainty. Investigations including x-rays, blood tests and the child's medical history will help confirm the diagnosis. To make the wrong diagnosis will obviously have undesirable consequences, and suspicions must be kept to a minimum if co-operation is to be gained from the parents.

**(c) Consideration of circumstances**

Nurses caring for children suffering from child abuse, which may be physical and/or emotional, may react quite strongly towards the parents. It is important to look carefully into the reasons why, for example, a child was hit or burnt in such a way. We have all been in situations where a child has been whining continuously and we have all become irritated. Consider how you would feel if, on top of this, there were unemployment, poor living conditions, you had to care constantly for a handicapped child, or if you were a one-parent family. Parents become frustrated and/or angry in ordinary homes, so there are increased pressures when situations just described are present.

**(d) A place of safety**

When a child comes into hospital with suspected abuse, he is being brought into a Place of Safety. If the parents are not in agreement, the social worker can apply to a magistrate for a 'Place of Safety' order, which lasts 28 days. Parents are often relieved when a child is admitted as he will no longer be in the vicinity to be hit, nor will they have a continuously crying child. Indeed, some local authorities have a telephone service where parents can phone for help should they feel that they may abuse their child.

Once in hospital the family circumstances can be investigated. Children may find it hard to settle and to make relationships with the staff. Skills are needed to help the child feel as secure as possible and to start developing any delayed milestones. Parents may feel threatened and everyone should be careful not to show any judgemental feelings that they may have. Nursing care includes providing stimulation for the child as well as supporting the parent.

**(e) Subsequent care**

The Department of Social Services, health visitor, medical staff, NSPCC, and sometimes the police, may be involved in investigating the cause of child abuse. If home circumstances can be improved, e.g. by local authorities providing home improvements, finances being increased and/or health visitors providing increased supervision, a case conference may decide to send the child home to his natural parents under supervision. If the risk is felt to be so great that a re-occurrence of abuse could take place, then the child will be placed in the care of the local authorities. This may require a court order and can be for varying lengths of time. A child could be placed in foster care for a short while until the

home situation improves or the child may be placed in long-term residential care, until he comes of age.

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## **Identification of illness and defects**

Abnormalities in children should ideally be identified as soon as possible. The earlier they are detected and the appropriate intervention taken, the sooner adequate facilities can be provided and physical and mental potential developed as far as possible, with the child and parents being given guidance and support.

### **(a) Examinations at birth and during childhood**

All babies are given a full examination at birth and are screened with the 'click test' for congenital dislocated hip. Phenylketonuria (a metabolic disorder) and hypothyroidism are screened for by blood tests. Premature babies and neonates are especially vulnerable and special facilities for their care are needed. Statistics are a useful tool in helping to ensure that sufficient facilities are available for the handicapped. The local authority is responsible for ensuring that these facilities are available, e.g. schools, home adaptations, provision of essential equipment such as wheelchairs. At birth, registration is made of any child born with a congenital abnormality.

### **(b) Follow-up care**

Any abnormality detected during school examination, e.g. defects in sight, reading, hearing or speech, will require follow-up care. A defect in hearing or speech may require audiograms and speech therapy. School nurses, teachers, GPs and health visitors may be in a position to detect child abuse, squints or infestation (e.g. head lice). The school nurse will provide any nursing care, such as the issuing of tablets at regular times to children who need medication.

Standards of living, social and economic pressures and the economy all affect our maintenance of health and the facilities that can be provided for the handicapped. There is still much social stigma attached to handicap and, in particular, mental illness.

Some children may require care from the local authority Child Care Services, providing for parentless children by fostering or residential care. Adoption, Juvenile Court and Probation Services must all be provided.

A child may be ill at home for a variety of reasons. He may be suffering from one of the childhood infectious diseases such as mumps or he may have returned home following a stay in hospital.

### Primary health care team

Wherever possible children should stay at home when ill, within the secure environment of their family and surroundings. Parents will be anxious for their child's welfare and wherever possible will prefer to care for their child themselves, and, of course, the child 'wants his Mummy'.

The responsibilities involved can be worrying. Therefore parents need to know where to turn to for advice. Usually it is the primary health care team that provides such advice and care. The GP and district nurse visit regularly if this is necessary and some district health authorities have some paediatric nursing visiting services.

### Common symptoms and how they develop

When very ill, the child may be quiet, may lose his appetite (anorexic) and may possibly be feverish (pyrexial). He may become irritable and constantly demand attention and cuddles. Children may regress developmentally and return, for example, to bed-wetting, or become more clinging so that other siblings and the housework get less attention.

Mum and Dad may be anxious themselves and, of course, will become tired and edgy with the increased demands of supervising the child.

#### (a) First signs and symptoms

Often the disease does not fully manifest itself at first. The child appears ill, but there is 'nothing concrete' and mothers are often perplexed by this stage which is one of prodromal signs and symptoms, e.g. pyrexia, rhinitis (runny nose) or a cough. If one of the childhood infectious diseases is being incubated, it is often at this stage that he is most infectious.

#### (b) Definite signs and symptoms

Next the definite signs and symptoms appear, e.g. rash, enlarged tonsils, respiratory signs such as wheezing, or symptoms of diarrhoea and vomiting. The child is anorexic and lethargic. All too often this develops in the middle of the night, even in the best of households, and the GP may have to be called. He must always be called when young children present with otitis media or diarrhoea and vomiting because of the risk of complications of deafness and dehydration, respectively. In order to avoid passing on infection children with infectious diseases should not be taken to the GP's surgery.

Dehydration easily occurs in childhood, especially in young babies as they are unable as yet to maintain their body fluid balance efficiently. Dehydration can lead quite quickly to electrolyte imbalance, convulsions and, in its severe form, to renal failure. Pyrexia especially in babies and toddlers can lead to febrile convulsions.



(c) The role of the primary health care team

The GP will give advice on any complications to be observed for and when to call him. He may need to notify the Medical Officer of Health of some diseases. Prescriptions, which are free for children, are given for any antibiotics or other medication. The district nurse will provide any specific nursing care, e.g. changing of dressings, advice on fluid intake, giving injections.

(d) Recovery

Gradually the child will begin to recover. For a while he may become more irritable, fractious, bored and attention-seeking. Eventually his appetite and energy will come back, and family life return to normal.

Try thinking for yourself of some further advice that a mother might require in order to nurse her child at home and then check with the practical hints offered.



Figure 9.1

### Practical hints on nursing children at home

1. Lots of time and patience from Mum and Dad, often easier said than done!
2. Bedrest while acutely ill and feeling unwell. Children, unlike adults, dislike being confined to bed and will only stay there if feeling ill. They will often decide for themselves when to stay in bed and when they are recovered enough to get up. Making a bed on a settee downstairs will prevent 'wear and tear' on Mum so that she does not have to keep climbing the stairs. He will also feel more included in family events, more secure and less isolated. Mum can observe him more easily and as he recovers she is in the kitchen and the TV and radio are nearby.
3. If the illness is infectious, advice may be needed as to how it spreads. Visits from friends and relatives may have to be curtailed.
4. Antipyretics in paediatric dosages can be given with plenty of fluids. When pyrexial, the child should be kept at an even room temperature, without too many bedclothes and with windows sensibly adjusted.
5. Mum will no doubt have an increased washing-load and paper tissues that can easily be disposed of by burning should be provided. Ill children may regress and are more likely to wet the bed; a plastic mattress cover may be useful. Pillows should be protected from vomit and a bowl placed within easy reach.
6. Antibiotics may be prescribed for any infection and/or to prevent secondary infection. Warn Mum that diarrhoea may occur and that some antibiotics may need to be kept in the 'fridge. Medicines are more easily given in liquid form, or crushed tablets given in jam or honey. She should try to ensure that the full dose is given and not spat out and that the full course of medicine, particularly antibiotic, is taken, even if the child makes a quick recovery.
7. Fluid intake should be increased as a general rule. He may well not feel like eating at first. A few days without food will not hurt him, but going without fluids will, so fruit juices and other popular drinks are essential. 'Bendy' straws will be appreciated and as he begins to recover a light diet is introduced, the all-time favourite being ice-cream.
8. Prevent him from scratching any spots if present. Keep his nails short and clean and keep him occupied. Cool clothing, preferably cotton, and 'coolish baths' will help prevent irritation.
9. As he begins to feel better, he will start to be less attention seeking and 'mummyish' but he will be taking more of an interest in what's going on and will need occupying if he is not to become bored and maybe naughty. Discipline is still required, even though he is ill! Disposable toys that are easily burnt afterwards are a good idea, e.g. comics, inexpensive reading books and colouring books are helpful in infectious diseases.
10. Gradually he will start getting up and about and becoming more active.
11. Once he is better (and non-infectious) friends and relatives can visit and then he will be allowed back to school.
12. Remember that each child according to his age and family circumstances will have his individual needs.

Forty-five per cent of children in the United Kingdom will come into hospital by the age of seven years (Davie, Butler and Goldstein, 1972).

One of the reasons may be for removal of tonsils but if this is given thought we realise that the child will be well when he enters hospital but will leave with a sore throat! How can you as a nurse help the child and his family understand and thus adjust to this situation?

If you understand some of the causes of paediatric disorders you will be able to plan and adapt your nursing care for your patient accordingly, so giving support and understanding to the child and his family, while developing attitudes and relationships with your patients.

Like patients on adult wards to which you may have been allocated, children will be admitted with infections or suffering from trauma. However, there is also a group of patients who will be suffering from congenital abnormalities, which may have far-reaching effects on the life of the child and his family. Children may be admitted several times for treatment over many years and nursing these children is both challenging and rewarding.

Remember that children for admission will be at different stages of development and independence, which need to be carefully considered when planning nursing care.

### **Children admitted with infections**

Like adults, children suffer from infections, for example, chest infections, osteomyelitis, appendicitis, some of which may require hospital admission.

It should be remembered that a child's immune defence mechanism takes some time to mature. Therefore, children are more vulnerable to infections especially within the first years of life. As yet, they have not developed a full supply of antibodies, which will only happen as they become exposed to various antigens. For this reason, hospitals usually try to admit infants to cubicles to protect them.

Children often suffer from the commonly termed 'childhood infectious diseases' such as measles, whooping cough and chicken pox. Upper respiratory tract infections and tummy upsets are also common. Most of these children will be nursed at home by their parents with, if necessary, the support of the primary health care team and they will only come into hospital should complications occur.

Young children have immature temperature control mechanisms, which may lead to febrile convulsions accompanying infections such as otitis media and tonsillitis.

### **Children admitted as a result of trauma/ poisoning**

Children are by nature very inquisitive and, especially the young, have little fear of danger. They have not yet acquired the experience of life and so may be unable to recognise the difference between a coloured tablet and a sweet. They may not be able to judge the distance between a high climbing frame and the asphalt surface below. Running after a ball in the street is far more exciting than stopping to look for approaching traffic. However, adults know differently and when accidents occur, parents may suffer from guilt feelings.

Burns and scalds are a common occurrence and often could have been prevented. Long-term consequences may be disfigurement and/or contractures. A cup of hot tea spilt on a small child is probably the equivalent of a bucketful being spilt on an adult.

So children will be admitted following trauma causing fractures, or following road accidents and some will be admitted with non-accidental injuries.

## Planned admissions

Children like adults are admitted for 'routine surgery'. Such admissions can be planned for and the child prepared both physically and emotionally for his stay in hospital. Common reasons for planned admission are adenotonsillectomy, circumcision or repair of hernia. In some cases, such as the last mentioned, it may be possible for the child to be admitted as a day case, so reducing psychological trauma.

## Emergency admissions

Children may be admitted in an emergency situation, as in appendicitis, meningitis or following an accident. They will not have been prepared for the experience and the nurse on the paediatric ward needs her skills to help the child and his parents adjust to this emergency situation. It is very important to send for the parents without delay if they were not present at the time of the accident.



Figure 10.1

## Social admissions

Different standards of living, economic pressures, cultural behaviour and codes of living will affect the development of children and their reactions to illness. For example, unemployment brings severe pressure to the family and a child who cries persistently all weekend may become the victim of abuse, which may be physical and/or emotional. Returning a baby home following bronchiolitis may not be satisfactory if the family live in a damp house with no finances to pay for heating bills. Mother may not be able to cope with child-rearing, e.g. feeding, or discord may occur within the family, manifesting itself in physical or psychological ways in the child, e.g. enuresis (bed-wetting).

The community services, in particular health visitor and medical social worker, have a vital role to play in these circumstances.

## The child with malignancy

Many nurses are surprised to learn that cancer affects children, and think that it is only a disease of the adult, especially the elderly.

Leukaemia and cerebral tumours are among the more common forms of malignancy in the young. It should be remembered that research into some forms of leukaemia means that the prognosis is no longer as depressing as it used to be and that the 5-year survival rates are lengthening (J. Chessels, 1981). Indeed, some so-called malignant diseases can now be cured.

Nevertheless, nurses often experience difficulty in coming to terms with young patients becoming terminally ill and the effects it has on both the child and his family. It seems unfair that a child should undergo pain and never experience a full life.

Indeed, many nurses are frightened of seeing a dead child: they wonder whether they will be able to control their emotions and what they should say to parents. The trained staff will give guidance and the best advice is perhaps to do 'what comes naturally'. Remember that an understanding nurse sitting in silence and listening with sympathy can be a great comfort.

## Children with congenital abnormalities

Congenital (i.e. born with) abnormalities may be inherited, caused by an embryological defect or be idiopathic in origin. Some understanding as to the reasons for these abnormalities will help you to understand how children and parents may react to them and in turn you can adapt your skills, including those of communication.

### (a) Inherited disease

You may hear parents ask: 'Will my next child be affected in the same way?' or 'But it's not on my side of the family' or 'Why did it happen to us?'.

Genetics is a detailed subject so you might like to revise your anatomy and physiology of the cell and cell division. Hereditary material is contained within the chromosomes of the nucleus. The new individual will have some characteristics of both parents; for example, you will have heard people say such things as: 'Doesn't he look like his mother (or father)'. We inherit characteristics such as colour of eyes and hair. Not only may normal physical characteristics be inherited but some diseases are inherited. During early development a number of problems may occur:

1. Rearrangement of genetic material in an incorrect way will lead to a mutation and may show up as a disease. Some diseases are recessively inherited, e.g. cystic fibrosis and metabolic disorders. They are not so common in 'their' incidence as those that are dominantly inherited, e.g. brittle bones disease (osteogenesis imperfecta). Inter-marriage increases the chances of abnormalities occurring within families.

It should be remembered that diseases may be carried and that they may not necessarily affect every generation.

2. Chromosome division may not be carried out evenly so giving rise to extra pieces of chromosome in the nucleus. The most well-known example perhaps is Down's syndrome.
3. Some diseases are linked with the sex chromosomes, e.g. haemophilia.
4. Sometimes there may be incorrect division of sex chromosomes resulting in abnormal numbers of X or Y in the nucleus, so giving rise to such abnormalities as Turner's syndrome (in which there is only a single X chromosome).

Aldous Huxley had interesting thoughts on the subject:

A million million spermatozoa:  
 All of them alive,  
 Out of their cataclysm but one poor Noah  
 Dare hope to survive.

And among that billion plus one  
 Might have chanced to be  
 Shakespeare, another Newton, a new Donne —  
 But the One was Me!

## (b) Embryological defects

From conception to birth, cell division and differentiation will proceed in an orderly sequence with one cell developing into a baby with all its cells, tissues, organs and systems in the right place.

Embryology is a complex subject and it is not surprising that sometimes things go wrong. For example, the heart is one of the most complex organs to be developed and thus it is perhaps not surprising that congenital heart defects are found in the top 10 of embryological abnormalities (Carter, 1977).

Sometimes there may be more than one defect, and when there are several occurring together a syndrome is formed.

Of course there can be an interaction between genetic influences and the environment on embryological development. Spina bifida is more common in Ireland and Wales than it is in London (see Norman, 1971) and much research is being undertaken into the cause of the multiple handicaps involved, which, eventually and hopefully, will lead to its prevention.

Factors which may affect the embryological development especially within the first three months are:

- Mother's diet.
- Social class.
- Age.
- State of health.
- Effects of radiation.
- If mother smokes, drinks alcohol, has an infection, e.g. rubella (german measles), has a sexually transmitted disease (STD) or takes drugs.
- Position of baby *in utero*.

Patients who have an abnormality themselves, or a family history of the abnormality, or already have one affected child with an abnormality, naturally want to know 'Will my next baby be normal?' Genetic counselling centres are to be found in major paediatric centres for advice. Each family and each disease is different and so no family fits into any one set statistical pattern.

Parents may suffer guilt as a result of passing on a disease. Mum may wonder what she did wrong during her pregnancy to have caused such an abnormality. Great skill is needed by nursing staff in helping parents adjust to caring for their children. Do not attempt to solve their problems yourself, but refer the parents to the nurse in charge.

## Developmental problems

Children are continually growing mentally and physically. Development may be arrested at any stage for different reasons, e.g. trauma, infection. Mental, physical and sensory handicaps may occur, e.g. cerebral palsy, which usually arises at birth.

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### Suggested exercise

Using the information that you have just read, when you are next on duty on the paediatric ward try answering the following questions about an individual patient you are nursing:

1. Why is your patient in hospital?
2. How does the patient (depending on age) react to his illness?
3. How do the parents react to (a) their child, (b) hospital staff, (c) other siblings?
4. How did their behaviour influence (a) your attitudes, (b) your communications?
5. How were other siblings affected by the attention the sick child is receiving?
6. In planning your nursing care how did the child's (a) mental and (b) physical development affect your planning?
7. How much of the child's life span will be affected by his illness?
8. If the illness is inherited, how will the next generation be affected?
9. What makes you think that the child has come to terms with the illness, if, indeed, he has?
10. Will the child require further treatment?  
Will the child require follow-up services in the outpatient department?  
Will the child require follow-up services in the community and if so for what purpose?

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## **Part 2**

# **Principles of Nursing Sick Children**



Although we do not like to think of any child being ill and needing hospital care, parents are wise to prepare their children for such an event. Preparation should help to put into perspective fear and 'bad stories' often connected with hospital admission. Learning about hospitals and becoming a patient is part of the child's social preparation for the adult role.

Research has shown (*Which?*, 1980) that if a child is prepared for hospital he will settle better and be more co-operative in any care and treatment he may need.

## How parents can prepare their child

The most important preparation perhaps is that parents talk openly and honestly about 'children in hospital'. This need not include 'horror stories' or reward or punishment. Sometimes parents are frightened themselves and need reassurance from the ward staff, as they do not like to show their child that they too are fearful. Openness and honesty therefore are the ideal necessities for explaining hospitalisation; but this is not always easy to achieve.

### (a) Books, TV and visual aids

Other preparation for hospital may include television programmes. Many hospital programmes are shown on TV and often at children's viewing time. A clear understanding of hospital may be achieved from story books (e.g. Althea series published by Dinosaur), with the child, his siblings and parents reading the story together. The National Association for the Welfare of Children in Hospital (NAWCH) continually produces for the public, books, posters and visual aids about children entering hospital. Many hospitals now produce their own hospital booklet. This provides information and explanation for parents and pictures/drawings for the child. Colouring the pictures is a useful way of learning about hospital. The health visitor may be involved in advising parents what to teach their children about hospital.

### (b) Visit and pre-admission programme

Possibly one of the most realistic ways to learn about hospital is to pay a visit. This may be an outpatient's visit to see the doctor, followed by a visit to the ward. The family can meet the nurse in charge and members of the staff, as well as viewing ward layout. This type of visit can be arranged especially well for those requiring planned surgery.

In some hospitals this visit has been extended into a Pre-admission programme. The programme usually comprises an introductory talk with the children and their families, followed by a short tape and slide show about the hospital and personnel. The room in which this is conducted may also have pictures and equipment for children to play with, the concept of 'role play' being of particular help in preparing children for hospital stays. Ideally, this talk should be followed by a short tour to include such areas as the ward, operating theatre and x-ray department. Parents and children are encouraged to ask questions and the ward staff able to begin a relationship with the family. The play leader may be particularly useful in 'breaking the barriers' of such a visit by getting the children to play and chatting with the parents. Pre-admission programmes can be varied according to the age and development of the children concerned, for example, an adolescent may prefer preparation for hospital by visiting by himself or by using the telephone to ask questions. Literature for the adolescent must be fuller in explanation, to satisfy the understanding and fears of this age group.

### (c) Play in preparation for hospital

Play is an important feature of learning in childhood. The opportunity to 'dress up' in nurses' and doctors' clothes provides both enjoyment and useful preparation. Dolls and other toys are often used by the younger child to be patient, nurse and doctor. Children play at care and treatment with toys and amongst themselves in 'role play', learning through play expression either at home or at school. Teachers can encourage children to learn about hospital through their education programme by writing stories, making drawings and collages, or writing letters to friends who are in hospital. Preparation for hospital, in whatever format, is essential for children.

#### Suggested activity

Choose a child of a particular age and identify the ways in which he would be prepared for hospital.

## The child's view of hospital

Seeing hospital through the eyes of a child may help you to understand how he feels, his anxieties and how best to explain things. Most children have some idea about hospitals, nurses and doctors, usually from the TV. However, in real life, uniforms, for instance, may be frightening. Attempts have been made to overcome this aspect by the wearing of gaily coloured aprons and tabards. Children appreciate these, especially if they can identify on the apron a character known to them.

The sheer size of a hospital, the ward and the rooms may be overwhelming to a newly admitted child. A tour of the ward, especially the toilet may help allay this fear.

### (a) On admission

#### 1 Planned admissions

The play leader is one of the key people who may help the child overcome initial anxieties by involving him in play. This may be especially relevant on admission and before the child is shown to his bed and locker. When a child is admitted to hospital it is important that both he and his parents understand why he is there and what may 'happen' to him (care and treatment). This is a joint responsibility of the nursing and medical team. The child may need to have explanations repeated many times before he is satisfied.

The nurse who takes the nursing history from the family should ensure that she obtains details about the special aspects of the child's activities of daily living. Such aspects include special toys, cuddly blankets and photographs which he keeps with him or it may be the way he asks for the toilet ('pee' and 'big jobs'). In any uncomfortable procedures or investigations which are necessary on admission, such as a blood test, parents and child need clear explanations.

#### 2 Emergency admissions

Children who are admitted as an emergency need special consideration. If this emergency is at night and in the dark, fears may be further enlarged. Due to the nature of the admission there may have been little or no preparation for hospital. This, together with feeling unwell, the presence of uniformed nurses and doctors and a strange environment may make the child even more anxious.

Parents are especially encouraged to stay in this situation and may need a fold-up bed by the side of the child or, if available, a special parents' room. Once the child is over the acute period of illness, the nurse should spend extra time with parents and child, talking about hospital and, more importantly, listening to them. Emergency admissions do not initially give the time for parents, child and staff to get to know each other, and, therefore, it is very important, once the child's illness has been controlled, to spend time with the family. The child needs reassurance, too, especially if the care and treatment has been unpleasant.

#### 3 Introducing other patients

Other children in the ward can be both helpful and unhelpful to new arrivals! Adolescent girls and boys are often particularly interested in caring for toddlers, and both age groups appear to gain much enjoyment.

Children who are receiving specific treatment, such as infusions, transfusions, injections or traction, may cause apprehension in a new arrival. A straightforward honest explanation is usually the best policy. Also, introducing the 'new admission' to the 'established' patient needs careful handling: quite often the child receiving treatment informs the newly admitted child of all the details! The nurse should be observant in this instance in order to explain any misconceptions created by the child's account, such as 'horror stories'. Simple explanations are best understood by children but these must relate to their developmental ability to conceptualise. An example of this might be telling a child of 5 years that a patient is having a blood transfusion in his *arm* to make his *tummy* better. Children of this age do not understand the connection between blood going into a vein in the arm and the stomach which is for food. Some thought is required when explaining, so that children do not get confused. If explanations are plain and simple most children will accept them without much further questioning.

#### 4 Daily routine

Lastly, when considering the child's view (Figure 11.1), it is important to remember that they do not like disruption to routine. This can be overcome by establishing with parents on or around admission, the child's normal routine. He may feel more secure by having items from home and in establishing his own territory, which, in relation to hospital, is his cot/bed and locker, and he should be encouraged to put play items, washing equipment, clothes and any artwork around this area.

##### Suggested activity

Squat on the floor and view the ward from the 'height of the child' (Figure 11.1). This exercise can easily be achieved during a play session.



Figure 11.1 A child's eye view

### How hospital may affect the child

Despite the fact that children's reactions to hospital can be helped by preparation, many children arrive unprepared. Unfortunately there are still parents who threaten children with: 'If you do so and so you'll go to hospital!'

Children have possibly been warned over and over about running across the road—‘If you do you’ll land up in hospital’. This may be true, but the child then regards hospital as a punishment. It is difficult for many children to see the benefit of being attached to traction and bedbound when, after the initial pain and trauma of the accident, they feel full of energy and basically well.

## (a) Changes in behaviour

It is normal for child and adult alike to react to the unknown by adopting defensive behaviour. Infants may not positively express their anxiety if left on their own in hospital. However, persistent crying, poor sleeping patterns and difficulty with feeding may be examples of anxiety.

The toddler and pre-schooler are likely to cry and sob if left without their family. If the family, particularly the mother, does not reappear, this age group then show signs of withdrawal. This is often mistaken for ‘settling in’, because the young child becomes quiet and undemanding. Ultimately, if he is continually left to cope, he may react by refusing to recognise his family when they visit. This is called denial, and regressive behaviour may develop (loss of sphincter control, demanding a bottle). School-age children and adolescents appear to cope better with the unknown but still should not be left to cope alone. The family should be truthful and explain about their visiting and tell the nurses when they need to leave to go home so that they can help the child adjust. Remember that parents are often as upset as the child when they have to leave for home, especially if the child has not been comforted by the nurse.

Siblings may become jealous if a brother or sister who is in hospital appears to be receiving all the attention. Siblings should be able to visit and need as much attention in these circumstances.

Behaviour changes related to hospital may not emerge until the child returns home when he may continue to be demanding and clinging. He will need reassurance.

## (b) Disciplining the child

Children are often pampered when unwell and receive many gifts, often sweets and foods. This may cause them to appear spoilt and at times naughty and difficult to discipline, resulting possibly in tears and a reaction of uncertainty from the nurse. Does she console because of the tears or reprimand because the child has been naughty? She should take her cues from the parents, where possible, or from the trained children’s nurses. It is important to remember that no nurse is the child’s mother — she is the substitute.

### 1 Parental and hospital guidelines

The subject of disciplining children is one often discussed by student and trained staff alike. Discipline should be based on parental wishes and hospital guidelines, because of emotional security and child safety. If a child is naughty, there may be an underlying reason, such as fear, sadness or guilt. If, through listening and reasoning, the child’s behaviour does not improve, then corrective guidelines should be discussed with trained staff. A regular routine may be needed by the child. Whatever the decided action, punishment need not be the answer to bad behaviour.

The ways in which children are disciplined by their parents varies considerably. As the nurse involved, you may not agree with the way in which a child is or is not disciplined by his parents. However, you are advised to discuss this with senior colleagues and parents where appropriate. Each family is individual in its view related to child-rearing and this fact should be accepted by the nursing staff.

#### Practical hints on disciplining children

1. Set the child guidelines, routine or limits.
2. If bad behaviour occurs seek cause; but let child know the limits and adhere to them.
3. Remove from ward situation to a quiet place if behaviour is not responding to quiet firmness *or* if child is unsafe.
4. Discipline is most effective at the time of misbehaviour.
5. Try not to let the smile on your face show!

Many factors influence the differing nature of children's, as opposed to adult, nursing.

You will have seen in Part I that the developmental stages through which children progress involve many physical, mental, intellectual and social changes. Children are not adults in miniature; they will gradually have to learn to be independent human beings and live life for themselves. Children are usually part of family units and at times of illness, injury or stress will not want to be separated from their family. The nurse has to consider that she is caring for a family, rather than an isolated child. She must also have some insight into how children differ in their concepts and understanding of life.

### Limitations in understanding

These limitations, of course, relate to age and stage of development. Explanations of care and treatment should bear this in mind.

#### (a) Gaining understanding of the child's view

The nurse in paediatrics can gain understanding of the child's limited view of the world in practical ways, some of which are given below.

1. Drawings: especially when asking the child to draw a picture of himself, to indicate for instance, pain, operation, illness. The nurse can often correct misconceptions which have become apparent from the self-portrayal.
2. Allowing children to 'perform' investigations, operations and treatment, for example, using their toys. A careful corrective explanation may dispel fears and anxieties made apparent in this sort of play.
3. Encouraging children to 'dress up' in clothes appropriate to the role they are to play, i.e. doctor, nurse, haematology technician ('the vampire'). While the children are acting out their chosen roles, listen and observe their comments and actions. Correct information which has been misunderstood.

### Emotional immaturity

Emotionally, all patients, adult or child, suffer some apprehension when admitted to hospital.

Children may suffer greater anguish, especially if they are separated from their family who, for instance, may not be able to visit. In particular, parents who live a long distance from the hospital may be unable to visit very often.

#### (a) Signs of emotional immaturity

Crying is a natural way of expressing fear, anxiety and pain amongst other signs and symptoms. Emotional immaturity may be shown only by crying especially in the toddler who cannot verbalise sufficiently to convey his distress.

Some children appear very 'grown up' — boys especially often show initial bravado. It is easy to be deceived by initial bravery and all children need to be considered as individuals; sometimes the 'brave face' is hiding inner misunderstandings and fears. Children who are normally boisterous may become shy and withdrawn when worried or, conversely, become demanding.



## (b) Giving comfort

Toddlers especially benefit from having a parent resident. With any child who cries, touch is perhaps the most important sense to use, for example, cuddling the toddler and pre-school child or sitting a school child on your lap. The adolescent may be comforted by a hand on the arm or shoulder.

Sometimes the child cannot be consoled until his family is present and the nurse should not feel defeated by this.

## Developmental needs

Because children at different ages have widely differing developmental needs, the nurse should be flexible in her approach. Children's wards tend to be noisy and cluttered with a range of toys and play equipment. Few children need or want to stay in bed for long. Walking down the corridor of the ward may be a hazardous business if it is being used as a race track. Promoting the child's physical and mental development is closely linked to play but always with the provision of keeping the environment safe. (Refer to Part 1 for development and play needs at different ages.)

## Working with the family

For the nurse who is unaccustomed to working in front of parents and relatives, the prospect may seem daunting at first. The initial encounter may be an anxious one: the nurse may feel unsure as to what the parents expect of her and, primarily, how she should handle their child.

### Practical hints for handling the child and his family

1. Involve the family at all times.
2. Try not to separate the family unit unless this is disadvantageous to the child's well-being.
3. Gain co-operation of child and family.
4. Be honest and truthful whenever possible and seek assistance where this is difficult.
5. Establish the child's individual needs.
6. Try to establish a routine similar to that at home.
7. Establishing a routine should help with guidelines for discipline.
8. Encourage children to express their feelings through play.
9. Establish a working relationship with resident parents.
10. Be prepared to terminate a relationship with a child when he goes home or doesn't get better.

(a) Involving the parents in the child's care

### 1 Forming a good working relationship

The aim is to involve parents as much as they wish, and are capable of, in the child's care, and form a good working relationship with them.

It is easy to see how useful a mother can be in bathing and feeding a sick infant but it is not always a comfortable experience to have her watching when, for instance, you may need to do one of the following:

- Change a dressing.
- Administer a nasogastric feed.
- Administer an injection.
- Record the pulse of a toddler who insists on wriggling.

Parents do not usually wish to be critical of the care the nurse is giving. In fact, they often feel inadequate because they cannot carry out the procedure or care themselves. It is important to note that parents are willing to learn and perform many aspects of nursing care, in hospital and at home. Do remember that some parents would rather not be present during some aspects of care, for instance, removal of sutures.

### 2 Tension and reaction

Parents may ask a lot of questions to allay anxieties or to cover guilt feelings. If a child behaves badly while the nurse is trying to carry out care or treatment, parents can get cross. The anger is not directed at the nurse but at the child's bad behaviour, so never take this personally. The simple fact is that the child wants his Mum or Dad and that they, the parents, cannot always provide the care needed at times of illness and hospitalisation.

### 3 Importance of parental observations

An important point to note is that if a mother says her child is 'not so well' *take note*, as she is usually the best judge of her own child and information such as this should be communicated to senior staff. Good paediatricians are guided by parental observations and they take note of reported changes.

(b) Facilities for parents and other visitors

While their child is in hospital, parents should be considered, too, for they have their own special needs.

Parents are part of the ward team and not 'just visitors' who can be asked to leave when their presence is not convenient. A comfortable chair, facilities to make hot drinks and refreshments and somewhere to wash and use the toilet should be provided. A cup of tea during the wakeful hours of the night can be very comforting.

Day visitors need somewhere to leave their coats and possessions. All visitors, resident or non-resident, need somewhere to sit and chat amongst themselves, read the newspaper or watch TV. A lounge or separate room is the best place so that if they wish to talk, cry or laugh, there can be some degree of privacy and they need not be seen or overheard by the children. Mixing with other parents allows a degree of normality and can relieve tensions built up by being totally with their sick child.

Parents should not feel isolated while their child is hospitalised and the nurse should use every opportunity to talk with, and gain insight into, the family unit. The health visitor, who may visit the ward, can provide the necessary link between home and the family.

(c) Parental roles and changes in society

Changes in society, such as the emergence of more one-parent families and high levels of unemployment, have affected families' involvement with children who are in hospital. For instance, the cost of travelling to a hospital may cause the family to cut down the number of visits they can make. Where one parent is coping alone, it may not be possible to leave other siblings to visit their child in hospital. Families tend to 'drift apart' when children have grown up and married. Therefore grandparents and other relatives may not be nearby to 'baby-sit'. Where the man has lost his job, it may be that the woman is working and the man is house- and child-minding, a societal 'role-reversal' for the family. The effect of this is that resident fathers may become more in evidence in the ward and the nurturing role of the mother, although still necessary, may need to change.

When considering families in hospital, the wider societal implications should always be considered, especially in relation to planning nursing care and after care.

## Families from other countries

### (a) Overcoming the language problem

Britain today is a multi-racial society and increasingly children from ethnic minorities may be admitted to hospital. In order to provide the care they need, it is sometimes necessary to understand more of the cultural background and expectations of the families. Where there is a language problem this can be difficult. Sometimes the children are able to interpret for their parents but where the children are too young or too sick to do this it will be necessary to get an interpreter. Most hospitals have a list of staff willing to assist and this list is usually held by the administrator. Alternatively, social workers may be able to help through community services or the Voluntary Services department.

### (b) Special food or diet requirements

Some dietitians produce information sheets in various languages to help explain diets, but often the diet is not for medical but religious or cultural reasons and then it is important not to offend the families unwittingly. Parents are usually more than willing to bring in the food to which their child is accustomed. In this way it is sometimes possible to help adapt an unsuitable diet by seeing what is produced and offering practical advice.

### (c) The family at home

Families with different cultural backgrounds do not always understand the facilities in the community available to them, although every effort is made to converse in their own language (leaflets on feeding, safety, etc. and health workers who speak their language). Cultural differences may affect the child's development as well as the parental expectations of developmental changes.

### (d) The family in hospital

Many of these families are close knit. Staying together may be very important, therefore, they expect to stay with the young member who is sick—a situation that can be somewhat disconcerting to the nurse if it hasn't been anticipated. They may help when explanations have to be given about treatment or diagnosis but it can never be assumed that the words used by the staff have the same connotations for the patient and his family. One member of the family may do more to allay fear than a member of staff as he/she understands the expectations and cultural background.

#### **Suggested exercise**

When nursing children in hospital or the community, note the attitude of different cultural groups to the provision of child health care.



## Where children are nursed

Most people want to be nursed at home when they are ill and this is especially so for children. As you will have read, paediatric wards aim to cater for the whole family.

### (a) Recommendations

Unfortunately some children are still nursed in adult wards, although recommendations have been made by various concerned agencies throughout the last 20–30 years (Platt Report on The Welfare of Children in Hospital, 1959; *Which?* Consumer Report, 1980). It is unsatisfactory to nurse children in adult wards due to their limited understanding.

#### 1 The paediatric ward

Reports also recommend that children should be nursed by those with qualifications and experience in the care of children. The right environment in a paediatric ward (be it NHS or private) is one where there is accommodation for families, and not just for parents whose child is very ill, but for parents of all children in hospital. Visiting times should be unrestricted so that all family members and friends can visit.

#### 2 Day surgery

Some hospitals provide day surgery facilities. The child, with family, is admitted for treatment; investigations or surgery are carried out in the morning and the child returns home in the evening if he is sufficiently recovered.

### (b) Open ward or cubicle

Where the child is nursed, such as in the open ward or in a cubicle, will largely depend on illness and age.

#### 1 Infants

Infants are usually placed in cubicles which should provide protection from micro-organisms. Infants' immunity is less developed than adults and, therefore, they are more susceptible to many infections. Nursing an infant in a cubicle may be easier for resident mothers or fathers to gain some privacy. This may be especially relevant for the mother who is breast feeding, as the cubicle provides the quiet and privacy that are conducive to establishing a better 'bond' with her infant. It may also aid the technique of breast feeding and help the mother to establish her own routine with the infant.

For safety reasons infants will be nursed in basinettes or cots with sides placed up. Hospital cots are usually higher from the ground than those at home. Premature, underweight or very ill infants may be nursed in an incubator which provides better observation and control of the infant's environment. Occasionally, infants may be nursed under special conditions, such as ultraviolet light treatment for neonatal jaundice.

Because the infant is in an incubator, parents are often frightened. They must be shown how to touch and feed their infant and where possible to take him out for cuddles, but this will largely depend on his physical condition.

#### 2 Toddlers and pre-school children

Children in these age groups are also usually placed in cots for safety. Hospital

beds are usually higher from the ground than at home and hospital floors are not usually carpeted! Therefore, it is considered safer to place the young child in a cot with adjustable sides. If the child is upset by this, then hospital policy, parental wishes and ward guidelines should be followed to decide if he may be placed in a bed. It is sometimes safer to have a mattress on a clean floor for a lively pre-schooler or a child who is hyperactive or mentally retarded. If confined to their cot, this can be wheeled to the play area.

### 3 School children

These children are invariably safe if placed in a bed. They may need reminding of the height when getting in or out! Whenever possible school children are nursed in the open ward. If confined to bed, this can be wheeled to the play area.

### 4 Adolescents

Ideally adolescents should be nursed in their own unit. This subject is a point of discussion and as yet there are very few such units in the UK. Adolescents often like the privacy of a cubicle if one is available. Development in physical characteristics and self-awareness of their changing image often leads to embarrassment. Privacy is important and should be provided.

#### (c) Nursing in cubicles or side rooms

Nursing in separate rooms can relate to any age group of children. For the infant, cubicle nursing is a protective measure against infection and is done for safety reasons. Toddlers, pre-school and school children do not have to be nursed in a separate room unless infectious, susceptible to infection or sometimes when very ill, such as in the child with a terminal illness.

Being nursed in a cubicle can be a lonely experience for the young child so it is important to make the room bright and cheerful with pictures. The child should have a range of suitable play items and the nurse should plan to spend as much time as possible with such a child. A room with a view is much appreciated, especially if the child can converse through the window with his nextdoor neighbour. Parents can be resident in a cubicle with their child but this depends on the nature of the illness or infection. If parents are resident then they should be encouraged to leave the cubicle for periods of time, otherwise they may become 'isolated' in the sense that they feel alone with their child and get the child's illness out of proportion (refer to Part 3: The Acutely Ill Child, Isolation Nursing, pages 129–132).

#### (d) The ward

A children's ward may at first appear disorganised due to the presence of play items and visitors. However, there is some routine set by the trained staff in the ward. Examples are medicine rounds and bedtimes, although often children are put to bed when it is felt they need the rest but not when liked by children! Bedtimes tend to be generally earlier than at home. It is possible to create an organised, happy, homely environment in a children's ward and allow freedom for such things as play.

## Communication

In order to create the happy atmosphere needed in the ward, the importance of communication (Figure 13.1) must be stressed. Nurses in a children's ward communicate with many people.

#### (a) Methods of communication

The method of communication between those people (Figure 13.1) is primarily through verbal channels. Children communicate in many different ways, some of which have been described earlier in the text.

### 1 Non-verbal communication

Children are very aware of non-verbal cues given by the nurse, and in giving these sort of cues themselves. Children are usually good communicators, that is

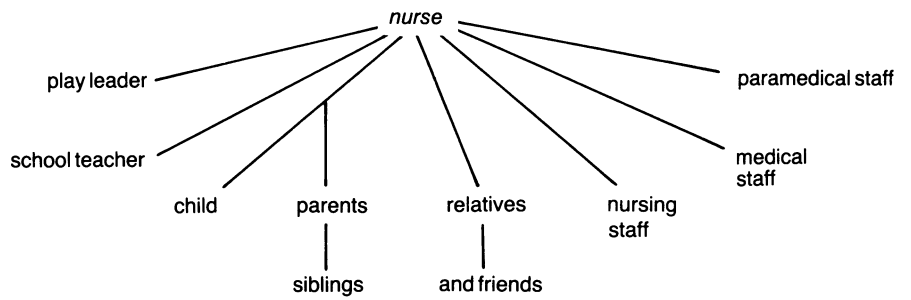


Figure 13.1 Communication in the children's ward

providing they are not anxious, tired or ill. However, even at such times they may give many non-verbal clues. A particularly good example is pain which can be observed in the child without him expressing it in words; from the infant who frowns and turns red in the face with wind, to the older child who may withdraw, cry and hold where it 'hurts'.

Touch is an important aspect of non-verbal communication and this is especially relevant with children. Cuddling and holding firmly but caringly may relieve anxiety, provide security and, of course, provide a lot of pleasure for the nurse. Touch can be used at all ages, although modified for instance in the adolescent, who is very aware of touch, but in a more adult way.

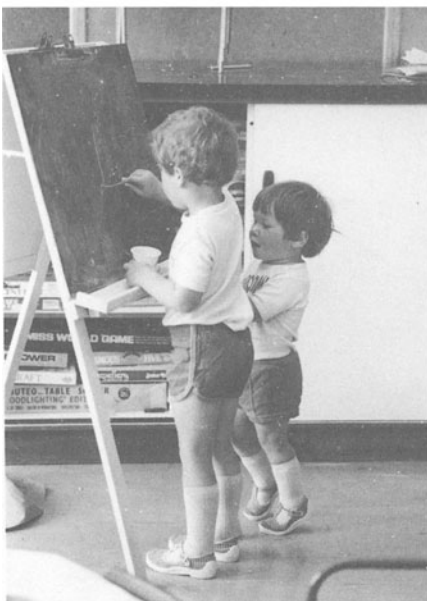


Figure 13.2

## 2 Verbal communication

Verbal communication with children will depend upon their age and understanding. However, as discussed previously, children should always have new situations explained to them. An example of this might be receiving an injection:

1. The toddler will need a simple truthful explanation, just before the injection is administered.
2. The older school child needs to have an explanation some time before the injection, but particularly on the same day.

Communication with children may be more effective when parents are present. Many unpleasant procedures are better explained by parents; but to do this they must fully understand the procedure themselves.

In many aspects of treatment, parents may wish to participate in discussions about their child and opportunity should be provided for this with nursing and medical staff. Informed and consulted parents are usually less anxious and this may have a better effect on the child.

## 3 Communication between staff

Nursing staff in paediatrics must communicate efficiently with one another both verbally and in writing. Observational skills are very important when nursing children. Any changes that have been noted by the nurse or the parents must be reported, no matter how insignificant. Communication between staff should not only be for the benefit of information exchange but also to create the happy and organised environment desirable in a children's ward.

## 4 Communication between staff and child/parents

Medical and paramedical staff have a responsibility to communicate effectively with both child and parents. They also exchange information with nursing staff, often noting carefully the observations which the nurse has made during the time of caring for the child in question. Communication in paediatrics, therefore, cannot be over-emphasised.

# Safety

Children's wards are designed with safety in mind. The guidelines in Table 13.1 may help you to recognise the safety features in your own ward. Add your own observations to this list.

Table 13.1 Safety features in a children's ward.

Safety features	Observations
1. <i>Ward environment</i>	
(a) Door handles at high level.	
(b) Cots with adjustable sides.	
(c) Windows which do not open.	
2. <i>Equipment</i>	
(a) Safe toys.	
(b) No infants lying on pillows (suffocation).	
(c) 'Nothing by mouth' notices for children undergoing operations.	
(d) Safe eating utensils and crockery (often plastic).	

Table 13.1 (cont.)

Safety features	Observations
<p>3. <i>Protective or source isolation</i></p> <p>(a) Prevention of spread of infection or protection from infection*.</p> <p>4. <i>Medicines and lotions</i></p> <p>(a) Safe storage.</p> <p>(b) Administration policy.</p> <p>(c) Accurate weighing of children prior to giving doses of medicine.</p> <p>5. <i>Observational skills and accurate recording</i></p> <p>(a) Charting fluid balance.</p> <p>(b) Recording changes in vital signs.</p> <p>6. <i>Warmth and clothing</i></p> <p>(a) Ward temperature kept constant, especially in cubicles where infants are being nursed.</p> <p>(b) Suitable clothes, including socks to keep feet warm, one-piece towelling suits for infants.</p>	

\*Refer to pages 129–132, Isolation Nursing, in Part 3 The Acutely Ill Child.

When you first work in a children's ward you will become acutely aware of the need for a safe environment. Parents may need instruction in such aspects as isolation nursing and the procedures followed for administration of medicines while the child is in hospital.

## Play

Play for the child has a number of benefits, among which are the following:

1. Providing a link with home.
2. A method of communication.
3. Expressing feelings.
4. Learning about the world.
5. Occupying children with special needs, for example, those in traction and confined to bed.

Many children's wards have someone who co-ordinates play. This may be a play leader, nursery nurse or a person with a particular interest or field of study related to play.

Play should be enjoyable for the child, the parents, the play leader and nurse. It should not just involve watching the TV or reading. Children like constructing models, doing jigsaws, drawing, painting, colouring, water play, games and cooking, to name just a few activities.

### Suggested exercise

During a span of duty, observe and record the activities which children in the ward are doing.

Play should be linked to age and development, in order to provide a stimulus for learning. Children become bored with the same playthings and the activity needs to be changed regularly.

Special mention should be made that some children in a strange environment may initially regress in their abilities. This factor should be considered when organising play.

Whatever the child draws or makes the nurse should take an interest in and commend his skill. Drawings, particularly, can be stuck on a board or wall by the bedside for parents and staff to see.

Ill children still need toys, but their participation may be limited, due to their illness. At such times the parents, nurse or play leader may be needed to read the child stories, hold his hand or just 'be there'.

Every child has the need to play: sometimes he needs assistance with this and at other times he prefers to be alone. The nurse in paediatrics may find at first that playing with children is an unusual way of providing care. However, she should remember that it is a necessary and hopefully enjoyable aspect of care.

## (a) Providing a link with home

Play reminds the child that hospital is not for ever, that it is a period of time from which he is expected to recover and return home.

### 1 Favourite possessions

Children are generally encouraged to bring their favourite toy, cuddly blanket, photographs or any other familiar item into hospital with them. This helps to provide security and, as mentioned earlier, a child may be more co-operative in undergoing a particular procedure if his doll or teddy has experienced that procedure first.

### 2 Role play

Home links can be provided by having available play items such as cooking utensils, clothes to dress up in and areas set aside where play houses and shops can be visited. A Wendy house in the corner of a playroom, with a few pieces of artificial equipment resembling items at home, can give many hours of entertainment to the toddler and pre-school child. Role play for the school child is wearing 'Mum's' and 'Dad's' clothes and shoes, not to mention the application of make-up! In such a situation, the younger children and those who are of a shy nature tend to be relegated to play the baby.

### 3 Special occasions

Should the child be in hospital during a special day in the year, such as a birthday, firework night or Hallowe'en, then this is considered a festive occasion. For the birthday child, a party with a cake is usually arranged or, if permissible, there may be a special outing. In preparation for Hallowe'en, for instance, the children may be encouraged to make masks and witches hats.

It is important that these elements of the real world are kept in the child's life while in hospital and could be considered in view of his discharge when recovered.

### 4 Outdoor play

Lastly, with regard to a link with home, the value of outdoor play in the fresh air should be remembered. A play area in a safe environment outside can release anxieties, tire a hyperactive child and provide a different, usually more active, type of play. Sometimes it is possible to go on trips to the park or to some special event. When the child is playing outside, or on a special visit, he must be accompanied by his parents and usually a nurse and/or play leader; this will depend on group size, ages and abilities. It may be necessary to obtain permission from parents before taking children out of the hospital. You should consult your local policy for this information.

## (b) A method of communication

Much has already been expressed about play as a method of communication. Children may find it difficult to identify feelings about themselves. They are often unable to tell adults what they think may 'happen' to them. Apart from observing children at play and whom and what they play with, their general interaction with others and social behaviour may help the nurse to identify how the child feels.

Children learn from many sources, but particularly from each other. It is often the learning from each other which can give rise to anxieties and misinterpretations. Children are very observant, the old saying 'children don't miss a trick' is very true. However, their interpretation may be incorrect and play may be used to communicate this fact.

### Suggested exercise

1. Listen to a child using a toy telephone.
- or*
2. Listen to one child explaining to another child about his operation.

You could use this information to explain any misconceptions and in adjusting nursing care accordingly.

#### (c) Expressing feelings through play

This is closely connected both with play as a link with home and as a method of communication. Relief of feelings such as anxiety, boredom, anger or unhappiness can be actively and safely expressed in play. If there is no apparent underlying reason for aggressive behaviour then use of a punch-bag (soft-filled cotton bag) in the play area is a useful way of releasing feelings. Well children, such as those on traction, often appreciate this as they are unable to run around and relieve their boredom or anxiety.

Expressing feelings through play is natural for all children but their safety and that of others must always be considered.

#### (d) Learning through play

One medium through which children are constantly learning is that of play. Through play they can learn language, both appropriate and inappropriate (slang words). Children can learn about time and texture according to the toys with which they play and their interactions with others. Learning should be a constant theme through play and, of course, should be linked to developmental ability.

In hospital, play may be used in explaining certain operative procedures, for instance, the child for surgery might learn from a doll which is attached to an infusion, ECG leads, catheter, or bandaged with a dressing. The child is encouraged to handle the equipment, ask questions and to perform care according to what he believes may take place. This is one example by which the nurse in paediatrics can assist the child in learning.

#### (e) Occupying children with special needs

Children who need special play consideration might be those confined to bed or those in a wheelchair. Such children need not be precluded from ward activities. The older child confined to bed might like to play a board game with another bedbound colleague. This can be achieved by pushing beds together.

### 1 Children in isolation

Children who are isolated in cubicles may need extra toys, but certainly need extra nurse-time for play activities. This of course depends on their state of health. If the cubicle has windows on several sides it might be possible to push beds from two adjoining cubicles to the window. Both children could talk or play games or read to each other. A television is invaluable for the older child confined to a single room.

## Education

In the younger age range learning is not formalised in terms of schooling but many toddlers and pre-schoolers attend nursery or pre-school playgroups.

#### (a) Importance of the continuation of schooling

In hospital there is a statutory requirement to provide schooling for children until 16 years of age. The continuation of schooling while in hospital can help to prevent boredom and provide an occupation for the child. This is particularly relevant for the adolescent who is admitted for long stay care.

### 1 Providing a teacher

Hospitals have school teachers provided by the local authority. Teachers should be very much part of the ward team and included in the planning of the

child's day. If there is not a regular teacher, then a tutor may be requested through the local education authority.

As a nurse in paediatrics you may find you are frequently requested to assist with school work, so 'brush up' your reading, writing and 'rithmetic (the 3 R's)!

## 2 Encouraging continuation of schoolwork

Contrary to popular belief children do not like missing schoolwork as they are often upset at the thought of lagging behind their classmates. If a child has some schoolwork then he should be encouraged to complete it and may need the privacy of a quiet corner or single room without distractions. The work children do may be for the hospital teacher, or from the school they attend. Liaison is important between teachers in hospital and in school, in order that the child does not fall behind. Missing schooling is often a parental anxiety as well.

Contact with school friends should be encouraged and they should be allowed to visit. Their teacher may organise the class to make cards or pictures to send to their unwell classmate in hospital.

### (b) Taking examinations in hospital

The older school child and the adolescent may be due to sit an examination. Wherever possible, and depending on the illness, these examinations should be arranged to take place in hospital. GCSE and 'A' level examinations can be organised, but this requires some careful communication and planning between ward staff, hospital school teacher and the adolescent's teacher. The examining board may need to be consulted before examination preparations are made. Extra tuition is often required, in which case the adolescent's school teacher may visit or send in work via the parents.

## Theory into practice

In this chapter, basic concepts of paediatric have been presented. In Part 3, children admitted to hospital with specific illnesses are described using a nursing process framework. This may be either using a nursing model (Roper, Logan and Tierney, 1985; Orem 1985) or a priority approach to structure the nursing care plans. The basic concepts discussed in Part 2 are incorporated in the next section.

The care plans are preceded by explanation of some principles and practical skills necessary for safe paediatric care.

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## **Part 3**

## **The Sick Child**

## Acute illness

An acute illness is one that occurs suddenly and is of short duration, e.g. tonsillitis, otitis media, gastro-enteritis, appendicitis. The illness is unexpected. The child may be nursed at home, or if sufficiently ill, for example, increasing dehydration in a child with gastro-enteritis, he will be admitted to hospital. Follow-up care may be required. If a child has repeated attacks of tonsillitis, misses school, or hearing becomes impaired, he may require surgery for a tonsillectomy. This can be planned. In this section guidance is given for both planned and emergency admissions and examples are given to help you plan and adjust your nursing care accordingly.

Children with a long-term disorder may be admitted with an acute episode, e.g. asthmatic attack in a child with asthma.

### (a) Symptoms of acute illness in a child

Recognising an acutely sick child is not always easy. The following are only for guidance:

1. Child becomes anorexic.
2. Child becomes lethargic and may lie quite still.
3. Child becomes irritable and 'whiney'.
4. Child may have screaming attacks.
5. Child may be pale.
6. Child often has abdominal pain.
7. Child often has diarrhoea and vomiting.
8. Child becomes pyrexial.
9. Child develops specific signs and symptoms of disease.

Children differ from adults in that pallor often turns to greyness and a lot of diseases are accompanied by abdominal pain and diarrhoea which means that a differential diagnosis has to be made by the doctor.

A mother knows her child and she will tell you when he is ill! Children can become very ill very quickly and parents naturally become anxious and bewildered.

## The planned admission

### (a) Welcome and tour of the ward

Welcome the child in a friendly reassuring way: greet him by name, if necessary bending down to obtain eye contact with him. If he is shy or frightened give him time to become adjusted, and establish a relationship with his parents. If the child sees his parents trusting in you, he, too, will gain confidence in you. Never talk down to him but on his own level. Keeping up to date with current favourite book and comic characters and TV programmes will easily provide you with conversation topics. As he gradually relaxes ask him about his brothers and sisters and, if they accompany him, include them in the admission procedures.

Show him his bed and locker and allow him and his parents to settle in and unpack his personal belongings. The family should be introduced to neighbouring patients and other staff and given a tour of the ward which should include the toilets, play areas and the TV.

### (b) Admission interview

Find a cosy corner of the ward to conduct the admission interview, remembering that comfortable and uninterrupted proceedings will enable you

to obtain the maximum information from the parents, so enabling you to fill in the nursing history sheet. You will, no doubt, be familiar with the history sheet used by your own hospital.

## 1 Routine details

Obviously you will require routine details of name, address and next of kin. Children often have pet names which they prefer. They will enjoy helping to label identity bands. Details of religion and whether or not he is christened are obtained. In young babies and very sick patients, it may be necessary for sister to establish whether, in the event of an emergency, the parents would like their child christened.

The name and address of the health visitor who liaises with the family is obtained. She will be contacted if further information is required, will participate in any case conferences and be informed of the child's discharge where continuing care may be required. Some hospitals have liaison health visitors, so promoting communications.

## 2 Daily living activities

### Diet

The child's likes and dislikes should be asked, e.g. some children dislike 'greens'. The menus for the children's ward should bear in mind children's dietary preferences, e.g. 'bangers and mash', chips and fish fingers which can all be part of attractive and nutritious meals. Any diets for religious reasons are discussed and ordered.



Figure 14.1 A teacher beaker

It should be established if the child drinks from a cup, teacher beaker (Figure 14.1) or bottle. Some toddlers may drink from a cup during the day, but enjoy a bottle with a cuddle and story at bedtime. If the patient is a baby, find out what feeds he has and how often.

### Play, rest and sleep

Find out about his daily routine. Does he have any naps during the day? What time does he wake up and go to bed? Does he have a 'comforter', e.g. a favourite blanket or a dummy, or does he suck his thumb? Find out the name of his favourite teddy and encourage him to stay as well. It is usually a good idea to give him a name band too.

### 3 Stage of development

You can start assessing the child's personality to some extent and his relationships with his family. At what stage of development is he? Will he eat with a knife and fork? Can he sit or walk? What words does he use to indicate that he wants to go to the toilet? Does he wear a nappy at night? Does he use a potty?

### 4 Knowledge of hospital admission

Find out what he knows about his hospital admission. Encourage parents to tell him the truth about his stay and whether they are going home and when. If Mum is unable to be resident a favourite family photograph on the locker will comfort him.



Figure 14.2 A cubicle for parents

If Mum is to be resident (Figure 14.2) she should be shown her bed, toilet, telephone facilities and told about the availability of meals. Dad will want to know about telephone numbers, visiting times and probably car parking facilities.

#### (c) Physical observations

The child's temperature, pulse and respiration and any specific observations will be taken to form a baseline measurement. He should be screened to ensure that he has no childhood infectious condition which would affect his recovery and could be passed on to other patients.

He is weighed. Drugs and intravenous therapy will be calculated accordingly, so it is very important that weight is measured accurately. If required the child's height is measured. Height and weight are both plotted on the percentile chart.

#### (d) Clothes and skin care

Children usually keep their own clothes during an admission, which should be carefully stored. If hospital clothes are used, do find co-ordinating and well-fitting garments.

If necessary he is given a bath, which includes washing the umbilicus carefully as well as behind the ears! During this time he can be discreetly observed for any rashes, bruises (perhaps indicating child abuse) or head lice, where appropriate treatment can be commenced if necessary.

- (e) **Settling in** By now both he and his parents will enjoy a drink, perhaps a cup of tea. You can find out his favourite fluids, which may help you in any future fluid therapy. He may enjoy a book to read or a game to play while he settles and becomes accustomed to his new environment and friends. He should be introduced to the nursery nurse or play leader.
- (f) **Doctor's admission interview and examination** The doctor will conduct an admission interview and examination. He will obtain details of family and medical history and developmental details to date. Immunisation details are also required and any allergies written in the notes and nursing orders. Investigations will be ordered. The anaesthetist will visit the child and ensure he is fit for anaesthesia, if surgery is indicated.  
Both parents and the child (if old enough) will require explanation of any procedures and surgery. Consent is obtained from parents for surgery and some investigations, e.g. jejunal biopsy.  
Once settled, hopefully the patient will oblige by providing a specimen of urine, both for routine urinalysis and laboratory culture if necessary.
- (g) **Beginning the nursing care plan** Having obtained the nursing history, the nurse will chart the information, make a nursing assessment and will then be able to begin to plan her total nursing care, adapted to the individual patient's needs.

## **The child admitted in an emergency**

It is so important to give a calm and reassuring welcome to the child and his family. His illness has occurred unexpectedly, catching family arrangements unawares. It may be even more frightening if admission is during the night and if the illness is severe.

Medical care may need to be given immediately. It is essential to keep both child and family informed, so allaying fears both real and suspected. Remember that some parents may be so worried that they become aggressive. Once the immediate situation is dealt with, with medical and nursing care commenced, routine and other information will be obtained.

All procedures will be carried out as in the planned admission but obviously here priorities are in a different order. A child may require urgent treatment before all admission details can be obtained.

## **Day surgery**

In some cases, e.g. repair of inguinal hernia, it may be possible for the child to be admitted as a day case. Some hospitals have the special facility of a day unit. Staying in hospital just for the day reduces the psychological trauma for the child.

- (a) **Benefits for the family** Mum can plan ahead, arranging babysitters for siblings, care of elderly relatives, transport, with perhaps Dad arranging for a day off from work so that the family can all be together. In this way there will be less separation for the child since the people closest to him can be around.
- (b) **Benefits for the hospital** Financial burdens are reduced for both the family and hospital. Economically, it enables the hospital to reduce waiting lists and it is less expensive because overnight accommodation does not have to be provided. Staff enjoy the benefits of evenings and weekends off duty, though they may not enjoy such close relationships with the children as they are in for such a short period.  
There is a higher turnover of patients. Nurses must be on the alert as accidents can occur in this situation.

# Observation and investigations

## (a) Observation of the sick child

Observation of the sick child requires skill and experience. Is a baby crying because he has a wet nappy, wants his feed or his Mum, or is he in pain?

### 1 Importance of observation

Children tend to deteriorate more quickly than adults when ill, and, correspondingly, tend to recover more rapidly. Children who are sick tend to go pale or even grey in colour and show distress by crying or becoming abnormally quiet and lethargic. They are often too young to let you know exactly what is wrong (e.g. if they have a headache) or to describe explicitly how they feel. Most illnesses are described by children as 'tummyache'. Indeed abdominal pain is a common feature in childhood illness. Toddlers run the risk of febrile convulsions where there is rapid increase in temperature.

### 2 Temperature, pulse, respiration and blood pressure

Generally, temperatures are taken per axilla under 5 years of age (Figure 14.3), and orally above that age if there is no mental retardation or risk of convulsions. Some hospitals take rectal temperatures under 1 year of age, if there are no rectal abnormalities. The child is positioned on his left side and the feet held firmly enough to prevent him kicking the thermometer out, or causing injury. He should not be left alone while he has a glass thermometer in position.



Figure 14.3 Taking a temperature

The pulse in the baby can be felt most easily in the temporal region and is best taken before disturbing the baby to feed. The respiratory rate can also be checked at this time. Pulse and respiratory rates will be affected by children crying as well as by their running up the corridor to watch TV.

Blood pressure can be difficult to take in wriggling youngsters and is not as commonly taken as in adults. Remember to use a cuff corresponding to the size of the child. Indeed, you will have to become accustomed to the difference in size in the equipment on the paediatric ward from catheters to intravenous sets.

### **3 Neurological and behavioural observations**

Neurological observations will include observing the state of the anterior fontanelle in the child under 18 months. It can give clues as to the degree of dehydration and/or raised intracranial pressure. Observation of the child's level of irritability, general behaviour and responses may indicate his degree of illness. Children on the whole do not like being ill.

### **4 Weight changes**

Weight is an important guide to a baby's health. Weight loss may be caused by dehydration; weight gain may be due to oedema. Accordingly, the child may be weighed weekly or daily and always before feeds.

### **5 Fluid balance**

Fluid balance charts are more difficult to record. Children need a lot of supervision in order to record urinary output and bowel actions. If up and running about they often don't remember if they have been to the toilet. Changing napkins means that the nurse can only gauge urinary output. Remember that very young babies will have a bowel action with every feed, the colour varying according to whether he is breast fed or bottle fed.

If preparing a child for theatre, you will need 'eyes in the back of your head' to check that he is not given a drink by a kind visitor. On such occasions brightly coloured 'nothing by mouth' notices are fastened to children's clothes.

### **6 Assessment of pain**

This can be difficult in the child too young to point to the site of pain, or assess its degree of severity. Even young babies suffer from pain and may require analgesia. Remember non-verbal clues will help you in your nursing judgement.

### **7 Safety**

As already discussed, there can be many hazards on the paediatric ward, e.g. the ward entrance doors, the high cots, or fluids for the patient who should have nothing by mouth. The paediatric nurse should aim to be observant and responsible for the patient's safety.

### **8 Changes in condition: physical and emotional**

If in doubt always report any changes in a child's condition to the staff in charge. Be on the alert for complications. Chest infections and pressure sores can develop from prolonged bedrest. Deep vein thrombosis rarely develops, mainly because most children are up and about and increased mobility has been encouraged. A few hours after operation he may be sitting up asking for Mum. Do watch for adverse reactions to hospital stay, especially in the long-stay and toddler group, e.g. withdrawal, regression and/or aggression. Where Mum is not resident watch for homesickness too.

## **(b) Investigations and collecting specimens from children**

### **1 Specimens**

Obtaining specimens from children for investigation often requires a little more time and patience. They need greater reassurance too. Bladder and bowel incontinence and the fear of finger pricks (for blood specimens), makes life a little more challenging for you and them!

#### **Urine and stool**

Specimens of urine may have to be obtained from any age group, including the young with no sphincter control. Here urine collecting bags (Figure 14.4) are applied, after cleansing the perineum and labia with sterile water. If 24-hour specimens are required, catheters can be inserted into the bag. Paul's tubing may be used for little boys.

Specimens of stool may be obtained from the napkin, if necessary by lining it with a non-suffocating plastic lining.





Figure 14.4 Children's urine bag

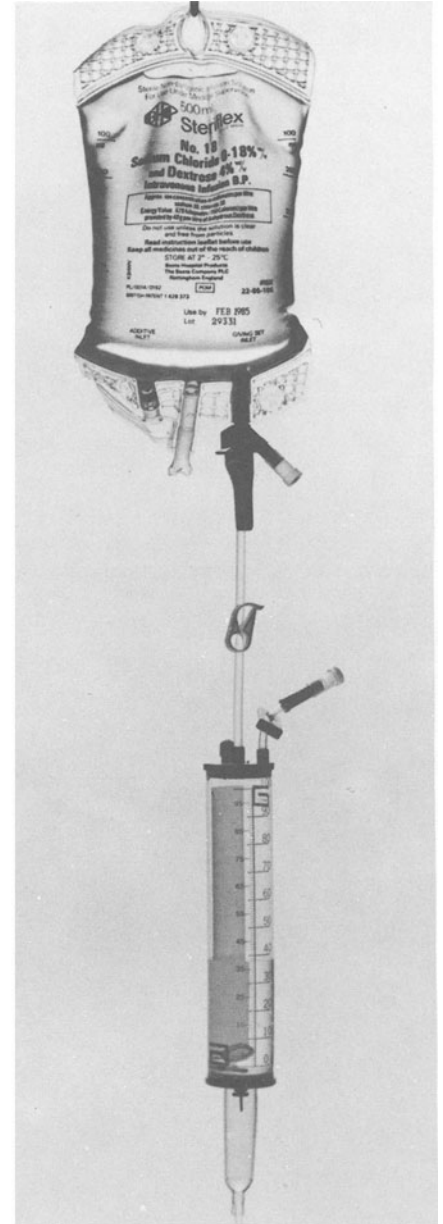


Figure 14.5 Burette

### **Blood**

Children should always be told the truth about obtaining blood specimens, just shortly before the event, especially if they have to be frequently obtained.

### **Swabs**

Nasal and throat swabs should be obtained with the minimum of fuss.

## **2 Investigations**

Sometimes the child will have to be restrained while investigations (and indeed some nursing care) are carried out. This is for his own safety and should be done gently but firmly, causing the least physical and psychological trauma.

### **X-rays and scans**

X-rays may be frightening: being taken to a strange place with large equipment which includes the EMI scan. All should be adequately explained and Mum or a favourite nurse allowed to accompany the patient.

### **Lumbar puncture**

Sometimes lumbar punctures are carried out on children (Figure 14.6). The very young are held in a curved position on a flat surface, securing the head and feet so increasing the intervertebral space.



Figure 14.6 Position for a lumbar puncture

## Replacement therapy

Children of all ages may need blood, plasma or blood product therapy. Observations of temperature, pulse and respirations need to be recorded frequently during transfusion. Particular attention should be paid to reactionary signs and symptoms such as breathlessness, loin or back pain, pyrexia or skin rashes.

Transfusion often causes alarm to parents, who view this treatment as being serious. The concern over blood-product transfusion has been heightened due to the isolation of the acquired immune deficiency syndrome (AIDS) HI viruses, present in some donors' blood.

Children who regularly receive blood products, such as haemophiliacs and infants born to drug abusers, are particularly at risk, the family needing support and education. Screening blood donors for HI viruses has now become law. More information is emerging on the epidemiology, spread and the effect of the virus.

## Fluid administration

### (a) Fluid requirements

Children have a higher fluid requirement in proportion to their surface areas. When ill, their basal metabolic rate may be raised significantly. In the baby, kidneys will be immature, therefore, fluid intake must be very carefully monitored.

### (b) Methods of giving fluids

#### 1 Intravenous infusion (IVI)

For the reasons outlined above it can be difficult to give small IVI amounts. IVI sets are therefore adapted with special burettes (Figure 14.5). IVAC pumps carefully regulate the number of drops given per minute.

Scalp vein infusions may be used in young babies; the veins are distended, into which a butterfly needle easily penetrates, often attached by means of plaster of Paris. Children are naturally inquisitive and fingers may need restraining by safe methods.

#### 2 Naso-gastric and oral methods

Naso-gastric tubes are quite frequently used for fluid and feed administration if necessary, but remember not to occlude the nasal passages by using too large a tube.

Oral fluids can be made more tempting with the use of fruit juices, milk shakes and 'bendy' straws. Do remember teeth cleaning afterwards!

### (c) Dehydration

Children easily become dehydrated, more so than adults, so accurate fluid balance charts are important. Signs and symptoms are outlined below.

#### Signs and symptoms of dehydration

1. Depressed fontanelle.
2. Skin dry and inelastic.
3. Diminished urinary output.
4. Sunken eyes.
5. Loss of weight.

### (d) Mouth care

For patients who are to have nothing by mouth, mouth care is very important. Forceps which may be used for adults and older children may be too big for tiny mouths. Cotton buds are a useful alternative. A dummy may provide comfort for the baby who is unable to have oral feeds.

## Infant feeding

Where possible breast feeding (Figure 14.7) is the most natural for babies, but congenital abnormalities or problems with the mother's milk supply may prohibit this.



Figure 14.7

### (a) Bottle feeding

The alternative to breast feeding is bottle feeding. Suitable premises for the preparation of bottles must be provided where risks of infection are minimised. Most hospitals now use pre-packed feeds which are placed in jugs of warm water (not boiling — in case of accidents) prior to feeding. See practical hints on infant feeding.

## 1 Amount and concentration

Amounts of feed vary according to the baby's weight: on average 150 ml per kg body weight per 24 hours. It is made according to the instructions on the packet and extra scoops of feed should *never* be added to the fluid requirements. The solution would then be too concentrated and would affect blood electrolyte levels. If babies are dehydrated and extra fluids are required, this is given as fruit juice or as a glucose electrolyte mixture. Weight gain is a good indication of a satisfactory feeding schedule and a baby's successful and contented feeding.

## 2 Feeding schedule

Babies may be fed 3-hourly during the first fortnight. Mostly they are fed 4-hourly on demand or routine. By two months the 2 am night feed is omitted, and by about eight months the 10 pm feed will not be needed and he will be sleeping through the night.

### Practical hints on infant feeding

1. To hold the baby correctly, lean well back in the chair and relax the arm around the baby so aiding his comfort.
2. Use a supporting and comfortable chair for mother or nurse.
3. If weaning, have a clean set of baby clothes available.
4. Test temperature of feed by dropping a little on the back of your hand.
5. Plan sufficient time to feed in comfort: the average time is 20–25 minutes.
6. Talk and smile to the baby so establishing eye and facial contact.
7. To 'wind' the baby, rub his back firmly on completion; observe for regurgitation of feed.
8. Clean bottles with detergent and bottle brush. Submerge (without air bubbles) fully in tank of cleansing agent.
9. Check size of hole of teat and cleanse thoroughly before submerging in correct strength dilution of cleansing agent.
10. Leave child with a variety of toys to play with if he so wishes.

## 3 Weaning

Weaning may be commenced between three and four months. A small amount of cereal mixed to a runny consistency with milk from the feed is offered first. The different texture and taste is not always received well, so protect yourself and the baby on the first administration. Gradually the consistency of the cereal is thickened and the amount increased over a number of days or weeks. One taste at a time is introduced, with savouries before sweet foods to encourage a balanced diet and prevent a 'sweet tooth'. Rusks may provide comfort during teething. Iron and vitamin supplements will be required both in the form of fruit juices and preparations in 'drop' form. Fruit juices should be of the unsweetened variety and not given in dummies over long periods of time, so that developing teeth are not damaged. As solid intake increases, the milk feed (breast or bottle) is decreased. Cow's milk may be introduced as early as six to nine months, although many mothers continue to breast feed or give 'baby milks' for the first nine to twelve months. Under one year, cow's milk should be boiled and cooled before feeding.

### Suggested exercise

Look at the different types of milk powders available. Note differences in price, constituents and instructions for use. If possible practice making up a feed for yourself.

## Elimination

Voluntary control of bowels is achieved at approximately 12–18 months and of the bladder at 18–24 months.

### (a) Nappy changing

Babies are in nappies, which require frequent changing (see Practical hints on nappy changing) and the contents recorded. Buttocks should be scrupulously washed, dried and a barrier cream applied each time. Nappies are changed *before* and after each feed as necessary. Most hospitals use disposable nappies; some use towelling napkins and methods of folding vary.

'Nappy rash' should be prevented by adequate washing and drying.

#### Practical hints on nappy changing

1. Use a flat, stable, protected surface of a reasonable height.
2. Have disposal bins available.
3. Have spare safety pins (closed) and terry nappies or disposable nappies available.
4. Have fresh plastic pants for terry nappies.
5. Have a toy for the baby to play with so that he is not tempted to play with unsafe items.

### (b) Helping the older child

Potties are used by toddlers with the older age groups using 'small' bedpans and urinals if unable to go to the 'big' toilet. Toilets on the paediatric ward are often of the 'mini' variety. Children may require steps or trainer seats and usually require encouragement to wash their hands afterwards. Doors should have locks that will not lock the child inside!

## Child hygiene

### (a) Bathing a baby

This will be one of the most pleasurable experiences for the nurse on the paediatric ward, but of course it requires confidence.

#### Practical hints on bathing a baby

1. Check room temperature and warm the room if necessary.
2. Close windows to keep temperature constant and protect surroundings.
3. Use bath of suitable height.
4. Wear protective clothing.
5. Have bath toys available.
6. Check that you have all equipment and clothing ready.
7. Test bath water temperature with elbow.
8. Keep baby warm.
9. If baby has to be weighed at bath time ensure that scales are balanced and stable. Preferably two people should be present to weigh baby and ensure that he does not fall from scales.
10. Hold baby firmly when applying soap and when holding him in the bath water.
11. Wrap him firmly in a large towel prior to and following the bath.

### (b) Hygiene for the older child

Older children, if well enough, can have a bath in the bathroom but should *never* be left alone. Cold water should be run before hot and the temperature tested. Plenty of toys are needed for bathtime fun.

Children who are ill will require blanket bathing daily and a 'topping and tailing' at the end of the day. Teeth are cleaned after meals and hair brushed. Pretty ribbons and slides may be used and hair washed once a week, though do not allow soap or shampoo to get in the eyes! Nails are kept short and clean to prevent scratching and infecting the skin.

Do remember that parents differ in their levels of hygiene and their standards may be very different from yours and those of the hospital!

# Administration of medicines

## (a) Safety

All medications to all patients require safe administration. Paediatric dosages are calculated as per body weight and are much smaller than those you are already used to. The decimal point in a Digoxin dose, if placed in the incorrect position, will decrease or increase the dose by ten times, with possibly fatal results.

Always work out medications measurements separately from the senior nurse and never be frightened to say either that you do not understand or that you disagree with the result.

All children's identity bands should be checked before medicines are given and Mum may participate with the administration.

Medications should *never* be left lying around on feed trays, locker tops, treatment rooms or anywhere else. Cupboards must be locked and medicine trolleys not left unattended.

## (b) Methods of giving drugs

Children will receive medications via many routes — IVI, IM, suppositories, tablets and, more commonly, elixirs (see Practical hints on giving medicines to children). Some children will reject their medicines and much skill is required in persuading them to take them. Use a bib to protect their clothing and gain the child's co-operation in order that he obtains the correct dose and does not spit any out.

Medicines should be given before a feed to a baby in case of vomiting. Sugar-free elixirs should be obtained for sugar-intolerant children.

Giving an injection to a child or a baby may be difficult at first. Smaller needles and syringes are in use and often there is less muscle to inject into. If a small dose has to be given over a regulated amount of time, drug pumps may be used.

### Practical hints on giving medicines to children

1. Follow your local policy with regard to the administration of medicines.
2. For babies use a small cylindrical medicine measure or receptacle with teat.
3. Use a bib for a baby.
4. Use two spoons to crush tablets.
5. Have available orange drinks and bendy straws.
6. Have sweets available as a reward.
7. Allow adequate time and ensure a steady hand.
8. Ensure child settled and comfortable. Hold him upright to prevent inhalation.
9. Have moist cloths available for wiping faces.
10. Have pad and pencil available for your drug calculations.

Ensure that safety measures are enforced at all times.

## (c) Drug calculations

The principle is as follows:

$$\frac{\text{dose required}}{\text{present standard quantity of drug}} \times \frac{\text{present quantity of liquid in which standard quantity of drug is dissolved}}{\text{correct dosage to be given}}$$

or, to put it another way:

$$\frac{\text{what you want}}{\text{what you have}} \times \text{what it is in} = \text{correct dosage to be given}$$

## 1 Examples\*

### To calculate a dosage

Your stock penicillin is 250 mg in 5 ml. The prescribed dose is 125 mg. Therefore the volume required to give the correct dose is:

$$\frac{125}{250} \times 5 = \frac{5}{2} = 2.5 \text{ ml}$$

### To calculate a dosage

Your stock Elixir Digoxin is 0.05 mg or 50  $\mu\text{g}$  in 1 ml. The prescribed dose is 0.25 mg or 250  $\mu\text{g}$ . Therefore the correct dose is:

$$\frac{0.25}{0.05} \times 1 = 5 \text{ ml}$$

### To calculate a dilution

To prepare 80 ml of '1 in 80' strength solution of antiseptic, you require:

1 ml antiseptic  
79 ml water

\*g = gram, mg = milligram,  
 $\mu\text{g}$  = microgram, l = litre,  
ml = millilitre.

## 2 Questions

1. Your stock solution of a drug is 250 mg in 2 ml. The prescribed dose is 75 mg. Calculate the volume required to give the correct dose.
2. Your stock solution is 0.05 mg in 1 ml. The required dose is 0.04 mg. Calculate the volume needed to give the correct dose.
3. Your stock solution is 60 mg in 5 ml. The dose prescribed is 40 mg; calculate the correct volume needed.
4. What quantities of antiseptic and water are required to prepare 60 ml of a '1 in 30' strength antiseptic solution?
5. Your stock solution of a drug is 100 mg in 5 ml. The prescribed dose is 25 mg; calculate the correct volume.
6. A dose of 60 mg of a drug is needed. Your stock solution is 20 mg in 2 ml; calculate the correct volume.
7. The prescribed dose of a drug is 400 mg, and your stock solution is 1 g in 2.0 ml. Calculate the volume required to give the correct dose.
8. The stock solution for a particular drug is 600  $\mu\text{g}$  in 1 ml and a dose of 0.2 mg is required. Calculate the correct volume.
9. 100 ml of a 1 in 20 strength solution are required. Calculate the correct dilution.
10. The prescribed dose of a particular drug is 30 mg and the stock solution is 125 mg in 5 ml. Calculate the volume required to give the correct dose.

## 3 Worked answers

1.  $\frac{75}{250} \times 2 = \frac{3}{5} = 0.6 \text{ ml}$
2.  $\frac{0.04}{0.05} \times 1 = 0.8 \text{ ml}$
3.  $\frac{40}{60} \times 5 = \frac{10}{3} = 3.3 \text{ ml}$
4. 2 ml antiseptic and 58 ml water are required.
5.  $\frac{25}{100} \times 5 = \frac{125}{100} = 1.25 \text{ ml}$
6.  $\frac{60}{20} \times 2 = 6 \text{ ml}$
7.  $\frac{400}{1 \times 1000} \times 2 = \frac{800}{1000} = 0.8 \text{ ml}$
8.  $\frac{0.2 \times 1000}{600} \times 1 = \frac{2000}{600} = 0.33 \text{ ml}$
9. 5 ml antiseptic and 95 ml water are required.
10.  $\frac{30}{125} \times 5 = \frac{6}{5} = 1.2 \text{ ml}$

## Preparation for surgery

Should hospital care involve surgery, children should be adequately prepared both physically and emotionally.

### (a) Emotional preparation

According to their age, all children should have all surgical procedures explained to them. Parents, too, need explanations so that they can be reassured and also help in their child's preparation. Children should be told that they will not be allowed any drinks and will go to sleep while the doctor helps them get better.

The play leader can help in the child's preparation and Mum is often allowed to accompany her child to the anaesthetic room.

### (b) Consent

Consent is obtained by the doctor from the parents of any children under 16 years of age. Consent cannot be given by grandparents or aunts and uncles, it *must* be the parent(s) or legal guardian. Consent may be required for some investigative procedures, e.g. jejunal biopsy.

### (c) Physical preparation

Physical preparation includes the child being 'nothing by mouth' beforehand. Unfortunately, poor dental hygiene often means that children do have dental prostheses that have to be removed. A bath is given plus any specific skin preparation and the child dressed in a theatre gown. Shaving may be required in adolescents. Many children have pierced ears and wear jewellery which has to be removed. Any nail varnish must be removed. The child is encouraged to pass urine and then put into bed.

### 1 Pre-medication

The identity band is checked and pre-medication given. As far as possible oral preparations are prescribed by anaesthetists and will include sedatives and substances to dry up secretions. A cuddle and quiet story will help the child to sleep. Remember to watch his colour as this may be affected by the pre-medication.

### (d) Reassurance

Teddy can go to theatre and indeed often returns with the same type of bandage as the patient. Anaesthetic rooms should be brightly coloured with posters so providing a cheerful atmosphere. Telling a not too adventurous story if the child is not asleep will help him settle and distract him from his surroundings until the anaesthetist is ready. Some hospitals award 'Bravery Certificates'.

## Discharge from hospital

### (a) Follow-up care by community staff and hospital outpatient department

Continuity of patient care may be required when the child returns home. The health visitor and the district nurse are informed, the latter if any specific care is required, e.g. suture removal. The family may have had contact with a liaison health visitor while in hospital. This person has an important linking role between hospital and community and will liaise with the family's own health visitor. Social workers may help with finances, provide appliances and coordinate social service help. Voluntary organisations may offer practical and/or financial assistance.

The hospital doctor will write to the GP and an outpatient department appointment will be given in order that medical care can continue to be supervised.

### (b) Follow-up care by parents

The nursing staff will teach the parents any specific nursing care required which may be infant feeding or even tracheostomy care. They may also be given the ward telephone number in case of any difficulties. Parents are often quite



anxious and need adequate preparation and education. They should feel confident and competent at being able to care for their child. Specific instructions should be written down, e.g. plaster care, and they should fully understand what treatment their child has had. They should be told that their GP will be informed and not to hesitate to seek further advice if they are worried.

### (c) Returning home

Advice on any 'convalescence' is given which is usually in the form of length of time to be kept away from school and any activities prohibited for a while, e.g. no rugby in a child who has just had his inguinal hernia repaired.

Time spent on discharging a patient is valuable in order to give encouragement and confidence and prevent complications occurring.

#### Further reading

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## Nursing care plans for the child who is acutely ill

### (a) Introduction

The four children chosen to illustrate the acutely ill child have either been admitted for planned surgery or as an emergency patient. Each child has the potential of becoming acutely ill during hospitalisation.

#### 1 Lucy, 5 years old, admitted for a planned adenotonsillectomy

Lucy is a reasonably healthy and alert child except for bouts of tonsillitis. She is gaining independence in many skills and her knowledge is increasing with school learning. Roper, Logan and Tierney's (1985) Activities of Living Model has been chosen to structure her care plan while in hospital, with consideration for her return home and convalescent period. Lucy is well prepared for hospital and her mother is to be resident. Careful nursing observations are necessary to detect the potential problems following adenotonsillectomy.

#### 2 Ahmed, 11 years old, admitted with appendicitis as an emergency: surgery is necessary to remove an inflamed appendix

Ahmed is ill on admission to hospital; he is in considerable pain and nauseated. Careful observation and preparation for surgery is necessary in the short time available before his appendicectomy. A priority approach to overcome Ahmed's problems is used to structure the care plan. Ahmed is unprepared for surgery and his family decide to be resident with him on a rotational basis. Ahmed is at risk from the complications of appendicitis and post-surgical problems.

### 3 Matthew, 18 months old, admitted for a circumcision as a day patient

Matthew's day surgery is a planned admission. However, due to his age and limited understanding, his parents have been unable to prepare him fully for hospital. His mother is to stay with him throughout the day to minimise emotional complications. Day surgery still requires the gathering of information and making a pre- and post-operative assessment, albeit in a shorter time. Matthew's care plan emphasises the importance of detecting complications during his brief hospital stay and the parents' acceptance and understanding of his after care. In this plan the nursing process is shown without a model.

In some paediatric units, standardised care plans may be used to assist with day care. Roper, Logan and Tierney's (1985) model or a self-care model (Orem, 1985) could be used to structure the care plan.

### 4 Jeanette, 3 week old baby, admitted with gastro-enteritis

Jeanette is admitted with diarrhoea and vomiting; with the potential for dehydration and electrolyte imbalance. Jeanette is from a single parent family, her mother being a teenager. To guide the planning of care, Orem's (1985) self-care model has been chosen. The emphasis on Jeanette's mother knowing her limits for coping and her ability to care for Jeanette and herself are enhanced by the self-care approach.

### 5 Formulation of a care plan for a child with a head injury

#### Suggested exercise

Look at the different types of milk powders available. Note differences in price, constituents and instructions for use. If possible practice making up a feed for yourself.

#### (b) How to use the care plans

In this section sometimes a part of the care plan has been left for you to complete. This might be the nursing history, assessment of problems or nursing action section. Wherever possible, relate the exercise to a child you have nursed. It may be helpful to refresh your memory by reading again about the two nursing models used to structure some of the care plans in this section.

## Nursing care plan for the child undergoing a planned adenotonsillectomy using an activities of living model



Figure 14.8

#### (a) Introduction to care plan

The care plan outlined in this section for Lucy (Figure 14.8) undergoing adenotonsillectomy uses Roper, Logan and Tierney's (1985) Activities of Living Model to structure the nursing care. The model may be used for other children described in this book. A brief outline of related anatomy and physiology and home care of the child with tonsillitis precedes the care plan.

#### (b) Introduction to Lucy

Lucy is 5 years old and an only child of middle-aged parents. She is to be admitted to hospital for an adenotonsillectomy. She has just started school and has been suffering repeated attacks of tonsillitis requiring antibiotics. Both her parents and the GP are concerned that she will miss important schooling. Lucy is referred to the ear, nose and throat specialist who places her name on the operation list for adenotonsillectomy.

In preparation for admission Lucy's parents have talked to her about hospital and her operation; this has also been explained by the use of the hospital booklet and colouring pictures, illustrating aspects such as temperature recording and taking medicines.

**(c) Normal function of the tonsils and adenoids**

It is important to understand the function in childhood of the tonsils and adenoids, especially in relation to protection of the respiratory tract.

The tonsils and adenoids form part of a ring of superficial lymphoid tissue in the pharyngeal mucosa called 'Waldeyer's ring' (Figure 14.9).

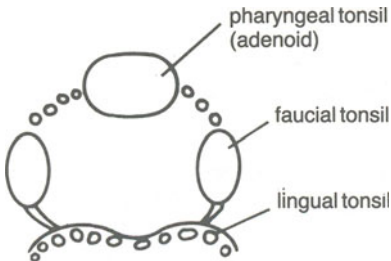


Figure 14.9 Waldeyer's ring of lymphoid tissue

**1 Adenoids**

The alternative name is pharyngeal tonsil. They are situated on the roof and upper posterior wall of the nasopharynx. The adenoids have many tubular crypts on their surface and five or more fissures running from anterior to posterior. Follicles of lymph tissue lie along the sides of the crypts and fissures. The adenoids are covered with ciliated mucous membrane which sweeps the fissures clean of debris. They do not appear to have a fibrous tissue capsule separating them from the superior constrictor muscle. Complete removal of the adenoids may not always be achieved, as they are not capsulated and for this reason it is often said that the adenoids have 'regrown'.

The position of the adenoids in the nasopharynx is close to the opening of the pharyngotympanic tube (Eustachian tube). Infection can spread to the middle ear via this tube and cause otitis media, especially in the growing child.

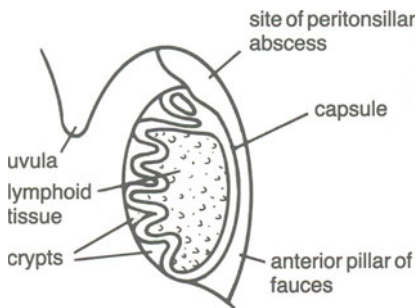


Figure 14.10 The faucial tonsil

**2 Tonsils**

The alternative name is faucial tonsil (Figure 14.10). They are composed of lymphoid tissue with 8 to 20 tubular crypts which branch in the depth of the tonsil. Cells covering the surface are stratified squamous epithelium and the crypts collect desquamated epithelial cells and lymphocytes. The tonsillar cells do not have a ciliated mucous membrane. The faucial tonsil is encapsulated and therefore easier to completely enucleate (remove).

Lymphatic drainage to cervical glands is shown in Figure 14.11.

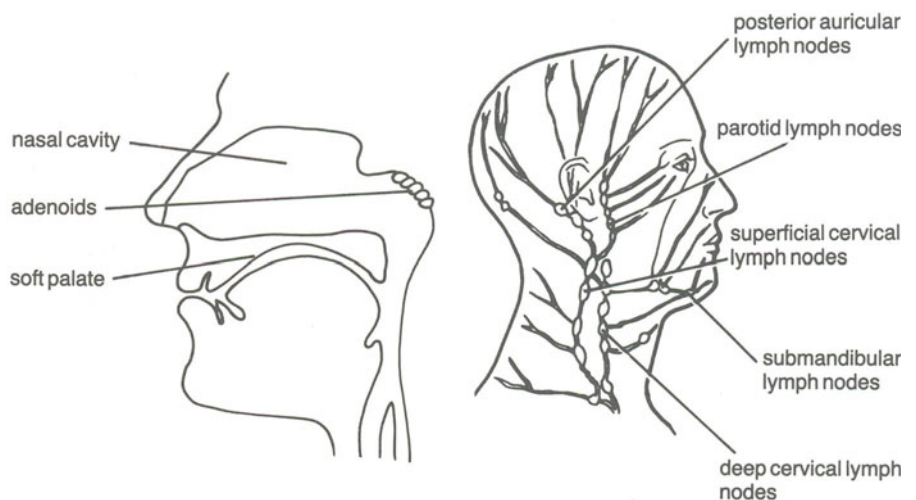
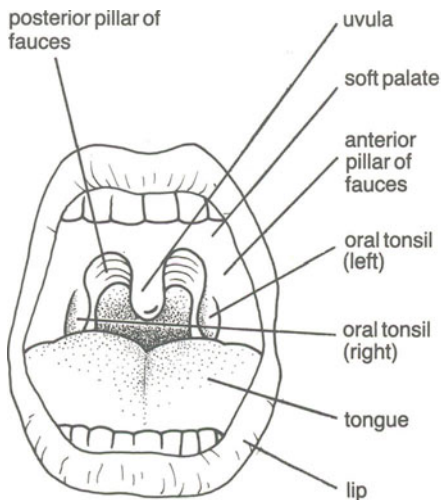


Figure 14.11 Position of the tonsils and adenoids and facial lymph system: (a) tonsils, (b) adenoids, (c) the superficial lymph nodes and superficial lymphatic drainage of the head and neck

**(d) Tonsillitis**

Children who suffer repeated attacks of tonsillitis feel very unwell and miserable during the acute period. They often refuse to eat due to the soreness of their throat and an associated pyrexia. If a child with tonsillitis is admitted for hospital treatment he is often noted to be pale and underweight for his age and stage of development. Tonsillitis particularly affects the pre-school and school-age child.

## 1 Causes of tonsillitis

Tonsillitis may be caused by several micro-organisms, the most common being:

1. Haemolytic *Streptococcus*.
2. *Streptococcus viridans*.
3. *Staphylococcus aureus (pyogenes)*.
4. Viruses.

## 2 Clinical features

The child shows the features given in Table 14.1.

Table 14.1 Clinical features and care in tonsillitis

Clinical features	Care and treatment
1. Abrupt onset of a cold and fever (39°C).	1. Love and comfort.
2. Pain in the throat and especially on swallowing.	2. Encourage rest.
3. Fatigue with irritability.	3. Paediatric analgesic elixir.
4. Uvula inflamed and thickened.	4. Clear fluids.
5. Tonsils red and swollen, and spots of yellowish exudate.	5. Diet as desired.
6. Swollen anterior cervical glands.	6. Prescribed antibiotics.

## 3 Complications

These may be localised, as in otitis media, or systemic such as acute nephritis or rheumatic fever, and they depend on the causative organism.

## 4 Treatment and care

Treatment and care of the child with tonsillitis is not only aimed at easing the painful throat but also at preventing the more widespread systemic infections and their more serious effect on the child's health.

Most children with tonsillitis are cared for by their family in a familiar home environment, thus minimising any further distress to the child.

## (e) Adenotonsillectomy

The tonsils and adenoids naturally enlarge at periods during the child's life and this is taken into consideration before a decision is made to remove them.

### 1 Criteria for removal of tonsils and adenoids

The following criteria usually indicate the necessity for adenotonsillectomy:

- Repeated episodes of tonsillitis in one year.
- Amount of schooling missed.
- Repeated otitis media and associated deafness.
- Repeated chest infections.
- Occasionally for chronic sinusitis.

#### More acute

- Obstructed airway
- Quinsy (peritonsillar abscess)

### 2 Operative procedure

#### Adenoids

These are removed with an adenotome or guarded curette. The adenoids are swept off in one piece from the nasopharynx and are usually removed before the tonsils.

## Tonsils

These are removed by dissection or guillotine. The aim is to dissect the tonsil in the plane of its capsule to ensure complete removal. Dissection is carried out below the lower pole of the Palatine tonsil to exclude the lingual tonsil on the base of the tongue (refer to 'Waldeyer's ring' on page 99).

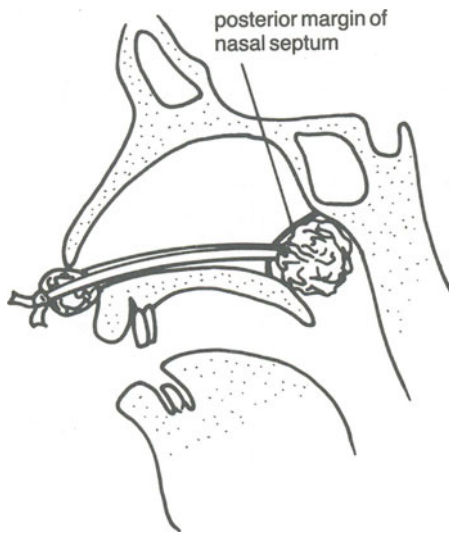


Figure 14.12 A post-nasal pack in position, with tapes tied across a small gauze swab anteriorly (the thread through the mouth is not shown)

## 3 Complications following adenotonsillectomy

### Primary haemorrhage

This is haemorrhage occurring at time of operation. Ligatures are often inserted by the surgeon to prevent further bleeding and after stasis has been achieved. Bleeding from the adenoidal bed may require a post-nasal pack (Figure 14.12).

### Reactionary haemorrhage

This haemorrhage is due to the blood pressure returning to normal limits after anaesthesia. A reactionary haemorrhage usually occurs within the first 12–24 hours after operation.

### Secondary haemorrhage

This haemorrhage is due to infection in the site of the tonsil bed and is usually seen 2–10 days after operation.

## 4 Nursing action and treatment

When a haemorrhage occurs following adenotonsillectomy, whether it is reactionary or secondary, certain actions should be taken.

1. Maintain the child's airway.
  - (a) If conscious lean forward to vomit into a bowl (be guided by child's colour and consciousness if sitting him up).
  - (b) If level of consciousness uncertain, or child unconscious, place in the left lateral tonsillectomy position with jaw held forward and tongue not obstructing airway.
2. 'Call' for assistance of a senior member of staff, who will observe and take action and will inform the doctor. The senior member of staff will be able to take care of parents if present.
3. Observe the child's:
  - (a) Colour.
  - (b) Degree of anxiety.
  - (c) Pulse (whether weak or thready).
  - (d) Respirations (whether laboured).
  - (e) Amount of blood vomited.
  - (f) Type of blood (this may be altered in colour due to effect of gastric juices if blood has been swallowed and vomited).
  - (g) Pain.
  - (h) Temperature.
4. Stay with the child and parents (if present). Reassure and try to pacify if upset. Clean blood away from face and body. Keep the child quiet. Continue observations  $\frac{1}{4}$ – $\frac{1}{2}$  hourly.
5. Assist the doctor in commencing an infusion if ordered. Blood specimens will also be taken for haemoglobin (Hb), white blood cells (WBC) and electrolytes; for blood grouping and cross matching. Observe, regulate and record infusion fluid. Position child comfortably and reassure parents.
6. Observe, regulate and record blood if transfusion commenced. Half-hourly observations of pulse and respirations should be taken and hourly temperature recordings.
7. Administer antibiotics by route ordered by doctor. As secondary haemorrhage is due to infection, antibiotics are an important aspect of treatment.
8. Prepare the child and parents for possibility of returning to theatre for insertion of ligatures to prevent further bleeding.

(f) Lucy's admission to hospital

Lucy and her parents were greeted on arrival to the ward just before lunchtime. Both parents wanted to wait and see the doctor, so there was time to show the whole family to Lucy's bed and locker. Mother and daughter unpacked her washing items and clothes after which the nurse who had met the family showed them around the ward. The tour included mother's bedroom, children's playroom, bathroom and toilet, and the facilities for the parents to eat, drink, wash and relax. Lucy met other children on the tour and joined them for lunch.

### 1 Nursing history and assessment

At the admission interview, details shown in Table 14.2 were taken.

Table 14.2 Nursing history and assessment

<i>Date of admission:</i> 16.07.86	<i>Date of assessment:</i> 16.07.86
<i>Surname:</i> THOMAS	<i>Forenames:</i> LUCY
<i>Male</i>	<i>DOB:</i> 21.05.81
<i>Female</i> ✓ <i>Age:</i> 5	<i>Nationality:</i> British
<i>Prefers to be addressed as:</i> LUCY	
<i>Address of usual residence:</i> 6, The Crescent, Sunning-on-Sea, Sussex	
<i>Type of accommodation:</i> Detached house, large garden, in the country	
<i>Family/others at this residence:</i> Mother, Father, no siblings	
<i>Next of kin: Name(s):</i> Mr and Mrs Thomas	<i>Address:</i> As above
<i>Relationship:</i> father and mother	<i>Telephone:</i> Sunning 2233
<i>Occupation:</i> Father: Company Director Mother: Housewife	
<i>Significant others (relatives/dependents):</i> Grandparents, able to visit without travelling difficulties	
<i>School:</i> Sunning School for Infants	
<i>Religious beliefs and relevant practices:</i> Church of England	
<i>Patient's perception of current health status:</i> Expresses limited understanding of need for hospitalisation	
<i>General practitioner:</i> Dr Dodds, High Trees, The Rough, Sunning-on-Sea	
<i>Reason for admission/referral:</i> Adenotonsillectomy	
<i>Medical diagnosis:</i> Recurrent tonsillitis	
<i>Past medical history:</i> Recurrent sore throats and earache	
<i>Allergies:</i> None known (i.e. drugs, foods, sticking plaster)	
<i>Significant life crisis:</i> Death of Grandpa's dog	

Table 14.3 Assessment of activities of living

Activity	Usual routines	Problems: actual and potential (p)
Maintaining a safe environment	Able to maintain safe environment with reminders about hot water, crossing roads, etc  Immunised against diphtheria, pertussis and tetanus (triple vaccine) × 3 doses and booster (diphtheria and tetanus) Polio vaccine × 3 Measles vaccine Prone to throat infections (tonsillitis) Just completed course of penicillin	(p) New environment, prone to hazards  (p) Infection in throat prior to, and post-adenotonsillectomy
Breathing	Breathes normally, respiratory rate = 22/min except during tonsillitis when nose becomes blocked On admission: Respiratory rate: 22/min Pulse rate : 100/min	(p) Airway obstruction pre- and post-operation

Table 14.3 Assessment of activities of living (cont.)

Activity	Usual routines	Problems: actual and potential (p)
Communicating	Articulate and 'mature' speech. Verbalises needs and appears to understand reason for hospitalisation. Prepared for hospital by parents, using Helpful Hints booklet and visiting the ward prior to admission. Mum to be resident.	(p) Anxiety prior to and after operation (p) Difficulty with communication due to sore throat
Eating and drinking	Eats a balanced diet when well. Likes fish fingers and chips Drinks tea mostly During tonsillitis eats and drinks very little On admission: weight: 19 kg height: 115 cm	(p) Difficulty with swallowing due to sore throat
Eliminating	Bladder and bowel control: dry by day and night Uses toilet on her own and likes privacy On admission: urine NAD	(p) Inability to eliminate due to new surroundings and effects of anaesthetic
Personal cleansing and dressing	Washes herself with guidance but fiercely independent Chooses own clothes to wear. Has a new cotton nightdress to wear after operation	(p) Inability to maintain own hygiene and dressing due to pre- and post-operative care
Controlling body temperature	Prone to pyrexia when she has tonsillitis On admission: temperature = 37°C Communicates if she feels too hot or cold	(p) Pyrexia pre- and post-operation
Mobilising	Very active when well, runs, skips, rides a small bike. During tonsillitis prefers to lie or sit quietly near Mum	(p) Inability to mobilise due to restrictions of pre- and post-operative care
Working and playing	Just started school, very keen to learn Classmates know she is in hospital and are going to write cards Special toy is a new nurse doll (present from Grandma) Plays alone a lot of the time	(p) Inability to play and learn during operative period
Expressing sexuality	Very feminine in dress, behaviour and play; fussy about how she looks	(p) Inability to wear clothes she likes during operative period
Sleeping	Bedtime 7.00 pm. Dad usually reads a story and will continue this in hospital No rest in the afternoon During tonsillitis often wakes at night needing a drink and a cuddle. Sometimes goes into parents' bed	(p) Altered sleep pattern due to strange environment and operation
Dying	Some anxiety expressed about 'special sleep' (anaesthetic) and waking up Grandpa had a dog 'put to sleep' and the dog did not wake up Parents anxious about bleeding, post-operatively	(p) Fear of not waking from anaesthetic (5-year-old's interpretation of death)

Following the nursing history and assessment interview, the House Officer arrived to examine Lucy, take further details and obtain consent to operation from Lucy's parents.

## 2 Medical history and assessment

### Physical examination

- No upper respiratory tract infection
- No ear infections
- No tonsillitis
- No enlarged glands

The House Officer found Lucy physically fit for operation which is planned for the next day.

### Past and current medical history

- Tonsillitis every 2 months
- German measles (Rubella, ? age)
- No bleeding tendencies
- No previous operations

### Family Medical History

- No parental illness
- Maternal grandmother had 'mild asthma' as a child.

### Consent form

After discussion and explanation of the operation with her parents, the House Officer obtained consent on the appropriate form.

## 3 Pre-operative care plan

Following the medical assessment of Lucy, her father left for the office. The ward staff made sure that he had the ward telephone number and he planned to return at approximately 6.00 pm. Mum was able to assist in identifying some of the problems Lucy might present and this helped in setting realistic goals. Lucy helped where she could.

To illustrate the Roper, Logan and Tierney's model (1985) in use pre-operatively, the first three Activities of Living have been identified as most appropriate for the period of care.

Table 14.3 Pre-operative care plan for Lucy Thomas

Assessment of problems	Goals	Nursing action and rationale
<p><i>(Communicating)</i></p> <p>(p) Anxiety pre- and post-operation and (p) difficulty with communicating post-operatively</p>	<p>Lucy and parents will not show anxiety and will express understanding of the operative period</p> <p>The family will be provided with a homely environment</p>	<p>(a) Allow family time to settle into new surroundings</p> <p>(b) Explain all procedures</p> <p>(c) Encourage questions</p> <p>(d) Explain post-operative care including sore throat pain relief, nothing to drink immediately, blood around mouth, thus minimising post-operative anxiety</p> <p>(e) Involve play leader in encouraging Lucy to 'act out' operative period, using role play technique, thus reducing emotional trauma post-operatively</p> <p>(a) Family should be able to be together as much as desired. Grandparents and all other visitors have free visiting access. Mum is resident.</p> <p>(b) Show Mum where she can eat during Lucy's admission and any other facilities for resident parents</p>
<p><i>Maintaining a safe environment</i></p> <p>(p) Hazards of new environment, anaesthetic and operation</p>	<p>Lucy will be safely prepared for theatre and undergo the correct operation</p>	<p>(a) Place identiband on Lucy (name, age, DOB, religion, hospital number)</p> <p>(b) Check consent form explained, signed and dated, thus ensuring correct child for surgery</p> <p>(c) Assist Mother to remove from Lucy any jewellery, nail varnish, hair clips or pins which could cause 'burns' in theatre due to diathermy or masking of signs of inadequate circulation, etc. (nail beds)</p> <p>(d) Encourage Lucy to pass urine after her bath to ensure bladder 'empty' (prevent post-operative retention)</p>
<p>(p) Infection in throat prior to operation</p>	<p>Lucy will not develop signs or symptoms of a throat infection pre-operatively</p>	<p>(a) Four-hourly recordings of temperature; pulse and respirations to be recorded. Any pyrexia to be reported as infection can delay operation</p> <p>(b) Assist doctor with collecting blood samples for haemoglobin and white cell count (for anaemia and infection)</p>
<p>(p) Development of generalised infection</p>	<p>Lucy will not develop signs of infection pre-operatively</p>	<p>(a) Assist Mum in bathing Lucy and putting on a clean cotton nightgown</p> <p>(b) Check Lucy's hair and head for cleanliness</p> <p>(c) Ensure bed linen is clean and prepared ready for theatre</p>



Table 14.3 (cont.)

Assessment of problems	Goals	Nursing action and rationale
<p>(Breathing)</p> <p>(p) Airway obstruction prior to operation</p>	<p>Lucy will maintain a clear airway pre-operatively</p>	<p>(a) Lucy will have a last glucose drink no later than 6 hours prior to theatre and then nothing by mouth</p> <p>(b) All food and drink should be removed from her locker</p> <p>(c) A sign should be placed on her bed and a badge on her and her doll saying 'Please do not give me anything to eat or drink'</p> <p>(d) Check with Mum that Lucy does not have any loose teeth and look in Lucy's mouth</p> <p>(e) Administer premedication as ordered, to sedate Lucy and dry secretions, thus preventing inhalation</p>

### Evaluation

Lucy did not appear upset prior to surgery; she expressed in play what she understood by her operation. Lucy's mother, however, remained extremely anxious throughout the pre-operative period, despite repeated explanations.

Prior to theatre Lucy was bathed, dressed in cotton nightgown and given nothing to drink as from 3.00 am (for surgery at 9.00 am). She was pleased with her 'special badge', but not happy about missing breakfast. Observations of TPR had not detected any infection.

Lucy was sleepy when the time arrived for her operation.

## 4 Reassurance before operation

### Responsibilities of the nurse accompanying the child for surgery

The nurse was accompanied to the theatre by Lucy's mother, who had sat with Lucy most of the morning. It is especially reassuring for child and parent if the nurse is one with whom they are familiar and especially so if it is the nurse who admitted the family to hospital. The accompanying nurse has the responsibility for:

1. Checking child's identity band against operation slip, notes and treatment card.
2. Ensuring the child has received premedication and is comfortable.
3. Collecting appropriate notes, treatment card, x-rays, blood results.
4. Communicating with accompanying parent to minimise anxiety.

In the anaesthetic room Lucy held her mother's hand tightly and was soon anaesthetised. Nurse and mother returned to the ward; mother was very much in need of a cup of tea and somewhere to try to relax.

## 5 Post-operative care

The nurse prepared Lucy's bed space by clearing unnecessary equipment but leaving toys and photos. She also checked that oxygen and suction were available and working correctly; that a vomit bowl and tissues had been placed on the locker; and that appropriate charts for recording temperature, pulse and respirations were available.

Table 14.4 Immediate post-operative care plan for Lucy Thomas

Assessment of problems	Goals	Nursing action and rationale	Evaluation
<p>(Breathing)</p> <p>(p) Problem: airway obstruction due to altered conscious level and site of operation</p>	<p>Maintain a clear airway by preventing inhalation of saliva, blood or clots</p>	<p>(a) Lucy should be placed in the tonsillectomy position (Figure 14.13)</p> <p>(b) Lucy's tongue should not obstruct her airway and her head should be lower than her chest to aid the drainage of blood</p> <p>(c) Oral suction to mouth can be performed if blood is collecting in side of cheeks. Avoid suctioning further down throat unless obstructing</p> <p>(d) Observe Lucy's colour and level of consciousness</p> <p>(e) Observe breathing and count respirations ½-hourly and record</p>	<p>No obstruction of airway</p> <p>Pale facial colour Respirations = 24/min</p>

Table 14.4 (cont.)

Assessment of problems	Goals	Nursing action and rationale	Evaluation
(p) Problem: haemorrhage from site of adenoid and tonsil beds	Prevent bleeding by reducing stress	<ul style="list-style-type: none"> <li>(a) Lucy's mother should sit by her bed, holding her hand and reassuring her</li> <li>(b) Lucy should be encouraged to stay lying flat and on her side and given nothing to drink. Her nurse doll should be in the bed too</li> <li>(c) Observe Lucy ¼ to ½-hourly for:                             <ul style="list-style-type: none"> <li>(i) swallowing, (ii) pulse, (iii) restlessness, (iv) nausea, (v) vomiting</li> </ul>                             Changes in these features may indicate reactionary haemorrhage and should be reported <i>immediately</i> </li> <li>(d) Wipe blood from mouth</li> </ul>	<p>Pulse rate: 108/min. No other signs of haemorrhage noted. Some blood around mouth</p>
<p><i>Communication</i></p> <p>Anxiety following operation and sore throat</p>	Prevent anxiety by enabling mother and Lucy to be together and by giving explanation	<ul style="list-style-type: none"> <li>(a) Mother should be encouraged to stay with Lucy until she has fully woken and then settled back to sleep. She should be encouraged to touch Lucy and to wipe any blood from hands or mouth</li> <li>(b) Mother will be informed by the nurse of the nature and result of the operation. This should be followed up by the surgeon visiting and explaining to both parents</li> </ul>	<p>Mum sat by Lucy throughout the immediate post-operative period. She was reluctant to wipe Lucy's mouth. Lucy's verbal communication was very little</p> <p>Father arrived early and received explanation from his wife, the nurse and the surgeon</p>
Pain at operation site and on swallowing	Control pain by relieving anxiety and with analgesia	<ul style="list-style-type: none"> <li>(a) Mother will comfort Lucy</li> <li>(b) Lucy to be given an injection of prescribed analgesia as necessary and level of pain will be regularly assessed</li> </ul>	<p>Intramuscular analgesia given in recovery and after lunch with good effect (see prescription sheet)</p>
<p><i>Safety</i></p> <p>Unable to maintain safe environment due to level of consciousness</p>	Provide safe environment and prevent accidents	<ul style="list-style-type: none"> <li>(a) Lucy to be kept on bed rest but may be carried to the toilet</li> <li>(b) To be nursed flat until she becomes conscious, then she may be given a pillow. Blood pressure should also be satisfactory</li> <li>(c) Cot sides should be used when Lucy's mother leaves her bedside and if Lucy is restless</li> <li>(d) Medicines to be administered according to local policy</li> </ul>	<p>Lucy laid flat and was reluctant to be raised up. BP, colour and level of consciousness satisfactory</p>
(p) Problem: infection at site of operation	Prevent infection and predisposition to secondary infection	<ul style="list-style-type: none"> <li>(a) Record 4-hourly temperature, report pyrexia. A rise in temperature following anaesthetic is likely but persistent pyrexia may indicate early onset of infection</li> </ul>	<p>No accidents, local policy for medicines adhered to</p> <p>T = 37°C at 2.00 pm and 6.00 pm</p>
<p><i>Eating and drinking</i></p> <p>Nausea and vomiting</p>	<p>Prevent vomiting which may dislodge blood clots, cause bleeding and cause pain</p> <p>Prevent dehydration and gradually rehydrate</p>	<ul style="list-style-type: none"> <li>(a) Lucy should be given nothing by mouth until fully conscious. As the operation site is the throat the likelihood of vomiting is increased, therefore a period of time is allowed to pass until the risk of vomiting is decreased</li> <li>(b) Report to the senior nurse the amount and type of vomit, especially if fresh blood</li> <li>(c) If this is a large amount of blood or fresh looking she may inform the doctor</li> <li>(d) Monitor signs of restlessness, swallowing, colour and pulse; alteration to these may indicate bleeding</li> <li>(e) Mother needs reassurance</li> <li>(f) Lucy's mouth may need cleaning and refreshing</li> </ul>	<p>One vomit at 12 md, dark altered blood, very small amount reported to senior nurse</p>
		<ul style="list-style-type: none"> <li>(a) Lucy may need pacifying by mother while she is 'nothing by mouth'</li> <li>(b) After a few hours, providing she has not vomited, Lucy can be offered sips of water. She may then gradually progress to weak fruit juices, avoiding orange juice because of acidity. Milk should not be given as it may coat the operation site and provide a medium for infection.</li> <li>(c) Encourage fluids. Food to be withheld until the day after operation</li> </ul>	<p>Offered sips of water in mid-afternoon: satisfied with this. Early evening, took water in small amounts. No signs of dehydration</p>

Table 14.4 (cont.)

Assessment of problems	Goals	Nursing action and rationale	Evaluation
<p><i>Elimination</i></p> <p>(p) Problem: urination following anaesthesia</p>	Prevent urinary retention	<p>(a) Carry Lucy to the toilet with Mum's help. Allow privacy</p> <p>(b) Note the time and amount of urine when first passed, following anaesthetic</p> <p>(c) Inform senior staff if Lucy does not pass urine after 6–12 hours have elapsed post-anaesthetic. Urinary retention can be a complication of anaesthesia and operation</p>	Passed urine in toilet during late evening
<p><i>Personal cleansing and dressing</i></p> <p>Unable to maintain own hygiene</p> <p>(a) General</p>	Provide conducive environment and assist Lucy's mother in meeting Lucy's hygiene and clothing requirements	<p>(c) Check Lucy has received analgesia for pain, before attempting to wash her</p> <p>(b) Offer sips of water before and after washing</p> <p>(c) Wash hands and face and put on clean nightgown</p> <p>(d) Change bed linen, especially pillowcase, if necessary</p>	Hands and face washed, clean nightgown and bed linen
<p>(b) Oral</p>	Prevent halitosis and oral infection	<p>(a) Offer oral hygiene every 2 hours using a small amount of mouthwash solution and swabs</p> <p>(b) Brush Lucy's teeth</p> <p>(c) Prevent Lucy from swallowing solution</p>	Breath smelling of blood, mouthwash attempted unsuccessfully Teeth cleaned
<i>Controlling body temperature</i>	See under Safety		
<p><i>Mobilising</i></p> <p>Unable to mobilise due to conscious level and potential for bleeding</p>	<p>Promote gentle mobilisation (refer to local policy, some surgeons like the children to mobilise as soon as possible)</p> <p>Prevent pressure sores</p>	<p>(a) Lucy should be slowly encouraged to sit up and take interest in her surroundings, dependent on level of consciousness and blood pressure</p> <p>(a) Check pressure areas when washing and attending to her</p> <p>(b) Encourage to move limbs</p>	<p>Not interested in surroundings: still very sleepy</p> <p>No redness of pressure area sites</p>
<p><i>Working and playing</i></p> <p>Unable to play normally</p>	Promote comforting play	<p>(a) Ensure Lucy has her nurse doll in bed with her</p> <p>(b) Encourage Mum and, later, Dad to read a story to her</p>	Cuddled doll and Dad read her favourite story
<i>Expressing sexuality</i>	See under Personal Cleansing and Dressing, and Working and Playing		
<p><i>Sleeping</i></p> <p>Unable to sleep due to environment and operation</p>	Promote sleep to aid healing and recovery	<p>(a) Perform necessary care together to minimise sleep disturbance (observations are an exception)</p> <p>(b) Provide a quiet, dark environment</p> <p>(c) Encourage Mum to eat and drink and move away from the bedside occasionally, especially when Lucy is deeply asleep</p> <p>(d) Ensure analgesia is effective, thereby enhancing sleep</p>	<p>Slept all day, except for waking for sips of water, reassurance or toilet</p> <p>Mum eventually ate a sandwich at 8 pm</p>
<p><i>Dying</i></p> <p>(p) Problem: fear of not waking from anaesthetic</p>	Prevent anxiety and provide explanations	<p>(a) In simple language reassure Lucy that she has woken up and can now sleep normally</p> <p>(b) Explain to Mum that bleeding could continue after operation and frequent observations could detect haemorrhage</p>	No expression of anxiety about anaesthetic once woken. Mum still anxious

Lucy's subsequent care plan is based on the relevant problems still applicable to her care and recovery. Only some of the original 12 Activities of Living are necessary to include in the subsequent plan. These are shown in Table 14.5.

Table 14.5 Subsequent post-operative care plan

Assessment of problems	Goals	Nursing action and rationale	Evaluation
<p><i>Breathing and safety</i></p> <p>(p) Problem: haemorrhage due to infection (secondary)</p>	Prevent infection in tonsil beds, thus minimising haemorrhage and subsequent airway obstruction	<p>(a) Lucy's observations, if stable, should be changed to hourly pulse and respirations and 4-hourly temperature. Then to 4-hourly TPR</p> <p>(b) Report any pyrexia immediately or alterations to other vital signs</p> <p>(c) Encourage fluids to prevent slough formation and infection at operation site. Fluids encourage muscular action of throat</p>	<p>T = 36.8°C</p> <p>P = 102/min</p> <p>R = 22/min</p>
<p><i>Communication</i></p> <p>Pain on swallowing and referred pain in ears</p> <p>Anxiety following operation and about returning home</p>	<p>Prevent pain by analgesia and promote swallowing</p> <p>Prevent anxiety by explanation and reassurance and contact with community</p>	<p>(a) Prior to mealtimes, and as necessary, administer prescribed oral paediatric analgesia</p> <p>(b) Monitor effect of analgesia</p> <p>(c) Offer frequent clear fluids</p> <p>(d) Reassure Lucy and Mum that the pain could be relieved by analgesia and would gradually subside</p> <p>(a) Explain all procedures to Lucy; making use of play items</p> <p>(b) Explain Lucy's progress to parents</p> <p>(c) Encourage Mum to mix with other parents whose children have had a similar operation, also to phone her husband and to take meals regularly</p> <p>(d) Contact GP and other relevant community personnel</p>	<p>Oral analgesia given before meals with effect</p> <p>Clear fluids and tea given. Clear explanation given of Lucy's progress; Mum still anxious</p> <p>Phoned husband in morning. Doctor to write letter to GP</p>
<p><i>Eating and drinking</i></p> <p>Difficulty with eating a 'solid diet' due to sore throat</p>	Gradual rehydration and introduction of 'solid' diet	<p>(a) Lucy enjoyed drinking cups of tea and these should be encouraged as she does not like fruit juices (except blackcurrant)</p> <p>(b) Lucy should be encouraged to eat:</p> <p>Breakfast: Cornflakes and/or toast, cup of tea</p> <p>Mid-morning: Drink</p> <p>Lunch: meat, vegetables, potatoes (small amount), jelly and ice cream, 1 cup blackcurrant juice</p> <p>Tea: half sandwich and cup of tea</p> <p>Supper: Fish fingers and beans, cup of tea</p> <p>Bedtime drink: wanted nil, but persuaded to have blackcurrant juice (Milk avoided due to formation of a 'coat' on operation site)</p> <p>Encouraging a 'solid' diet prevents infection and encourages muscle activity in throat</p>	<p>Lucy ate: a small breakfast of cornflakes</p> <p>At lunch she ate meat and vegetables and ice cream</p> <p>At supper, fish fingers only</p> <p>She drank tea and blackcurrant</p>
<p><i>Personal cleansing and dressing, and expressing sexuality and elimination</i></p> <p>Unable to maintain own hygiene and dressing</p>	Promote cleanliness and encourage Lucy towards independent care	<p>(a) Assist Lucy and Mum with a bath during the morning</p> <p>(b) Brush teeth night and morning and offer mouthwashes if mouth has unpleasant taste</p> <p>(c) Encourage Lucy to use toilet on her own</p> <p>(d) Assist Mum to dress Lucy in new pretty dress, a present as she had been 'brave'</p>	<p>Bath given, teeth clean, going to toilet on her own</p> <p>Very proud of her new dress</p>

Assessment of problems	Goals	Nursing action and rationale	Evaluation
<p><i>Mobilising, working and playing</i></p> <p>Reluctant to mobilise and play</p>	<p>Gentle mobilisation and safe play (see Mobilisation under immediate care plan)</p>	<p>(a) Encourage Lucy and Mum to mobilise and mix with other children            (b) Ensure 'nurse doll' is at hand            (c) Re-introduce Lucy to play leader. Encourage to draw pictures of nurses, doctors, ward, etc.            (d) Ensure Lucy receives cards from family and schoolfriends</p>	<p>Reluctant to play with other children. Drew a picture of a nurse            Opened all cards with excitement</p>
<p><i>Sleeping</i></p> <p>Lack of sleep due to strange environment and operation</p>	<p>Provide environment for rest and sleep</p>	<p>(a) Encourage Lucy to rest in afternoon            (b) Settle Lucy for bed at night by 6 pm and to allow Dad to read a story</p>	<p>Slept for 1½ hours after lunch            Tired by 6 pm, slept after Dad's story</p>

On the morning of the following day, the House Officer assessed Lucy post-operatively to ensure she could be discharged.

## 6 Medical assessment

- The Doctor examined Lucy's ears, nose and throat for redness, swelling and healing.
- He noted the 4-hourly TPR recordings and confirmed with the nurse that Lucy did not have a pyrexia.
- Lucy was asked if she was eating and drinking.
- Lucy's pain was assessed, in relation to swallowing and earache.

### (g) Advice on leaving hospital

Written advice and information included the following important points.

1. Rest and sleep to be encouraged (Lucy may need an afternoon nap and 'early to bed').
2. Continue to encourage a normal diet and good intake of fluids.
3. Give analgesia (as prescribed) if necessary before meals. This is only to be given if Lucy complains of pain on swallowing or earache. Persistent symptoms should be notified to GP.
4. No school until after ENT appointment.
5. Avoid crowded places where infection is likely to be contracted, e.g. shopping centres. Avoid swimming until after appointment.
6. Encourage play in warm fresh air.
7. Mother should contact GP or hospital if bleeding occurs or should she be worried about Lucy.

An appointment for approximately 2 weeks' time was given. Lucy and family left the ward, happy to be going home. Mother looked tired, but more relaxed than previously, and Lucy said a friendly goodbye to the staff.

## Nursing care plan for the child undergoing an emergency appendicectomy for a non-perforated appendix

### (a) Introduction to care plan

The care plan outlined for Ahmed undergoing appendicectomy provides the reader with a detailed account of his care. See Introduction to care plan on page 98. No specific nursing model has been chosen to guide the nursing process

used here. However you may like to use an Activities of Living Model or a model with which you are familiar.

**(b) Introduction to Ahmed**

Late on Tuesday afternoon, Ahmed (Figure 14.14), an Indian boy aged 11 years, was admitted to the ward complaining of abdominal pain. Earlier in the day, Ahmed had been at school where the teacher had noticed he looked pale and unwell.



Figure 14.14

At lunchtime, Ahmed went home with his two brothers. On arrival in the house he went to the bathroom to vomit. This worried his mother who wondered if it was something he had eaten during the morning. Ahmed said the pain had started after breakfast and it had worsened during the morning. The family waited for Ahmed's father to come home. By then the pain in his abdomen was severe and he was upset and crying. His father decided to take him to the local casualty department and drove the whole family there by car.

In casualty, after examination, a provisional diagnosis of appendicitis was made. Ahmed was admitted to the ward for an appendicectomy in the early evening, and was accompanied by his parents and five brothers and sisters.

**(c) Normal structure and function of the appendix**

See Hunt and Sendell, *Nursing the Adult with a Specific Physiological Disturbance*.

**(d) Appendicitis**

Appendicitis is inflammation of the appendix, usually due to obstruction of the lumen by a faecolith (hard fragment of faeces). It is a common cause of abdominal pain in childhood.

## 1 Signs and symptoms

1. Pain around the umbilicus, which within a few hours moves round the abdomen to localise in the right iliac fossa.
2. On palpation of the abdomen, the child exhibits 'guarding' (rigidity on both sides of the abdomen).
3. Mild pyrexia, around 37.5–38° C.
4. Nausea and vomiting.
5. Constipation (younger children may have diarrhoea due to proximity of the rectal structures).
6. Blood cell studies may show a moderate leucocytosis (white cell count increase).

## 2 Differential diagnosis of appendicitis

This may be difficult as a child can manifest abdominal pain as a feature of other illnesses, such as those outlined below.

1. Mesenteric adenitis (inflammation of the mesenteric glands which may follow a throat infection).
2. Constipation.
3. Urinary tract infection.
4. Right lower lobe pneumonia.
5. Psycho-social problems (psychosomatic pain).

## (e) Appendicectomy

This is the surgical removal of the appendix through a laparotomy incision. The aims of this surgery are:

1. To relieve pain.
2. To prevent perforation of the appendix and subsequent peritonitis.

## 1 Perforated appendix and peritonitis

(Refer to Hunt and Sendell: *Nursing the Adult with a Specific Physiological Disturbance*, Intestinal obstruction.)

If the appendix perforates in a child, generalised peritonitis can follow. This is due to the inability of the mesentery to 'seal off' infected fluid discharged into the peritoneum from the appendix.

### Suggested exercise

Using the information provided about Ahmed, his emergency admission and appendicitis, assess the problems you think should be considered in his pre-operative care plan. (Use Table 14.6 to check your assessment of problems.)

## Evaluation

Ahmed vomited once and his temperature was recorded as 37.5°C. He was given intramuscular analgesia in the form of a premedication. He slowly went to sleep, with his family sitting by the bedside.

## 2 Knowledge of hospital admission and illness

Ahmed and family had a very limited understanding of appendicitis. All members of the family seemed frightened. Ahmed had visited a cousin in hospital some years ago. Very little preparation for hospital had been given by parents, due to time limit, and Ahmed had not read any books or comics explaining hospital and operations.

## (f) Admission and pre-operative care plan

Table 14.6 Pre-operative care plan for Ahmed Ranjit

Assessment of problems	Goals	Nursing action and rationale
1. Abdominal pain	<p>Reduce and control pain prior to theatre</p> <p>Prevent shock due to pain, infection and fluid loss</p> <p>Reduce fear and anxiety by explanation</p>	<p>(a) Place Ahmed in bed in ward where he can be easily observed</p> <p>(b) Position comfortably to help relieve pain</p> <p>(c) Analgesia may be withheld if it could 'mask' signs of perforation</p> <p>(a) Hourly temperature (significant increase might indicate perforation and peritonitis)</p> <p>(b) Half-hourly pulse and respiration (tachycardia and difficulty with breathing may also indicate peritonitis)</p> <p>(a) Explain all procedures to Ahmed</p> <p>(b) Encourage family to be by bedside and to assist with care</p>
2. Nausea and vomiting	<p>Prevent further nausea and vomiting</p> <p>Prevent inhalation and obstruction of airway post-operatively</p> <p>Prevent dehydration</p> <p>Prevent dry, distasteful mouth and predisposition to oral infection</p>	<p>(a) Ahmed should be told he must not have anything to eat or drink in preparation for surgery to prevent vomiting and more severe pain</p> <p>(b) A sign should be placed on his bed and a badge on pyjamas stating 'nothing by mouth'; family should understand information (an interpreter may be needed)</p> <p>(a) Monitor and record all output, urine and vomit, and observe state of hydration</p> <p>(b) Provide Ahmed with a vomit bowl and tissues</p> <p>(c) Show family how to cope should he vomit</p> <p>(a) As Ahmed is being fasted, he should be offered hourly mouth washes but care should be taken to ensure he does not swallow these</p>
3. Pyrexia	Monitor and reduce pyrexia	<p>(a) Ahmed was placed on an hourly temperature recording to monitor degree of shock and pyrexia</p> <p>(b) His temperature may rise if the appendix is ready to rupture</p> <p>(c) Ahmed's pyjamas should be cotton and bedclothes lightweight</p> <p>(d) He may need a fan by the bedside to cool the air</p>
4. Anxiety and fear shown by Ahmed and his family	<p>Reduce anxiety</p> <p>Keep family together</p>	<p>(a) Ensure family are seated comfortably by bedside</p> <p>(b) The nurse who admits Ahmed may need to spend some time with the family explaining appendicitis and appendicectomy</p> <p>(c) Information about the hospital, the ward and visiting should be made clear</p>



Table 14.7 Nursing history sheet

<b>Name:</b> AHMED RANJIT	<b>Activities of daily living</b>
<b>Age:</b> 11 years <b>Date of birth:</b> 3.2.1972	<b>Play and education:</b> Attends local secondary school. No problems with work. Father has promised a new model car if brave about operation.
<b>Nationality:</b> British <b>Religion:</b> Muslim	<b>Food:</b> Not to have pork and beef. Ahmed likes Western food but parents prefer him to have Indian food. Ahmed has not eaten since breakfast.
<b>Parents:</b> Indian	<b>Elimination:</b> Ahmed is very shy and will need privacy when using the toilet.
<b>Address:</b> 123, Portwood Street, Birmingham	<b>Hygiene:</b> Usually washes himself. Requires privacy to prevent embarrassment.
<b>Next of kin:</b> Mr and Mrs Ranjit: mother and father, address as above	<b>Clothes:</b> Wearing own clothes. Parents want to take these home to wash. Cotton pyjamas provided by hospital.
<b>Phone number:</b> Home: Work:	<b>Rest and sleep:</b> Usually goes to bed between 9 and 10 pm. Sleeps through till 7 am.
<b>Parents' occupation:</b> Father: Works in electronics factory Mother: Housewife	
<b>Siblings:</b> 5 (3 boys, 2 girls)	

### 3 Social background

The family live in a small terraced house in the vicinity of other Indian families. The grandparents live nearby. Father understands a reasonable amount of English, as many of his work colleagues only speak English. Mother does not speak any English. She tends to mix with other Indian women and does not go out a lot.

No facilities in the community health team were used and no particular health visitor was known to the family.

*General practitioner:* Dr I. Singh

*Address:* The Health Centre, West Barr, Birmingham

*Phone Number:* 021-123 9999

### 4 Physical details

*Weight:* } (Measured later, as not able to stand upright due to pain.)  
*Height:* }

*Urine specimen:* trace of ketones otherwise NAD.

*Temperature:* (Refer to care plan, ½-hourly recordings.)

*Pulse:* (Refer to care plan, ½-hourly recordings.)

*Respirations:* (Refer to care plan, ½-hourly recordings.)

*Allergies:* No known allergies to medicines, food or adhesive plaster.

*Medicines:* Not taking any medicines at present.

*Immunisations:* Difficult to ascertain if any immunisations given. Need to check this later, perhaps with school.

### 5 Physical examination and medical history

The house officer arrived to examine Ahmed, take a medical history and obtain consent to operation from his parents. Ahmed's father stayed with him during the examination which included a per rectum examination. Blood specimens were taken for Hb, sickle cell, WBCs, electrolytes. The diagnosis was confirmed on this evidence and the medical history given by father (refer to Introduction to Ahmed, page 110, and Signs and Symptoms of Appendicitis, page 111). Ahmed was considered suitable to withstand an anaesthetic and operation.

#### Consent form

Father signed a consent to operation form. The house officer told Ahmed that he would see him in the anaesthetic room.

### 6 Preparation of care plan

From the nursing history a pre-operative assessment is made and a care plan prepared (Table 14.8).

**Table 14.8 Immediate pre-operative care plan for Ahmed Ranjit**

Assessment of problems	Goals	Nursing action and rationale
1. Anxiety due to hospitalisation and emergency operation	<p>Minimise anxiety</p> <p>Prevent post-operative emotional complications</p> <p>Involve play leader or child who could help Ahmed understand operation</p> <p>Provide a homely environment</p>	<p>(a) Following explanation and details on admission, Ahmed and parents will need further information</p> <p>(a) Explanation should include his wound site, the possibility of an IV infusion and the need to remain nothing by mouth</p> <p>(b) Degree of pain should be discussed and the use of injections and bedrest to minimise this</p> <p>(a) Ahmed should be encouraged to verbalise his anxieties: these may refer to the operation or to being 'left alone' in hospital</p> <p>(a) Parents should be offered residency (parents couldn't decide on this)</p> <p>(b) A ward tour to familiarise his parents with all the facilities should be included</p>
2. Problems (p): Infection in wound site post-operatively	Prevent post-operative infection	<p>(a) Assist Ahmed's mother with washing him and change into clean operation gown</p> <p>(b) Check that his bed is clean</p> <p>(c) Check hair for infestation</p>
Post-operative urinary retention	Prevent post-operative urinary problems	<p>(a) Encourage Ahmed to pass urine to ensure empty bladder</p> <p>(b) Provide privacy for urination</p> <p>(c) Test a urine specimen for abnormalities (see history sheet)</p>
Inability to maintain safe environment	Promote general safety	<p>(a) Place identity band on Ahmed (name, age, DOB, religion and hospital number)</p> <p>(b) Ensure consent form signed and dated</p> <p>(c) Assist mother to remove from Ahmed any jewellery or any metal objects as these could cause 'burns' due to use of diathermy in the theatre; a special wrist watch required some lengthy explanation before it could be removed</p>
Airway obstruction post-operatively	Prevent inhalation of secretions	<p>(a) Administer intramuscular pre-medication as ordered by doctor to sedate, relieve pain and dry secretions in the gastro-intestinal tract</p>

### Evaluation

Ahmed was safely prepared for theatre.

## 7 Reassurance before operation

Ahmed was asleep when the porter arrived to take him to theatre. His parents decided to return home for a couple of hours to prepare supper for the siblings. They had promised Ahmed that they would return about 9 pm. The nurse ensured that father had the hospital telephone number and name of the ward, and tried to relieve their fears.

You should refer to page 105, Lucy going to theatre for a planned adenotonsillectomy, for the responsibilities in accompanying a child to theatre.

## 8 Preparation for post-operative care

Refer to page 105 for guidance on preparation of the bed area. Appendicectomy in childhood is a common surgical procedure in a paediatric ward. You may have the opportunity to nurse such a child post-operatively.

**Table 14.9 Immediate post-operative care plan for an appendicectomy (Ahmed Ranjit)**

Assessment of problems	Goals	Nursing action and rationale	Evaluation
1. Potential problem: airway obstruction 2. Potential problem: haemorrhage 3. Pain 4. Anxiety: (a) Ahmed (b) Family and siblings 5. Nausea and vomiting 6. Dehydration due to post-operative period without oral fluids 7. Potential problem: wound infection 8. Potential problem: cessation of bowel movement 9. Potential problems due to limited mobility: (a) Chest infection (b) Pressure sores 10. Inability to maintain own hygiene: (a) Oral (b) General 11. Elimination following abdominal surgery 12. Decreased ability to maintain safe environment			

**Suggested exercise**

Use the nursing problems stated here (Table 14.9) to decide on appropriate goals and actions. Rationale usually states why the action is taken. You can use a 4th column for this. An alternative is to use the 4th column for evaluation. You may find it useful to refer to Lucy’s post-operative care plan (pages 105–107).

You may need to add individual problems relevant to the child you have nursed. You may consider that the order in which the problems are stated should be rearranged to specifically relate to the child you have chosen. The problems stated here should be used as guidelines.

**9 Subsequent post-operative care**

As Ahmed recovers from his operation, some problems, potential or otherwise, should diminish, e.g. airway obstruction. Other problems may change in priority. You may need to alter or rewrite the care plan to assist Ahmed in recovering from appendicectomy on subsequent post-operative days. The approach you use will depend on the method adopted by your ward policies.

**Suggested exercise**

Ahmed had a non-perforated appendix and a straightforward appendicectomy. You could compare his pre- and post-operative problems with a child who has a perforated appendix and peritonitis and the differences incurred.

(g) Discharge and advice for going home

During Ahmed's hospital stay, preparation for discharge should be a continual thread throughout his care.

After 6 days, Ahmed was considered well enough to return home. The doctor examined him and checked the wound site (sutures removed on 5–7 days). Ahmed had been eating small quantities of food and had had his bowels open 3 days post-operatively. After an initial slight pyrexia on the night of his operation, his temperature had been stable and normal. Mobility had proved difficult as Ahmed was not keen to walk and his parents did not see the need to encourage this. It was the other children in the ward who finally encouraged him to mobilise.

## 1 Written instructions for going home

### Wound care

1. If sutures have not been removed the district nurse would possibly be asked to do this at home.
2. If sutures removed, have a daily bath and apply dry dressing with sterile gauze if necessary (the district nurse may do this).
3. Clothes which do not rub wound site should be worn.
4. Any swelling or discharge should be reported to GP.

### Pain

1. Avoid over-exertion by strenuous activity.
2. Prevent constipation.
3. Oral analgesia as prescribed.

### Activities

Tree climbing, bicycle riding, football and other activities which might put strain on the wound site should be avoided.

### Rest and sleep

This should be arranged in order to aid healing.

### Diet and fluids

A 'balanced' diet should be eaten to aid wound healing. Meals which include fibre (vegetables, fruit, wholemeal cereals) will help to avoid constipation.

### School

Ahmed should not return to school until after the outpatient follow-up appointment, usually in 2–3 weeks. Ahmed may like to have a small amount of schoolwork to do at home, as he feels better.

Ahmed and family were happy to go home. His father was reassured that he could contact the ward if he was worried and a date for an appointment was given.

## Nursing care plan for the toddler undergoing day surgery for circumcision

(a) Introduction to day surgery

Many paediatric units undertake day surgery for children who are either at a susceptible age to being separated from their parents, or for 'minor' surgery which may not need hospital after-care.

Children admitted for day surgery may raise the question from nurses: 'How do I get to know the child and his family in a day?' Although time is limited, *it is possible* to take a nursing history and create a care plan, even though the child is admitted on the same morning as his operation.

A toddler has been chosen, as he is at a very vulnerable age: he is old enough to understand that he is away from home but not old enough to understand why.

## (b) Introduction to Matthew

Matthew (Figure 14.15), an 18-month toddler, is to be admitted to the ward at 8 am for a circumcision later in the morning. On the day of the operation he is brought straight to the ward by his mother and father and sister Suzie. Suzie is 4 years old and outwardly very excited about coming into hospital with her brother. Her enthusiasm is not shared by her parents who are naturally anxious for their son.

In preparation for Matthew's operation, the parents have tried to familiarise themselves with his pre- and post-operative care. This has been achieved by visiting the ward prior to admission and talking to the health visitor whom they see in the health clinic. It is important that the parents understand about the operation as preparation for surgery begins, and after-care follows, at home.



Figure 14.15

## (c) Circumcision

### Suggested exercise

In order to familiarise yourself with Matthew's operation, find out the following:

1. *Definition* of need for circumcision.
2. *Normal structure and function* of male genitalia in the young child.
3. *Indications* for a circumcision:
  - (a)
  - (b)
  - (c)
  - (d)
4. *Specific complications* of a circumcision related to post-operative care. These are important, as much of Matthew's after care will be at home.

## (d) Matthew's preparation at home and admission to hospital

Matthew's father had given him a last glucose drink at 6 am. After that he had been carefully observed and pacified when breakfast was not forthcoming. Explaining to an 18-month toddler that he cannot have breakfast because . . . is not an easy task. Matthew may regard this as a punishment. Distraction from the need to eat is probably the best policy. Explanation of his operation is best reinforced at the appropriate time. Mother had bathed Matthew and dressed him in clean clothes.

Matthew's operation was planned for 10 am, the family arrived promptly at 8 am and after ensuring he had the hospital 'phone number, father left for work.



operation and will visit Mum on the first and any necessary subsequent post-operative days.

When Matthew was a baby, the social worker had been involved with the family to assist in obtaining a grant for a new roof for their house as the bathroom and one bedroom were damp. Mum is a housewife and Dad trains apprentices for a firm on the industrial estate near their home. Financially the family appear able to cope.

#### 4 Physical examination

Invariably during the history-taking interview, the doctor arrives to examine the child to ensure that he is fit for surgery. Weight is checked and pre-medication prescribed.

#### 5 Preparation of care plan

From the time of admission until operation, there was a two-hour period to admit and prepare Matthew for surgery. Table 14.11 shows the pre-operative care plan.

Table 14.11 Pre-operative care plan for Matthew Smith

Assessment of problems	Goals	Nursing action and rationale
1. Anxiety of Matthew and his Mum due to hospital, operation and after care	<p>Relieve child's and mother's anxiety</p> <p>Prevent post-operative emotional complications</p> <p>Provide homely environment</p> <p>Involve play leader</p>	<p>(a) Matthew and his Mum and sister should be kept together</p> <p>(b) Ensure that mother understands explanation of procedure</p> <p>(a) Matthew should have simple clear explanation of, e.g. temperature recordings, changing into pyjamas, pre-medication</p> <p>(a) Give Mum a comfortable chair to sit in</p> <p>(b) Show her the ward, especially where to make drinks and snacks, and the toilet and rest room</p> <p>(a) Matthew's sister was not content to 'sit still' in a chair but was happy to be involved with the play leader and other children on the ward</p>
2. Problems (p): Post-operative blood loss from wound site Inability to maintain safe environment Infection in wound site post-operatively	<p>Prevent post-operative complications</p> <p>Promote general safety and minimise risks of infection</p>	<p>(a) Assist doctor in collection of blood sample for Hb, WBCs, electrolytes (if not previously collected during an outpatient visit)</p> <p>(b) Check that temperature, pulse and respirations are within normal limits (especially important, as post-operative bleeding may follow a circumcision)</p> <p>(a) Check consent form signed, dated and explained</p> <p>(b) Place identiband on Matthew (name, age, DOB, religion, hospital number)</p> <p>(c) Place an 'I must not eat or drink' sign on Matthew and his bed</p> <p>(d) Check with Mum that he has remained 'nothing by mouth', had a bath, wears clean cotton pyjamas and no jewellery</p> <p>(e) With Mum's assistance, check Matthew has clean groins, umbilicus and penis</p> <p>(f) Check that his bed linen is clean</p> <p>(g) Collect a urine sample for testing</p>

#### Evaluation

Mum's anxiety was minimised with careful explanation and using diagrams. Matthew was safely prepared for theatre.

## 6 Reassurance before operation

Matthew was given an oral pre-medication which he was told would make him sleepy. As the medicine tasted pleasant Matthew swallowed it without too much difficulty. His sister wanted some too but explanation solved this problem. Mum cuddled Matthew who reluctantly went to sleep. She accompanied him and the nurse to theatre. (Check page 105 to ensure responsibilities of the nurse accompanying patient to theatre are quite clear.)

The nurse and Mum returned to the ward where Mum had some coffee and tried to sit calmly until Matthew's return.

## 7 Preparation for post-operative care

Matthew's operation took a short time and the nurse collected him from the recovery room, where he was already beginning to rouse from the anaesthetic.

Post-operative care is outlined in Table 14.12.

Table 14.12 Immediate post-operative care plan

Assessment of problems	Goals	Nursing action and rationale
1. Potential problem: airway obstruction	Maintenance of airway	(a) Although Matthew had been placed in the semi-prone position, with an airway in his mouth, he soon recovered consciousness (b) On return to the ward he was maintaining his own airway and crying
2. Mum's anxiety and Matthew's anxiety and fears	Minimise anxiety	(a) Mum cuddled Matthew the minute he returned to the ward. He seemed reassured by this and laid down to sleep with Mum's arms still round him (b) Suzie stroked his face and brought his special teddy
3. Potential problem: haemorrhage from wound site	Monitor and record signs of haemorrhage  Report any bleeding  Prevent pressure on wound site	(a) Matthew was placed on a half-hourly pulse and respiratory chart (a rise in pulse could indicate haemorrhage) and 4-hourly temperature (a) The wound site was checked frequently for bleeding and swelling (b) Paraffin gauze covered the site (c) Matthew's general colour and level of consciousness were monitored (a) He was not to wear nappies or pyjama bottoms (b) Bedclothes were elevated by the use of a bed cradle
4. Pain: operation performed in painful site	Monitor and record pain and minimise pain observed	(a) Matthew's tears appeared more as distress in separation from Mum than pain (b) Analgesia had been ordered on his medicine chart if needed and was given later in the day
5. Potential problem: decreased urination due to position of wound site	Prevent discomfort at wound site  Must pass urine before discharge	(a) Matthew was offered a potty every hour but was not able to urinate at first (b) Oral analgesia was given as per chart which induced him to sleep and during this period he was incontinent of urine (a) The child needs to pass urine before discharge; because of the nature of the operation and discomfort, retention can occur
6. Potential problem: nausea and vomiting	Prevent vomiting	(a) Matthew was thirsty a few hours after surgery and was offered a small amount of weak fruit juice by teacher beaker (b) The anaesthetic may have a nauseating effect so fluids are given in small amounts a few hours after surgery



Table 14.12 (cont.)

Assessment of problems	Goals	Nursing action and rationale
7. Potential problem: dehydration	Prevent dehydration due to pre-operative fast  Gradual resumption of toddler diet	(a) Once the initial fruit juice drink was tolerated, Matthew was encouraged to drink every 2 hours to rehydrate him and encourage urination  (a) At supper Matthew was offered toddler diet, a small amount of dessert, which he took eagerly
8. Inability to maintain own hygiene: (a) Oral  (b) General	Prevent dry furred mouth  Promote comfort and cleanliness	(a) Matthew tolerated fluids without vomiting, so mouth care not needed  (b) Teeth were cleaned after supper  (a) Mother washed Matthew before supper and put on a clean pyjama top  (b) His bed linen had been changed when he was incontinent
9. Restricted mobility due to possibility of bleeding from wound site and soreness	Restrict Matthew's mobility to prevent bleeding and discomfort  Provide play and items of comfort while on bedrest	(a) During the day in hospital Matthew was either nursed in his cot or on his mother's lap  (b) Gradual mobilisation usually occurs as the toddler feels better  (a) Matthew already had his teddy  (b) During the day other children brought him toys to play with but he was not interested in these — he just wanted his Mum
10. Potential problems after discharge	Prepare parents for care needed at home	(a) Both parents need explanation: this includes care and observations following a circumcision and any expected emotional changes in Matthew  (b) Written advice is given

By early evening, Matthew's Dad had arrived and was relieved to see his son awake, even though he was in some discomfort. His wife was glad to be able to share her feelings with her husband and to have him help her control Suzie who by now was becoming bored and mischievous.

### (e) Discharge and advice for after-care at home

After supper the doctor examined Matthew to see if he was ready for discharge. The following points were checked:

1. General colour and level of consciousness following anaesthesia now satisfactory.
2. The wound site did not indicate excessive bleeding or swelling.
3. Observations of temperature, pulse and respiration since operation were stable.
4. Matthew had passed urine since operation.
5. Matthew was tolerating fluids and light diet.
6. The trained staff were happy about the parent's ability to cope with Matthew's after-care.

#### 1 Written advice

The parents were eager to return home. Written advice included the following points for his care.

##### Wound care

1. Matthew's wound was to be kept dry for 24–48 hours after operation. He could then have a *saline bath* to soak the dressing off. Mum should not attempt to pull off the dressing. He was *not to touch* his wound.
2. Matthew was *not to wear nappies, pants or trousers* for at least a couple of days post-operatively. If the wound became more *swollen* than on discharge or, particularly, *started to bleed*, the parents were to inform the GP or the hospital straight away.
3. If Matthew *failed to pass urine*, this should also be reported promptly.
4. Should mother notice the wound *smelling or discharging*, the GP was to be informed.

### **Mobility**

Matthew should not ride his tricycle or rocking horse until after the outpatient appointment. This sort of activity might cause swelling, bleeding and discomfort.

### **Clothing**

Mum was happy to let Matthew run around without nappies, as she was potty-training him. He should be kept warm and comfortable.

### **Diet and fluids**

Normal toddler diet should be resumed the following day and Matthew should be encouraged to drink plenty of fluids to help urination.

### **Rest and sleep**

Matthew will probably regulate this himself but adequate rest will aid healing.

### **Social facilities and personnel**

Arrangements had already been made for the health visitor to call the next day. A letter was sent to the GP about Matthew. Parents were happy to contact him should the need arise. The ward telephone number was given to them with an outpatient's appointment for 2 weeks.

## **2 Importance of after-care information**

The information given to parents on discharge of a child following day surgery is very important. Parents should clearly understand the implications of the surgery and, without inducing anxiety, any specific complications that could occur. The information given to parents should be balanced by giving them time to ask questions and express anxieties.

The parents should feel relaxed and confident in the giving of post-operative after-care.

## **3 Evaluation**

Short-term evaluation of each goal set should take place throughout the day that Matthew is in hospital. The long-term effects of his care and hospital admission may be noted by his parents and the health visitor.

## **Nursing care plan for the infant with gastro-enteritis using a self-care model**

### **(a) Introduction to Jeanette**

Jeanette is a three-week-old baby admitted to the ward with a history of diarrhoea and vomiting for 12 hours.

Jeanette is brought to the ward by her mother and grandmother (Figure 14.16). She is admitted into a cubicle where Mum can be resident with her if she wishes.

Although the immediate medical and nursing goal is to rehydrate Jeanette, care should also be aimed at helping Jeanette's mother to cope. Orem's (1985) Model is chosen to guide the care plan, thus promoting self-care. The model may be used for other children described in this book.

A brief outline of the causes, features and medical treatment of gastro-enteritis precedes the care plan.



Figure 14.16

## (b) Gastro-enteritis

Gastro-enteritis is a common gastro-intestinal problem in young babies. It is a term applied to loss of fluid and electrolytes from the inflamed gastro-intestinal tract, with diarrhoea and vomiting.

### 1 Causes of gastro-enteritis

Gastro-enteritis may be caused by several micro-organisms:

1. *Viral*
  - (a) Enteroviruses – Echovirus
  - (b) Adenoviruses
  - (c) Rotaviruses
2. *Bacterial*
  - (a) *Escherichia coli* (*E. coli*)
  - (b) *Salmonella* species and subspecies
  - (c) *Shigella* species
3. *Fungal*  
*Candida* enteritis

### 2 Clinical features

The problem is characterised by the sudden onset of:

1. *Vomiting* This may be mild or severe.
2. *Diarrhoea* This appears either a few hours or up to 3 days after the onset of vomiting. Stools are green or yellow/green, usually explosive and may number 2–20 per day. Mucus and pus may be present.

Due to vomiting and diarrhoea, a young infant quickly becomes dehydrated. It is for this reason that infants with gastro-enteritis are admitted for hospital care.

3. *Dehydration* The *effects* of fluid and electrolyte loss appear rapidly in the infant due to:
  - (a) An extracellular fluid volume proportionally larger to infant size than in adults.
  - (b) Nutritional reserves which are smaller.

The *complications* are due to:

- (a) Electrolyte imbalance and fluid loss.
- (b) Hyponatraemia (sodium levels depleted which can lead to fits).
- (c) Metabolic acidosis; due to disturbance of electrolytes, causing problems with respirations which may become more rapid and shallow.

Dehydration may be mild or severe and is graded according to the features of fluid loss, also the amount of urinary output, body weight loss and blood electrolyte results.

4. *Pyrexia* This may be low grade or raised to 41°C.
5. *Behaviour change* The infant initially becomes irritable and restless and cries a lot. As vomiting and diarrhoea continue and he becomes dehydrated, he becomes weak, with flaccid muscles, dull eye expressions and feeble cry.

(Refer to the Introduction to the acutely ill child, Fluid requirements, page 90.)

### 3 Treatment and care

#### Fluid and electrolyte replacement

Treatment is primarily directed towards fluid and electrolyte replacement. Depending on the degree of dehydration and general state of the infant, a method of fluid replacement will be chosen accordingly. This may be an oral electrolyte and glucose feed given at regular intervals. In more severe dehydration an infusion may be necessary to quickly restore fluid and electrolyte balance. The objective of fluid replacement is to prevent further deterioration and collapse of the infant.

#### Isolation nursing

This is indicated in most hospitals, certainly until the causative organism is isolated from a stool specimen. Micro-organisms spread quickly from one

infant to another. The route of transmission in gastro-enteritis is via contact with excreted substances. Special attention must be paid to hand washing and disposal of excreta (refer to page 129, Source Isolation Nursing).

### Prescribed medicines

Antimicrobial agents are not generally prescribed, as they may increase the number of stools, due to their action on the gastro-intestinal tract.

Neomycin (an aminoglycoside) may be prescribed for its action in reducing the bacterial population of the colon. It is not absorbed and therefore stays in the gut to act locally.

## (c) Jeanette's admission to hospital

On admission and following a physical examination, Jeanette was assessed by the Doctor as being mildly dehydrated (less than 5% total body weight loss). Jeanette's mother displayed a nonchalant, occasionally aggressive approach to the nursing staff. It was suggested that she was anxious and guilty about her baby's illness. The family were given time to settle in the cubicle and then the nurse took a nursing history.

## 1 Nursing history

Table 14.13 Nursing history sheet for Jeanette Brown

Name	Age and DOB	Sex
Jeanette Brown	3 weeks 23.10.85	Female
<i>Address:</i> Flat 12 Turner Estate Eastside London	<i>Nationality:</i> British <i>Religion:</i> Church of England Not christened	
<i>Next of Kin:</i> Miss Brown Living in her Mother's flat	<i>GP:</i> Dr Filey, Grumbles Road, Ditcham, London <i>Clinic:</i> Eastside Clinic <i>Health Visitor:</i> Mrs Goodbody	
<i>Phone:</i> None		
<i>Nurse's perception of Jeanette and Mum on admission</i> Fretful baby, looks hungry and unsettled. Mum unwilling to disclose much information about herself. Appears to understand Jeanette's ill health and willing to take responsibility in giving care. Grandmother very supportive, possibly trying to take over care of Jeanette.		
<i>Mum's understanding of Jeanette's normal health state</i> Limited understanding of development, especially in relation to infant feeding.		
<i>Life experiences as they influence Mum and Jeanette</i> Birth of Jeanette increased responsibility for Mum. Lost job because of pregnancy. Lost social contact with friends.		
<i>People with whom Mum and Jeanette live</i> Grandmother		
<i>Responsibility for the care of others:</i> None		
<i>Dependents:</i> None		
<i>Occupation:</i> Unemployed, previously shop assistant		
<i>Housing:</i> 2nd-floor flat, near hospital: 1 bedroom, dining room turned into bedsit		
<i>Financial status:</i> Poor. Financial assistance from DHSS		

## 2 Physical examination and medical history

### Physical examination

The house officer arrived to examine Jeanette and to take a medical history. He observed that Jeanette had:

- Mild dehydration with dry skin.
- Slightly sunken anterior fontanelle.
- Anxious and irritable behaviour.
- Loose stools and vomiting.

## Diagnosis

The house officer diagnosed gastro-enteritis.

## Family medical history

Miss Brown had not had any illnesses. Pregnancy had been uneventful, although labour had been prolonged. Grandmother was well at present but kept regular hospital appointments for a gastro-intestinal problem. Miss Brown knew of no illnesses on her side or the paternal side of the family.

## 3 Preparation of the care plan

Jeanette's problems (deficits) were assessed using the eight universal self-care needs (requirements) advocated by Orem (1985), Table 14.14. Although Mum was 16 years old and therefore still developing through adolescence, she was willing and able to engage in Jeanette's care.

Table 14.14 Nursing care plan for Jeanette Brown

Universal self-care needs	Assessment of self-care and identification of problems (in italics)	Goals for Mum and baby	Type of nursing intervention and detailing of care	Evaluation of self-care goals
Prevention of hazards to human life; human functioning and human well-being	Jeanette is <i>susceptible to infection</i> . She is too young to have received any immunisations. She is not known to have any allergies. Jeanette has the <i>potential to spread infection</i> to others via infected faeces	Jeanette's infection will not spread to other patients on the ward Mum will demonstrate she understands how to nurse Jeanette in source isolation and protect her from other infections	<i>Wholly compensatory and educative-supportive</i> Jeanette will be placed in a source isolation cubicle, with a clear label on the door to inform all who enter of the necessary precautions. She should have all her own equipment (refer to P129 source isolation nursing). Mum should be offered a bed in Jeanette's cubicle and taught the principles of protective and source isolation	Jeanette may come out of source isolation when 3 'clear' stools have been recorded by the laboratory. No spread of infection to other patients
	<i>Jeanette is pyrexial:</i> T = 38°C	Jeanette's temperature will reduce to within normal limits (37°C) and Mum will demonstrate she can regulate environmental temperature	Jeanette's temperature to be recorded hourly with pulse and respirations. She should wear a cotton nightgown and have the cot covers elevated. Mum to be shown how to observe and regulate Jeanette's temperature. Head, hands and feet need special attention as they easily become cold	Temperature of 38°C reduced to 37°C within 24 hours of commencing treatment, with Mum regulating environment
	Jeanette is <i>developmentally unable to maintain a safe environment</i> . Mum has a reasonable understanding of promoting safety for Jeanette	Jeanette's Mum will demonstrate she can maintain a safe environment for Jeanette while in hospital and at home	<i>Educative-support</i> Mum will nurse Jeanette in a cot, with cotsides placed in the upright position when asleep. Jeanette will not have a pillow and will be placed on alternate sides to sleep following feeds. Mum will be observed, safely handling Jeanette especially during bathing, playing and feeding. Jeanette's toys should be mechanically safe and washable to prevent spread of infection. Mum will be reintroduced to Mrs Goodbody, the Health Visitor, so that she may receive education about immunisations, etc. (Safety relates to all universal self-care needs.)	Jeanette was safely nursed by Mum. She was reintroduced to Mrs Goodbody

Table 14.14 (cont.)

Universal self-care needs	Assessment of self-care and identification of problems (in italics)	Goals for Mum and baby	Type of nursing intervention and detailing of care	Evaluation of self-care goals
Maintenance of sufficient intake of air	<p>Jeanette has the <i>potential for airway obstruction during periods of vomiting</i></p> <p>Jeanette is a pale looking baby but otherwise alert.                      Pulse = 160 beats per min                      Respirations = 60 per min</p>	<p>Jeanette's airway will be maintained and Mum will demonstrate and understand the importance of this. Jeanette's colour will improve when the infection has cleared</p>	<p><i>Wholly compensatory and educative-supportive</i>                      Jeanette will be nursed in a cot, propped on her side, especially after feeds. Suction and oxygen equipment should be available. Mum will be shown how to position Jeanette.                      Record hourly pulse and respirations, noting tachycardia and shallow respirations which may accompany dehydration</p>	<p>Jeanette maintained her own airway, although her colour remained pale. Mum demonstrated she could maintain Jeanette's airway. Observations reduced to 4-hourly TPR</p>
Maintenance of sufficient intake of food and water (all food in fluid form prior to 3 months old)	<p>Jeanette has <i>vomited her last three feeds</i> and Mum complains <i>Jeanette is hungry 1 hour after vomiting. Jeanette is developmentally unable to provide own fluids and food.</i> Mum normally feeds her 90 ml of modified milk <math>\times</math> 6 in 24 hours. She needs a night-time feed.                      Birth weight = 3.4 kg (at 39 weeks)                      Current weight = 3.5 kg                      Height = 51 cm                      Head circumference = 34 cm</p>	<p>Jeanette's clinical features will show rehydration and her feeding pattern return to normal</p> <p>Mum will be able to demonstrate she can safely prepare a feed and administer this to her</p>	<p><i>Partly compensatory and educative-supportive</i>                      Jeanette's milk feeds will be discontinued and she will be prescribed glucose and electrolyte clear fluids every 3 hours. (This will correct dehydration and restore electrolyte balance.)                      When Jeanette tolerates 'clear' feeds for 24 hours she may be offered <math>\frac{1}{4}</math> strength milk feeds (<math>\frac{1}{4}</math> milk plus <math>\frac{3}{4}</math> clear fluid) progressing to <math>\frac{1}{2}</math> and <math>\frac{3}{4}</math> strength feeds over the next 48–72 hours. Regrading of feeds can only occur if Jeanette does not vomit or have diarrhoea. All vomit should be measured, observed and reported to senior staff. All feeds and vomit should be charted. Gradual regrading of feeds should culminate in returning to 90 ml, 4-hourly <math>\times</math> 6.                      Mum and the nurse should observe Jeanette for features which change in relation to state of hydration, namely: the anterior fontanelle, weight loss/gain, muscle tone, skin elasticity, urine output and general behaviour of the baby. Jeanette to be weighed daily and her weight recorded. Her mouth should be cleaned every 2 hours with swabs to prevent infection</p>	<p>Jeanette tolerated 'clear' feeds and after 24 hours commenced <math>\frac{1}{4}</math> strength milk feeds. No vomiting or diarrhoea occurred, so during the next 24–48 hours she was regraded on to <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math> and full strength feeds. Mum demonstrated she could safely feed Jeanette. Preparations of feed (dilution, sterility, etc.) still to be shown</p> <p>Calculation of feeds and increase should be based on the calculation shown on P. 92. The health visitor will have a responsibility for this. Weight on day 3 = 3.55 kg.                      Jeanette's clinical features did not show deterioration, muscle tone and skin elasticity increased. No oral infection occurred</p>

Table 14.14 (cont.)

Universal self-care needs	Assessment of self-care and identification of problems (in italics)	Goals for Mum and baby	Type of nursing intervention and detailing of care	Evaluation of self-care goals
<p>Provision of care associated with eliminative processes and excrement</p>	<p>Jeanette has <i>frequent, loose, explosive stools</i>. Normally stools are yellow, semi-formed and follow each feed <i>Urine output diminished</i>. Urine testing: ketones present otherwise NAD</p> <p>Jeanette has <i>excoriated buttocks and groins</i>. She is <i>developmentally unable to care for her elimination</i></p>	<p>Jeanette's stools will return to a normal consistency and urine output will increase. Mum will understand the importance of handwashing to prevent spread of infection</p> <p>Mum will demonstrate she can safely clean and care for Jeanette's bottom and genitalia. Jeanette's bottom will heal</p>	<p><i>Partly compensatory and educative-supportive</i> Mum will be shown how to change, wash and dispose of faeces and nappies to prevent spread of infection. She will be taught about the effect of clear and milk feeds altering stool consistency. Stools will be observed for type and frequency and charted. Stool specimens should be sent to laboratory every day. The infecting organism will be isolated from the stool, until the infection has cleared. Urine output to be noted and charted on a fluid balance chart. Jeanette to be nursed exposed, lying on a nappy under the bedcradle. Everytime she urinates or has diarrhoea Mum should be encouraged to wash and dry her bottom and apply a barrier cream</p>	<p>No spread of infection occurred and Jeanette's Mum demonstrated that she could safely dispose of faeces and nappies. No further diarrhoea occurred after one episode just after admission. Jeanette's stools returned as 'clear' from the laboratory after two consecutive specimens. Urine output also increased over a 24-hour period; ketones no longer appeared in the urine. Mum cared well for Jeanette's excoriated bottom. Nappies were applied when broken skin had healed. Mum was reminded about constant changing of nappy</p>
<p>Maintenance of a balance between activity and rest</p>	<p>Jeanette is alert; but rather <i>lethargic</i> due to her dehydration. Developmentally she is a normal 3-week-old baby, who is able to demonstrate primitive reflexes (grasp, Moro, rooting, etc.) and momentarily trying to lift her head from the bed. She has <i>no special toys</i>, but appears to like bright coloured toys. Jeanette has <i>never slept well between feeds since birth</i></p>	<p>Mum will understand and respond to Jeanette's developmental changes. She will select appropriate toys for Jeanette</p> <p>Mum will establish a routine for Jeanette's day so that a pattern of sleep will emerge</p>	<p><i>Partly compensatory and educative-supportive</i> The nurse will show Mum the milestones of development which Jeanette has reached. Future milestones should be noted also. Jeanette will be given safe and washable toys while she is in isolation, to prevent future spread of infection to other patients. Mum will be taught about Jeanette having a few of her own toys, which should be bright, safe, cuddly and musical (i.e. musical mobiles, rattles). Mum will be assisted to set a routine for Jeanette including bathtime, feedtimes; the need for play and establishing sleep in relation to the 3-hourly feeding pattern. Mum will be shown how to play with Jeanette when she is better</p>	<p>Mum's response to teaching about Jeanette's milestones was variable. In view of Mum's age, it was decided to ensure that the health visitor would continue this over a long-term basis at home. Grandmother and Mum shopped for toys for Jeanette, deciding on some 'cradle plays' and a soft, pink rabbit With continuing assistance, Mum began to set a routine for the day. Adjustment of the 3-hourly routine to one of every 4 hours was necessary on returning to milk feeds</p>

Table 14.14 (cont.)

Universal self-care needs	Assessment of self-care and identification of problems (in italics)	Goals for Mum and baby	Type of nursing intervention and detailing of care	Evaluation of self-care goals
Maintenance of a balance between solitude and social interaction	Jeanette and her Mum did not interact with other people, except Grandmother. Jeanette received love and affection, but <i>Mum either finds this difficult or is jealous of Grandmother's affection for Jeanette</i>	Mum will understand the importance of touch and speech as a way of communicating with Jeanette. She will work together with Grandmother in caring for Jeanette	<i>Educative-supportive</i> Encouragement will be given to Mum, to hold and touch Jeanette when she is awake. At first, rest will be important, but as Jeanette improves she will respond to love and affection. Mum and Grandmother should be helped to work out a routine so that both care for Jeanette and have the opportunity to go out and socialise. Mum should be encouraged to leave the cubicle and socialise with other visiting parents	Jeanette's Mum slowly showed she could communicate with her and touch her more. With the setting of a routine, Grandmother and Mum each had time alone with Jeanette, upon which they had both agreed. Mum was encouraged to phone old friends to arrange an evening out. She did not mix well with other parents in the ward
'Being normal' (human functioning and development including social groups, in accordance with human potential and limitations)	Jeanette's development appeared 'normal', however her <i>Mum is still developing through adolescence and needs support</i> both with this and the care of a young infant	Jeanette will continue to develop normally. Mum will complete the adolescent period uneventfully and demonstrate the ability to look after Jeanette safely	Jeanette will continue to have all her self-care needs met until she is able to do this for herself. (Most self-care needs have been described previously.) Mum will continue to bath and dress Jeanette in suitable and feminine clothes. She will show she is proud of her baby	The evaluation of Jeanette's long-term development will be ongoing. Mum must be supported through adolescence by hospital and community staff and relatives

#### 4 Teaching and subsequent care

Table 14.15 Prevention of recurrence of gastro-enteritis

<p>Prevention of further infection is an important consideration of Jeanette's care. In this aspect Mum needed further teaching. This included:</p> <ol style="list-style-type: none"> <li>1. Correct dilution of milk powder and water.</li> <li>2. Sterility of equipment and feed during preparation.</li> <li>3. Use of a sterile bottle and teat for each feed.</li> <li>4. Sterilising of bottles, teats and equipment after use.</li> <li>5. Ensuring milk powders have not passed the expiry date.</li> <li>6. Ensuring dummies are cleansed correctly and that toys placed in the mouth are as clean as possible.</li> <li>7. Cleanliness of hands prior to feeding and especially after nappy changing.</li> <li>8. Seeking advice from the health visitor or baby clinic when Jeanette is unwell, especially if she has a recurrence of diarrhoea or vomiting.</li> </ol>
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#### Guidance from community personnel

The *health visitor* had persuaded Miss Brown to visit the clinic for Jeanette's developmental assessments. During these visits it was hoped to reinforce the basic skills of baby care also. Miss Brown also needed some advice on health education matters, including attending 'check ups', contraception, and advice about nutrition. Due to the circumstances in which Miss Brown was placed: a young baby, limited accommodation and finances, it was planned for her to meet and discuss these with a hospital *social worker*. It was suggested that Grandmother would be able to look after Jeanette for part of the day. This enabled Miss Brown to look for a part-time job, although finding work was not going to be easy. Miss Brown, however, showed interest about returning to work.

#### (d) Discharge and advice for going home

On the sixth day after admission Jeanette was considered well enough to go home. The doctor examined her; his assessment included the following:

- Cessation of diarrhoea and vomiting.
- Tolerance of milk feeds and weight gain.



- Normal temperature.
- No features of dehydration.
- Blood electrolyte results within normal limits.
- Laboratory results indicating three non-infected stool specimens.

The trained members of nursing staff were fairly confident that Jeanette's Mum could cope at home with assistance from health visitor and social worker.

The family were discharged with written instructions with regard to feeds, recurrence of gastro-enteritis and names of community personnel. A GP's letter was sent and an outpatient appointment given.

## Fact Sheet 3: Principles of isolation nursing

In the paediatric unit you may encounter differing types of isolation nursing. Each hospital has its own policy relating to use of gloves, gowns and masks and to handwashing techniques. You should familiarise yourself with your own hospital policy as the detail in this section is only an introduction to isolation nursing.

The two main categories of isolation nursing are *source isolation* and *protective isolation*. You may know these by other titles such as barrier nursing and reverse barrier nursing.

1. *Source isolation* This is used when an infant or child is infectious and, therefore, potentially capable of spreading the infection to other children in the ward.
2. *Protective isolation* This is used when an infant or child is susceptible to or has lowered resistance to infection. Many paediatric units automatically place all infants under 1 year in protective isolation. The infant's immune system is not fully developed; naturally acquired immunity develops gradually due to exposure to organisms. Some passive immunity is received during foetal life and artificial immunity is given in the form of immunisations during infancy and childhood.

### (a) Principles of source isolation nursing

Written instructions are given on the cubicle door. Examples of illnesses which may need the child to be isolated are as follows:

- Childhood infectious diseases, e.g. measles, chickenpox.
- Bronchiolitis.
- Whooping cough.
- Diarrhoea and vomiting (gastro-enteritis, cause unknown until stool specimen analysis).
- Meningitis. (All children are isolated until the causative organism is known or until 48 hours after antibiotics have been given. This is the minimum time and most children are isolated for the entire admission.)

The child is placed in a single room with all his own equipment wherever possible. Care is taken with disposal of equipment, soiled linen, clothing, nappies, etc., and with handwashing.

#### 1 Disposal of excreta, linen, clothes, nappies, rubbish

Disinfection may be necessary before these items are placed in appropriately marked bags. In some units, disposal includes items being placed in an inner and outer bag (double bagging) before collection for disposal. Then they may be disinfected or burned according to hospital policy.

#### 2 Disposal of feeding equipment or eating utensils

As these items are usually plastic, glass or rubber, they can be soaked in a disinfecting agent (i.e. hypochlorite solution) before removal from the cubicle. Following the instructions on the bottle, this solution should be diluted to the correct strength. Metal objects should not be sterilised in such solutions as oxidation will occur. Feeding bottles and teats may be of the disposable type or sent to a central sterilising unit in the hospital. Some feeding utensils are disposable, e.g. paper plates and plastic cutlery.

### 3 Disposal/disinfection of toys

Some thought should be given to the type of toys taken into the cubicle. Preferably, these should be washable but still with consideration to the child's development, e.g. washable cuddly toys for infants. A disinfectant solution should be used for the toys when the child is no longer infectious. If there is doubt with regard to infectivity of the child and play items, the latter may need to be destroyed.

### 4 Handwashing

As the child has a potential illness which may spread to others, the nurse who is caring for him must be careful that she does not act as the source of transmission. Many units like their staff to wear some form of gown, a mask and gloves where applicable. Handwashing is essential before and after touching the child, *especially after touching* the child (e.g. a child with whooping cough — potential spread by droplets). If the child has diarrhoea, then washing hands after nappy changing and disposal of excreta is important.

### 5 The cubicle environment

Ideally the child should have all his own equipment (see layout, Figure 14.17). The cubicle should be kept tidy but homely. Extra equipment taken into the cubicle should be able to be removed again when necessary. The ancillary staff, or the nurse, should be instructed in daily cleaning of the room, according to hospital policy. This involves having a clean floor, working surfaces and sink.

For the older child who is isolated, it is ideal if he can be placed in a room with a bathroom and toilet attached. When the room is vacated equipment is disposed of, the room is thoroughly cleansed with a suitable sterilising/disinfecting agent. Where possible, the cubicle should have a change of air through it, if not under a controlled ventilation system.

#### Practical hints for source isolation nursing

1. Remember you can be the source of transmission of infection to other children, by careless handwashing, incorrect protective clothing and inappropriate disposal of rubbish, clothing and excreta. All feeding equipment must be sterilised before removal.
2. Parents, relatives, medical, paramedical and ancillary staff need instruction too.
3. Before entering the cubicle, especially with equipment, stop and think: 'How can I remove this from the cubicle?'

#### (b) Nursing children who are HIV-positive (AIDS)

Children who are positive for the HI viruses are usually those who have regularly received blood products or who have parents who are drug abusers (IV drugs). The route of spread is known to be via 'infected' blood and possibly through excreta and secretions. Some health authorities nurse the children in a source isolation cubicle when admitted to hospital. Others only nurse children in a source isolation cubicle during the time that they may potentially 'spread' the virus via blood secretions. Examples of this are children with wounds, drains and intravenous cannulae.

The precautions for nursing children who are HIV-positive are similar to those employed for children with Hepatitis B. Great care is taken with handwashing and disposal of blood secretions. Some authorities extend this to include all excreta and secretions.

#### (c) Principles of protective isolation

Written instructions are given on the cubicle door. Illnesses which require the child to be protected from others who are a potential source of infection (e.g. other children, nurses, doctors) may include the following:

- Children with burns and scalds.
- Children with a low white blood count.
- Children with a malignancy.
- Children admitted for plastic surgery, e.g. repair of cleft lip or palate.
- Babies under 1 year old.

The infant or child is placed in a single room with all his own equipment wherever possible. Care is taken with equipment brought into the cubicle, milk feeds, meals and handwashing before contact with the child.

### 1 Equipment entering cubicle

Sterile equipment such as cotton wool balls and gallipots may be used. Linen, clothes, gowns and other equipment should be socially clean.

### 2 Feeding equipment and eating utensils

Milk feeds, teat and bottle should be sterile. An older child will need his own cutlery and plates. If these are not provided at each meal, then the utensils can be washed and soaked in a disinfectant solution between mealtimes.

### 3 Play items

Where possible the child should have his own toys. Those provided by the hospital should ideally be as clean as possible and not removed from another child without cleansing in between.

### 4 Handwashing

The child is potentially susceptible to infection and the nurse who is caring for him must be careful that she does not act as a source of transmission from other children. Many units like their staff to wear gowns and, occasionally, a mask. Handwashing is essential before and after touching the child. This is *especially* important *before* touching the child.

### 5 The cubicle environment

The cubicle should be kept tidy but homely and well stocked with necessary equipment (Figure 14.17). The ancillary staff, or the nurse, should be instructed in daily cleaning of the room, according to hospital policy. This involves having a clean floor, working surfaces and sink. The older child ideally should have his own bathroom and toilet facilities. When vacated, the room is cleaned in the normal manner.

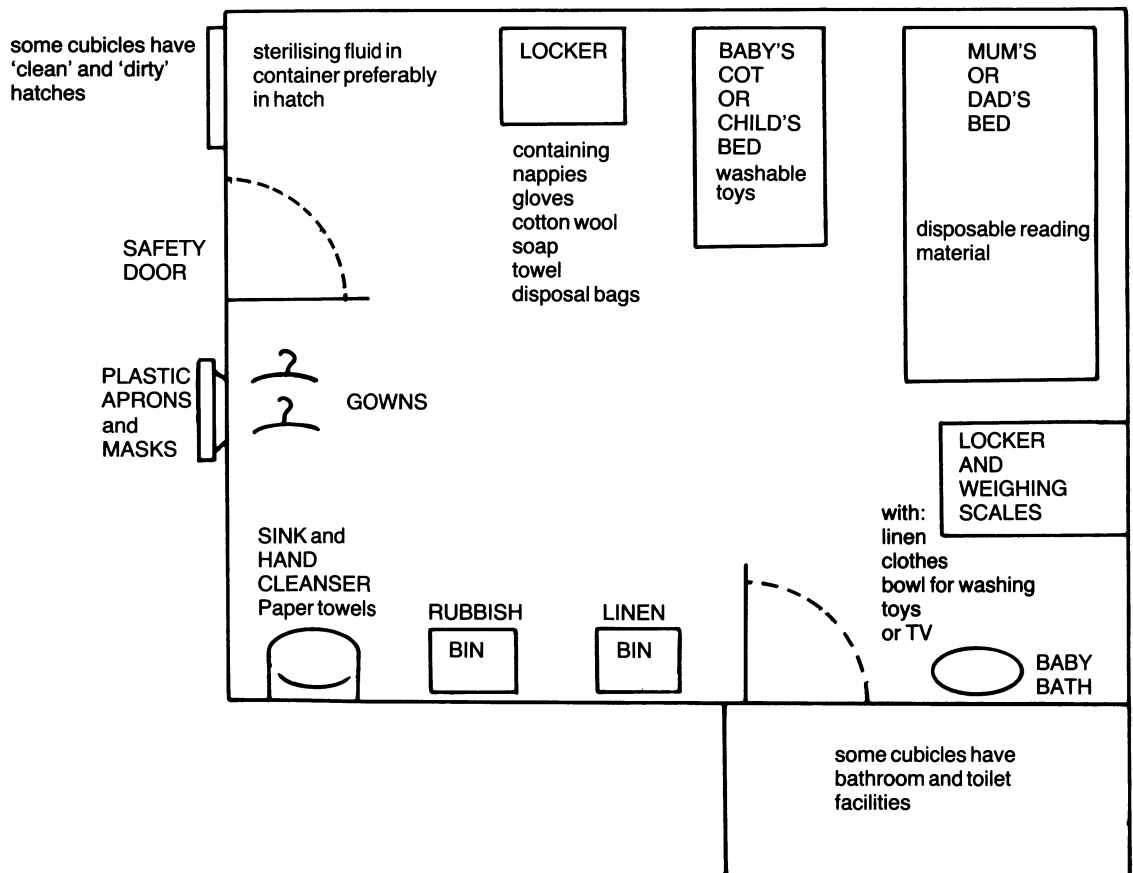


Figure 14.17 A cubicle layout

#### Practical hints for protective isolation nursing

1. Remember you can be the source of transmission of infection from other children, by careless handwashing, incorrect protective clothing and introducing unclean equipment.
2. Report any coughs, colds or infections, e.g. infected finger, to the trained staff and occupational health department (where applicable). You may be the potential source of infection and therefore should not nurse children in protective isolation.
3. Parents, relatives, medical, paramedical and ancillary staff need instruction, too.
4. Stop and think before entering the cubicle: when to handwash and gown; is equipment entering the cubicle a potential source of infection?

#### (d) The psychological effects on children nursed in isolation

##### 1 Infants

Though infants appear less sensitive to being nursed in isolation, this is not so. It is important to plan your care to visit the cubicle at regular intervals, both to observe and provide stimulation for the infant.

Play items should always be placed in the infant's cot, chosen according to his development and illness. A radio can provide pleasant background music and company.

##### 2 Toddlers and pre-school children

These age groups find isolation nursing difficult if not impossible to understand. If you have a toddler to care for who is in isolation, you may need to plan to spend most of the shift in his cubicle. It is best if one or both of his parents are admitted with him, and that he has freedom to move round the cubicle with plenty of toys available. Safety must be a consideration at all times.

##### 3 School children

The school child is a little more able to understand isolation nursing but should not be left for long periods. He may appreciate having a story read or the company of a TV. He can still find isolation a lonely experience.

##### 4 Adolescents

This age group often enjoys privacy and isolation but when ill may appreciate the company of a nurse. Suitable occupational therapy should be provided in the cubicle.

##### 5 Parents

Parents may be bewildered and lonely when they are resident or visiting their child in isolation. The nurse should encourage their participation and where necessary teach them the care of their child. Parents need to be kept up to date with changes in treatment and care. Sometimes, they just need someone with whom to talk.

## Formulation of a care plan for the child with a head injury

The length of stay in hospital would be 24 hours.

#### (a) Head injury in the pre-school and school child

Head injuries in the pre-school and school age child are a fairly common reason for admission to hospital. Children in these age groups are very active and adventurous but there is only a growing awareness with regard to safety, so experiments may lead to minor injuries to body and/or head injuries, sometimes with fractures. Examples of outdoor play which can lead to a head injury are:

- Swings.
- Tree climbing.
- Bicycle riding.

Within the home environment, head injury to a small child may result from:

- Falling from a highchair.
- Falling downstairs.
- Falling from a window in a block of flats.

(b) Hospital admission after head injury

It is common practice to admit all children to hospital who have a history or clinical features of a head injury. The suggested exercise that follows is divided in five separate exercises.

**Suggested exercise**

*Exercise 1* Find out why head injured children need hospital admission. This first exercise should help with identifying the problems (potential or actual) for your care plan.

*Exercise 2* Revise and review the normal anatomy of the skull, coverings of the brain, blood circulation, CSF circulation and the main anatomical structures within the brain (refer to Hunt and Sendell, 1987).

*Exercise 3* List the problems which you think may occur if the head and the structures you have outlined above are injured due to a forceful blow.

*Exercise 4* In relation to a child you have nursed with a head injury, formulate a care plan with goals, action and rationale. You should use the problems you have included in Exercise 3 and those which are individual to the child you have chosen.

*Exercise 5* List the advice which should be given to the child and parents in preparation for discharge.

**Answers to exercises**

*Exercise 1*

- Admitted because of possible damage to brain matter, thereby causing loss of function.
- Admitted because of predisposition to bleeding, usually formation of a haematoma.
- Admitted if skull is fractured, or observations show altered conscious level.
- Children may also be admitted if the history of the injury is under question, such as in child abuse.

The clinical features of complications of a head injury may not become apparent until several hours later.

*Exercise 2* Reference included.

*Exercise 3* Potential and actual problems.

- Actual* Bruising, lacerations, pain and swelling over area injured.
- Potential* Altered conscious level due to bleeding or dysfunction within CSF system.
- Potential* Coma, due to bleeding within the brain or increased intracranial pressure due to bleeding or CSF obstruction.
- Potential* Low pulse rate and raised blood pressure. These are effects of raised intracranial pressure in the brain depressing vital centres.
- Potential* Loss of function to part of the body. This will depend on which area of the head has been traumatised and the extent of the trauma.
- Potential* Nausea and vomiting. This may be the effects of the injury, for instance pain may precipitate nausea. However, these are also signs of raised intracranial pressure.
- Potential* Discharging fluid from nose or ears. Depending on the site of the skull, a fracture, especially if of the depressed type may cause loss of cerebrospinal fluid, seen from nose or ears.
- Actual* Anxiety and fear due to hospitalisation. Child is usually unprepared as this is an emergency admission.

*Exercise 4* The answer guide for this will depend on your local policies with regard to observation. Refer to other parts of this section: care plans for the acutely ill child (e.g. pages 105–107, 115).

*Exercise 5* Advice should also be written. Any of the following signs and symptoms should be reported to the doctor:

- Headaches
- Dizziness
- Drowsiness
- Vomiting
- Epistaxis
- Loss of function of part of body.

Advise parents on how to maintain a safe environment.

#### **Further reading**

DHSS (1984). *AIDS Interim Guidelines*, Advisory Committee on Dangerous Pathogens (revised June 1986), HMSO, London.

RCN (1985). *AIDS Nursing Guidelines*, 1st report of the RCN AIDS Working Party, RCN, London.

#### **References**

Orem, D. (1985). *Nursing Concepts of Practice*, 3rd edn, McGraw-Hill, New York.

Roper, N., Logan, W. and Tierney, A. J. (1985). *The Elements of Nursing*, 2nd edn, Churchill Livingstone, Edinburgh.

Hunt, P. and Sendell, B. (1987). *Nursing the Adult with a Specific Physiological Disturbance*, 2nd edn, Macmillan Education, London.

## Long-term disease/disorder

Some diseases/disorders can affect children over a long period of time and possibly all their lives. These were once classified as chronic diseases as opposed to the acute illness, which occurs suddenly and only lasts a short while, e.g. a bout of tonsillitis.

The term chronic disease is a difficult one to define. There is no arbitrary definition and, therefore, any attempt to define the term here would promote much discussion. Do try discussing it among yourselves and see what conclusions you come to.

Some examples of diseases or disorders which affect children over long periods of time are:

- Leukaemia.
- Epilepsy.
- Haemophilia.
- Diabetes mellitis.
- Asthma.
- Cystic fibrosis.

### (a) Pattern of the disease

As outlined below, the pattern of the disease may vary.

1. Some children may recover from the disease or improve in health. For example, some asthmatic children grow out of the disease and do not suffer from it at all as adults, or have attacks that are much reduced in severity. The acute exacerbations decrease also in frequency and preventive medicine and good education of the child and his family are all important in this outcome (e.g. the use of foam instead of feather pillows).
2. There is a deterioration in health with perhaps a fatal outcome. For example, the asthmatic attacks become more frequent causing progressive lung damage, diminished chest volume and alteration in chest shape so restricting energy and activity levels. There is also the possibility of status asthmaticus.

No matter which category, the life style of the child and his family will be affected to a varying degree and for varying lengths of time. Whatever the outcome, the child and family will require support and understanding throughout, with preparation for his future role in society.

## The diagnosis, causation and parental acceptance

It is naturally distressing for parents to be told that their child has a disease that may affect perhaps the rest of his life. They will ask 'Why us?' 'How did it occur?' 'What will his future quality of life be?' 'Is there a future?' 'How will it affect all our lives?'

### (a) Diagnosis at birth

#### 1 Maintaining parental contact

Sometimes the disease/disorder is diagnosed at, or very shortly after, birth when there is the added problem of mother recovering from the birth of her

baby and where she may have to be parted from him if he has to be transferred to a paediatric ward or even to a regional paediatric unit at another hospital. It will be difficult to establish 'bonding' — the close relationship between mother and baby — as they will be parted. However, many neonatal units possess an instant picture camera to help keep Mum involved in her baby's development and to help establish bonding. In addition, Dad will be required to visit both hospitals.

## **2 Adjusting to the diagnosis**

It may be difficult for parents to come to love a baby who has something wrong with him. Every parent hopes for a 'perfectly formed' baby and indeed it is said that parents need time to mourn the loss of a healthy baby and to adjust to his having something wrong. Unfortunately, some parents reject these babies at birth. Many also need to adjust to the fact that this first hospital admission will be the first of many.

### **(b) Later diagnosis**

Sometimes the disease/disorder is not evident at birth, e.g. asthma, and does not manifest itself until the child is older. It is often diagnosed as a result of an acute exacerbation, i.e. the child is admitted with an acute asthmatic attack. Parents have to cope with the illness as well as being told the diagnosis at this point.

### **(c) Causation and parental acceptance**

#### **1 Reactions to diagnosis and prognosis**

Parents sometimes suffer from guilt feelings upon being told the diagnosis. How did the disease occur? Some are inherited, some are the result of an infection and others are idiopathic in origin. If inherited, guilt feelings in the parents may be enhanced and genetic counselling will be required for planning future pregnancies.

The family and the child, if old enough, should be given a realistic idea of the prognosis if at all possible and the ways in which family life will be affected. Previous knowledge and public attitudes may hinder acceptance of the diagnosis, e.g. epilepsy, where historically fits were thought to be the results of evil spirits.

#### **2 Accepting the diagnosis**

On first being given a diagnosis the implications may not be fully grasped by the parents and the ward sister will return to the parents to answer any further queries. Meeting another child and his parents facing a similar problem may help, as well as joining one of the self-help organisations, e.g. Epilepsy Association or Asthma Society.

How the parents view their child's outcome and help him in his treatments may well affect him as he grows up and learns to accept the diagnosis himself, adjusting to any limitations on his way of life, hopefully without a 'chip on his shoulder'. Some parents become over-protective (often compensating for guilt feelings), and molly-coddle their child so not allowing him to assert the independence of which he is capable.

## **Children's attitudes and ways of coping with long-term disorders**

### **(a) Accepting the disorder**

No matter what the disorder, a child wants to develop as fully as possible his physical, social, psychological and educational potential. He has to accept the disorder, its limitations and its outcome. Difficulties may have to be overcome and other talents developed. These children, and their parents, often show much determination and perseverance.

#### **1 The importance of an honest explanation**

It is important to tell him, honestly, what is going to happen to him, if he requires hospital admissions, blood tests or specific medication. He will cope



better with the truth, rather than fear of the unknown. As he matures he will gradually learn to be responsible for his own medications, treatments and for maintaining his state of health.

## **2 Giving support and understanding**

He will need love, security and discipline if he is to grow up with confidence. It can be difficult for parents to discipline such children, negotiating the right balance between discipline and protection.

Brothers and sisters, friends and members of the public can be cruel by teasing or mimicry. It can be bewildering to have to withstand the jeers of schoolfriends or society in general, to be unable to go to parties or, once there, be unable to eat certain foods. With patience and understanding he will adjust to the pattern of daily and family life.

## **Recreation and education**

### **(a) Recreation**

Play may become more important to these children, with toys carefully chosen and perhaps adapted to enhance motor skill, communication or to promote learning.

In some disorders sport may have to be closely supervised, e.g. swimming in the epileptic child, or some activities curtailed, e.g. rock-climbing in haemophilia. Talents and energies are diverted into other fulfilling pursuits.

### **(b) Education**

#### **1 Recommendations**

Young children may benefit from nursery schools and playgroups. The Warnock Report (1978) examined the problems of children with long-term disease and also those with a handicap. Wherever possible it is recommended that children should not attend special schools. Now the trend is to send children to ordinary schools to mix with normal children. Teachers are made aware of any medical problems, e.g. epileptic fits and how to cope.

If necessary special classes are established in normal schools. The more severely affected children may have to go to a special school, e.g. Lingfield School for children with epilepsy. Teachers are specially trained in the remedial skills that may be required by some children.

#### **2 Continuity between school and hospital**

If school is interrupted by hospital admissions, there is the hospital school teacher who will liaise with the child's school and help him with class and examination work, so preventing him from falling behind. Contrary to popular belief, some children become very concerned that this may happen!

## **The family**

Think of the many difficulties this family may have to cope with. A concerted effort is required to achieve as normal a family life as possible. Occasions that are stressful to any family, such as moving house, unemployment or the illness or death of a family member, may be the 'straw that breaks the camel's back'.

### **(a) Coping with disruption to family routine**

The family may be affected by daily treatments, with routine having to be arranged around physiotherapy, for example. There may be disruptions by repeated hospital visits for outpatients, physiotherapy or for admission. Family meals may have to include the preparation of special diets and family activities may have to be adjusted, e.g. no fencing for the child with haemophilia, supervision for the child with epilepsy who wants to ride a bicycle and avoidance where possible of contact with anyone with an infection for the child with cystic fibrosis. However, as much as possible of normal life should be retained to minimise the adverse effects if a child is labelled 'different'.

**(b) Effects on parents**

Living with a prognosis which may have a fatal outcome, e.g. cystic fibrosis, can be unsettling and cause considerable stress. Indeed a great deal of stress can be placed on a marriage. Another example is if too much and constant attention is given to a child, so that the parents do not get the chance for time to themselves and by themselves, especially if attention is over the 24-hour period. Financial worries can occur, adding to the emotional strain.

**(c) Effects on child and siblings**

When do the parents tell the child his prognosis? How do they tell him? How much do they tell him? The hospital staff and the community services can provide much support and help in decision-making by giving guidance. Siblings may be affected by the amount of attention that is given to the affected child; he, of necessity, requires more attention, for physiotherapy, dietary supervision, etc. Thus jealousy or attention-seeking can occur, though many siblings will enjoy helping with the affected child's care, but it must be remembered that they are entitled to a full life too.

## **Support available**

**(a) Community services**

Various community services are available to help the child and family at home. If specific nursing care is required the district nurse will visit. The health visitor will visit frequently and liaise with other services as necessary. She will often become a valued 'friend' to the family and will also maintain continuity of service by liaising with the hospital.

The GP will visit and should be kept fully informed of the child's condition and progress by the hospital. The social worker and social services may have a role to play in helping with any alterations to housing, provision of any appliances such as wheelchairs or incontinence pads and even arranging installation of the telephone for use in case of medical emergency.

**(b) Financial help**

The social services can give advice on financial provision, which may include an attendance allowance, and arrange holidays. A holiday may need to be arranged with special facilities or for the parents alone, so that they can have a rest; often the child comes into hospital to receive his necessary care while his parents are on holiday and you may well nurse such a patient during your allocation. The social worker can arrange transport for hospital visits if necessary.

Prescriptions are free for children and for those on necessary continual medications.

## **Hospital admission, assessment and nursing care**

Some diseases follow an erratic pattern and acute episodes may occur, requiring hospital admission. Families have to adjust to these interruptions which may be planned or could occur at any time, e.g. child acquires an infection.

Where possible the child should be admitted to the same hospital and, indeed, the same ward. Seeing the same medical and nursing staff will provide security and confidence for the child and family. Hopefully, other members of the multidisciplinary team, e.g. physiotherapist, dietician and occupational therapist will be familiar and thus help to provide continuity of care.

**(a) Involving the child and his parents**

Upon admission the child and parents will require much reassurance. The child will be upset at being in hospital again and may have to face being separated from his family if Mum cannot be resident. Mum may well feel upset at handing over her child's care to the nurses. It should be remembered that parents of a child with a chronic disease are often well-informed, having educated themselves with the facts of their child's disease. They have become adjusted to

coping with any problems and they can be extremely helpful in planning nursing care and the best ways of feeding, toileting, etc. Remember that their anxieties and fears may be transmitted by aggression or 'fussiness'.

## (b) Assessment and care

Upon admission, in your interview, remember to obtain details of daily home routine, medications, etc., and try to cause as few disruptions as possible so that continuity of care can be provided.

A few children suffer from adverse effects from repeated and prolonged hospital stays. They can withdraw from the situation, regress in milestones, e.g. bed-wetting, or may react aggressively, becoming rude and defiant, pushing to the limit the patience of those caring for them. Stimulation and occupation are thus important. Play and educational facilities should be readily available. Favourite teddies should come into hospital; TV and radio are popular; and grandparents and siblings should be allowed to visit.

When ready for discharge the patient and his parents should be educated in any new treatments and the community services informed of any changes. An outpatient department appointment is arranged so that continuing supervision of treatment can be given.

### Further reading

Burton, L. (1975). *The Family Life of Sick Children: A Study of Families Coping with Chronic Childhood Disease*, Routledge and Kegan Paul, London.

## Nursing care plans for the child with a long-term illness

### (a) Introduction

The children chosen to illustrate long-term illness have diagnoses which may necessitate frequent hospital admissions.



Figure 15.1

### 1 Tommy, a pre-school child with cystic fibrosis

Tommy is shown in Figure 15.1. His illness is an inherited one; the effects of the disease cause problems with respiration and digestion, right from birth.

His prognosis is not likely to be a good one at present. Many children with cystic fibrosis only live until adolescence, their lives having been punctuated by frequent hospital admissions, especially with many respiratory infections causing deteriorating lung function.

### 2 Marsha, an adolescent with diabetes mellitus

Marsha's illness may not be genetically inherited and may not become apparent until well after birth in childhood.

For most diabetic children, once the initial onset of the disease has been controlled, hospital admissions are for periods of instability in controlling their diabetes. These admissions may be due to dietary or insulin indiscretions. They may be because the child has been too energetic, has had an infection, or due to bodily changes which occur in development. The child may be very ill during any of these crises but usually recovers with appropriate care and treatment.

The prognosis is more favourable than in cystic fibrosis; children are likely to grow into adulthood. However, hospital admissions may continue throughout life, and in later life they are due to the complications associated with the disease.

For both children, once they are discharged from hospital, their illness is still present, but for a period of time under control. Much of the nursing care is performed by parents and only when the child is in an acute phase of illness, or hospital care becomes vital to their well-being, are they admitted to a paediatric ward.

## The pre-school child with cystic fibrosis

### (a) Introduction to Tommy, a 2½ year old

Tommy was admitted to the ward with a respiratory infection. He was noted to have a respiratory rate of 45 per minute (normal 25 per minute), a loose sounding cough and dyspnoea. He was pale and underweight with a slightly protuberant abdomen. Tommy was accompanied by his Mum who was extremely anxious.

### (b) Admission to ward

Tommy was known to the ward staff, as he had been a frequent patient during the previous winter.

Due to his respiratory difficulties he was placed in a cot, with pillows to nurse him upright, aiding lung expansion. Mum was given a comfortable chair by his bedside and offered a cup of tea. She was glad to recognise some of the nurses and burst into tears on sister's shoulder.

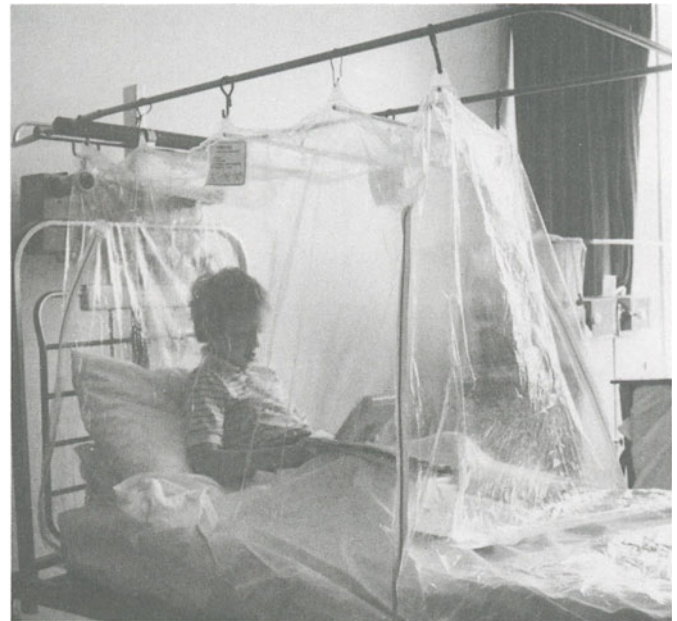
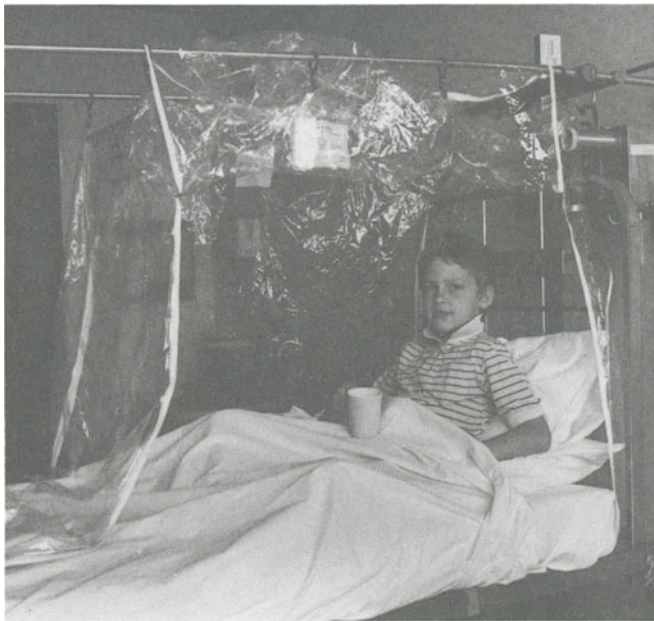


Figure 15.2 A humidity tent

Tommy felt too tired and ill to do very much. He was examined by the doctor, who ordered humidified oxygen (Figure 15.2), physiotherapy, chest x-ray, antibiotics and fluids.

The nursing staff made him comfortable in bed with his toys, offered his favourite drinks and recorded hourly temperature, pulse and respirations.

### (c) Cystic fibrosis

This was formerly known as *fibrocystic disease of the pancreas and mucoviscidosis*

#### 1 Definition

Cystic fibrosis is an inherited disorder affecting the exocrine glands, where abnormal viscid mucus is produced by gastro-intestinal and pulmonary glands. In the pancreas, the viscid mucus blocks the pancreatic ducts and restricts the entry of pancreatic enzymes into the duodenum. The pancreas develops cysts which fibrose and all secretions are reduced. Malabsorption of food therefore occurs.

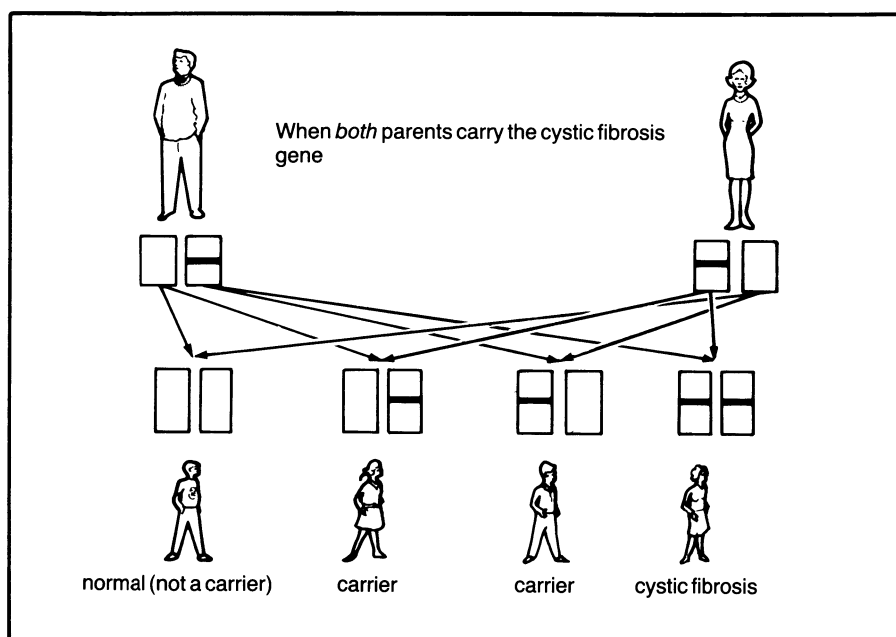
In the lungs, the viscid mucus blocks the air passages and predisposes the child to respiratory infections and abscesses. The lungs, due to blockage by mucus, may overinflate and atelectasis may become a problem. Repeated lung infections occur because of the increased mucus and medium for growth of infecting organisms. Ultimately fibrotic changes will take place in the lungs leading to reduced peak flow and vital lung capacity.

## 2 Inheritance

### Mode of inheritance

The mode of inheritance (Figure 15.3) is via an autosomal recessive gene (Mendelian inheritance).

A person born with cystic fibrosis must have received one gene for the trait from each parent.



*Figure 15.3 Mode of inheritance of cystic fibrosis (CF). For a child to be born with CF he or she must have received one gene for the trait from each parent. If he or she only inherits a gene from CF from one parent and a corresponding normal gene from the other, the child is free of the disorder, but a carrier of the CF gene, which could be passed on to his or her children. A child of parents who may both be carrying the CF gene could inherit only the normal genes from both parents. This child would neither have CF nor be a carrier. 1 in 25 of the population is a carrier of the CF gene. The incidence of CF is 1 in 2500 Caucasian live births*

### Incidence and carriers

The incidence is 1:2500 Caucasian live births or 1:4 chance of child inheriting cystic fibrosis when both parents carry the cystic fibrosis gene. One in 25 people are carriers of the affected gene.

## 3 Clinical presentation

Cystic fibrosis may first present at any age, although the genetic error is present at birth. The following clinical features indicate cystic fibrosis.

### Meconium ileus

This is usually noticed within 24 hours of birth, as the infant fails to pass meconium, has a protuberant abdomen and starts to vomit. This obstruction of the small intestine is due to a meconium plug, stuck in the ileum due to the viscosity of mucus and lack of pancreatic enzymes entering the duodenum (refer to page 15, Infant's stools).

### Recurrent respiratory tract infections

The infant is prone to severe respiratory infections, during which time the mucus production increases and is often coloured and offensive. He may have a lot of difficulty in maintaining a clear airway while small, as the mucus is difficult to expectorate. His colour may deteriorate due to inadequate oxygen reaching the tissues and he may have attacks of wheezing. Differential diagnosis is necessary to eliminate more common respiratory infections (e.g. bronchiolitis). If the infant does not present at birth with meconium ileus, he often presents in later childhood with respiratory infections.

### **Failure to thrive**

Parents may notice that the child is hungry but fails to gain weight, his abdomen may be large and protuberant and he passes bulky, foul smelling stools which float on the water in the toilet. The stools are mainly composed of undigested food and especially fats, hence their ability to float. The child does not have the required amount of pancreatic enzymes to digest food and, therefore, it passes undigested through the bowel. He fails to thrive and gain weight and is naturally always hungry. His muscles are poorly developed and he tires easily.

The hepato-biliary tract may also be obstructed by the viscid secretions from the pancreas which can lead to biliary cirrhosis.

### **Rectal prolapse**

This may occur due to a combination of problems. Excessive coughing or the passage of large, bulky stools, for which the child has to strain to evacuate his rectum, may cause a prolapse.

### **Increased salt on skin**

When they kiss their child on the forehead, parents may notice that his skin tastes salty. Children with cystic fibrosis have an increased amount of salt and chloride in their sweat. This may be particularly noticeable after exercise or in hot weather.

## **4 Diagnosis**

This is based on:

1. Clinical presentation.
2. Family history (including any unexplained infant deaths).
3. Chest x-ray.
4. Stool examination (increased fat, as globules, and muscle content).
5. Sweat test (sodium levels will be above 60 mmol/litre).
6. Lung capacity tests (vital capacity, peak flow).

## **5 Complications**

### **Pulmonary system**

- Emphysema.
- Atelectasis.
- Pneumothorax.
- Bronchiectasis.

### **Cardiac system**

- Cor pulmonale.

### **Nasal problems**

- Chronic sinusitis.
- Haemoptysis.
- Nasal polyps.

### **Gastro-intestinal and endocrine systems**

- Pancreatic fibrosis.
- Biliary cirrhosis, portal hypertension.
- Diabetes.

### **General effects**

- Loss of self-esteem due to illness and body image.
- Heat prostration.
- Aspermia in males.

Tommy's admission to hospital was not a planned one. As on many other occasions his mother had coped with his respiratory infections until it necessitated hospital intervention. The family were not strangers to the ward and this factor might help to alleviate some of the anxieties created by Tommy's admission.

## 6 Nursing history

Tommy will need a nursing history to include:

1. Details of home and family.
2. Activities of daily living.
3. Psycho-social background.
4. Details of physical development.
5. Family medical history.
6. Current medical history. (See page 140.)

### Suggested exercise

Use a nursing history sheet with which you are familiar and obtain details about a child whom you admit to hospital with the diagnosis of cystic fibrosis. Note any specific problems as well as any effects the disease may have had on his life to date.

If you are unable to nurse a child with this diagnosis, use the guidelines presented here. These should enable you to identify the specific problems and appropriate care for a child admitted with a respiratory infection due to cystic fibrosis.

## 7 Preparation of care plan

From the nursing history a care plan is prepared for Tommy (see Table 15.1).

Table 15.1 Nursing care plan appropriate for Tommy

Assessment of problems	Goals	Nursing action and rationale
1. Difficulty with breathing and mucous cough	Maintain a clear airway  Monitor and record vital signs	(a) Sit Tommy upright in cot with pillows to aid lung expansion (b) Have suction available at cotside (c) Place Tommy in a humidity tent if ordered (d) Commence postural drainage, 3–4 times daily to drain secretion (e) Assist physiotherapist with Tommy's breathing exercises, percussion and coughing (f) Give medicines and oral or parenteral antibiotics (a) Record hourly pulse and respiratory rates (b) Monitor temperature 4-hourly if he is apyrexial
2. Poor facial and peripheral skin colour	Improve oxygen uptake and increase perfusion	(a) Observe Tommy's colour, facially and peripherally (b) Have oxygen available and give if prescribed; administer by mask or via the humidity tent
3. Tommy's anxiety about being hospitalised	Minimise anxiety provoking situations	(a) Explain simply all new procedures; his teddy may need to 'undergo' procedures first (b) Keep Tommy and Mum together; there is no one else in the family (c) Have patience with Tommy's behaviour
4. Mum's anxiety about Tommy's illness	Prevent separation of mother and child  Involve counselling personnel	(a) Allow Mum to perform as much care as she can for Tommy—she is used to this at home (b) Offer Mum a bed to sleep and show her the bathroom and where she can make a drink or relax (c) Explain carefully any new treatment (a) Tommy's Mum may wish to spend time with a counsellor: this may help to relieve the pressure of caring for a child whose prognosis is poor (Mum is divorced, and probably has few people with whom to discuss Tommy)

Table 15.1 (cont.)

Assessment of problems	Goals	Nursing action and rationale
5. (p) Problem: loss of body fluid due to increased breathing and decreased fluid intake	Prevent dehydration  Prevent dry mouth and predisposition to infections	(a) Tommy's infection may cause loss of body fluid, due to increased respirations and decreased fluid intake: offer hourly fluids, preferably his favourite drinks (b) If he becomes dehydrated an infusion may be necessary (a) Offer 2-hourly oral care
6. Salt loss in sweat	Prevent sodium depletion and dehydration  Monitor sodium levels  Prevent soreness of skin	(a) Monitoring Tommy's temperature 4-hourly will indicate a pyrexia and increase in sweat (b) While ill, keep quietly occupied in bed, thereby conserving energy and reducing sweat (c) Offer fluids hourly (d) When he commences eating, salt may need to be added to food (a) Blood electrolytes will indicate sodium and chloride levels in body (a) Increased salt in sweat may give rise to sore skin especially neck, axillae, groins and buttocks: give Tommy frequent washes
7. Underweight child with malabsorption problem	Reduce malabsorption of food  Monitor and record weight	(a) Encourage Tommy's diet as soon as he feels able to eat; the diet should be attractively presented, high in calories and protein and low in fats (b) Water soluble vitamins should be included and vitamins A, D, K added (these are fat soluble); pancrex capsules, containing pancreatic enzymes, should be given before each meal. The diet and pancrex are given to assist the disordered absorption due to a cystic pancreas (a) Weigh Tommy weekly
8. Large, bulky offensive stools	Assist Tommy with elimination  Monitor and record stools	(a) Although only 2½ years, Tommy will need privacy and a comfortable seat to sit on to open his bowels (b) Diet, pancrex and fluids may help reduce the size of his stools (c) As soon as well enough, give some exercises to help prevent constipation (a) Observe Tommy's stools for any changes (b) Collect stools for specimens as requested or dispose of quickly due to their offensive smell (c) Ensure that an air freshener is available beside toilet or at bedside
9. Sore anus from straining at stool	Promote healing of sore skin	(a) After using the toilet, wash and dry Tommy's bottom and apply barrier cream (b) Note any fissures or prolapse and give appropriate treatment

### Evaluation

Tommy's cough and colour slowly improved with careful nursing care, physiotherapy and antibiotics. He remained a fussy eater and there was difficulty with maintaining a good fluid intake, this being achieved mainly by Mum.

Tommy's care plan is a guideline for relating the specific problems of a child with cystic fibrosis.

In your own care plan you should be able to include specific problems related to the child you have chosen. You may also like to add the important but more generally applied problems which relate to many children, for instance, play, education, hygiene.

Cystic fibrosis, being present in the child throughout his life, means that the family need education and guidance to cope with the illness at home.



(d) Parental and child education

### 1 Diet

Tommy and his Mum should understand the need for high protein and carbohydrate diet for growth and energy. Fat content should be kept low, due to the absorption problems.

Pancrex capsules must always be taken with the diet. Children generally dislike the taste of these and they can cause sore mouths and bottoms. Salt may need to be added to the diet in hot weather, to prevent salt depletion.

Tommy may grow through a period of 'foodfads' where he does not wish to stick to his diet or take Pancrex. When he reaches school age his school will need to be informed and a suitable diet discussed. Tommy's teacher may need to ensure he takes his Pancrex.

### 2 Physiotherapy

This is often the most difficult and tiring aspect of care to learn. Mum and Tommy have to perform physiotherapy several times a day, regardless of how each may feel. Physiotherapy (Figure 15.5) is preceded by postural drainage (Figure 15.4). Where possible, a physiotherapist should visit the family, especially in the early stages of the illness and at times when secretions are profuse. As Tommy grows older he may learn to take responsibility for his own physiotherapy. With the help of the family, in this case his mother, he may be able to perform these skills on himself.

The child, especially while small, may not co-operate with physiotherapy. It may not be easy to understand how being 'hit' on the chest can improve his breathing. To minimise skin soreness, a towel can be placed over the area being percussed.

When Tommy begins formalised schooling, his physiotherapy may be arranged around school hours. Alternatively, the school teacher or school nurse can be instructed in his care and how to drain and percuss his chest. A busy schoolchild may forget that this treatment is important to him, so at all times an adult should be available to remind him.

### 3 Infection

The child with cystic fibrosis must avoid contact with those with respiratory infections and infectious diseases. This vigilance is difficult as the child naturally wants to mix with others at school, at parties and in play.

It is often necessary to keep the child on prophylactic antibiotics, especially during the winter months. If the school has an epidemic of, for instance, influenza, it may be justifiable to keep him away from school for a few days.

The need to protect the cystic fibrosis child from infection and dietary indiscretions often means he is molly-coddled. He may be kept indoors if the weather looks cold, when he might benefit from fresh air. It is difficult for parents to strike the correct balance between over-protection and prevention from infection and possible hospitalisation. Immunisations can be given, as outlined by the health authority. These may be especially important to such a child.

### 4 Play and exercise

Children with cystic fibrosis need play and exercise in the same way as 'normal' children. Tommy, at 2½ years, is unlikely to want to sit in the house all day, unless he is unwell.

Limits to exercise tolerance are a matter of 'trial and error' on the part of the child. As Tommy grows he may try to 'test' his body to the extreme, not wishing to be handicapped by his disease. This in itself may cause problems, especially of breathlessness, salt depletion and inadequate circulation.

### 5 Education

Providing the school is conducive to a 'healthy environment', then a child can attend a normal school. If, as in Tommy's case, the child is particularly prone to chest infections, an 'open-air' school may be recommended or a residential day school. Schooling may be interrupted frequently due to hospital admissions.

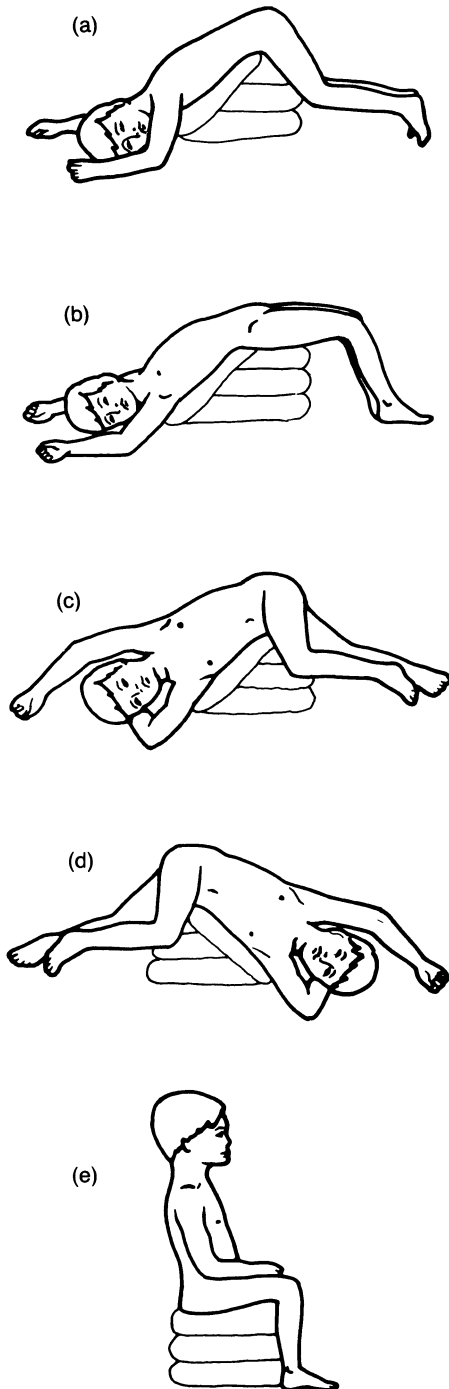
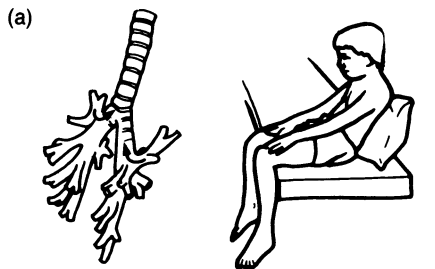
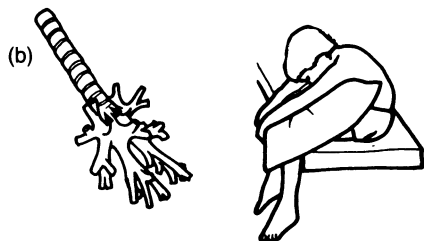


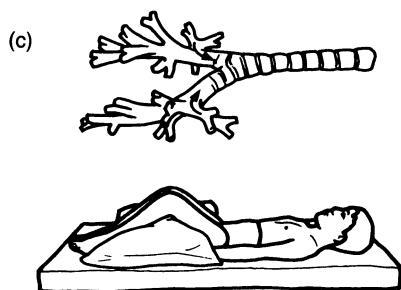
Figure 15.4 Positions for postural drainage in babies and older children: (a) and (b) drain the lower parts of the lung; (c) and (d) drain the lateral parts; and (e) drains the upper parts



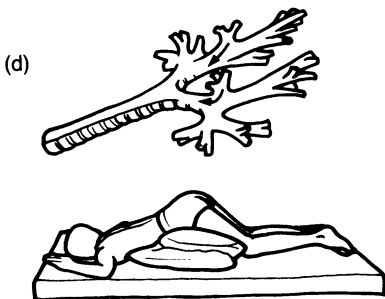
(a) Apical segment of right upper lobe and apical subsegment of apical-posterior segment of left upper lobe.



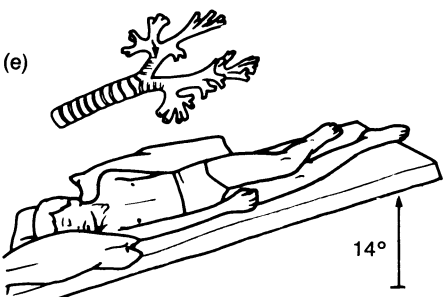
(b) Posterior segment of right upper lobe and posterior subsegment of apical-posterior segment of left upper lobe.



(c) Anterior segments of both upper lobes; child should be rotated slightly away from side being drained.



(d) Superior segments of both lower lobes.



(e) Lingular segments (superior and inferior) of left upper lobe (homologue of right middle lobe).

Figure 15.5 Bronchial drainage for different parts of the lung (arrow indicates direction of drainage)

## 6 Body image

Even when a suitable diet and pancreatic enzymes are taken, faeces still tend to be offensive and bulky. Bowel control is usually achieved at the accepted age; however, problems with regard to odour and type of stool may give rise in the older child to a perceived 'altered body image'. This may make the child feel undesirable and unclean, sometimes leading to anxiety and depression. Generally speaking the cystic child tends to have stunted growth, rather wasted muscles, sometimes a barrel chest and enlarged abdomen. He may be teased about his features, especially his size, and this depresses his confidence in body image.

## 7 Psycho-social stress in the family

The pressures of a long-term illness, such as cystic fibrosis, on a family are enormous. Firstly, the fact of knowing that there is no known cure for cystic fibrosis, and that the disease is inherited, may give many parents guilt feelings.

### Effects on siblings

Before further pregnancies, advice and genetic counselling should be sought. There is a 1:4 chance of other children being affected.

If there are other children in the family unaffected by cystic fibrosis, they may resent the attention paid to their ill brother or sister. Siblings can become very jealous and therefore should be included and taught how to administer care to their brother or sister.

### Effects on marital relationships

The stress of caring for a child such as Tommy can cause marital disharmony and divorce. In this case history there is no-one besides Mum and Tommy in the family as his father has left them. The burden of continual care and the constant demands Tommy placed on the family contributed to the break-up of the relationship between his mother and father.

### Financial problems

Financially, there may be difficulties, especially if a single parent is coping with the child. Expenses include equipment (humidity tents may be needed at home), medicines, travelling to hospital. All the relevant social service benefits should be available to the family. A social worker may be able to help with such problems.

### The importance of holidays

Holidays should not be abandoned, but should be taken when the child is well and, preferably, in the country. Parents need a rest, too; the child may be able to stay with trusted relatives or friends. At 2½ years, Mum will find it difficult to leave Tommy, especially as she has learned to cope with all his care. It takes parents many years to build up confidence to hand the care of their child to someone else in order that they may have a rest. Even when a holiday is taken the parents often suffer tremendous feelings of guilt.

## 8 The Cystic Fibrosis Society

This society acts as a focal point for meetings between parents of affected children and for information purposes. Research into the disease and treatment are continually being carried out and parents often look to such societies for a glimmer of hope.

## 9 The cystic fibrosis adolescent and the future

In the beginning of this section it was stated that the prognosis for cystic children is generally poor. It should be said that not all children have respiratory involvement to the same degree. Therefore, there are those children who will reach adolescence and early adulthood.

### Difficulties in accepting the prognosis

The adolescent will almost certainly want to know his prognosis; this is difficult and will largely depend on the degree to which he is affected. By adolescence most cystic children have an understanding of their disease and many know that they will die young. This is very difficult to accept since adolescence is a time for living, for experimentation and learning—not for dying. Some psychological assistance may be needed in the form of counselling. The adolescent may become depressed or aggressive about his illness.

### Relationships and marriage

For those who live into early adult days, there is the thought of relationships and marriage. Genetic counselling should be given so that the cystic person may choose for himself whether producing a baby is advisable. He should be aware of the mode of inheritance (aspermia, a feature of cystic fibrosis, may be present and then he and his partner will not be able to have a child).

### Employment

Preparation for employment is necessary for every teenager and the cystic child is no exception. However, qualifications may be hard to gain if studies have been interrupted by illness and hospitalisation.

Much determination is needed on the part of parent and child alike, when cystic fibrosis presents in the family. Through every acute crisis the family strive to keep the child well, yet for many the outcome will be fatal.

## The adolescent with diabetes mellitus

### (a) Introduction to Marsha, a 15 year old

Marsha (Figure 15.6) lives at home with her parents, two brothers and a sister. She is of West Indian origin and the family live in a terraced house in the vicinity of other West Indian families. Marsha attends the local comprehensive school, to which she is able to walk in 10 minutes. At school she is studying to take 'O' level subjects in mathematics, English, history and domestic science. Marsha is the oldest child in the family; she helps her mother to look after the rest of the family, whose ages range from 6 to 12 years. Marsha is especially interested in cooking and is relied upon to assist with housework.



Figure 15.6

Mother has a part-time job in domestic work and father is employed by the railways on rotational shift work. Both parents work hard to secure the family's finances and give the best to their children.

## (b) Admission to hospital

Marsha needed admission to hospital as her diabetic state was once again unstable. She was known to the ward, as she had been diagnosed as having diabetes mellitus at 6 years old. On admission she was in a hyperglycaemic state (refer to page 149, hyperglycaemia). The clinical features of her illness included:

- Drowsiness.
- Vomiting.
- A degree of dehydration.
- Glycosuria.
- Altered respiratory state.

Her mother and sister had brought Marsha to the hospital, where she was quickly transferred to the ward. Mother was particularly upset as she did not know why Marsha was ill again.

## (c) Understanding of diabetes by the family

### 1 Special teaching

When Marsha was first diagnosed as having diabetes, the family were shown the skills relating to injecting insulin and taught about carbohydrates and fat content of food. The trained staff spent several periods of time explaining why Marsha needed insulin and how this was necessary in order that her body could use the food she ate. A nurse specially trained in diabetic care was introduced to the family; she was also to be the person who would monitor Marsha's diabetes at home.

Due to the nature of her parents' work, Marsha's family were never present together. Each member of the family had to be taught separately, which it was thought might lead to misunderstandings about the care. Explanation was also given as to the signs and symptoms Marsha might experience if she did not keep to a diet and inject her insulin. Marsha was always included in any teaching. Although only 6 years old at the onset of the illness, she would soon be able to take some responsibility for her own care.

### 2 Problems associated with failure to follow guidelines

The family stated that they understood the importance of diet, insulin and other aspects of diabetes. The diabetic nurse visited them frequently after discharge. However, within a short time Marsha was again admitted in a hyperglycaemic state.

This pattern continued throughout her life, until the present admission at 15 years of age; during every hospitalisation, advice and guidance had been given, but the family failed to understand the importance of following the guidelines. They freely admitted that Marsha ate what she liked and sometimes forgot the insulin injections. Occasionally she was admitted in a hypoglycaemic state (too little glucose and too much insulin), having forgotten to eat before exercise.

During recent admissions, the complications of unstable diabetes have been emphasised to the family in the hope that this may make them more careful with Marsha's treatment. Marsha's age may be a factor in the difficulty experienced in currently stabilising her diabetes. Pubertal growth and adolescence cause many physical and emotional changes with which the body has to cope (refer to pages 37–45, *The Adolescent*).

## (d) Diabetes mellitus

*Literal translation:* 'running through like honey'—the diagnosis was originally based on the sweet taste of urine!

### 1 Definition

Diabetes mellitus is a disorder where too little or no insulin is produced by the islets of Langerhans in the pancreas. Alternatively, the insulin is produced but does not act in the normal way.

Insulin facilitates the entry of glucose (from carbohydrates mainly) into the cells of the body, in order to provide energy. If insulin levels are low or working incorrectly, glucose remains in the bloodstream, giving high serum glucose levels. Glucose also spills over into the urine (glycosuria). In normal health glucose does not appear in the urine (refer to renal threshold measurement).

Diabetes can occur at any age, although in children it commonly presents during the school years. The cause of the disorder is unclear, although several factors may predispose to the onset of diabetes, these include:

1. Inheritance factors.
2. Other diseases, such as cystic fibrosis and illnesses treated with steroids (long-term).
3. Following some viral infections.

## 2 Clinical presentation

Each child with diabetes may present with differing clinical features (Figures 15.7 and 15.8). Commonly the onset is due to *hyperglycaemia* (high blood glucose levels and insufficient insulin). Features include:

- Glycosuria.
  - Polyuria.
  - Polydypsia.
  - Dehydration.
  - Weight loss.
  - Vomiting/nausea.
  - Abdominal pain.
  - Acetone breath ('pear drop' smell).
  - Deep sighing respirations due to acidotic state of body.
  - Respirations called Kausmall.
  - Confusion, drowsiness, which can lead to coma.
  - Alterations in pulse, often weak and rapid.
  - Alterations in blood pressure—hypotension.
  - Alterations in temperature—decreases.
  - Thin body with wasted muscles and dry skin.
- Usually insidious onset
- Acute onset
- Usually acute onset

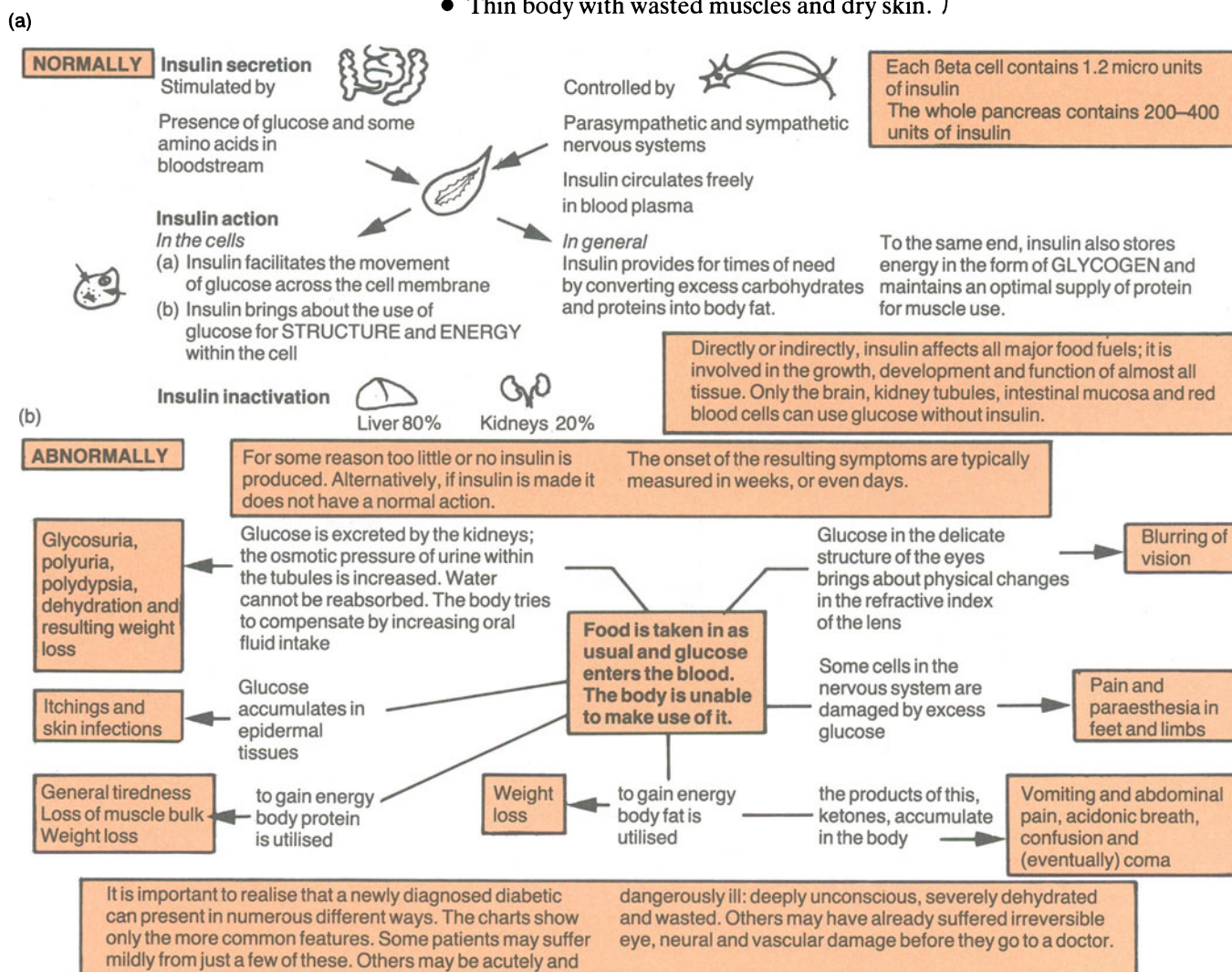


Figure 15.7 The physiology of diabetes. (a) The action of insulin in the healthy individual; (b) diabetes mellitus: the effects of insulin deficiency

When admitted for the first time, the child may only be suffering from weight loss, polyuria and polydipsia. In other children, the onset may be rapid when they quickly become drowsy and dehydrated and can fall into coma.

### 3 Immediate care and treatment

1. *Maintenance of airway* if child is comatosed.
2. *Monitor*
  - (a) Level of consciousness.
  - (b) Respiratory state.
  - (c) Pulse, blood pressure.
  - (d) Temperature—hourly.
  - (e) Urine output.
3. *Test and chart*
  - (a) Blood for glucose levels using a BM stix or Dextrostix.
  - (b) Urine for glucose and ketones.
4. *Correct electrolyte imbalance and dehydration*
  - (a) Intravenous fluids, usually sodium infusion to correct acidosis. Prescribed by doctor.
  - (b) Potassium added to intravenous infusion (potassium depletion due to loss in urine).
  - (c) Administration of insulin.
  - (d) Intravenous infusion with glucose to prevent child from becoming hypoglycaemic (too much insulin, too little glucose).

### 4 Subsequent care and treatment

To stabilise diabetes in the child may take some time. However, the immediate care and treatment should overcome the critical phase when coma and death can occur. Subsequently, it will be necessary to continue monitoring the child, testing urine and blood samples. A glucose tolerance test may be performed. Insulin doses will be altered according to the results of urine and blood analyses. The child will need to be started on a diet with restricted carbohydrate and fat content and with protein requirements suitable for growth and development. Each of these aspects are considered more fully in the section on educating the child and the family (pages 151–154).

#### Monitoring the disease at home

Once the child is over the acute phase, it is at home that this disease will be monitored and adjustments made to diet and insulin accordingly. The family will need the help of qualified community doctors and nurses to learn about diabetes, the care and treatment.

#### Readmission

As the child grows he will possibly be admitted to hospital several times in an unstable diabetic state. If his admission is due to *hyperglycaemia*, it may have been caused by:

1. Dietary indiscretions (too much glucose).
2. Infection.
3. Injecting too little insulin or forgetting to inject insulin.

Not every admission to hospital of a child with diabetes is due to hyperglycaemia. If the child has insufficient glucose in the diet and continues to take insulin he may become hypoglycaemic.

### 5 Hypoglycaemia

Low blood glucose levels and normal to high insulin levels are typical of hypoglycaemia. Features include:

- Behaviour change.
- Sudden hunger.
- Visual disturbances.
- Weakness.
- Pallor.
- Sweating.
- Tremor.
- Dilated pupils.
- Loss of consciousness.

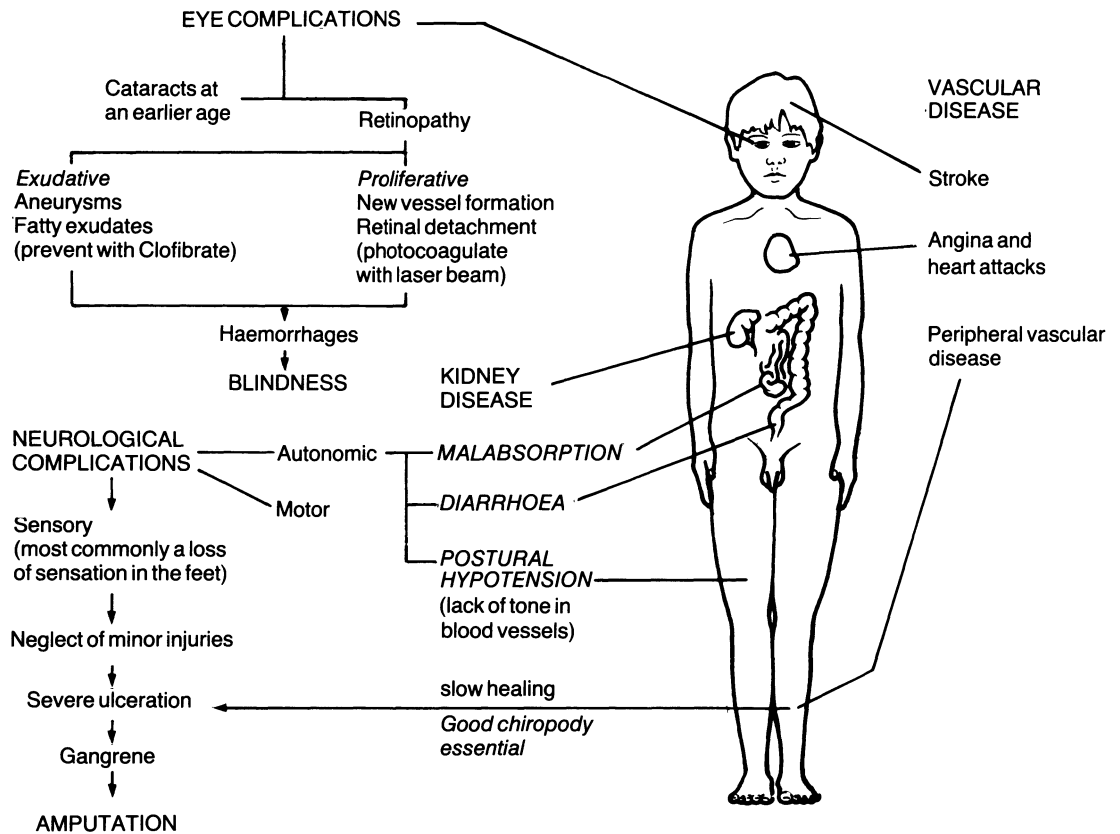


Figure 15.8 Complications of diabetes

## 6 Causes of hypoglycaemia

Hypoglycaemia occurs due to one of the following factors:

1. Overdose of insulin.
2. Low dietary intake of glucose.
3. Increased exercise (glucose used up faster, insulin levels remain high with no glucose on which to act).



Figure 15.9 Injection of insulin

## 7 Immediate care and treatment for hypoglycaemia

1. *Maintenance of airway* if child is unconscious.
2. *If conscious* give a glucose drink or food which contains simple sugars.
3. If the child is losing consciousness or unable to swallow fluids, an alternative method of giving glucose should be available. This might be *intramuscular glucagon* or *intravenous 50 per cent dextrose*.
4. *Monitor* conscious level, vital signs and urine output.
5. *Test and chart* blood glucose levels as necessary using BM stix or Dextrostix.
6. Test and chart urine specimens before each meal and prior to bedtime.

Subsequently the care and treatment will be similar to that described for hyperglycaemia.

## 8 Complications of diabetes

Figure 15.8 shows the main complications in the case of a typical child.

### (e) Parent and child education

Many hospitals produce their own booklet on this topic. Table 15.2 acts as a guide.

Table 15.2 Guide for care of diabetic child.

Need	Advice/education
<i>Diet</i>	
1. Needs to be controlled to prevent hyper- or hypoglycaemia 2. Prevent long-term complications 3. Needs to be adjusted to balance growth and development 4. Need to continue on a controlled regime throughout life	(a) Involve trained community nurse (b) Calorie controlled diet (c) Carbohydrates must be 50% of total calories, preferably high-fibre-containing carbohydrates (d) Fats: 35% or less of total calorific intake (e) Proteins: needed for growth and development (f) Salt: normal/reduced intake (g) Alcohol: need not be banned (depending on age) but it is high in calories (h) Diet should be taken at intervals during the day, to balance insulin injections and action (i) Adjustment to diet needed when exercise to be taken, or stressful situation, e.g. exams (glucose used up faster) (j) During puberty, diet may need adjustment because of increased growth and hormonal activity (k) Diet during adolescence may be rejected or 'experiments' tried (l) Grandparents and other relatives must be educated not to give extra sweets as treats to a child with diabetes (m) An exchange chart, indicating carbohydrate content of food, is useful for altering food in diet
<i>Insulin</i>	
1. Needs to be injected for the rest of the child's life 2. Psychological effect of injecting own body. Parental feelings about injecting their own child 3. Complications associated with injections 4. Needs to be adjusted through times of growth change, illness, etc.	(a) Involve trained community nurse (b) Explanation of the need for insulin by the body should be clearly understood. This must be explained in conjunction with a diet which is controlled in glucose and fat content (c) Type of insulin prescribed: this should not be changed without medical advice (d) Dosage, as prescribed or according to blood glucose or urinalysis. Simple calculations need to be taught. Measuring insulin after dosage checked and calculated (e) How to 'draw up' into a syringe after rotating the vial—do not shake (f) Sterile equipment used (g) Insulin at room T° (h) Where to inject (see Figure 15.9) and why to rotate insulin injection sites to prevent fat atrophy and subsequent reduction in absorption (i) Subcutaneous injection (see Figure 15.9): firm pressure with sterile swab and cleansing agent after injection (j) Observe for reaction (k) Cleansing and sterility of equipment used (l) Replacing equipment (m) Store insulin in a refrigerator



Table 15.2 (cont.)

Need	Advice/education
	<p>(n) Feelings about injections can cause reluctance on the part of parents to give insulin to their child. Children may go through stages where they do not want to give themselves injections. In adolescence this may be a particular problem</p> <p>(o) During illness, especially infection, insulin must still be given and doses sometimes need to be increased</p> <p>(p) Exercise, growth, stress factors may alter insulin requirements</p>
<p><i>Measurement of blood glucose</i></p> <p>1. Necessary for regulation of insulin and diet</p>	<p>(a) Use Dextrostix or BM stix</p> <p>(b) Child and family taught how to obtain blood sample from finger prick</p> <p>(c) Chart to show glucose levels</p> <p>(d) What to do if glucose at too low or too high a level</p>
<p><i>Urinalysis</i></p> <p>1. Necessary for regulation of insulin and diet and to detect complications</p>	<p>(a) Family taught how to use reagents to test for glucose and acetone</p> <p>(b) Chart to indicate levels of these in urine</p> <p>(c) Significance of high glucose and acetone levels (or low glucose)</p> <p>(d) Action to be taken with regard to insulin and diet. How to collect specimen: Before each meal and prior to bed, two specimens required: The first 1 hour before the meal. Discarded after testing as not a fresh specimen. The second ½ hour before the meal—results more accurate</p> <p>(e) Children unreliable, so all urine specimens should be tested</p> <p>(f) Some children on a sliding scale insulin dosage, depend on the results of urinalysis to adjust their insulin</p>
<p><i>General care and hygiene</i></p> <p>1. To prevent complications (see Figure 15.7 and pages 149 to 151).</p>	<p>(a) Children with diabetes should avoid infection wherever possible, respiratory infection particularly</p> <p>(b) Any cuts, bruises, abrasions should be treated promptly to prevent local and systemic infection</p> <p>(c) The diabetic child may be prone to skin infections, therefore careful observations and prompt treatment are required</p> <p>(d) Dentist should inspect teeth regularly</p> <p>(e) Foot hygiene and nail cutting needs particular attention to prevent infection; a chiropodist may need to advise family</p> <p>(f) Shoes should be well fitting and not plastic</p> <p>(g) Immunisations can be given according to local policy</p>
<p><i>Effects of diabetes (a long-term illness) on the child</i></p>	<p>(a) Controlled diet, insulin injections, urinalysis and special hygienic care may make the child feel very 'different' to the group; he may get 'outcast' and thought of as abnormal</p> <p>(b) Adolescence is a particularly difficult time; the need to adhere to a strict regime is often not wanted</p>

Table 15.2 (cont.)

Need	Advice/education
	<p>(c) May need assistance of a counsellor to help through periods of upheaval</p> <p>(d) Emotional crises may precipitate instability in diabetic condition</p>
<p><i>Education</i></p> <p>1. To ensure minimal disruption of schooling</p> <p>2. To prevent complications occurring, such as hyper- and hypoglycaemia</p>	<p>(a) Often disrupted due to hospitalisation</p> <p>(b) School nurse should be involved, if available, and school teacher should be aware of child's care and treatment, e.g. what to do if child becomes hypo- or hyperglycaemic</p> <p>(c) Friends could also be educated</p> <p>(d) School timetable may need to allow flexibility for diabetic child, for instance, sports activities are often planned for the whole afternoon and a diabetic child may find difficulty in glucose/insulin regulation to deal with a long period of physical energy</p> <p>(e) Exams and the stress of such times must be considered</p>
<p><i>Societies</i></p> <p>1. Information, advice and support to diabetic families</p>	<p>(a) The British Diabetic Association: families should be put in contact with their nearest branch</p> <p>(b) Booklets available, e.g. 'Rupert and his friends' (in conjunction with Ames Laboratories)</p> <p>(c) May be put in contact with places for holidays, e.g. holiday centres for adolescents</p> <p>(d) Advice for travelling abroad and carriage/storage of insulin</p>

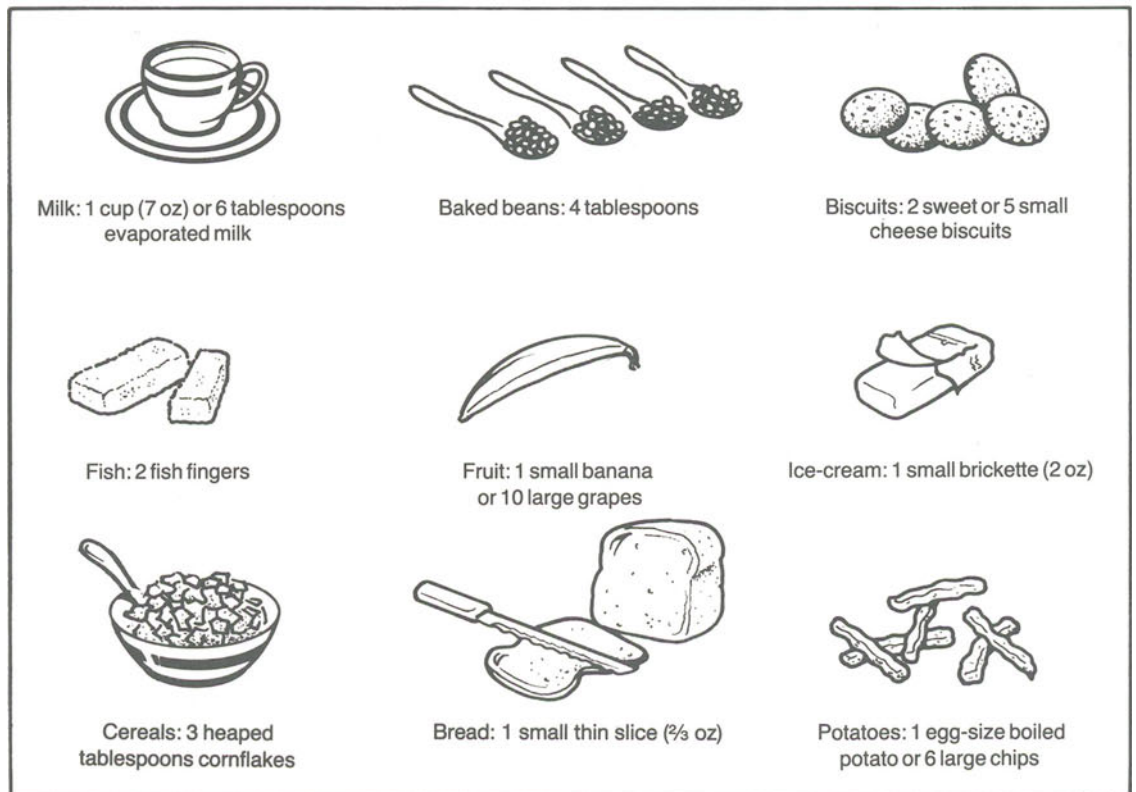


Figure 15.10 Carbohydrate content of several foods. The foods shown each contain 10 g carbohydrate

## 1 Diabetic cards and/or discs

Diabetic children should carry a card stating:

NAME:

ADDRESS (home):

PHONE NO. (home):

GP'S NAME AND PHONE NUMBER:

Some children may also wear a disc.

*A form of glucose must always be carried*, e.g. sugar lumps, chocolate bar. This advice is on the card.

### Suggested exercise

To test your knowledge of the adolescent admitted to a hospital as an emergency and the problems of diabetes, answer the following questions.

1. List the problems with which Marsha will present if she is:  
(a) hyperglycaemic, (b) hypoglycaemic.
2. Assess the needs of a 15-year-old girl admitted to hospital. (Refer to pages 37–45, *The Adolescent*.)
3. Using the needs you have assessed and the problems of *either* hyper- or hypoglycaemia, outline on a chart with which you are familiar, a care plan suitable for a 24-hour period in hospital. The care plan should have goals stated and a description of nursing action, rationale and evaluation.
4. List the aspects of self-care you think should be outlined to help Marsha and her diabetic state.
5. Discuss with your colleagues how an adolescent with a family such as Marsha's could be helped to understand diabetes and its complications.
6. Marsha is likely to leave school at 16 years. She may be successful in her 4 GCSE's. What advice should she be given with regard to:
  - Employment.
  - Relationships, marriage and children.
  - The course of diabetes and associated complications.
  - Social activities, including learning to drive a car.

## Terminal illness: definition, causes and acceptance

### (a) A definition

Terminal illness occurs when a child has had an illness, possibly with remissions and relapses, but now no further active treatment is possible and symptomatic relief of signs and symptoms and good nursing care to maintain the child's comfort and dignity are required. The child and family will be prepared physically and emotionally for the eventual outcome which will be of varying amounts of time. Doctors may be able to give an indication of the time that the child has left—this may be days or weeks. The actual moment of death may be sudden, perhaps unexpected, or there may be an indication of when it will happen.

### (b) Causes of terminal illness

Probably the first cause of terminal illness that will come to mind is malignancy. It must be remembered that many children are cured of some types of cancer and indeed acute lymphocytic leukaemia has a much increased chance of a curative prognosis nowadays.

You may nurse children with terminal illness occurring as a result of the following:

- Some types of brain tumour.
- Renal diseases and failure.
- Liver failure.
- Cystic fibrosis.
- Some of the less common, degenerative disorders.

Whatever the cause do go to your textbooks to find out about the disease (including the pathology) and read the patient's medical notes as it will help you in planning your nursing care.

### (c) Nurses attitudes in acceptance

Caring for a child who is terminally ill is often one of the things that nurses think about most when they first hear that they are being allocated, for experience, to the paediatric ward. You may be worried about seeing a dead child, or coping with the parents and possibly your own emotions. To all involved it seems so unfair that a child will not be growing up to become an adult with a full life in society; that a small child may have to undergo some unpleasant investigations, suffer pain or the side-effects of drugs. How far do we go in research and trying to find a cure? Also, it seems to be the nicest children that are affected.

#### 1 Understanding the illness and providing support

If you understand the child's disease and treatment, by reading the medical notes and relevant textbooks, you will be able to come to terms with the situation and so be better able to support the child and parents. Do talk to sister and the other trained staff on the wards, e.g. social worker, ward psychologist or doctor. Everyone must work together and be fully aware of what the child and parents know, so that communications are effective. In caring for a child with terminal illness you are not alone, but part of a large team under the direction and guidance of the ward sister and consultant.

#### 2 Helping the family in their acceptance

Not only does the child need your help, care and understanding, it is of course a family centred caring situation. You may be frightened of saying the wrong

thing. Each patient and his family are individuals, with differing emotional and social circumstances, but they all have a common denominator, that of the grieving process and coming to terms with the eventual outcome in whatever time there is left. Perhaps the hardest thing for them to face is the eventual separation. The ward sister or nurse in charge will help the nursing students to learn to assist parents and other relatives by being present, by listening and by saying very little. The presence of a nurse is often all that is needed.

(d) Confirming the diagnosis and preparing the parents for the outcome

### 1 Investigations to confirm diagnosis

Before imparting news that the child is at the stage of terminal illness, doctors will confirm that the illness is no longer responding to treatment and may do some investigations, for example, blood tests or x-rays. They will then speak to the parents.

### 2 Preparing the parents

Some parents, having cared for their child during a long illness, may guess for themselves but they are still about to be told by someone else and have their fears confirmed. The separation from their child is about to become a reality. For some this is a relief; for others it will be unacceptable—hope has turned into despair and there will be no more remissions and no cure.

#### Parental reactions and questions

The parents will feel mixed up. How long has their child to live? Will he now suffer more pain? Will they be able to cope? Should they tell the child? How much does he know already! What to tell siblings, relatives and neighbours? How will he die? Will it be peaceful? You are sure that there is no miracle cure?

#### Giving realistic answers

The parents will be told realistically what will happen. Of course, much of this is 'educated guesswork' since no-one can estimate the length of a terminal illness exactly. Being pessimistic or giving false hope will not promote the parents trust in the ward team.

Parents will need time to adjust to this latest episode in their child's illness. Sister will go back later to answer any further questions. The social worker, ward psychologist and doctor and the nursing staff will all combine to give them support.

## Principles of caring for the terminally ill child

Not all children will be cared for in hospital. If the parents feel able to cope, the child may be cared for at home with the support of the community and nursing services. Other children receive hospice care; paediatric hospices are now beginning to emerge.

(a) Pain control

Pain control is one of the most important principles of care. Pain can be a feature of terminal malignancy. Much research is taking place into analgesia—the combination of drugs giving pain relief, with the minimum of side-effects. Prevention of pain is now the rule and often some of the least powerful drugs are used. It may become necessary in the final stages to progress to more powerful drugs and perhaps to the controlled drugs. Tolerance is a feature of these drugs so dosages are controlled, and this will no longer be of paramount importance.

(b) Radiotherapy and cytotoxic therapy

As in adults, radiotherapy and cytotoxic therapy may be part of the treatment. Side-effects of loss of hair, anorexia, increasing periods of tiredness and being prone to infections can be distressing to both child and parent. 'Kojak' hairstyles, however, are now more acceptable following the showing of the TV series.

- (c) Treating the symptoms      The principles of treatment at this stage are symptomatic and doctors will constantly monitor the patient's condition and degree of comfort.
- (d) Nursing and caring      All nursing care should be grouped together as much as possible, so that the child can have periods of rest. The importance of the little things cannot be over-emphasised, and 'nursing' rules are often 'bent' on such occasions, such as a visit from a much loved pet. Observations are usually kept to a minimum.  
Basic nursing care is even more important as the patient's emaciated state means that he is more prone to pressure sores and perhaps mouth ulceration.
- (e) Nursing in cubicle or ward      Where the patient is nursed will depend on the individual and the situation. Sometimes a cubicle offers greater privacy and peace and a place where members of the family can be resident with the child. Other children prefer to be in the ward and part of the hubbub of the daily routine. On better days he may enjoy having his bed wheeled into the playroom. Even though he is terminally ill, life goes on and he will enjoy colourful and cheerful surroundings.
- (f) Talking and listening      There is no need for morbid atmospheres. Sometimes he and his family will want to enjoy themselves and to laugh, but there will be other times when they are more despondent and feel the need to cry. Conversation will often be about normal and everyday happenings, even including the future. Say what comes naturally: don't deliberately set out to avoid certain subjects and take your cues from the child and the family. Most important, take time to listen. Past experiences are often discussed, brothers, sisters, schoolfriends, even school work.
- (g) Providing company and comfort      As the patient's condition deteriorates it is often appreciated if a nurse stays with him whenever possible. In this way the child and family do not feel alone, unless of course they expressly wish for particular moments to be by themselves.  
Favourite teddies, family photographs, posters, school work and colourful curtains that can be drawn to provide privacy will be appreciated, as will his own personal things such as his own pyjamas or drinking cup.  
Allow parents to do as much of the care as possible or to help you. They appreciate being actively involved, and it is their child.  
Stress is placed on marital and family relationships. Family routines may have to be adjusted. Financial worries may arise and help may be available from agencies such as the Malcolm Sargent Fund. The social worker can be a tremendous help here. The priest may be asked for help and comfort by the family.  
Games involving little physical and perhaps (later on especially) mental energy will be enjoyed. TV, radio, comics and the reading of stories are greatly appreciated. On sunny afternoons the bed can be wheeled on to a balcony. Visiting is completely free and includes parents and siblings, grandparents and schoolfriends. In the later stages, Mum and Dad often become resident together, and siblings too may stay. The family is able to stay together at this stressful time.
- (h) Specific nursing care      Nursing care specific to the condition will also be given, e.g. oxygen for the dyspnoeic patient as prescribed; special diets or perhaps IVI or nasogastric feeding in the final stages to relieve the discomfort of dehydration and urinary infections.

## Causes of death

Death of a child is not always preceded by a terminal illness. It may occur as a result of:

1. Failure to recover from an acute illness such as meningitis.
2. Severe congenital abnormality being incompatible with a continued life.

3. Trauma from road traffic accident, drowning, poisoning.
4. Unexplained, as in infantile cot death syndrome.

Thus the death can occur suddenly, for example, as a result of an accident or after a short illness.

(a) Accidents

Death as a result of accidents can cause tremendous feelings of guilt; the parents will often say: 'If only . . .', especially if there was some error or lack of supervision. Parents often expect themselves to be perfect and superhuman but accidents can and do happen.

(b) Cot deaths

Cot deaths are distressing as the child appears to be his normal healthy self on going to bed but when his parents go to wake him in the morning he is dead. A post-mortem reveals no cause and this, of course, does not help the parents in coming to terms with the death. A great deal of research is pursued into causes of cot deaths and many factors are being identified which may lead to its prevention.

## Accepting the news that the child will die or has died

Two situations arise here. One is that parents must be told that their child is not going to recover from an illness and that he will very shortly die as a result. The second is that the child has in fact already died and the parents must be told.

These situations are never easy and staff feel distressed at having to impart such news to the parents. You will never have to do this yourself and you will be given information and guidance from senior staff as to what has been said should you be part of the caring team in these situations. It is usually the doctor who tells the parents, with the ward sister present.

(a) Ensuring privacy

It is advisable for both parents to be present and a suitable room is used so that privacy is ensured, and can continue, once the doctor and sister have left.

Parents may not be expecting such serious news and may not be able to take in many details other than the fact that their child is about to die or has died. 'How?' and 'Why?' will be their first questions and 'Why us?' Questions like this must be answered as truthfully as possible.

Having been told the news, the parents may appreciate some time to themselves to try to absorb the news and get over the shock. Sister, and if necessary the doctor, will return to answer further questions after they have had time to think.

(b) Reactions to the news

Reactions of parents to such news varies from tears to anger and even to aggression. Some parents will take a long time to adjust. Sometimes one partner appears braver and more supportive (though if prolonged this can cause mental stress). Whatever their reactions, parents should be encouraged to express their feelings (if necessary to cry) and fears. Guilt feelings may be involved: 'What did we do to deserve this?' 'Did we do all that we could to prevent our child's death?'. This is the beginning of the grieving process which will be discussed in a later section on Bereavement, page 161.

## Attitudes to death

(a) Fear and taboo

In general, people are frightened of the word death and its implications. If a member of the family or a neighbour dies, people are often hesitant in approaching or discussing the subject. They think that if they mention the dead person's name it will cause upset. So usually the subject is ignored and people pretend that it never happened.

There are also taboos on the subject and it is only recently that death seems to be discussed more freely on TV and in the media. Hospice work in particular seems to have highlighted the dignity involved and the religious aspects.

(b) Children's concepts of death

Children have varying concepts of death which depend on their age. Many books are now being published for them on this subject. People talk of 'Granny having gone to live with Jesus'. Naturally, they find it easier to understand why an old person dies, but not so easy to understand why a younger person dies. Their first contact with the subject is often the death of a pet, the goldfish or rabbit, which is then buried in the garden. They find it hard to understand that the vet 'puts to sleep' a dog and have no hesitation in relating it to the human case and thus causing confusion. Whatever the child is told, and often it is best to tell him the truth, according to his age, the whole ward team must know what is said in order to avoid confusion.

(c) Religious views

It is important to consider religious views. There are differing practices to be respected for Anglican, Catholic, Islamic, Jewish and Buddhist religions. You should acquaint yourself with the varying customs by discussing them with the ward sister, hospital and family religious leaders. Being introduced to someone who has suffered a bereavement and been through similar feelings may help the parents.

## The child who dies in hospital

Parents want to know if the moment of death will be peaceful. Will the child suffer? Will he know what is happening? They wonder, as perhaps you may, what to expect when he actually dies and what he will look like afterwards.

(a) Caring at the moment of death

The moment of death is usually a natural one. It often happens very peacefully—the child simply ceasing to breathe—perhaps in his cot, in his mother's arms or in the arms of the nurse. The doctor will certify that the child has died. The child will then be placed in his cot, having offered the parents a last cuddle, and his eyelids quietly closed. Parents may like a few moments alone with their child.

Later a cup of tea with a few words of sharing their sorrow will be appreciated. Simple phrases are the best, with perhaps a touch on the arm to show that you do care and understand. There is no shame in your shedding a few tears with them but sobbing hysterics will not help.

(b) Assisting with last offices

The child is left undisturbed for perhaps an hour, when last offices are performed. It is the last service that you can give and the parents may like to help you wash him and dress him in a white gown, perhaps placing a small white flower in his hands. He is then taken (with a method of identity) by carrycot or trolley to the hospital chapel or mortuary according to religious practice. The presence of the priest may be particularly appreciated at this time, but remember that some people have no religious views at all. Remember also that in some cultures all the family may wish to be present. Parents may or may not wish to speak to the doctor. A post-mortem may have to be requested, especially if the death is a sudden one or of unknown cause; a request may be made for organ donation for transplant. Arrangements are made for the collection of the death certificate (which is taken to the Registrar of Births and Deaths within five days) and personal belongings. It is important that these belongings are neatly put together and handed to the parents at a suitable moment.

Parents will then arrange with a funeral director the details for the funeral service for which a grant is available. Leaflets are available from the DHSS with all the relevant information.

## The child who dies at home

Some parents want their child to die in hospital as they feel that they cannot look after him as well at home and offer him the security of the medical and nursing team's care. Indeed some children require such medical care that they cannot go home.



(a) Support for the family and continuity of care

Other parents wish their child to be at home, when no further medical care can be given. Good preparation of the parents and support from the GP and community services will help the parents feel less frightened and able to cope. Arrangements are made for drug administration, laundry facilities, provision of incontinence pads, etc. It is easier for the family to be all together and somehow it all seems more natural.

There must be good communication between the hospital and community services in order to provide continuity of care.

## Bereavement

(a) Stages of grieving

The grieving process takes place in stages: fear, shock, disbelief, guilt, mourning and finally acceptance of the death. With a child there is not only a loss of the past, but a loss of the future. Grief decreases in intensity over a period of time which varies, often over 1–2 years, only being intensified on special days such as birthdays when there is a particular feeling of loss. It is a gradual letting go and acceptance of separation from the child.

When the child dies in hospital, it may be your last contact with the parents. Some return at a later date to thank the ward staff and to talk about their child, but all too often the parents are left to cope on their own.

(b) Progress in understanding bereavement

A greater understanding of bereavement is emerging. The Compassionate Friends has been established (see Address list) and some hospital chaplains, social workers and psychologists arrange self-help group meetings where parents with similar grief can meet and share experiences. Social workers can help with financial worries.

Of course the ward staff have lost a patient. Discuss with sister any feelings or fears you may have. Often wards have social worker, psychologist, and nursing staff meetings for this very reason, which help to put events into perspective. Utilise your experience with adults and remember that the more experienced you become in communicating the more confident and helpful you will be in such circumstances.

### Further reading

Bluebond-Langner, M. (1978). *The Private Worlds of Dying Children*, Princeton University Press, New Jersey.

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## Nursing care plan for the terminally ill child

(a) Introduction

The child who is terminally ill may have been diagnosed on his first and only admission to hospital. However, he may be like the child with leukaemia, discussed here to illustrate the course and progress towards terminal illness, with frequent hospital admissions. Malignant disease is the second commonest cause of death in children under 2 years (Chessells, 1981).

Leukaemia is the commonest malignant disease in children in the UK. The age of onset is most likely around 5 years, being generally more prevalent in the schoolchild.

(b) Introduction to David, an 8-year-old with acute lymphoblastic leukaemia



Figure 16.1

(c) Leukaemia

### 1 The first diagnosis

David, Figure 16.1, was first diagnosed as having leukaemia at the age of 5 years. The news that their child had a malignant disease was devastating to his parents. David, although old enough to understand that he was ill, could not understand the implications of such a disease.

His parents were noted to follow an acute grief reaction: at first they were very shocked, and did not believe the diagnosis, then they blamed themselves for David's illness.

Until admission to hospital, David had been a normally active 5-year-old. He had just started school, where his teacher said he was noisy but hard working with a good intelligence level. David had a younger brother called Sam, who was 3½ years old. Sam attended a pre-school playgroup, so when the two brothers were together there was boisterous fun and games.

The family appeared to be very loving and had a close relationship with one another. The diagnosis of David's illness as leukaemia was very upsetting and the family needed to support one another. This support included grandparents and nearby friends and neighbours.

### 2 The prognosis

The diagnosis of leukaemia does not necessarily mean that the child will die. If leukaemia is of the acute lymphoblastic type (85% of children have this type), life chances carry a reasonable prognosis. In some places in the UK children have been in remission for 5 and up to 10 years. These children have had no relapse since the last remission in their disease and are sometimes termed as being 'cured'. As the cause of leukaemia is largely unknown, it is difficult to categorically state that the child is 'cured' as only time can tell.

The second group of leukaemias are called acute myeloblastic. At the present time, children with this type do not respond so well to treatment and producing a remission is difficult. Their life chances are very limited and many children die within a short time of diagnosis.

Leukaemia is a malignant disease of the blood and particularly the white blood-forming cells in the bone marrow. The leucocytes (white cells) are produced as immature and undifferentiated cells, released in large quantities in the bloodstream. The immature cells are often called blast cells. Because the bone marrow is engaged in producing many white cells, erythrocytes (red blood cells) and platelets are produced in smaller quantities.

#### Predisposing factors

The cause is largely unknown although certain factors predispose to leukaemia:

1. Some viral agents.
2. Genetic factors and possibly chromosomal defects.
3. Radiation effects.

Leukaemia is diagnosed as affecting the development of the white cells, causing either acute lymphoblastic or acute myeloblastic leukaemia.

### 1 Normal formation of the white cells

The white cells, lymphocytes, myelocytes and monocytes, are formed through a series of stages called *leucopoiesis*.

#### Lymphocytes

The lymphocytes are formed in lymph nodes, spleen and bone marrow, and are *lymphoblasts* before maturing to lymphocytes. They form 25 per cent of the leucocytes in the blood.

#### Myelocytes

The myelocytes differentiate into:

- Neutrophils.
- Eosinophils.
- Basophils.

They are formed in the bone marrow and are *myeloblasts* before maturing to myelocytes, and differentiate into the three types stated above. These white cells form 70 per cent of the total number in the blood.

### **Monocytes**

The third type of white cell, the monocytes, account for 5 per cent of leucocytes and cause a rare form of leukaemia, with a prognosis similar to the myeloblastic type.

## **2 Acute lymphoblastic leukaemia**

### **Changes in blood picture**

1. Reduced haemoglobin and erythrocytes: the bone marrow is over actively engaged in the production of immature, undifferentiated leucocytes. The clinical features of anaemia are present.
2. Reduced platelets: platelets are formed from megakaryocytes and these come initially from a stem cell in the bone marrow. Clinical features of bleeding are present.
3. Normal or high levels of neutrophils in the bloodstream: the neutrophils are immature and poorly differentiated in structure. Clinical features show a decreased resistance to infection.

### **Clinical features**

The child may initially present with any of the following features:

- Fever (pyrexia or hyperpyrexia).
- Infection (often recurrent) especially throat and chest.
- Bruising.
- Epistaxis.
- Bleeding gums.
- Bone and joint pain.
- Pale tired appearance.
- Abdominal pain, especially if organs infiltrated.
- Enlarged lymph nodes.
- Central nervous system involvement which can give rise to headache and vomiting.

Diagnosis is based on the child's clinical picture and the changes in the cells of the blood.

## **3 Progress of leukaemia: remission and relapse**

Treatment and care is aimed at producing a remission in the course of the disease.

### **Remission**

The word comes from 'remit' which means to pardon or relax. Remission here relates to abatement of signs and symptoms.

### **CHEMOTHERAPY**

The remission is achieved by a long and repeating course of chemotherapy. The drugs used are cytotoxic in action and apart from affecting the 'malignant' cells they also cause side-effects, including anaemia, bleeding tendencies, hair loss, nausea and vomiting. One of the most difficult aspects of this treatment is placing the child in even greater predisposition to infection due to the effects on the white blood cells. The child may be nursed in a protective isolation cubicle (protective isolation nursing, see page 130). He may also require blood transfusions to correct the anaemia caused by both his illness and the treatment.

### **RADIOTHERAPY**

Radiotherapy may also form part of the treatment and, if cytotoxic therapy has not done so, this will cause alopecia. Parents find this a trying time as the treatment is as unpleasant as the effects of the illness. It is difficult for parents to understand the benefit of such treatment at a time when they are grieving and upset in trying to adjust to the diagnosis.

Once the child is over the acute period, is well enough and the family feel they can cope, he will be discharged home, as treatment can be continued on an outpatient basis. When remission is produced, there may be a long period of time in which the child is clinically well and shows no signs or symptoms of the disease. During such time, he is carefully monitored by medical staff, especially his blood picture.

### **Relapse**

A relapse occurs when the features of leukaemia appear in the blood and manifest themselves clinically.

This is a very unhappy time for parents, as their hopes have been raised due to their child being in remission and probably quite well. Treatment has to be started again, the child may be very ill and parental morale will be low.

### **Coping with the pattern of illness**

This pattern of illness is typical in leukaemia and is very tiring, physically and emotionally for child and parent alike. The child wants to know why he is ill, and doesn't get better. As he grows older he may begin to understand the implications of his illness. He may not voice his fears but may remain frightened and withdrawn. Alternatively, he may ask pointed questions of his parents, such as: 'Am I going to die?' Parents often need guidance in how to deal with such questions and behaviours through which their child may pass. They are asking, too, 'Will he get better?' 'How long before there is no chance of recovery?' 'Can he be cured?'

Life has to continue, for the sake of their affected child and his siblings. A positive approach to the present is best. This is not easy when you know the alternatives in the prognosis of leukaemia.

### **David's leukaemia**

David's illness had followed the pattern described above: in and out of hospital during the three years since the diagnosis. On this admission, after consultation and agreement by his parents, cytotoxic therapy was discontinued as it was having no effect on the malignant cells and making David feel very sick and poorly.

#### **(d) David's admission for terminal care**

David's parents expressed the wish that he be nursed in hospital with the family becoming resident. Both parents felt that they would be better able to cope with the support of paediatric nurses and medical staff. They arranged to have a rotation system during the week, whereby one parent was always with David. Sam, his brother, now 6½ years old, was to visit regularly. At the weekends the family were there together, including grandparents.

The staff arranged beds, washing and cooking facilities for the family. By placing David in a cubicle, privacy and observation could be achieved. Parents were also reassured that a nurse allocated to care for David was available when they needed to go home for a short period. Parents of a dying child, need to be able to 'get away', out of the hospital, even if only for a few hours.

### **1 Nursing history**

A nursing history which had been taken from David and his parents on their very first admission was updated. This included details of physical growth, changes in activities of daily living and changes in home and social background.

Although David was well known to the trained staff, at every admission information about him was updated. This was especially in relation to activities since his condition had deteriorated from the last admission.

### **2 Assessment of problems**

David was assessed to have the following problems for which nursing action was needed.

#### **Behaviour change**

David's behaviour has changed due to his fear of illness, investigations and the future. David's parents have decided not to tell him his prognosis. They reacted to his illness with anxiety and obvious uncertainty about the process of dying.

**Pain and discomfort**

David experiences pain in his limbs, joints and back. He also has bad headaches. His movements are limited by pain, unless analgesia is given regularly with good effect. Non-verbal clues which might indicate pain should be recognised.

**Breathlessness, poor colour and lethargy**

Due to reduced number of erythrocytes, David is anaemic, and his colour is poor due to decreased oxygen uptake. He is lethargic due to his anaemic and debilitated state. Oxygen may be prescribed and a blood transfusion given if some relief of symptoms can be obtained.

**Bruising and bleeding easily**

This problem is likely to cause epistaxis or bleeding into joints, causing pain and immobility. Gums may bleed if brushed too vigorously or diet is too hard. Bleeding may also cause melaena and haematuria. Medicines prescribed by the doctor take into account the tendency David has to bleeding and therefore intramuscular injections should be avoided.

**Predisposition to infection**

David has mouth ulcers and in the latter stages of his illness he developed a chest infection. Infection is due to a decreased and immature number of circulating white cells, and to anaemia.

Protective isolation is not recommended as David is in the terminal stages of his illness and the restrictions imposed by this type of nursing are considered unnecessary. His mouth needs frequent and gentle care to relieve soreness.

**Nausea, vomiting and weight loss**

David is reluctant to eat due to his sore mouth and because he feels nauseous. The family cook his special meals, usually a soft diet. He often wakes hungry in the middle of the night. Pain relief and anti-emetics are given to relieve his discomfort. David became thin by the time he was dying. Care for pressure areas is given as often as David lets anyone move him.

**Assistance with hygiene and elimination**

David normally washes and dresses himself. He is shy in front of nurses and prefers his mother to wash him. He often becomes frustrated because he wants to do things for himself and this leads to tension between him and Mum. An angry outburst helps to 'clear the air'. David is offered bedpans and urinals but as he experiences difficulty in using a bedpan, he is carried to the toilet. Constipation becomes a problem due to insufficient diet and mobility and suppositories are administered to ease discomfort.

**Boredom**

David sleeps a lot but when awake enjoys a story or watching TV. The play leader finds many interesting and different books and games. The children in the ward understand David is ill but often come into the cubicle to say 'hello' or, if David feels like it, play a board game or watch TV together. Play helps satisfy the curiosity of the children.

### **3 Support for the family**

David's family receive support from other parents, as well as from nursing and medical staff. The social worker involved with the family visits, as does David's spiritual leader. Friends and relatives often phone and visit and sometimes persuade David's Mum to go out for coffee or shopping with them.

Sam asks many questions about David and at one time said he knew David was dying. Parents are as honest as they can be in answering Sam's questions and he seems satisfied by this.

## 4 The final days

David never asks his parents about going home again. Over the latter relapse he has become quieter and more mature. His parents say they are sure he knows he will not get better but has indicated he does not want to talk about it. Behaviour changes such as anger signify anxiety, and parents and nurses need to sit and talk with him, giving honest replies whenever possible. If David behaves very badly, his parents try to show some discipline, as some normal and secure routine needs to be established.

David died a few weeks after admission. His parents and a member of the nursing staff were with him. The parents wanted to be alone with him and his spiritual leader immediately after the death.

Nurses on the ward were saddened and upset about David. A quiet discussion was arranged for them to express their grief (refer to page 156, Introduction to the terminally ill child).

### Suggested exercise

Using the problems identified in David's terminal care, write a care plan stating suitable goals, action, rationale and evaluation.

You may find it useful to underline some points discussed under each problem, which could contribute to nursing action. Alternatively you may prefer to write a care plan for a terminally ill child you have nursed.

Practical hints are included, which you may find useful when writing your care plan.

### Thoughts and behaviour of the dying child

Many thoughts and fears of the child are similar to those experienced by adults. Death is something which is permanent but not necessarily something which happens to him. Childhood is a time for living, for achieving goals and for experimentation and independence.

Physically the child is developing towards adulthood. He develops an awareness of changing body image and physical attractiveness.

Illness is perceived as distortion of his body image. This may affect his mental attitude to himself and others. The child may become resentful and angry that he is the one who has to suffer and ultimately to die. He may not believe he cannot recover; but as he reaches adolescence, his mental capabilities allow him to realise the truth.

If you are nursing a dying child you may find he is:

- Withdrawn.
- Feels rejected.
- Resentful.
- Aggressive.
- Bitter.
- Loud and noisy (bravado).

### Practical hints for nursing the dying child

1. Involve the family with his care, and teach and support them whenever necessary. Most parents like to be physically as well as emotionally involved.
2. Allow privacy but do not isolate the child from the world around him.
3. Be prepared for the child not to talk about illness and death. It usually takes time to build up a trusting relationship.
4. Allow for aggressive outbursts, which may seem unreasonable to you at first.
5. Be honest when you answer questions and enlist the help of experienced staff where you cannot answer. Make sure you know what the parents wish their child to know or what they have told him.
6. Use other methods to encourage the child to express his feelings. These might include art, board games, discussion after TV programmes.

7. Keep the child in touch with the outside world.
8. Allow independence, such as in choice of clothes, hairstyles, music, food, TV programmes and books.
9. Schoolfriends should be aware of their sick colleague and encouraged to visit if parents agree.
10. A multidisciplinary approach is often most appropriate, so that expertise in all areas is available to the family.
11. When the child dies, no matter how independent he and his family have been, they usually will not wish to be alone.

## What is handicap?

It is difficult to define such a term as handicap and people have their own views in doing so. For the purposes of this chapter it will be described as the child's normal function being never achieved or lost in some part, usually permanently.

### (a) Types of handicap

There are different degrees of severity and different types of handicap:

- Loss of motor power/physical ability, e.g. after poliomyelitis.
- Loss of sensory power, e.g. blindness, deafness.
- Loss of communicating, e.g. speech and language defects.
- Loss of mental ability, e.g. Down's syndrome.

There may be more than one type of handicap presenting itself in a child, e.g. in cerebral palsy (you may have heard children with this problem described as spastic). Here the child will present with perhaps some degree of motor disability, mental retardation and/or speech defects. He is said to have a multiple handicap.

Handicap may be congenital or acquired. An example of the former is where a pregnant woman has german measles (rubella) which causes blindness in the baby. Handicap may be acquired as the result of infection, for example, poliomyelitis. Fortunately, this is now a rare disease but it may leave a child with a disability.

### (b) Some causes and methods of prevention

The cause of handicap is not always known. As already mentioned, some are the result of ill health in the mother, e.g. rubella infection, while others may be the result of birth trauma, e.g. cerebral palsy. Some are genetic in origin, e.g. Down's syndrome, but the vast majority are idiopathic in origin.

#### 1 Preventive medicine

Hopefully, to determine the cause is to prevent the birth of more children with a handicap in the future. Therefore, much research is taking place into this prevention. Statistical information on, for example, incidence and geographical variation in numbers presenting, dietary factors in the mother, are all playing a role.

Health education and preventive medicine, information via the media, and rise in standards of living are all helping in the prevention of the birth of children with handicaps. The immunisation programme plays an important role in prevention, e.g. children in this country are immunised against poliomyelitis and all females are recommended to be immunised against rubella during early adolescence. Genetic counselling provides an advisory service of utmost importance where a disease is genetic in origin.

#### 2 Antenatal tests and care

Once the mother is pregnant it may be possible to perform an amniocentesis test or ultrasound. This is carried out where there is a family history of the handicap, e.g. spina bifida. If detected by the presence of high levels of alpha foetal proteins, mother may be offered a termination of pregnancy if she so wishes.

During pregnancy full antenatal care is important, with good facilities for the birth of the baby. After the birth it is essential that facilities are available for the neonate should he require hospital treatment for difficulty after birth or for any handicap found to be present. For example, anoxia in a baby may cause cerebral palsy.



(c) Early reactions from parents

Parents may be devastated at being told that their child is handicapped. Their reactions are often similar to those described for the child with a long-term disorder. You may find it useful to refer to that section. However, here the condition is rarely and probably never going to be cured. Parents mourn the loss of a perfect baby. Some feel they can never cope with, for example, a mentally retarded child, and they reject him. Handicapped children may be subjected to child abuse and, once again, can place considerable strain on a marriage. Fortunately, the majority of parents love these children, displaying great inner strengths and qualities, so becoming determined to help their child obtain the greatest possible quality of life.

(d) Ethical issues

Much discussion has been provoked on the ethical issues involving the handicapped child. 'To treat or not to treat — that is the question' is often asked once the diagnosis has been made. Some people believe that every baby should be treated whatever his handicap and others believe that some children should be kept comfortable with no active intervention.

Whatever the opinion, the quality of life as already mentioned is an all important factor. Each child is individually assessed with doctors, nurses, social workers and others and, most importantly, the parents being involved in the decision-making. You may like to discuss this dilemma further with your tutor and within your group of colleagues.

Moral, social, legal and religious views are all implicated and both medical and nursing professions have ethical committees that consider such issues. Hypothetical instances are emotional and there is a danger of making decisions without responsibility. Confidentiality is of the utmost importance.

## Living with a handicap: effects on child and family

Circumstances surrounding the family with a handicapped child vary, as does the ability to adjust to the knowledge of a handicap being present. If the handicap is congenital the parents and, in particular, Mum, will be getting over the effects of the birth and adjusting to being parents. The child will grow up with the handicap being present and he and his parents will learn to adjust from birth.

If the handicap is acquired it may be sudden; to have been 'normal' and then to have to adjust to a handicap can pose problems for both child and parents.

(a) Parental attitudes

Once again the attitude of the parents and the child will play a vital role and much support will be required in developing the child's full potential and guiding him to his full role of adulthood in society.

As with the parents of children with a long-term disorder, parents of a handicapped child may become over-protective, often as a result of guilt feelings, which may prevent a child from gaining his full independence.

He needs love, security and discipline. The family, including siblings and grandparents, will help him adjust. Life is often easier when he is a tiny baby because the full effects of the handicap may not manifest themselves. All babies are incontinent; they are easy to lift; and mental abilities are not fully developed.

(b) Developing self-confidence

As the child grows he will start to ask questions about his handicap. 'Why him?' 'What is his future?' 'Will he get a job?' The teenage years can be quite difficult. An adolescent often asks: 'Will the opposite sex be interested in me?' 'Will I be regarded as some sort of freak?' The opinion of peers is all important and the reactions of friends at parties, for example, can be quite threatening. He'll need to develop confidence in his own individual abilities so that he doesn't become shy or aggressive in character. Many of these children develop a gentleness and understanding that is all their own.

# Support, facilities and care

## (a) Support and facilities

Various Acts of Parliament should ensure that facilities are planned for and provided for the handicapped. Information as to their availability must be published and publicised. The aim is now to integrate the handicapped into the community.

The facilities are, in the main, provided by the social services via local authority governments. The services include:

- Alterations to housing.
- Education and recreational facilities.
- Financial provision.
- Transport and holidays.
- Access to public buildings via ramps.
- Provision of specially adapted public lavatories.
- Access to libraries, schools and universities.
- Free prescriptions.

Social workers co-ordinate all these services for the family. A key worker will be identified for the family.

There are also many voluntary organisations which provide support and information, e.g. RNIB, Spastics Society, ASBAH. Do find out about these for yourself.

### 1 Residential care

Residential care may be needed. This can bring problems of 'institutionalisation', with loss of identity and parents may feel guilty at not being able to care for their handicapped child themselves. Small 'family units' are sometimes formed. Residential homes are provided both by the local authority and voluntary organisations, e.g. Sunshine Homes for the Blind.

### 2 Holidays

Where children are cared for continually at home, local authorities may be able to provide holidays. Specially adapted bungalows at the seaside enable the child in the wheelchair and his family to have a break. Sometimes the parents need a well-earned rest and they are encouraged to have a holiday on their own. Often the handicapped child comes into hospital during this time so that care can continue, and you may well nurse such a child during your paediatric allocation.

### 3 Education

Education may be undertaken in special schools, ordinary schools or special classes attached to ordinary schools. Education centre buildings may have to be specially adapted to take wheelchairs.

The child with a sensory disorder such as deafness or blindness will need specialist help. The deaf child will be taught lip-reading and possible speech. The partially hearing may be able to use hearing aids. The blind child will need to learn braille and will need specialist equipment and books at school.

### 4 Mobility and employment

As the child grows older, mobility has to be considered. As he grows he becomes heavier and less easy to hold and to move. Certain aids may be needed such as hoists in the bathroom. There are varying sizes of wheelchairs and now there are electric ones for the older child. Consideration must be given to the teenager in preparation for employment where the child is capable. The Disablement Resettlement Officer will be able to advise from the department of employment.

The place of the handicapped in society has been given greater prominence with the International Year of the Disabled. Public attitudes are becoming more sympathetic and the aim is to integrate the handicapped more. However, notice how many people shout at someone in a wheelchair even though he is not deaf.

## (b) Hospital and community care

District nurses and health visitors will visit the child at home as necessary and continuity must be kept between home and hospital care.

After diagnosis of the handicap an assessment is made of degree of severity and future care required. A programme of 'training' may be drawn up whereby the child is taught in small steps how to, for example, feed himself. This requires **planning, time, much patience, with repetition of movements, and depends on the degree of severity of motor and/or mental disability.** Doctors, nurses — hospital and community, physiotherapists, occupational therapist, parents and child are all part of the team.

Various aids may be required, e.g. incontinence pads, calipers, wheelchairs and/or feeding utensils. They may have to be individually adapted to each child.

Communicating with a handicapped child who cannot speak can be frustrating for the child and parents. Not being able to understand or make yourself understood does not aid progress. Speech therapists may be involved and in severe cases considerable ingenuity has been used in developing boards, lights and electric typewriters (e.g. Bliss system). Parents and the handicapped child learn through experience and often develop their own methods of communicating. Such parents are often vital and invaluable when resident with their child in hospital. Remember to obtain such information upon admission of any handicapped child to your ward.

Play greatly helps the handicapped child both in recreation and education in both mental and physical abilities. Occupational therapists can help in the choice or adaptation of suitable toys.

When a handicapped child is admitted to your ward, remember to consider the following practical hints in planning nursing care.

#### **Practical hints in nursing the handicapped child**

1. The paralysed child may have little or no sensation. He is unable to maintain his *body temperature* so remember to keep him warm. He cannot feel the heat of hot water or radiators. *Safety* is an extremely important factor.
2. Being unable to move himself and with less circulation in paralysed limbs, *pressure sores* are more likely to occur. Turning and shifting position is vital.
3. *Activities and daily living* Remember that parents have lived with their child and adapted to his needs. Ask them for any tips in moving him, holding him for feeding and how to communicate. Use any special aids the parents have brought in and look after them carefully.
4. *Mobility* Find out what physiotherapy he needs and how often. This is often of the passive variety to prevent contractures in paralysed limbs and more active to develop those limbs that do move. Any specific position for any tonic limbs?
5. *Elimination* Discover whether he is continent of urine and faeces and if he wears nappies or appliances. Find out whether he becomes constipated and, if so, how his mother adapts his diet, and whether suppositories are used and how often.
6. *Feeding* Find out whether his food has to be minced. Does he use a feeding cup? Has he likes and dislikes?
7. Find out whether any *specific nursing care* is required.
8. *Communications* Above all, remember that he is an individual requiring love and stimulation. If he cannot talk, he may be able to hear. TV, radio and the reading of stories may be favourites along with Teddy. Permission may be obtained from parents to take him for walks and outings so that contact with the outside world is maintained. A positive attitude from you will encourage the child and parents considerably.

#### **Further reading**

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- Meredith Davies, B. (1982). *The Disabled Child and Adult*, Ballière Tindall, London.
- Parrish, A. and Collins, S. (Eds) (1987). *Mental Handicap*, The Essentials of Nursing Series, Macmillan Education, London.

The *Human Horizons* series. Many different aspects of handicap and types of handicap are dealt with in this series, which is published by Souvenir Press, London. Two examples are:

Russell, P. (1984). *The Wheelchair Child*, 2nd edn.

Shennan, V. (1980). *Mental Handicap Nursing and Care*.

## **Nursing care plans/histories for the handicapped child**

### **(a) Introduction**

Three children with differing handicaps have been chosen to illustrate this section: a child with multiple physical defects, one with deafness, and a mentally retarded infant.

#### **1 Patrick, a 17-year-old with spina bifida, hydrocephalus and other associated deformities**

Patrick's handicaps are due to congenital malformations. At birth surgery was attempted to maintain and ultimately improve his quality of life. As he has grown older, hospital admissions have been frequent, usually requiring surgery to overcome the problem. As an adolescent, Patrick wants to be accepted as normal for his age. This may be difficult as he cannot walk or control elimination, he is short in stature and appears to regress emotionally when ill.

Because Patrick is physically handicapped, he is not automatically mentally handicapped and this fact should be remembered in planning care.

#### **2 Wendy, a 6-year-old with congenital deafness**

Wendy does not appear handicapped at first sight. However, when you attempt to communicate with her, she replies by using sign language and understanding your speech by lip-reading. Wendy's handicap is largely hidden for she looks like a normal 6-year-old. The care discussed in this case history centres around the community, with some guidelines in caring for the deaf child in hospital. Wendy's handicap does not require her to visit hospital frequently for treatment. She mainly attends the ENT outpatient clinic, but was admitted once as an inpatient due to an ear infection (otitis media).

#### **3 Susan, a baby with Down's syndrome**

Susan's handicaps are mental with physical characteristics manifesting themselves as well. Down's syndrome occurs due to a defect in the chromosomes and gives rise to, amongst other characteristics, the physical features of slanting eyes, large protuberant tongue and flattened occiput. Mentally, an infant such as Susan is unlikely to reach her full potential and will need special education. Down's babies show varying degrees of mental handicap. They usually grow into extremely loving and affectionate children; the freedom with which they show affection to strangers is one area which causes parents much anxiety.

Initially, however, parents are faced with the prospect of a handicapped baby who may have physical complications as yet undiagnosed (e.g. cardiac defects), and they may also have feelings of guilt for not having produced a 'normal' baby. Coming to terms with having a baby with a mental handicap is often thought to be more difficult than coming to terms with a baby who has a physical defect.

Susan is described with regard to care in early infancy.

## **Nursing care plan/history for the adolescent with a multiple physical handicap**

### **(a) Introduction to Patrick, a 17-year-old with spina bifida and hydrocephalus**

Patrick (Figure 17.1) is back in hospital once again, where he can be found skilfully driving his wheelchair around the ward.

Patrick was born with a deformity, due to unknown factors affecting his spine during foetal development. His deformity is a type of spina bifida. Associated with this he has hydrocephalus, nerve paralysis causing a neurogenic bladder,

no bowel control and flaccid legs and feet. His feet look deformed because he has a type of talipes. Patrick is truly multiply handicapped.

At birth he was kept in a special baby unit where he underwent surgery for his spina bifida and hydrocephalus. During this time, Patrick's parents were encouraged to stay with him and participate in his care. It was obviously a very worrying period for them.

Patrick has been admitted to hospital many times since birth, mainly in order to correct his bladder and leg deformities. On a few occasions the admission has been an emergency one, due to problems with the valve that was inserted in his head to cope with the hydrocephalus. He is usually drowsy and unresponsive, with signs of raised pressure within the brain at each of these admissions. Surgery is required to relieve the symptoms.



Figure 17.1 Patrick

### 1 Admission to a paediatric ward at 17 years old

The question of where to nurse Patrick now he is 17 years old is a controversial one. Ideally he should be nursed in an adolescent unit. These tend to be few and far between in the UK. Many people are involved in actively promoting such units, thus identifying the problems which are unique to the adolescent.

As Patrick is unable to be admitted to such a unit, he must be admitted to the paediatric ward. This has some benefits both to Patrick and the staff.

### 2 Benefits of a paediatric ward

Patrick's current admission is for treatment to relieve constipation. The benefits of nursing Patrick in a paediatric ward are many, as outlined below.

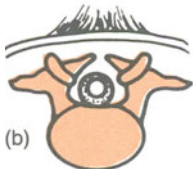
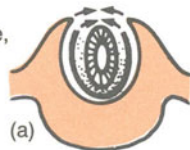
1. Patrick is known to the nursing and medical staff.
2. Patrick likes coming to a ward where he is well known and feels secure.
3. He can be assessed from the developmental point of view from the last to the current admission, often by the same nurse and medical staff.
4. Continuity of care can be achieved as nursing staff should know the skills which parents have promoted in their child and can be continued in hospital. This is especially important in the early years of life.
5. Patrick's educational needs can be more easily met in a children's ward.
6. Patrick is short for his age, although overweight from being confined to a wheelchair. He is incontinent of faeces and has a urinary stoma. Physically he looks younger than his 17 years so this is a debatable benefit of being nursed in a paediatric ward. However, *he should not be treated as a child.*
7. During times of illness, Patrick is known to regress mentally, his behaviour becoming more childlike. This may be better understood in a children's ward than an adult ward.

## (b) Spina bifida

This is a collective term used to describe varying degrees of congenital deformity to the vertebrae and spinal cord (see Figure 17.2(a), (b), (c), (d)).

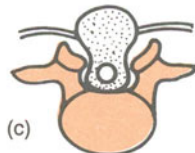
### SPINA BIFIDA

During the second month of intra-uterine life, tissues destined to become meninges and vertebrae enclose the neural tube. If this process is incomplete, it can give rise to varying degrees of defect



#### Occulta

A bony defect only, may be discovered accidentally. Sometimes symptoms affecting lower limbs and bladder occur in adolescents when spinal growth is rapid.



#### Meningocele

The lower limbs are weak, with reduced sensation, and sphincters are paralysed. Hydrocephalus and mental defect may be associated. The condition can now be diagnosed before birth; all pregnant women can be screened with a blood test for  $\alpha$ -fetoprotein; when this is high, neurological defect can be confirmed by amniocentesis;



#### Meningomyelocele

There is a small risk of this procedure producing abortion, so it should not be performed unless she is prepared for termination of an affected pregnancy. When an affected baby is born, the medical team should discuss the baby's future management frankly and sympathetically with the parents.

Figure 17.2 The nature of spina bifida. (a) Normal neural tube enclosure; (b) spina bifida occulta; (c) spina bifida meningocele; (d) spina bifida meningocele

## 1 Main classifications

There are three main classifications of spina bifida.

### Spina bifida occulta

This is a defect in the vertebrae only (Figure 17.3). It is usually symptomless except for a skin dimple or nerve disorders such as sensory defect to bladder or legs.

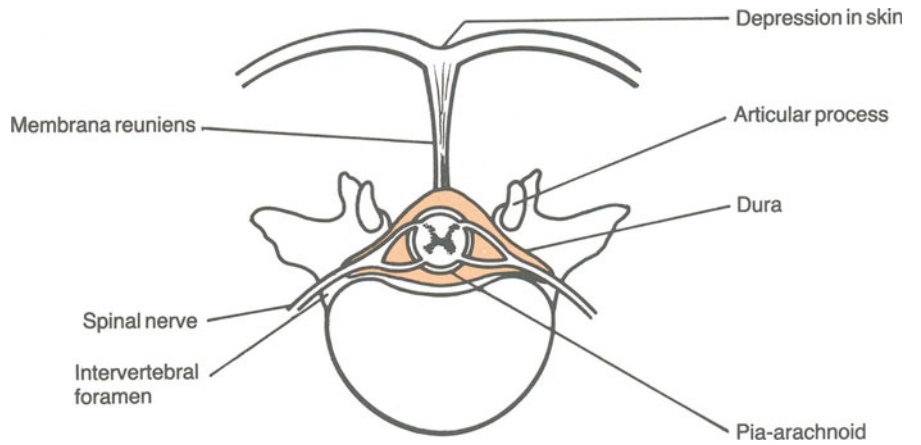


Figure 17.3 Spina bifida occulta

### Meningocele

This is a defect in the vertebrae, which allows protrusion of the meninges through the defect. Over the affected region in the back there is normally a sac which contains meninges and cerebrospinal fluid (CSF). The bladder, bowel and lower limbs may be affected in varying degrees of loss of function.

### Meningomyelocele

This defect involves the vertebrae, protrusion of meninges and spinal cord (Figure 17.4). A sac is seen on the back, which may rupture and leak CSF. The sac contains meninges, CSF and spinal cord. The nerves below the defect are all paralysed, involving bladder, bowel and lower limbs.

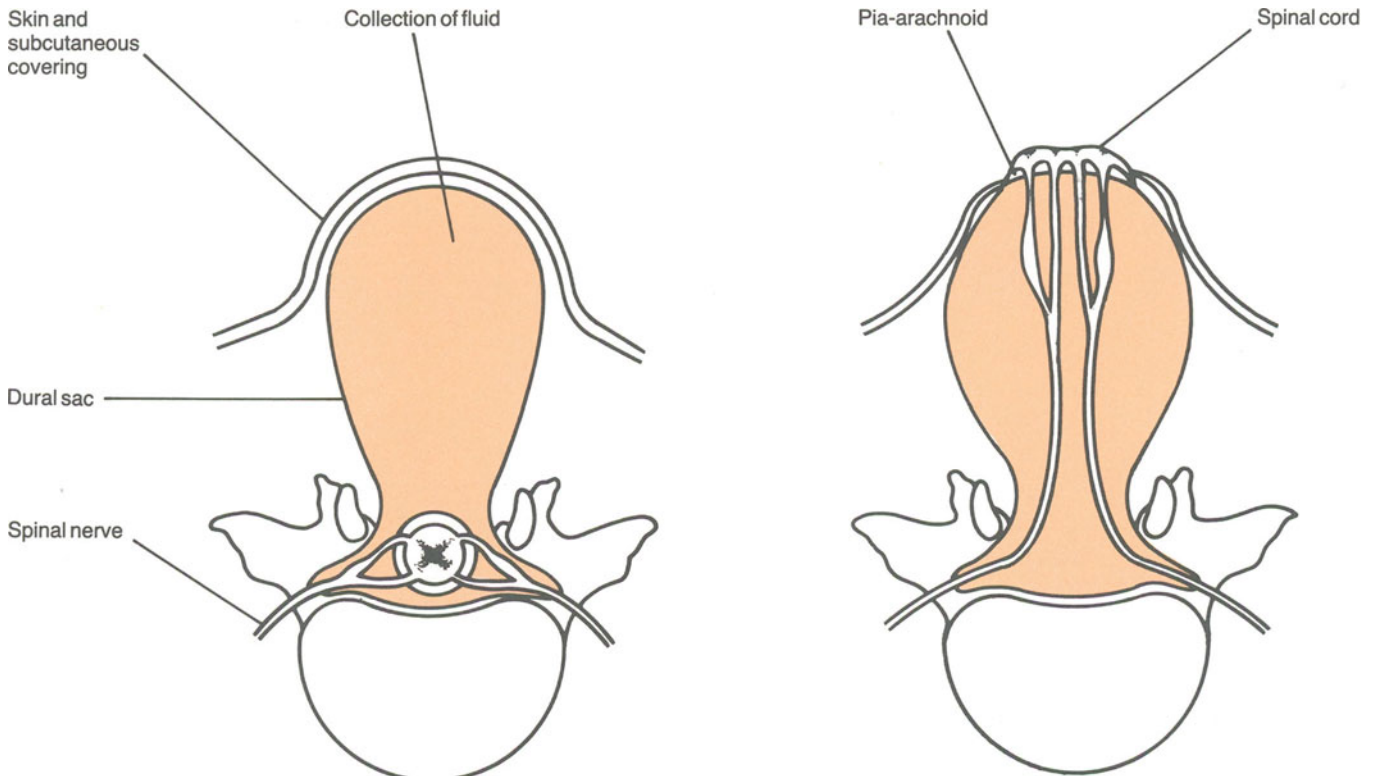


Figure 17.4 Spina bifida aperta: (a) meningocele; (b) myelomeningocele

## 2 Regions of the spinal cord affected by spina bifida defects

Any type of spina bifida may affect any area of the spine and spinal cord. Most commonly the defect is in the lumbar spine. In meningocele and myelomeningocele nerves leading from that region are affected (Figure 17.5). If the defect is over the thoracic spine, the abdominal muscles and organs may be affected. Respirations may also be affected, if nerves to muscles of breathing are involved. When the defect is at the beginning of the cervical spine, total paralysis may affect the body. This is an uncommon type of spina bifida.

When there is a defect in the base of the skull including meninges and/or CSF and brain tissue protruding into a sac, this is called an encephalocele. The child is likely to be affected mentally due to brain tissue damage.

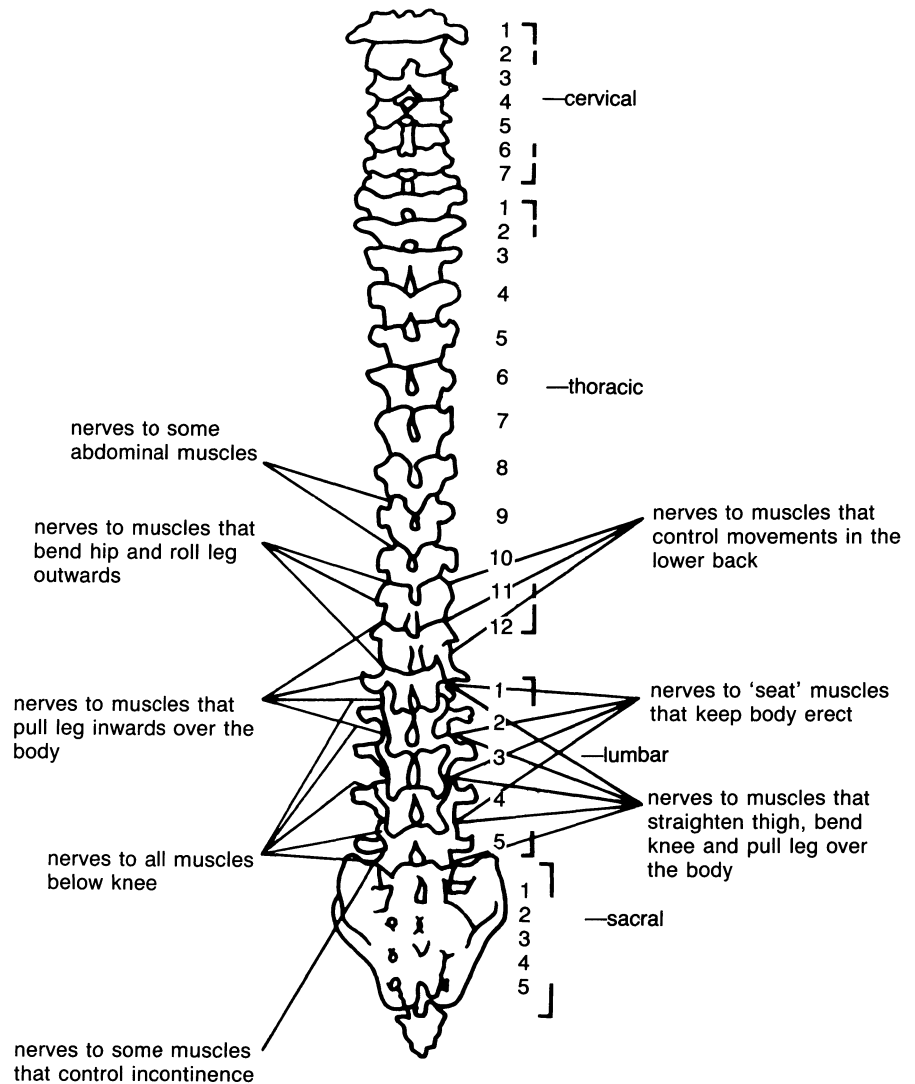


Figure 17.5 Nerves from the normal spinal segment. This diagram has been simplified and shows nerves only singly. All nerves run from both sides of the spine

## 3 Diagnosis of spina bifida in foetal life

All pregnant women can be screened with a blood test for alpha-fetoprotein. When this is high, neurological defect can be confirmed by amniocentesis. This procedure involves taking a sample of amniotic fluid from the uterine cavity. Amniotic fluid surrounds the developing foetus, so great care has to be taken to prevent direct damage to the foetus. Other risks include a spontaneous abortion and the introduction of infection if the needle is unsterile or aseptic technique inadequate. High levels of alpha-fetoprotein indicate spina bifida. Ultrasound may also show the defect in the spine, but it may not become apparent until the foetus is too big to be aborted, should a termination of the pregnancy be desired.

## 4 Treatment of meningocele and myelomeningocele

The defect over the spine is closed by drawing the skin edges together. If there is insufficient skin, grafts may be taken from the buttocks or thighs. Until the infant is able to go to theatre, the back is kept as sterile as possible to prevent infection and subsequent meningitis.

Before skin grafting, saline soaks may be applied to the back if ordered by the surgeon.

In some instances the infant's back heals spontaneously without surgical intervention.

### (c) Hydrocephalus

This refers to an accumulation of cerebrospinal fluid within the circulatory (CSF) system of the brain (refer to Hunt and Sendell, 1987). A defect, either in the system of canals leaving the ventricles or in the reabsorption system of the arachnoid villi, can lead to an increased amount of CSF within this circulating system. Hydrocephalus (Figure 17.6) is often associated with spina bifida.

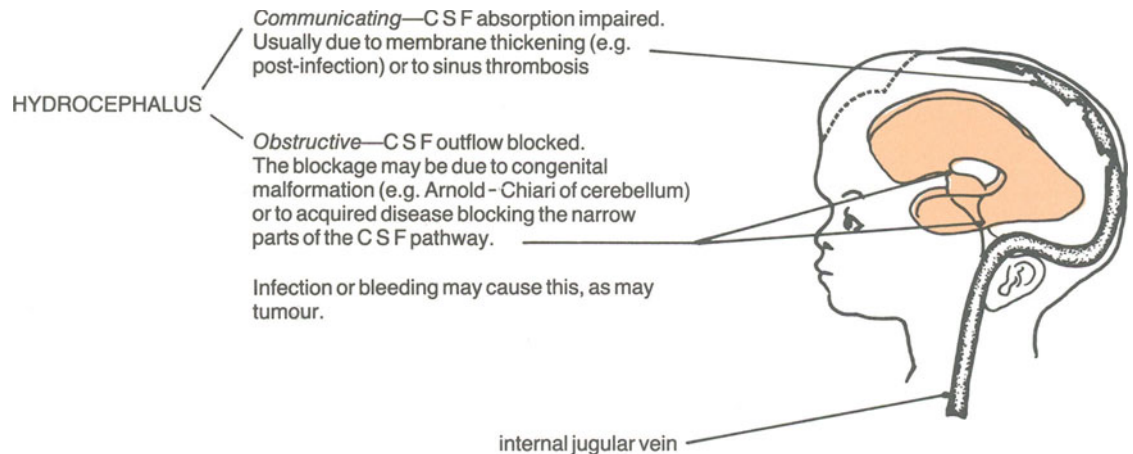


Figure 17.6 Hydrocephalus

Figure 17.6 Hydrocephalus

## 1 Functions of cerebrospinal fluid (CSF)

1. Shock absorber for the central nervous system, forming a fluid cushion.
2. Forms an exchange medium between blood and brain, keeping the brain's biochemical environment relatively constant despite changes in the blood. This is the 'blood-brain barrier'.
3. Supports the central nervous system which is 30 times lighter in CSF than it is in air.
4. Pressure changes on the brain can be buffered by changing rates of CSF production and absorption.
5. Provides nutrients for the meninges and neural tissue.

## 2 CSF: production, constituents and reabsorption

### Production of CSF

Choroid plexi in the lateral and third and fourth ventricles produce CSF at the rate of approximately 125 ml per day.

### Constituents of CSF

Protein	15–45 mg/100 ml
Glucose	40–80 mg/100 ml
Electrolytes, i.e. chloride	720–750 mg/100 ml
Cells	0–5 lymphocytes/mm <sup>3</sup>
Normal pressure	60–160 mm CSF, average 120 mm

### Reabsorption of CSF

Refer to Hunt and Sendell, 1987.



### 3 Clinical features of hydrocephalus

In *congenital* hydrocephalus the clinical features may be present at birth, or appear soon after. Hydrocephalus may also be *acquired* following an infectious disease such as mumps or measles. It may develop due to trauma or because of obstruction such as a tumour or haemorrhage. In this section we are considering congenital hydrocephalus and the related features.

#### Features of congenital hydrocephalus

These include:

1. Enlargement of head circumference (newborn infant's 33–35 cm). Measurement is taken around frontal and occipital bones.
2. Anterior and posterior fontanelles are wider than normal and adjoining cranial sutures may gape. (Posterior fontanelle in normal infants may be closed at birth.)

The following four features are signs of raised intracranial pressure:

3. Alterations in pulse — bradycardia and hypertension. Respirations may be depressed.
4. Nausea and vomiting.
5. Restlessness and irritability with a headache.
6. Scalp veins may protrude and forehead appears to 'bulge' and skin becomes shiny.

The child may deteriorate and show these features:

- Drowsy.
- Unresponsive.
- Eyes may 'sunset' (Figure 17.7).
- Falls into a coma or has a cardiac/pulmonary arrest.

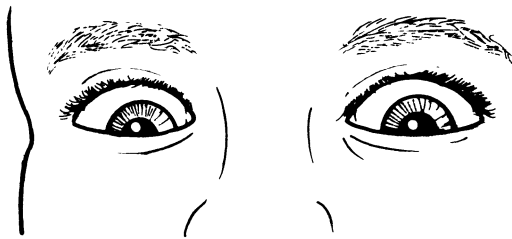


Figure 17.7 Sunsetting eyes

In a situation of deterioration and coma or cardiac/pulmonary arrest surgery is needed to relieve pressure as the condition will not resolve without intervention.

The treatment and surgery undertaken will depend on the time that can be allowed before intervention becomes necessary.

### 4 Investigations

Where time allows, the following investigations may be performed:

1. Skull x-ray.
2. Trans-illumination of the skull. Light is placed behind the skull so that skull and brain substance are illuminated.
3. CAT scan (computerised axial tomography) and computer analysis of x-ray photograph.
4. Ventriculography: the introduction of air into the lateral ventricles to outline defects in the ventricular system or the subarachnoid space.
5. Ophthalmoscopy may reveal papilloedema.

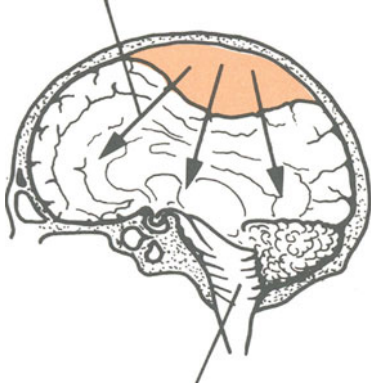
### 5 Ventricular puncture

If the features are in the early stages, initially the doctor may 'tap' the ventricles — *ventricular puncture*. This is a sterile procedure where a needle is introduced directly into the ventricles to withdraw CSF. The entry is made possible through the anterior fontanelle.

#### Dangers associated with lumbar puncture

Lumbar puncture is not usually the chosen route for removing excess CSF in hydrocephalus, because of the danger of 'coning' (Figure 17.8). If too much

Raised intra-cranial pressure applied to the cerebral hemispheres.



This results in the crushing of the pons and medulla into the foramen magnum. This is called 'coning'.

Figure 17.8 Coning

CSF is withdrawn too quickly the brain substance may herniate through the skull, i.e. 'coning'. The effect is irreversible as the vital centres of the brain are damaged and the child will die.

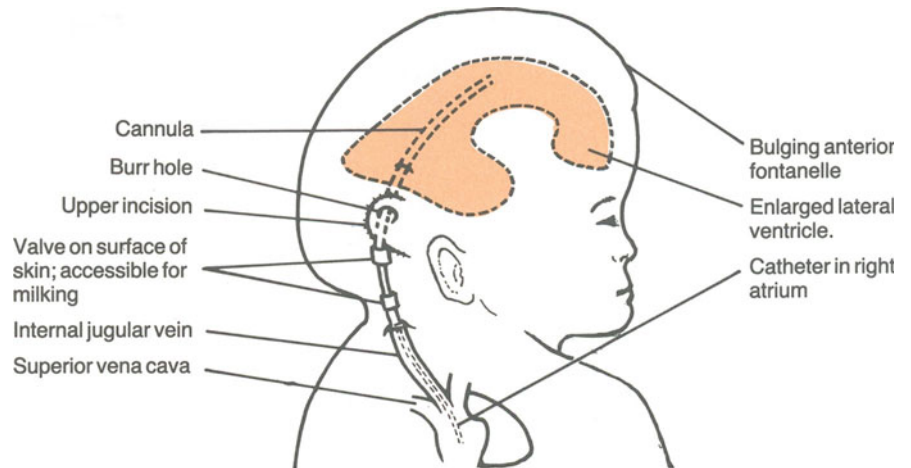


Figure 17.9 Drainage of hydrocephalus with a Spitz-Holter valve

## 6 Surgery

An alternative circulatory route for CSF has to be constructed. The surgery of choice is the insertion of a valve mechanism (Figure 17.9) which will allow CSF to drain through a one-way system.

The valve has a proximal catheter which is inserted into the lateral ventricles. This is connected to the one-way valve which also has a distal catheter adjoining it; the distal catheter is threaded into a neck vein and fed into the right atrium of the heart.

Parents may be taught to pump the valve once a day to ensure it is filling with fluid and working correctly.

### COMPLICATIONS OF THE VALVE MECHANISM

1. Infection: this often necessitates revision of the valve.
2. Growth: the proximal and distal catheters become too short when the child grows.
3. Displacement: any part of the valve may become displaced from the ventricles or venous system.
4. Frequent reinsertion may use all the neck veins. The distal catheter may need to be placed so that it drains into the pleura or, occasionally, the peritoneum.

## (d) Patrick's spina bifida and hydrocephalus

Patrick had a meningocele and developed the features of hydrocephalus within 24 hours of the birth.

Surgery was carried out to repair his back and a valve inserted to relieve hydrocephalus. Treatment was provided quickly not only to relieve symptoms, but to prevent meningitis and for cosmetic effects. His parents found it easier to hold him when his back had healed.

## 1 Post-operative care

The post-operative problems following surgery at birth for Patrick's meningocele and hydrocephalus are outlined in Table 17.1.

Table 17.1 Post-operative care plan for Patrick

Problem	Plan of care
1. Airway obstruction	(a) Nursed laterally on opposite side to that of valve (b) Oxygen and suction available
2. Coning	(a) Half-hourly recording of pulse and respirations (b) Half-hourly recording of neurological response (pupils, movement, sensation, verbal stimuli and level of consciousness) (c) Head circumference measured daily (d) Fluid loss from wounds on back and head observed

Table 17.1 (cont.)

Problem	Plan of care
3. Potential for infection through wound sites (back and head). Predisposition to meningitis	(a) Hourly T° to indicate pyrexia (b) Signs of irritability, photophobia, headache, neck stiffness and convulsion (c) Wound observed for infection (d) Aseptic technique to back and head wound
4. Predisposition to infection due to developmental immaturity	(a) Baby has little immunity except for that gained from mother through the placenta; protective isolation nursing in a cubicle is necessary
5. Parental guilt and anxiety	(a) Parents need to be involved with their baby and his care, and offered residence (b) Parents need support from nursing and medical staff and other disciplines (c) Show how to stimulate baby to respond to them and place emphasis on their baby's normal aspects
6. Headache and pain at wound sites	Observation of pain, especially headache. Analgesia which will not distort neurological observations or depress respirations. Drug of choice usually codeine phosphate
7. Nausea and vomiting	(a) Baby may be nauseous from the anaesthetic and surgery. Nausea may also be a sign of meningitis or of disturbance to CSF circulation through valve mechanism, CSF draining too fast or obstructed circulation still present causing raised pressure
8. Dehydration Introduction to milk feeds	(a) This may occur due to vomiting or inability to feed prior to surgery. Initially an intravenous infusion may be inserted to rehydrate the baby (b) Milk feeds are gradually introduced in small amounts after initial 'clear' feeds (dextrose and electrolytes) (c) As baby is nursed in the lateral position, feeds should be given slowly in order to prevent airway obstruction (d) 'Winding' is still necessary even when the baby is lying flat
9. Elimination: potential to cause: (a) Urinary infection  (b) Wound infection  (c) Constipation	This may present a problem due to the inability of the bladder to empty completely, due to nerve paralysis. Baby is usually nursed exposed, allowing urine to drain on to a nappy The wound on his back must be kept clear of urine and faeces. Expression of the bladder may be needed if spastic paralysis is present May be a problem due to damaged nerves innervating bowel and due to diet and immobility. Later, if constipation persists as a problem, suppositories may be prescribed
10. Sore skin	(a) This is likely around groins and knees and toes. The baby is nursed laterally and occasionally prone, therefore knees and toes are contact points and may become sore (b) Turning the baby and pressure care should be given 2-hourly (c) Groins and genitalia should be washed whenever the baby eliminates and a barrier cream may be applied (d) General hygiene includes washing the baby once a day and as necessary at other times
11. Inability to move lower limbs	As the baby is initially kept flat in the lateral or prone position to allow the back to heal, mobility is limited. However, his legs should be placed in a position of function and the physiotherapist should be involved in carrying out passive exercises to limbs. She may also assess the degree of movement in all parts of the baby's body. Mum can be taught to perform passive exercises 2-hourly. At the same time, the baby can be observed for any soreness and pressure care given
12. Suitable play to stimulate development	Because the baby is physically handicapped it is particularly important his development should be stimulated. Brightly coloured toys, sound and touch provide stimuli. Mother can be taught to develop the baby in all aspects physically and mentally

## (e) Preparation for discharge

After several weeks in hospital, Patrick's wound sites were well healed and his parents had adjusted to his care. They felt ready to take him home. Criteria for discharge really depends on parental feelings about being able to cope. Other factors include:

- Stable head circumference.
- Suture lines well healed.
- Personnel available in the community to assist parents.

Parents are often eager to return home with their newborn baby, but inwardly they may be quite frightened of managing by themselves. They need to be fully aware of recurrence of problems, for instance, infection in the valve system. They must also realise that this is the first of many visits to hospital for treatment.

### 1 Community facilities

Any of the following personnel may be available to the family:

- Health visitor and health clinic
- Paediatric district nurse
- General practitioner
- Genetic counsellor
- Social worker
- Physiotherapist
- Paediatrician (hospital based)
- Societies, i.e. Association of Spina Bifida and Hydrocephalus (ASBAH).

The family may need social or financial assistance besides facilities to monitor their baby's development and illness. You should refer to the introduction to the handicapped child (pages 168–169), support and facilities available (page 170) and hospital and community care (pages 170–171).

## (f) Patrick's medical history since birth

Although Patrick's spina bifida and hydrocephalus had been treated at birth, he still had the problem of talipes and a neurogenic bladder.

### 1 Admissions to hospital

These have been numerous. The following list indicates most of the admissions and the treatment required.

#### **Infected or obstructed valve mechanism**

Valve system revised twice by 1 year.

#### **Lengthening of distal catheter**

Lengthening was necessary because the catheter had become too short as Patrick had grown. The problem was indicated by signs of the valve mechanism working incorrectly.

By the age of 6 years, Patrick had undergone surgery three times.

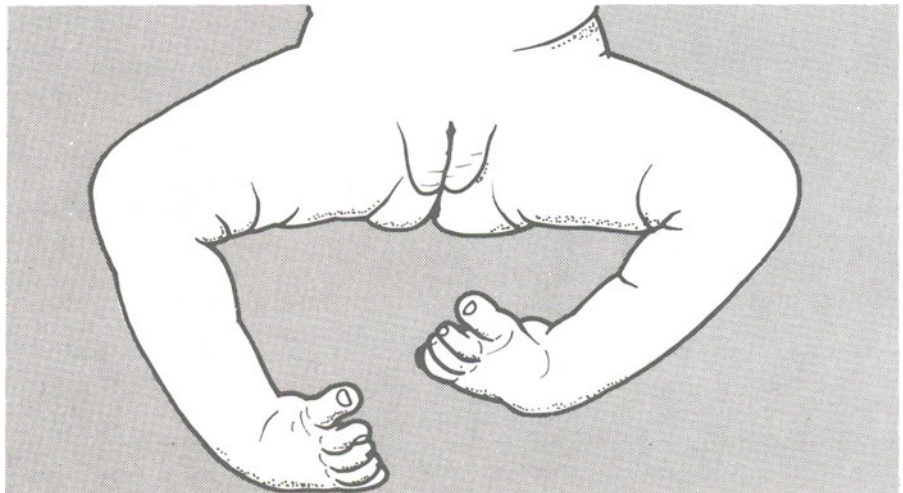


Figure 17.10 Bilateral congenital talipes equinovarus

### Correction of talipes

Talipes is sometimes called 'club foot' (Figure 17.10). It is a congenital deformity which affects one or both feet, either turning the feet inwards (soles together) or outwards.

Patrick's talipes was assessed orthopaedically with a view to surgery later on.

### SURGERY FOR TALIPES

The surgery included *lengthening of achilles tendon* (both feet) in an attempt to bring his heels down in line with his toes. Patrick was assessed as never likely to walk with calipers but nevertheless he needed to be able to wear shoes. As a small child his mobility was aided by using a trolley (Figure 17.11).



Figure 17.11 A spina bifida trolley

### Urinary tract infections

Patrick had been admitted four times with this problem. Investigations revealed that he had a large neurogenic bladder which had very poor tone and was never able to be properly emptied during micturition. Patrick usually had urine in his bladder which was static and provided a suitable medium for micro-organisms and, thus, infection. A neurogenic bladder is one where there is damaged or inadequate stimulus to the organ to contract and empty when full. Patrick's urinary tract infections were treated with antibiotics, fluids and 'expressing' urine from the bladder.

By the time he reached 10 years old, it was generally agreed that his incontinence and repeated infections might be better dealt with by formation of a urinary stoma.

### Formation of ileal loop diversion (stoma)

This operation is usually only performed when there is no other satisfactory way of dealing with incontinence such as urinary appliances and intermittent self-catheterisation. Formation of a stoma is a psychological as well as physical step to take. Patrick had to understand and agree to this, although it was his parents who signed consent to operation.

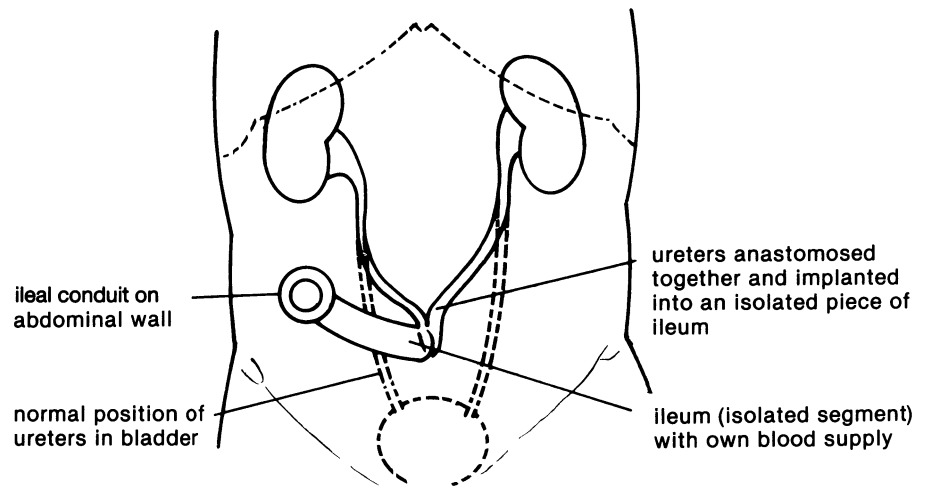


Figure 17.12 Ileal loop

### Surgery for stoma

An ileal loop is fashioned on the abdomen as a stoma (Figure 17.12). The ureters are disconnected from the bladder and inserted into a piece of ileum. The ileum is then brought on to the surface of the skin to form a stoma. In Patrick's case, this was to be a permanent stoma. Therefore, as well as undergoing a major operation, he had to learn to come to terms with the stoma and to care for it.

### Social admission while parents on holiday

Patrick had reached early adolescence and was becoming moody and difficult. His parents were finding him 'impossible', e.g. he did not want to care for his stoma, to wash or eat sensibly. Patrick's language was embarrassing and he wanted to stay out late at night with friends of whom his parents did not approve.

Patrick was admitted to hospital both for reassessment and for his parents to take a well-earned holiday. They had confidence in the nursing staff and possibly felt that a routine stay in hospital might be beneficial to Patrick during this rebellious period. This admission certainly tried the patience of nursing staff and Patrick was given opportunity to discuss his feelings about himself and his deformities.

## 2 Current admission for constipation

Constipation had necessitated repeated hospital admissions for Patrick. This problem was due to decreased mobility, decreased sensation and sphincter control, and a poor diet. Patrick's parents had tried to encourage a balanced diet with fibre content but when he was small they had easily given into allowing him sweets, biscuits and chips. Now as a 17-year-old, able to choose his own diet, the choices made were not those which might discourage constipation.

This admission, like others, necessitated a manual evacuation under anaesthetic.

### (a) Patrick at 17 years

#### 1 Physical development

Facially, Patrick looks like a normal adolescent boy. Puberty started at 14 years, so Patrick now has to shave, has a deep voice and is aware that he has some sexual characteristics.

His urine drains into a stoma bag and incontinence of faeces is managed by wearing pads and plastic pants.

Patrick's legs are short and his feet still do not appear normal because his toes point towards the floor. His legs bear the scars of surgery to tendons.

His back is twisted which gives his abdomen a protruberant appearance. He is overweight, especially noticeable around his waistline! This he attributes to eating too many fried foods which is what he most enjoys. Patrick's shoulders and upper arm muscles are well developed due to manipulating his wheelchair with them.

Patrick requires privacy when carrying out hygiene and dressing. He likes to wear brightly coloured clothes and requires some assistance with putting on his trousers. Patrick is fashion conscious and this shows especially in his different hairstyles!

## 2 Psycho-social development

Patrick seems aware of the changes in his body image, in relation to adolescent girls. He is shy with young female nurses and female visitors of his own age. Patrick says he has a girlfriend who is also physically handicapped. He met her at the local PHAB club (Physically Handicapped and Able Bodied). While Patrick was in hospital, she visited him once; she too was wheelchair bound. Patrick has a good relationship with his parents, as long as they let him have independence. He is beginning to outwardly value their continuing love and affection towards him. Patrick does not have any brothers and sisters. His mother conceived him during her late 30s and after the shock of giving birth to a handicapped baby decided, together with her husband, that they would not have any more children. His parents visit most evenings until quite late; they often watch the TV with Patrick and see him safely to bed.

Patrick belongs to a PHAB club where he plays table tennis and snooker. The club takes its members on visits to museums, theatre shows and even arranges seaside holidays. Financially, Patrick's parents have needed some assistance with fares for travelling to hospital. Personnel in the community together with those in hospital have helped his parents acquire the necessary mechanical aids, special shoes and equipment, although they were reluctant to take advantage of benefits available to a family with a handicapped child. At the moment Patrick seems content to live at home.

## 3 Education

During his life, Patrick's education has been seriously disrupted by frequent hospital admissions. During such times, the school teacher in the paediatric ward liaised with his school in order to give him suitable work to do.

After returning to school his teachers attempted to help Patrick in the work he had missed. Patrick was frustrated by the lessons he could not attend and finally left school at 16 years with two CSEs in English and geography. His parents had sought advice as to the most suitable school for him and latterly he had been a pupil at a local comprehensive.

Patrick did not have a job ready for him on leaving school. Currently, he is employed part-time in factory work which he can easily do from his wheelchair. He is not satisfied in this job, feels frustrated as he has to stay in one place all the time, and cannot use any of his lively mental ability. With parental assistance, Patrick is seeking other employment. He has contact with the disabled resettlement officer. Financially, as he only works 3 days per week, he is not earning much money and finds he cannot afford all that he wants. Hopefully, with references from the paediatrician, Patrick may be able to find a job which is more suited to his capabilities and is more financially rewarding. In order to prepare himself for a different occupation, Patrick is going to attend evening classes in two 'O' level subjects.

### Suggested exercise

1. List the factors which you consider important in formulating a nursing history relevant to Patrick on this admission.
2. What psychological reactions might you expect from Patrick on this admission?
3. Using the factors you have listed in the nursing history and with reference to adolescence (see pages 37–45), identify the problems Patrick is likely to have on this admission.
4. Use the nursing problems identified to formulate a care plan with rationale.
5. What advice for the future do you feel Patrick should receive with regard to the following topics?

- (a) Physical well-being.
- (b) Psycho-sexual development.
- (c) Employment and finance.
- (d) Utilisation of available community resources.

## Nursing care plan/history for the school child with a sensory handicap

### (a) Introduction to Wendy, a 6-year-old with congenital deafness

Wendy was an attractive baby at birth and her parents were pleased to have their third child (Figure 17.13). On examination, Wendy appeared physically normal, and Mum and baby were discharged home after 48 hours in hospital.



Figure 17.13

During the first few weeks of life, Wendy's parents noticed that although they talked and played music to her, facially she did not respond. Mum suspected that she was either tired, had 'colic' or was hungry or needed her nappy changing. From her experience, Wendy's Mum expected that her baby would smile by the time she reached 2–3 months old. The family were delighted when this happened and Wendy's two older brothers touched and tickled her to make her smile at every opportunity!

### 1 Early assessments

Developmentally, Wendy was assessed by the health visitor at the clinic. Such assessments are aimed at picking up deviations from normal development. Deafness is not easy to detect, although by the age of 3 months responses to loud noises, talking and music should be apparent. The baby should turn his eyes to the source of sound or at least blink when a loud noise disturbs him. Wendy did not demonstrate these abilities. The health visitor kept close contact with the family and arranged to reassess Wendy again soon, though normally the next hearing assessment is between 8 and 12 months.

### 2 Referral to specialist

Within the following months, Wendy's hearing made no obvious improvement and the family were referred to a paediatric ENT specialist. As Wendy was now 7 months old she should be expected to turn her head in anticipation to the sound she hears, for instance the sound of 'dinner' being prepared in her bowl with a spoon. However, she did make noises, giggle quietly and cry when unhappy but these noises were not usually in response to an external stimulus.

The ENT specialist suggested to the parents that Wendy was totally deaf — a devastating and upsetting diagnosis. Her parents found this hard to believe but



they were helped by the fact that the specialist wanted to see the family regularly to ensure that hearing was indeed absent.

By the age of 12 months, the provisional diagnosis was confirmed as congenital deafness, cause unknown.

## (b) Deafness

Deafness may be a handicap which is congenital or acquired.

### 1 Congenital deafness

This is considered to be caused by a defect in development of the foetus before birth. Many causes are largely unknown. Known causes include the following:

1. Rubella before the 12th week of pregnancy.
2. Pre-eclamptic toxæmia of pregnancy.
3. Genetic defects.
4. Chromosomal abnormalities.
5. Syphilis.
6. Medicines given to the mother during pregnancy (e.g. streptomycin).
7. An association with a central nervous system disorder.

### 2 Acquired deafness

This type of deafness is acquired due to illness or injury affecting the conducting or perception mechanisms in the ear. Acquired deafness can occur at any period of the child's life.

#### Deafness at birth

At birth deafness may be due to:

1. Prematurity.
2. Anoxia during or after birth.
3. Hyperbilirubinaemia (kernicterus).
4. Meningitis.

#### Deafness during childhood

Acquired deafness during childhood may be the result of one of the following:

1. Measles.
2. Mumps.
3. Meningitis.
4. Head injury.
5. Medicines which are ototoxic.

### 3 The degree of deafness

The examples in both congenital and acquired deafness are likely to cause a *permanent degree of hearing loss*.

#### Temporary deafness

Children may be prone to temporary periods of deafness, which are usually reversible. Causes of temporary deafness include:

1. Otitis media often associated with enlarged and inflamed adenoids.
2. A foreign body in the external auditory canal.
3. 'Glue ear'.

These conditions may be reversed with suitable medicine and surgery. However, a child who has repeated middle ear infections, with pressure exerted on the tympanic membrane, may suffer a perforated eardrum. This will lead to a temporary degree of hearing loss. The eardrum may require surgery. In some children, the degree of hearing loss may remain, due to damage to the eardrum and fibrosis. Therefore, in some children, deafness may not be a permanent handicap, but a temporary one.

#### Partial or profound deafness

The degree of hearing loss may bear some relation to the causative factor. Children can be *partially* deaf or *profoundly* deaf. The former group may be

referred to as 'hard of hearing' children. It is important for medical and nursing staff to know the degree of deafness, in order that the child is given appropriate aids and schooling, to assist all aspects of his development.

Deafness may be unilateral or bilateral, although the headings relating to 'partial or profound' encompass this.

Both the degree and cause of deafness can be due to a defect in the middle or inner ear or both, either in the conducting mechanisms (conductive deafness) or in perception (perceptive deafness). (Refer to Hunt and Sendell, 1987.)

### **Conductive deafness**

This is amenable to treatment to reverse the situation. An example of conductive deafness is otitis media. Conductive deafness is defined as follows:

A disorder affecting the apparatus for *conducting* soundwaves from an outside stimulus, to the oval window (fenestre ovalis). This structure is one of the demarcations between the middle and inner ear. Conductive deafness therefore affects the outer or middle ear.

### **Perceptive deafness**

This is also called sensory neural deafness. Perception of sound is the joint function of the specialised cells and nerves in the inner ear and of the auditory centre in the brain. Perceptive or neural deafness is due to damage to any of these mechanisms, thereby not perceiving or translating the sound transmitted to the inner ear. Due to the position of the structures in this inner ear responsible for perception, treatment may be extremely difficult or impossible.

## **(c) Hearing tests**

These begin soon after birth as part of normal developmental assessment (see Wendy's introduction, page 184).

### **1 Early assessment and diagnosis**

At the toddler age, vocalisation is an important aspect of the process of socialisation. If language is absent, deafness may be easy to note. However, more often, the toddler makes some noises, but is a slow learner and with skilled assessment is diagnosed as deaf.

The health visitor is an important person in the diagnosis, as it is usually she who performs developmental assessments. The GP may also be involved.

Early diagnosis is important, because if the child is permanently deaf, skilled teachers will be able to teach and assist parents with other methods of communication. Until such time, communication and learning will be impaired. Early education is thus desirable.

### **2 Tests for pre-school and school age child**

At pre-school and school age, deafness often occurs temporarily due to infections in the ear. Hearing tests may show difficulties at one visit but at the next the child hears perfectly. If a degree of deafness persists and the child has not been diagnosed, specialist advice should be recommended and arranged. Hearing difficulties may manifest themselves in the child's behaviour, for instance, temper tantrums, inappropriate social behaviour, or a slow, inattentive school learner. This possibility should always be considered and the child's hearing tested. The school medical service is responsible for testing hearing at regular intervals.

Hearing tests employed to test this sense may include those shown in Figure 17.14.

## **(d) Educating the deaf child**

Wendy, at the age of 6, is now at school. Her parents took advice as to when and where to start teaching lip-reading and sign language.

### **1 Provision of home tutor**

By the age of 2 years, her parents were fortunate in being provided with a home tutor for the deaf. This age is a crucial point in development, as the normal child is usually talking and using short sentences (see *Vocalisation and the Toddler*, page 20).

Teachers for the deaf may be provided through the local education authority, but this help does vary throughout the country. You could find out who has responsibility for provision of such teachers in your own area.

**Initial assessment of degree of deafness.**

The patient sits in a chair facing the wall so that he cannot see the examiner; he blocks his deafer ear with his finger on the tragus. He is asked to repeat what the examiner says. The examiner approaches and first whispers then, if necessary, says in a conversational tone test words or numbers. The patient repeats what he can hear. The type of voice and the distance at which he hears it is recorded, e.g. whispered voice at 1.7 m (WV 1.7 m), conversational voice at 2 m (CV 2 m) etc. The deafer ear is then tested in the same way.

False results may appear in patients who are very deaf when their worse ear is tested—they may be hearing with their blocked good ear.

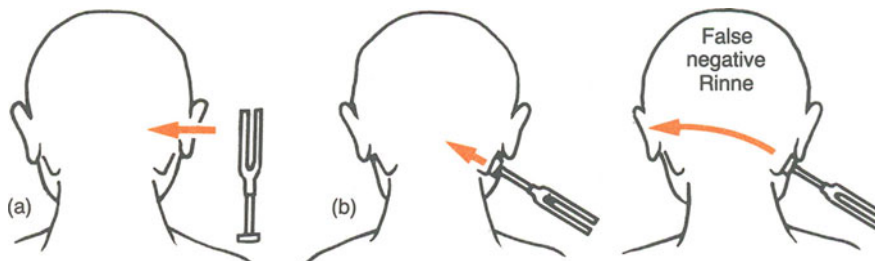


**Tuning fork tests**

Tuning fork tests depend on observing the differences between air conduction and bone conduction of sound waves in each ear separately and on comparing the two ears. AIR CONDUCTION (AC) is the normal way in which sound waves reach the inner ear. BONE CONDUCTION (BC) involves stimulation of

the cochlea by the transmission of sound waves through the bones of the skull; this short-circuits the outer and middle ear mechanism but, in a normal subject, less sound arrives at the cochlea than by air conduction; i.e. air conduction is greater than bone conduction—expressed as 'AC>BC'.

**RINNE'S TEST**

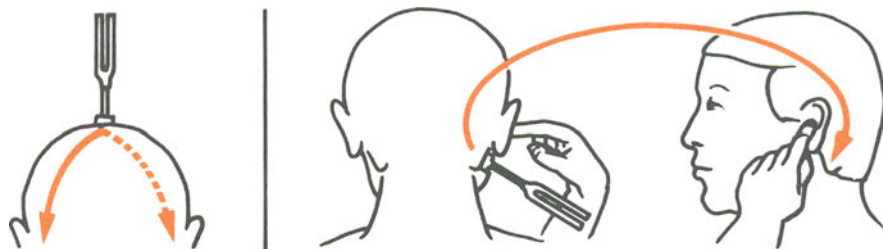


Testing AC then BC.

- (a) A tuning fork (512 Hz) is struck and held close to the patient's ear until he signals that he can no longer hear it.
- (b) It is then immediately placed on his mastoid process. If he can then hear it, then BC>AC—a *negative Rinne's test*—his perceptive hearing is OK and so there must be something affecting his *conducting* mechanism.

In a patient with severe unilateral perceptive deafness, BC may appear better than AC because sound is carried by the skull to the better ear. If so, hearing of the 'good' ear should be masked by 'noise', this restricts the test to the 'bad' ear.

**WEBER'S TEST**



The fork is set vibrating and its base put on the patient's vertex or forehead. Sound is conducted via the skull to both cochleas. He is then asked in which ear the sound is louder.

In *perceptive* deafness it is louder in the 'good' ear which has better cochlear function.

In *conductive* deafness, however, it is heard better by the 'bad' ear because the 'good' ear is distracted by normal sounds from the environment while the deafer ear can concentrate on the sound arriving by bone conduction.

**ABSOLUTE BONE CONDUCTION**

With the ear to be tested blocked by pressure on the tragus, a tuning fork is set vibrating and its base applied to the patient's mastoid process on the side under test. He signals when he can no longer hear the sound. The fork is then immediately applied to the examiner in similar manner. If the examiner can hear the tone, he concludes that the patient has some degree of *perceptive* deafness. (This test is, of course, only possible when the examiner does not suffer from perceptive deafness!)

Figure 17.14 Tests of hearing

The teacher can support and encourage parents, not only in communication but in facial responses, body language and physical signs that the child may exhibit in order to make his wishes known. Parents can naturally become frustrated with the slow progress deaf children make. The child cannot give verbal rewards such as 'Mummy I love you' or demands like 'kiss it better, it hurts'. With careful guidance parents look for other positive communications with their child, such as smiles, hand clapping and touch. This latter sense, and the sense of sight, become very important to the deaf child.

## 2 Choosing a suitable school

Where the child is educated at school will largely depend on his parents' wishes, the locality and resources available. Not every child may be fortunate in having home tuition from 2 years until school age.

A group of personnel may be involved with the parents in choosing suitable schooling facilities (Figure 17.15). These people choose the school based on the degree of hearing loss and the capabilities of the child.

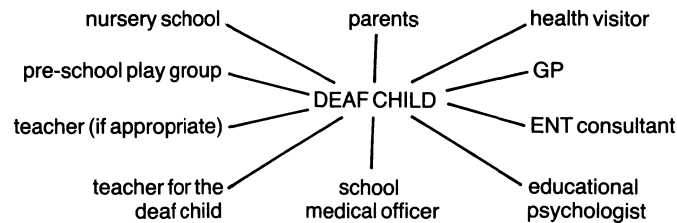


Figure 17.15 The different people involved with a deaf child

### Choices available

The choices of schooling available include:

1. Normal school and class: the child wears a hearing aid, sits at the front of the class and has a teacher who is aware that this child is deaf.
2. A special class attached to a normal school, educated by a teacher for the deaf.
3. School for the profoundly deaf and hearing impaired.
4. Continuation of home tuition, with frequent reassessment.

As Wendy was congenitally permanently deaf, a hearing aid would be of no use and as she was a lively child who was beginning to demonstrate a willingness to learn, she attended a special class in a normal school with a special teacher for the deaf.

## 3 Aids for the deaf child

For totally deaf children, development of other senses may not require any special aids. Tactile stimulation comes naturally to many.

### Hearing aid

Where appropriate the child is given a hearing aid, for instance in partial deafness (Figure 17.16).

#### TYPES OF AID

##### Body-worn

These are more powerful and have larger controls which are easier for arthritic people to manage.

The case can be clipped to a pocket or the neck of a dress, and is connected to receiver and ear-mould by fine flex.

The ear-moulds are made to measure.

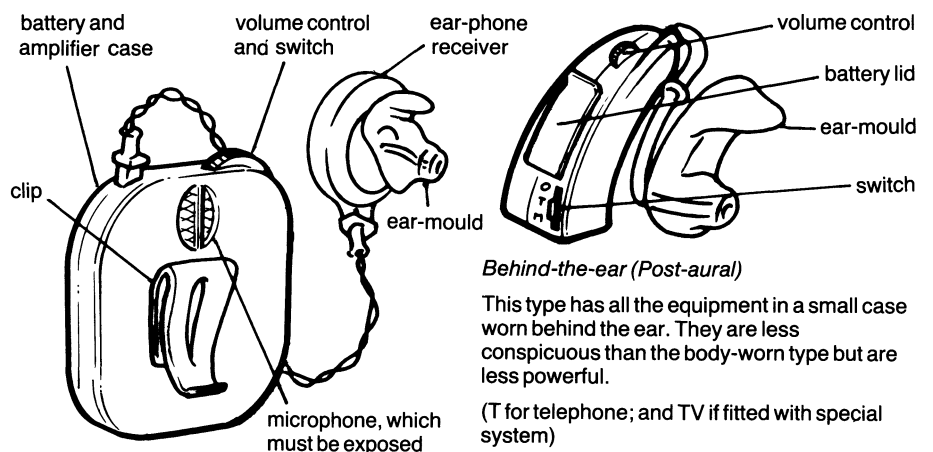


Figure 17.16 Hearing aids

## Lip-reading and sign language

Lip reading and often speech is taught, though learning these skills may be difficult and in this instance the speech therapist can be involved.

Sign language requires skill and memory to learn the alphabet and form words. Figure 17.17 shows some examples of sign language words.

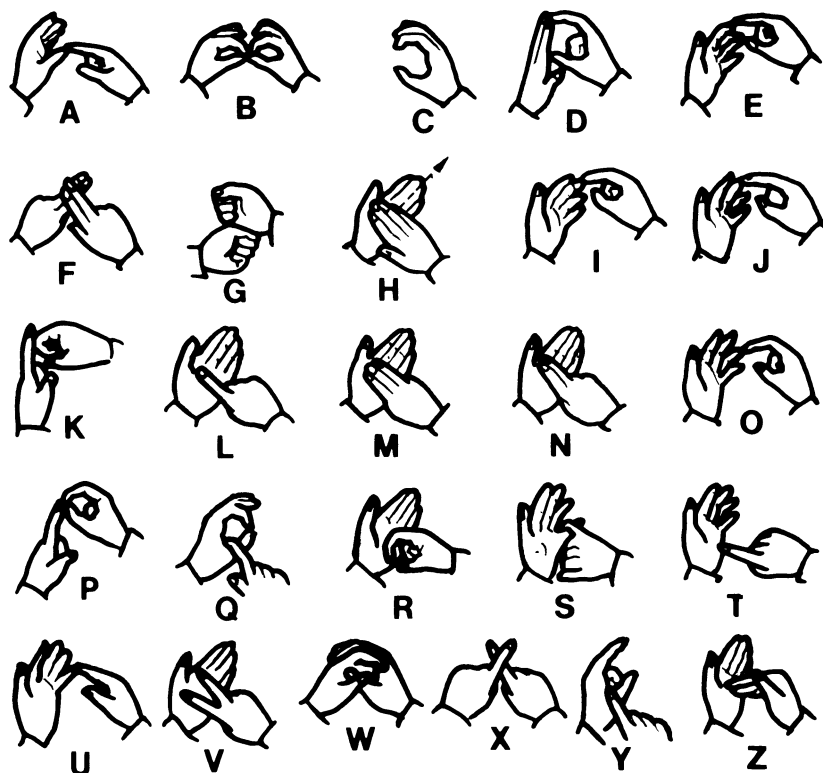


Figure 17.17 Finger spelling

### (e) Societies

Before looking at particular societies, it is important to note that the deaf do not receive overwhelming sympathy. No handicapped person wants to be treated as incapable but it is difficult to get help when your handicap is hidden! As soon as a person indicates they are deaf, everyone raises their voice. This handicap is very frustrating and communication takes a longer time than using speech.

Certain registered societies (see page 201 for addresses) are actively engaged in research, giving information and 'fighting' for better 'rights and conditions' for the deaf. The societies include:

- The Royal National Institute for the Deaf (RNID).
- British Deaf Association (BDA).
- National Deaf Children's Society (NDCS).

The deaf person, whether child or adult, is more likely to be encountered in the community than in hospital.

### (f) The nurse's role with the hospitalised deaf child

If a child such as Wendy is admitted for hospital care, the following points may be useful for the nurse assisting with her care.

1. Invite parents to be resident if they wish. Alternatively, ensure free visiting for all the family.
2. Establish the method of communication which parents and school have with the child.
3. Establish if any aids to communication are used.
4. Find out the type of play the child enjoys and any special toys required.
5. Find out how the child makes known his needs for food, warmth, elimination.
6. Ask the parents how they discipline the child, remembering that verbal reprimands are not effective for the deaf child and smacking is also not acceptable.
7. Establish what special education the child is receiving and whether this is to be continued in hospital.

#### Practical hints on caring for the deaf child

1. Observe and revise your knowledge of normal child development growth and stages. This will help you to identify what a normal schoolchild can do and say as a comparison with the deaf child.
2. Form a relationship with parents and child. Parents may be guilty, embarrassed or anxious about their child.
3. Do not isolate the child from others but provide a bed in the ward wherever possible, with room for parent(s) to stay. If isolation nursing is necessary, arrange visual aids to interest the child and plan to spend long periods of time with him if his parents are not present.
4. Do not over protect the deaf child by doing everything for him. Equally, do not ignore him.
5. Temper tantrums, developmental regression or general frustration may be a result of failure to understand the child or a failure to communicate with him.
6. When communicating with the deaf child:
  - (a) Look directly at him. Your non-verbal facial expressions will help communication.
  - (b) If he lip reads, form your words carefully and precisely.
  - (c) Do not shout!
  - (d) Communication may be more effective where the child is not distracted by other children and their activities.
  - (e) Use tactile stimulation to assist communication.
  - (f) Have patience, you may need to repeat the message several times.
  - (g) Use other methods such as drawing and writing to assist explanations.
7. Safety is extremely important, you can't tell a deaf child to 'look out' by calling him. He must be physically removed from danger.

There is often a general tendency with children and adults who are deaf, to shout, lose patience and treat as if infantile. It is important to remember that deafness need not limit intelligence.

#### Suggested exercise

Talk to a teacher of the deaf and a deaf child and his parents. You may encounter such a family in hospital or in the community.

## Nursing care plan/history for the baby with a mental handicap (by Daphne Hill)

### (a) Introduction to Susan—a baby with Down's syndrome

Susan has lived through many milestones in her short life, not least the first when her parents were initially informed of the true nature of her handicap. The paediatrician chose a time when both parents were together with her and, knowing that it probably would not be easy, informed them that their baby was handicapped by a condition known as Down's syndrome, and that it was a life-long condition with no certain cause and no cure. Having said this, much is known about the effects of Down's syndrome on the person and a great deal can be done to improve the development of the child and to support the family.

Susan's parents, distressed by the confirmation of their worst fears, needed time to absorb and adjust to this. So the paediatrician arranged to see them again to discuss the full implications for Susan and her family the following day. In the meantime, the nurse's knowledge of this condition will enable her to give much support to Susan's parents.

(b) Down's syndrome

**1 Significant factors in the cause of Down's syndrome**

With regard to cause, the most significant factor is maternal age (Table 17.4).

Table 17.4 Down's syndrome and maternal age

Age group of mothers	% of live births per age group	Incidence of liveborn children with Down's syndrome	% of all Down's syndromes per age group
Under 20 years	11	1 in 2400	4
20 to 24 years	32	1 in 1600	19
25 to 29 years	35	1 in 1200	27
30 to 34 years	16	1 in 900	16
35 to 39 years	3	1 in 300	11
Over 40 years	3	1 in 100	23

**2 Types of Down's syndrome**

**Trisomy 21**

The most common type of Down's syndrome is also known as Trisomy 21. Figure 17.18 illustrates this type, showing that an extra chromosome appears to be attached to pair 21.

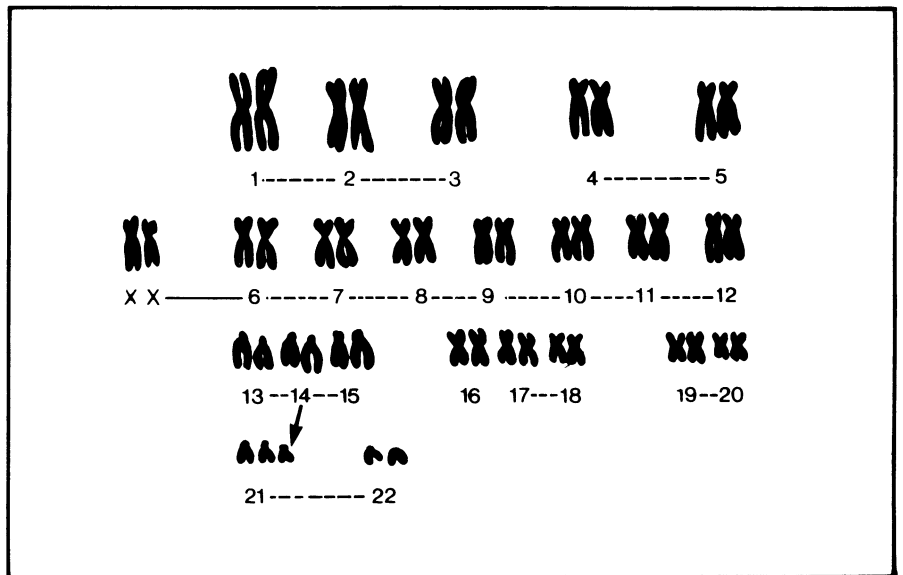


Figure 17.18 Chromosomes of a girl with Trisomy 21 Down's syndrome. Note the extra chromosome beside pair 21

As a comparison Figure 17.19 shows a normal male karyotype.

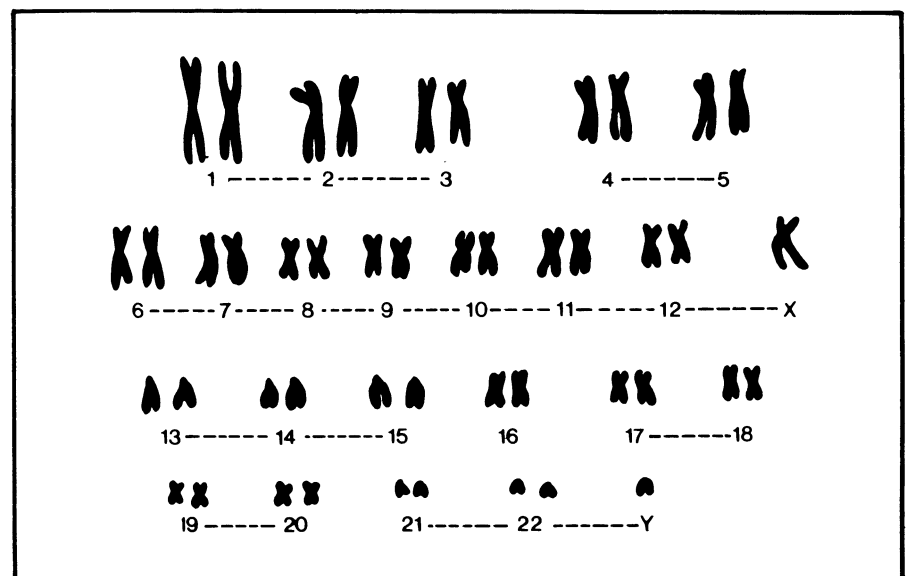


Figure 17.19 Human chromosomes showing the normal male karyotype

### Translocation type

Another chromosomal abnormality which results in Down's syndrome is translocation where there is attachment of one chromosome or part of one to another. This type is important because in about half the cases one or other parent is a carrier of the translocated chromosome and there is then a risk of recurrence in the next generation.

### Mosaicism

The third type is called mosaicism because some cells carry abnormal chromosomes and some do not. These people are often atypical of Down's syndrome in appearance. Figure 17.20 shows a typical child with Trisomy 21 Down's syndrome.



Figure 17.20 A typical child with Trisomy 21 Down's syndrome

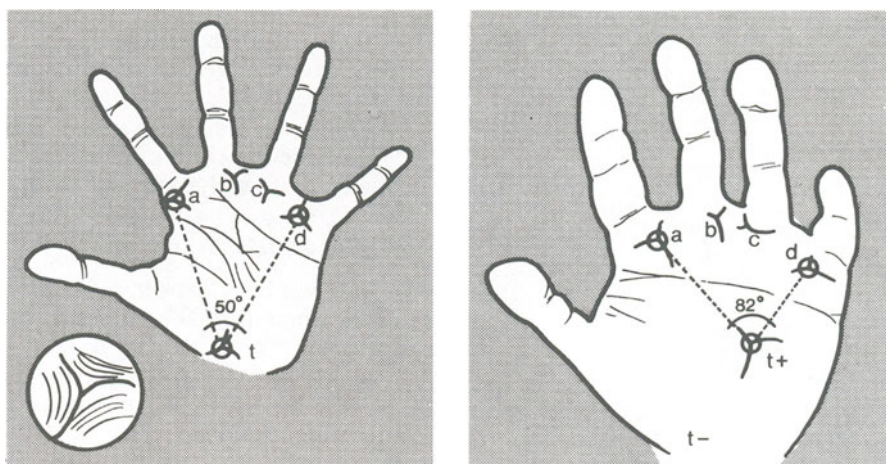
## 3 Characteristics

Understanding the various abnormalities produced by the different chromosomal defects will enable the nurse to plan individual care.

1. Growth and development in all areas are retarded due to a decrease in brain size and abnormal brain cell pathology.
2. The auto-immune system is immature and less able to form antibodies, giving rise to poor resistance to infection.
3. Muscles are hypotonic and ligaments lax, delaying motor development and co-ordination.
4. Some people with Down's syndrome may have associated congenital cardiac defects.
5. The skin is generally dry with scanty hair follicles and may be cyanotic if a heart defect is present.
6. The digestive system may be immature leading to early feeding and weaning problems.
7. There is an increased incidence of nystagmus and squint with later development of cataracts in middle life. Also, due to absence of lysozyme in the tears (which has an antiseptic action), blepharitis occurs.
8. Facial characteristics show a rather rounded face with poorly developed bridge to nose, fine brows and hair, eyes that slope downwards with an epicanthic fold across the inner canthus. The tongue, which is deeply fissured, tends to protrude through the lips. Ears are low set and poorly formed.
9. Hands are a diagnostic feature in themselves as they show characteristic palmar prints (Figure 17.21). The hand is often square with an incurving little finger, and single crease running transversely across the palm.
10. Speech lacks resonance and sounds gruff, articulation is poor due to lax vocal cords and an enlarged tongue.



On the positive side, babies and children with this condition are often responsive and loving, and though immature and slow to develop, with love and stimulation progress can be made.



(a) Palm of a normal child aged five years. The triradii at the base of the fingers are indicated (a, b, c, d). The atd angle is normal at  $50^\circ$ . Inset: a triradius is the junction of three dermal areas, each containing systems of dermal ridges.

(b) Palm of a five-year-old child with Down's syndrome. The triradius marked t- shows normal position of distal triradius. Triradius t+ is position of distal triradius in Down's syndrome. The atd angle is increased to  $82^\circ$ .

Figure 17.21 (a) Normal palm and (b) palm of a Down's syndrome child

#### 4 Management and care

For Susan, whether she will be accepted or rejected by her parents is critical.

##### The nurse's role

The role of the nurse here is to enable participation and involvement of the parents in the process of birth, and to ensure that they are given time to hold and feel close to her immediately after the birth.

If special care needs interfere with this time for love to take root, then parents may feel emotionally removed from their baby and rejection is easier. Every effort must be made to encourage a close bonding emotionally with the baby.

##### Answering some of the questions

When the parents accept Susan many questions will remain, in particular, 'Why us?' Questions like this are the most difficult to answer but chromosomal analysis to determine type and genetic counselling to advise on probability of recurrence will be a practical intervention at this stage and may in part answer some of the questions.

#### 5 Providing help with daily living activities and the child's development

Susan's parents will need help of varying kinds throughout her life. Initially the health visitor will monitor early development which will be very dependent on the type and degree of stimulation given to Susan. Babies with Down's syndrome may be lethargic and sleepy and mothers may say they are little trouble. These babies need lots of cuddles and social interactions to stimulate their awareness, e.g. bright toys, mobiles, musical mobiles and varied sounds from mother's own voice plus musical toys, bells, rattles, etc.

##### The importance of play and stimulation

Susan's own identity and sense of worth in relation to others will develop through close and happy play experiences with her mother and father. Their relationship with Susan needs to be consistent, warm and firm in approach. Susan will find pleasure from watching her mother from a supported position in her relaxer chair, from watching her facial expressions while feeding, and from splashing in the water at bath times, as all babies do, but for Susan the stimulation needs to be that much more positive and structured.

### **Early feeding and weaning**

Breast-feeding will give Susan valuable antibodies and a formula exclusive to her needs (bearing in mind her immature immune system and digestion). Sucking may be weak, and feeding time-consuming. Small feeds at more frequent intervals may be necessary, with particular attention to clear nostrils. If bottle fed, a larger hole in the teat and a boat shaped double ended bottle may provide easier suction but experimentation usually finds the answer.

Weaning needs special care. Susan will probably be resistant to solid food and disinclined to chew effectively. Her mother will need to be persistent and innovative both with foods and feeding utensils to overcome resistance.

### **Caring for skin, teeth and eyes**

The skin will benefit from massage with baby oil to counteract dryness, and better movement will be promoted by easy fitting clothes which are lightweight and warm.

When Susan cuts her first teeth a dentist who will give regular care will need to be obtained. Many dentists are reluctant to take on children who are mentally handicapped. They may be referred to the local mental handicap hospital for overnight stay and treatment under anaesthesia. Orthodontic care is often necessary.

Ophthalmic advice will probably be required as some children with Down's syndrome require spectacles from an early age for impaired vision.

### **Help from specialists, groups and associations in the community**

A specialist health visitor for the handicapped child will be able to help Susan's mother through the first 5 years.

Parents gain help and support from attending parents' workshops where they will meet other parents with similar problems and gain mutual support and professional advice from the district mental handicap team. Worries can be discussed and practical advice and help gained.

Discussions will revolve around particular aspects of care usually aimed at developing ability. Films will be watched and demonstrations given involving aspects of development in such areas as gross and fine motor control, speech development and control of bowel and bladder. Parents then develop a more positive attitude towards learning with their mentally handicapped child.

Parents may join special interest groups in relation to their child's needs, such as the Down's Babies Association. Many parents may be concerned for the future adulthood of their children, who may outlive them.

Visits may be arranged to the parents' home to introduce 'partnership in care' as shown by use of the 'Portage System', aimed at breaking skills down into simple steps and attempting to enable learning one step at a time, with the guidance and support of a community nurse for the mentally handicapped.

### **Education**

Susan will benefit from attendance at a pre-school playgroup, mixing with handicapped and non-handicapped children, the playgroup leaders ideally interacting with the parents and health visitor in structuring play activities within the group which may be continued at home to promote learning.

As Susan approaches school age the benefits gained from a loving and stimulating environment will probably be reflected in the outcome of her pre-school assessment which will determine her placement in a special school. Alternatively, if she is in a progressive area, there may well be a primary school with facilities to integrate handicapped with non-handicapped children as recommended in the Warnock Committee Report (Special Educational Needs) published in 1978.

Later education should lead towards suitable employment wherever this is possible.

You may nurse children with Down's syndrome during your allocation to the children's ward. They may be admitted, perhaps as a result of respiratory or other infection, or to give the parents a rest. Points of the following nursing care plan (Table 17.5) should be included in the plan of care for such a child.

**Table 17.5 Nursing care plan for the child with Down's syndrome**

<b>Problems Actual/Potential</b>	<b>Goal</b>	<b>Action/Rationale</b>
1. Bonding with parents difficult	Acceptance and love for their child	Involve parents in birth process. Give them time to hold baby and relax while getting to know her
2. Prolonged sleep and lethargy	Alert responsive infant with normal sleep pattern	Stimulate with lots of personal interaction, loving cuddles, bright mobile toys and sounds
3. Lazy feeder	Taking full feed in a responsive manner	Wake baby and gain her attention through playing with her first. Try various feeding bottles if not breast fed, a double-ended boat-shaped bottle may aid better suction
4. Length of mealtimes and resistance to solid foods	Encourage relaxed mealtimes; diet of varied consistency	Expect it to take longer! Make mealtimes a joy not a chore; increase consistency of food gradually and appeal to child's own taste with solids. Never let it become a battle of wills
5. Dry skin	Supple skin	Massage with body lotion and use oil in bath water. Avoid detergent-based bath products. Use a bland soap sparingly when bathing or changing the baby's nappy
6. Poor dentition; mal-occlusion	Healthy teeth	Register baby with a sympathetic and supportive dentist early
7. Floppy hypo-tonic limbs	Improved muscle control	Massage and carry out passive movements of limbs. Early introduction to water play. Toys which encourage motor skills. Give exercise outdoors as well as inside. Encourage all play
8. Visual defects	Healthy vision	Register early with an optician. Aid visual perception by stimulation of visual pathways with colourful toys and books. Draw attention to objects in her environment
9. Poor resistance to infection	Infection free	(a) Encourage deep breathing through exercise and singing (b) Loose warm clothes (c) Warm well-ventilated rooms (d) Avoid crowded places such as cinemas, tube trains, etc., when infections are prevalent (e) Healthy well-balanced diet (f) Nasal hygiene
10. Speech difficulties, gruff voice, poor articulation associated with hypotonic vocal cords and enlarged tongue	Clearer speech: increased verbal activity	Encourage verbalisation by speaking clearly, using eye contact and expression: relate speech to current activity. Development of muscles of speech through healthy eating/chewing and exercise, e.g. hydrotherapy, singing, etc., for control of breathing. (A recent intervention is surgery to reduce size of tongue.)

## Evaluation of progress for a baby/child with Down's syndrome (by Daphne Hill)

Evaluation links back to assessment and care through a cycle of events as shown in Figure 17.22.

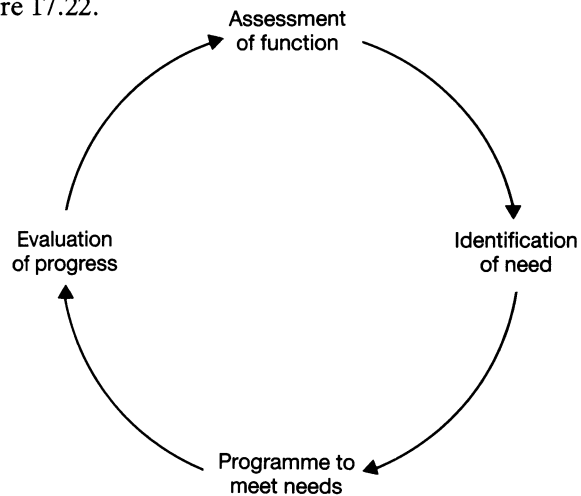


Figure 17.22

Assessment for a child with Down's syndrome whose primary problems relate to learning difficulties and adaptation to physical, psychological and social expectations, will require assessment within some of the following areas:

- Health
- Movement
- Social skills
- Self-help
- Play
- Language

Through interactions with the infant and child, relationships, integration of personality and feeling of self-worth and love needs can be developed (Figure 17.23).

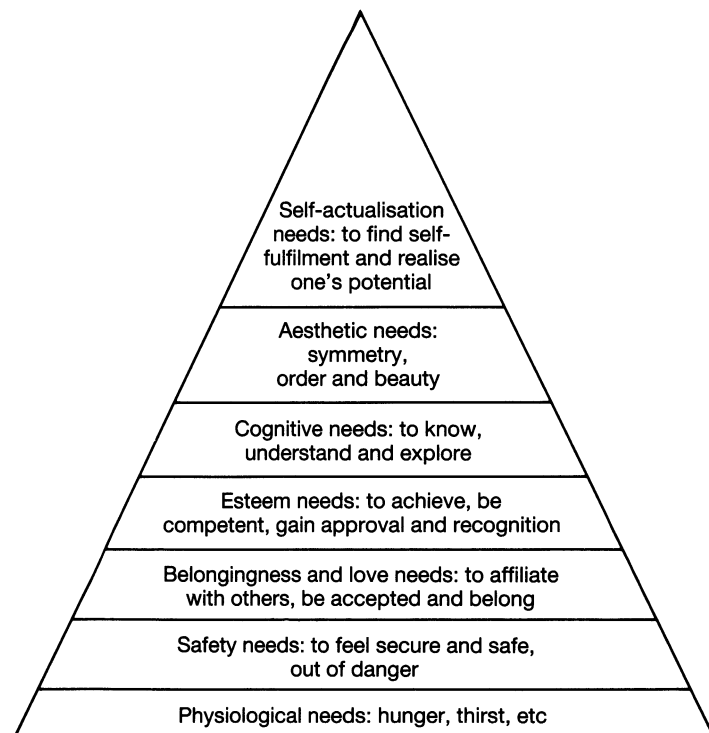


Figure 17.23

Critical to evaluation is an accurate record of the child's abilities/state of health at the beginning of any programme. This record is often referred to as a *base line*. This may be a written record in report format or a graph showing responses to particular activities (Figure 17.24).

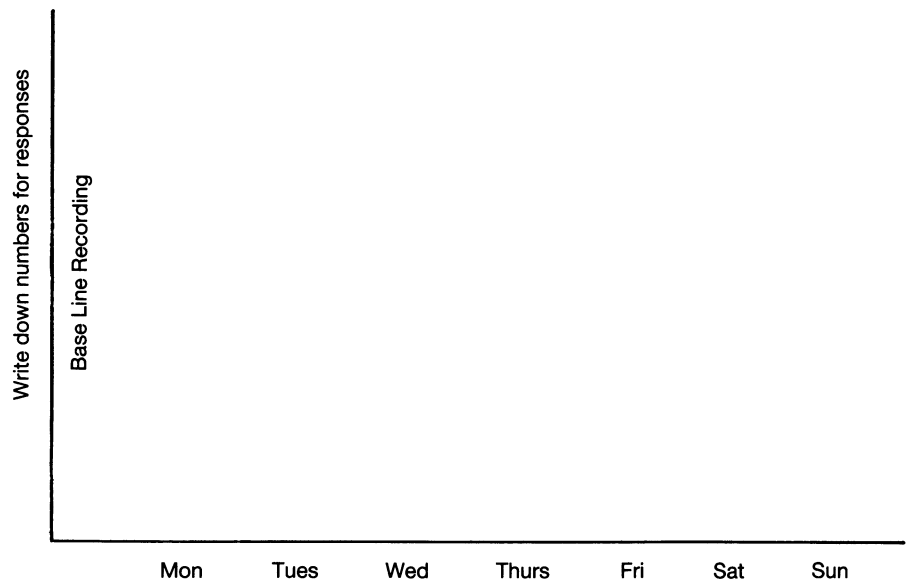


Figure 17.24

Nurses can devise their own criteria and formats for assessing needs and recording responses to care, but for children with learning difficulties there are a number of useful formats available. These have usually been devised by psychologists in the areas of childhood development. A useful developmental checklist has been described by Perkins *et al.* (1980).

Table 17.6

<b>SELF-HELP</b>	
<b>Eating and drinking</b>	
1.	Sucks well
2.	Shows anticipation when about to be fed.
5.	Pats bottle. Holds bottle.
6.	Drinks from cup when held to lips. Holds spoon with help. Sucks soft food off spoon. Chews and eats biscuit when fed with it.
7.	Keeps lips closed when offered more food than he wants.
9.	Helps to hold cup for drinking. Feeds self with biscuit. Rubs spoon across plate.
10.	(Finger feeds).
12.	Drinks from cup with a little help. Holds spoon — cannot use it alone.
13.	Manages cup up and down without much spilling. Holds spoon, brings to mouth and licks, but spoon tends to rotate. Chews well — some mess. Can manage to eat food on his own, but messily.
14.	Uses cup with both hands. Spoon no longer rotates. Hands empty dish to mother. Discriminates edible substances (doesn't eat rubbish, may bite objects, but no need to watch him).
15.	Uses cup with one hand — no spilling. Pours from one cup to another. Uses spoon competently. Chews competently. Removes wrapper from sweet before eating.
16.	Sucks through straw. Gets drink unassisted, e.g. water, milk. Uses fork — not very well.
17.	Pours from jug. Eats with spoon and fork — messy. Handles breakable objects.
18.	Eats skilfully with spoon and fork. Beginning to use knife and fork.
19.	Uses knife and fork. Spreads with knife. Prepares simple foods, e.g. jelly

(a) Teaching chart

Colour in each step that the child can do. Do not colour it in if the child cannot do all the items in that step. If the child cannot do a step because of physical handicap, write H.

	STEPS																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
MOVEMENT																			
SOCIAL SKILLS (getting on with others)																			
SELF HELP: Drinking and eating																			
Toileting and washing																			
Dressing																			
PLAY: Looking at things and colours																			
Handling things																			
Cubes, bricks, formboards and puzzles																			
Books, paper, crayons and scissors																			
Action toys, screwing and threading toys																			
Copying and pretending																			
LANGUAGE: Understanding																			
Speech — general conversation																			
Speech — answers to questions																			

(b) How the checklist is organised

The checklist consists of five main sections:

- Movement
- Social skills
- Self-help
- Play
- Language

Let us consider the Movement section as an example.

There are 19 levels in the Movement section. Level 1 is the easiest and level 19 the most difficult. Some levels have more than one skill. For example, level 8 includes both 'Stands with help' and 'Sits for one minute or more'. This sort of pattern is followed by all the sections.

However, in some sections, there are no skills at certain levels. For example, in the Social skills section there are no skills listed under levels 7, 8 or 11.

(c) How to fill in the checklist

1. Go through the five sections. On each list tick the skills the child can carry out. You will have to observe him to make sure which items he can do. He must do each one consistently *without help* to earn a tick. If he only does an item sometimes, he does not get a tick for it.
2. If he cannot do something because of a physical handicap, insert H.
3. Some early skills the child 'grows out of'. You can tick these if later skills have been mastered. For example, the child may no longer 'stand holding on to furniture' because he can do a later step, such as walk.

Be careful, though in areas like Social skills — looking at things, and Play — copying and pretending. In these areas many retarded children have big gaps. For example, they may look at things but not people. Do not tick the items unless you are sure the child does them reliably or has passed through that stage.

(d) How to fill in the teaching chart

Once you have completed the checklist, you can complete the teaching chart. One numbered square represents all the skills listed at that level in each of the five sections.

Start with the movement section at the top of the chart and colour in each square which represents a level at which the child can do all the skills listed.

For example, if he 'makes crawling movements when lying on stomach', colour in square one. If he 'Kicks forcefully', colour in square two, and so on. At level 8, he must carry out *both* skills before you can fill in square eight. If he can do only one of them, leave it blank.

Go through the whole checklist in this way until you have completed the chart.

### (e) Deciding what to teach

Once you have filled in the teaching chart you will be able to see where the child is doing well and where he needs extra help.

To take a simple example, suppose the child is up to level 17 in all sections except Self-help — dressing. In dressing, he only passes level 11. This means that he needs extra help to learn dressing skills since this is the area where he is doing least well. By turning back to the list of dressing skills, you will be able to choose one, at level 12, to teach next.

As a general rule, then, look at the teaching chart and find out where the child is doing least well. Then turn back to the appropriate list of skills and choose the next item on the list as your teaching target.

Of course, other things should influence what you will choose to teach. For example, it is best to:

1. Select a task that is going to be useful to the child.
2. Select a task that the child shows interest in learning (for example, he attempts the task already).
3. Select a task that is practical in the setting in which the handicapped child lives.

Do not choose too many teaching targets at once. Three new tasks are usually more than enough for a handicapped child to learn at any one time.

### (f) Important

Before you start teaching anything on the checklist there are four basic skills which the handicapped child needs to be able to do. These are:

1. Sits down at a table without fuss.
2. Looks at you when you call his name.
3. Looks at the object with which he is working.
4. Co-operates — that is, he will do what you expect him to do, if he understands what you want and is capable of doing it. (You will be able to tell what he understands and what he can do from the checklist.)

Make sure that the child can do all four of these things. If he does not, it may be necessary for you to teach them first.

### (g) Evaluation

Having worked through a learning programme with the child and recorded progress on the chart, evaluation is automatically built in as an ongoing and very visual aspect. Dating records and compiling over a period of time will give evidence of progress, and will build in for the nurse a record of personal accountability, leading back within the cycle to reassessment if goals are not being achieved and possible replanning in response to analysis of how these needs may best be met.

Other formats for assessing need and evaluating progress are also given in the reference list at the end of this section

Because of the long-term nature of care for a child with Down's syndrome, it is essential that the integrity of the family is maintained. Nurses should care for the child through the medium of the parent, never taking the parents' role from them but ensuring that parents are enabled to meet their child's needs (preferably within the home environment), having access to support structures as necessary, and feeling they are in partnership with professionals but seen as the key person in their child's life.

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## Names and head office addresses of relevant societies and organisations

*Association of British Paediatric Nurses (ABPN)*  
c/o Central Nursing Office  
The Hospital for Sick Children  
Great Ormond Street  
London WC1

*Association for Spina Bifida and Hydrocephalus (ASBAH)*  
Tavistock House North  
Tavistock Square  
London WC1 9HJ

*British Deaf Association (BDA)*  
38 Victoria Place  
Carlisle CA1 1HU

*British Diabetic Association (BDA)*  
10 Queen Anne Street  
London W1M 0BD

*Consumers Association*  
14 Buckingham Street  
London WC2N 6DS

*Cystic Fibrosis Research Trust*  
5 Blyth Road  
Bromley  
Kent BR1 3RS

*Down's Babies Association*  
Quinborne Community Centre  
Ridgacre Road  
Quinton  
Birmingham BR3 2TW

*Foundation for the Study of Infant Deaths*  
23 St Peter's Square  
London W6 9NW

*Handicapped Adventure Playgrounds Association (HAPA)*  
Fulham Palace  
Bishop's Avenue  
London SW6 6EA

*Leukaemia Research Fund*  
43 Great Ormond Street  
London WC1N 3JJ

*Leukaemia Society*  
45 Craigmoor Avenue  
Queen's Park  
Bournemouth  
Hants

*National Association for the Welfare of Children in Hospital (NAWCH)*  
Argyle House  
29-31 Euston Road  
London NW1 2SD

*National Deaf Children's Society*  
31 Gloucester Place  
London W1H 4EA

*National Society for the Prevention of Cruelty to Children (NSPCC)*  
67 Saffron Hill  
London EC1N 8RS

*Physically Handicapped and Able Bodied Association (PHAB)*  
42 Devonshire Street  
London W1N 1LN

*RCN Society of Mental Handicap Nursing*  
20 Cavendish Square  
London W1M 0AB

*RCN Society of Paediatric Nursing*  
20 Cavendish Square  
London W1M 0AB

*Royal National Institute for the Deaf (RNID)*  
105 Gower Street  
London WC1E 6AH

*Royal National Institute for the Blind (RNIB)*  
224 Great Portland Street  
London W1N 6AA

*Royal Society for the Mentally Handicapped Children and Adults (MENCAP)*  
National Centre  
123 Golden Lane  
London EC1Y 0RT

*Royal Society for the Prevention of Accidents (RoSPA)*  
Canon House  
The Priory  
Queensway  
Birmingham B4 6BS

*The Compassionate Friends*  
c/o Brenda Trimmer  
2 Norden Road  
Blandford  
Dorset DT11 7LT

*The Lisa Sainsbury Foundation*  
8-10 Crown Hill  
Croydon  
Surrey CR0 1RY  
(Help for those who are involved in  
the care of dying patients)

*The Malcolm Sargeant Cancer Fund  
for Children*  
56 Redcliffe Square  
London SW10 9HQ

*The RCN Paediatric Society*  
20 Cavendish Square  
London

*The Spastics Society*  
12 Park Crescent  
London W1N 4EQ

*Voluntary Council for Handicapped  
Children*  
8 Wakely Street  
London EC1V 7QU

# Index

- Accidents, 25, 33, 48, 50–51, 57, 66  
causing death, 159  
Acne, 38–39  
Acquired Immune Deficiency Syndrome,  
*see* AIDS  
Activities of living, assessment of,  
102–103  
Activities of Living model, 98–110  
Acute nephritis, in tonsillitis, 100  
Adenoids, 99–100  
Adenotonsillectomy, 57, 97–110  
complications after, 101  
Admissions  
by doctor, 86  
emergency, 64, 86, 110–116  
planned, 83–86  
for surgery, 83–134  
Adolescence, and spina bifida, 182  
Adolescent, the, 3, 37–45, 63–66, 68,  
72–73, 78  
behaviour of, 38, 41–43  
with cystic fibrosis, 146–147  
development of, 37–41, 72  
with diabetes mellitus, 139, 147–155  
diet of, 39–40  
education of, 40, 44, 77  
handicapped, 169  
height of, 39  
with hydrocephalus, 172–184  
in isolation, 132  
legal status of, 42  
sexual experimentation and, 44, 49  
social clubs for, 44  
with spina bifida, 172–184  
weight of, 39  
AIDS, 90  
and isolation, 130  
Alcohol, 13  
Allergy, to cow's milk, 13  
Alpha-fetoprotein, 175  
Amniocentesis, 175  
Amniocentesis test, 168  
Anaemia, and leukaemia, 165  
Androgen, 38  
Animism, 18, 20, 45  
Anorexia nervosa, 40  
Anterior fontanelle, 5–6, 17  
Antibodies, 49, 56  
Antigens, 49, 56  
Apgar score, 8  
Appendicectomy, 97, 110–116  
Appendicitis, 56–57, 97, 111  
Appendix  
non-perforated, 110–116  
perforated, 111  
Appetite, loss of, 53  
ASBAH, 170, 180  
Asthma Society, 136  
Attendance allowance, 138  
  
Bacteria, 15  
Basophils, 162  
Bathing, of babies, 93  
  
Bed wetting, 53  
Behaviour, 66, 69, 76  
of the adolescent, 38, 41–43  
of the pre-school child, 23  
regressive, 66  
of the school child, 33–34, 36  
of the toddler, 19  
Bereavement, 160–161  
Biliary cirrhosis, 142  
Birth trauma, 7  
Birth weight, 15  
Bladder, neurogenic, 172, 180–181  
Blindness, 168  
Blinking reflex, 10  
Blood, specimens of, 89  
Blood pressure  
determination of, 87  
of the infant, 8  
of the pre-school child, 23  
of the school child, 28  
Body image, 38–39  
and cystic fibrosis, 146  
and illness, 166  
'Bonding', 4, 12, 71  
Bottle feeding, 4, 12–14, 91–92  
Breast development, 38  
Breast feeding, 4, 12–15, 71, 91–92  
Breast milk, 12–13  
British Diabetic Association, 154  
Bronchiolitis, 58, 141  
Burns, 18, 57  
  
Calories, 12–14, 39  
Care  
for the handicapped, 170–172  
terminal, 164–167  
Care plan, 86, 184–195  
for acute illnesses, 97–129  
for adenotonsillectomy, 98–110  
for appendicectomy, 110–116  
for circumcision, 116–122  
for cystic fibrosis, 143–144  
for the deaf, 184–190  
for diabetes, 152–154  
for Down's syndrome, 190–195  
for gastro-enteritis, 122–129  
for the handicapped, 172–195  
for head injuries, 132–134  
for hydrocephalus, 172–184  
for long-term illnesses, 139–155  
for the mentally handicapped, 190–195  
for the multiply physically  
handicapped, 172–184  
post-operative, 105–109, 114–115,  
120–121, 178–179  
pre-operative, 104–105, 112–114, 119  
for the sensorily handicapped, 184–190  
for spina bifida, 172–184  
for terminal illness, 161–167  
Centile chart, 7  
Cereal, 14–15, 21  
Cerebral palsy, 59  
Cerebral tumours, 58

- Chemotherapy, for leukaemia, 163
- Chest infections, 56
- Chicken pox, 56
- Child abuse, 51–52, 169
- Child care services, 52
- Circumcision, 57, 98, 116–122
- Cognitive abilities, 23, 30–31
- Cognitive development, 40  
sensorimotor phase, 19
- Colic, 13
- Colostrum, 12
- Communication, 4, 8, 28, 72, 75–77  
with the handicapped, 171  
in the infant, 8, 73–74  
non-verbal, 72–73  
in the school child, 32–33, 74  
verbal, 74
- Community nurse, *see* District nurse
- Community services, 138–139
- Community staff, 96
- Compassionate Friends, 161
- Congenital abnormalities, 52, 56, 58  
dislocated hip, 52  
heart defects, 59
- ‘Coning’, 177–178
- Constipation, 15  
and appendicitis, 111, 116  
and leukaemia, 165  
and spina bifida, 182
- Convulsions, 49  
febrile, 7, 17, 23, 53
- Cot deaths, 159
- Cow’s milk, 13, 15  
allergy to, 13
- Cultural background, 9, 29, 37
- Cystic fibrosis, 58, 135, 139–142  
and the adolescent, 146–147  
and the pre-school child, 140–147
- Cystic Fibrosis Society, 146
- Cytotoxic therapy, 157
- Day patient, 98
- Day surgery, 71, 86, 116–122
- Deaf, the, schools for, 189
- Deafness, 53  
acquired, 185  
conductive, 186  
congenital, 172, 184–190  
and ototoxic medicines, 185  
partial, 185–186  
perceptive, 186  
profound, 185–186  
sensory neural, 186  
temporary, 185
- Death, 158–161  
attitudes to, 159–160  
causes of, 158–159  
fear of, 35, 103, 107  
at home, 160–161  
in hospital, 160
- Death certificate, 160
- Deciduous teeth, 20
- Defaecation, 20
- Dehydration, 6, 53, 91  
and gastro-enteritis, 123, 126
- Delinquency, 41, 45
- Dentition  
of the pre-school child, 23  
primary, 14  
of the school child, 28  
of the toddler, 16–17
- Development, 3–4, 8–9, 47, 50, 59, 67–68, 75  
of the adolescent, 37–38, 40–41, 72  
assessment of, 85  
and Down’s syndrome, 194, 196–200  
of the infant, 4, 8–9  
of intellectual ability, 26–27  
of language, 9, 21, 26, 33, 42, 45, 69  
of play, 12  
of the school child, 28–29, 31–33  
of social skills, 9, 16, 20–21, 26–27  
of the toddler, 17–20
- Diabetes, 148  
complications of, 151
- Diabetes mellitus, 135, 148–151  
and the adolescent, 139, 147–155
- Diabetic cards, 155
- Diarrhoea, 53, 55
- Diet, 39–40, 84
- Disablement Resettlement Officer, 170
- Discipline, 27, 55, 66, 68
- Disease, long-term, 135–137
- Disorder, long-term, 135–137
- District nurse, 53–54
- Down’s Babies Association, 194
- Down’s syndrome, 59, 168, 190–199
- Drinking, 38, 45, 49, 59
- Drowning, 27, 33–34
- Drugs  
addiction to, 38, 45, 49  
calculations for, 94–95
- Education  
of the adolescent, 40, 44, 77  
and cystic fibrosis, 145–147  
of the deaf, 186–190  
and diabetes, 151–154  
and Down’s syndrome, 194  
for the handicapped, 170–171, 183  
and long-term illness, 137  
of the pre-school child, 77  
of the toddler, 77
- Egocentricity, 9, 16, 45
- Electrolytes  
imbalance of, 53  
levels of, 13
- Elimination, 8, 15, 20, 34–35, 92–93
- Emotional immaturity, 67–68
- Employment, 34, 39, 45, 49  
and cystic fibrosis, 147  
of the handicapped, 183
- Eosinophils, 162
- Epilepsy Association, 136
- Epistaxis, 165
- Examinations, 40, 78
- Eyes, sunsetting, 177
- Facilities, for the handicapped, 170–172
- Feeding, 7, 9, 16, 27  
and Down’s syndrome, 194  
independence in, 9, 20  
of the infant, 9, 12–15, 91–92
- Fluid  
administration of, 90–91  
balance of, 88  
requirement for, 90
- Fontanelles, 5  
anterior, 5–6, 17  
in the infant, 5  
posterior, 4–5, 177
- Fractures, 18, 57
- Gagging reflex, 10
- Gastro-colic reflex, 20
- Gastro-enteritis, 12, 18, 98, 122–129
- Gender, 18, 35
- General practitioner, 4, 47–48, 52–53
- Genetic counselling, 59, 147
- Genetics, 47, 58
- ‘Glue ear’, 185
- Grasping reflex, 10
- Green Cross Code, 25, 33, 51
- Grieving process, 161
- Haemophilia, 59
- Haemorrhage  
after adenotonsillectomy, 101, 106, 108  
after circumcision, 120  
primary, 101  
reactionary, 101  
secondary, 101
- Handicap  
living with, 169  
in the school child, 53  
types of, 168
- Handicapped, the, 168–201
- Head circumference, in the infant, 7
- Head, injury to, 18, 132–134
- Health centre clinic, 4
- Health education, 49
- Health visitor, 4, 7, 17, 47–48, 52, 58, 63, 69
- Hearing aids, 188
- Hearing  
assessment of, 184  
in the school child, 29  
tests of, 186–187
- Height  
of the adolescent, 39  
of the infant, 7  
of the pre-school child, 23
- Hepatitis B, and isolation, 130
- Hernia, repair of, 57
- HI viruses, 90  
and isolation, 130
- Hormones, 37–38
- Hospital  
admission to, 102–104  
discharge from, 96–97, 121–122, 128, 180  
outpatient department, 96  
teachers in, 78
- Human immunodeficiency viruses, *see* HI viruses
- Hydrocephalus, 172–173, 176–180  
clinical features of, 177  
communicating, 176  
obstructive, 176
- Hygiene, 93
- Hyperactivity, 72, 76
- Hyperglycaemia, 150
- Hypoglycaemia, 150–151
- Identity, sense of, 37, 41–43
- Ileal loop diversion, 181–182
- Illness  
acute, 83–134  
long-term, 135–155  
terminal, 156–167
- Immunisation, 17, 24, 29, 39, 48
- Incontinence, 66
- Independence, 17, 21, 23, 34, 37, 41  
in feeding, 9, 20
- Infant, the, 3–16, 28, 66, 71–72  
blood pressure of, 8  
body temperature of, 7  
communication with, 8, 73–74  
development of, 4, 8–9  
feeding of, 12–15, 91–92, 96  
with gastro-enteritis, 122–129  
head circumference of, 7

- height of, 7
- immunity of, 71
- in isolation, 132
- motor development of, 9, 11
- muscle tone of, 8
- nurture of, 4
- nutritional requirements of, 12–13
- play and, 12
- pulse rate of, 8
- reflexes of, 8, 10
- respiratory rate of, 8
- safety of, 9, 12
- surface area of, 7
- vision of, 7–8
- weight of, 7, 15
- Infection, 53, 55–56
  - and adenotonsillectomy, 104, 108
  - and appendicectomy, 114
  - and circumcision, 119
  - and cystic fibrosis, 140–141, 145
  - of the eye, 7
  - and gastro-enteritis, 125–128
  - and hydrocephalus, 178–180
  - and isolation, 130–131
  - and leukaemia, 165
  - respiratory, 12, 56
  - and spina bifida, 178–180
  - urinary, 111, 179, 181
- Infestation, 49, 52
- Infusion, 65, 77
  - intravenous, 90
  - scalp vein, 90
- Ingestion, 18, 25
- Injection, 65, 68
  - and diabetes, 152
  - subcutaneous, 152
- Injuries
  - to the head, 132–134
  - non-accidental, 57
- Insulin, and diabetes, 148–154
- Intellectual ability, development of, 26–27
- Intelligence, 40–41
- Intracranial pressure, 6
- Investigations
  - on admission, 87–89
  - lumbar puncture, 89
  - scanning, 89
  - x-ray, 89
- Iron, 14
- Isolation
  - for leukaemia, 165
  - protective, 129–132
- Isolation nursing, 72, 74–75, 129–132
  - and gastro-enteritis, 123–124
  - protective, 132
- Junior foods, 15
- Juvenile courts, 52
- Kaussmall respiration, 149
- Kernicterus, 185
- Lacrimal ducts, 7
- Language, 198
  - defects of, 168
  - development of, 9, 21, 26, 33, 42, 45, 69
- Last offices, 160
- Leukaemia, 58, 161–165
  - acute lymphoblastic, 162–163
  - acute myeloblastic, 162
  - relapse in, 163–164
  - remission of, 162–164
- Lip reading, 189
- Lordosis, 16
- Lumbar puncture, 89
- Lymphatic drainage, to the cervical glands, 99
- Lymphoblasts, 162
- Lymphocytes, 12, 162
- Malcolm Sargent Fund, 158
- Measles, 56
- Meconium, 15
- Meconium ileus, 141
- Meconium plug, 141
- Medicines
  - administration of, 94
  - and deafness, 185
  - for gastro-enteritis, 124
  - and leukaemia, 165
  - ototoxic, 185
  - and safety, 94
- Meningitis, 57
- Meningocele, spina bifida, 173–176
- Meningomyelocele, spina bifida, 173–176, 178
- Menstruation, 13, 38
- Mental retardation, 72
- Mesenteric adenitis, and appendicitis, 111
- Milestones, 3, 8, 19, 28, 52
- Modified milks, 13, 15
- Mongolian ‘blue spot’, 4, 7
- Monocytes, 163
- Moro reflex, 10
- Motor development
  - in the infant, 9, 11
  - in the pre-school child, 24
  - in the school child, 30
  - in the toddler, 17
- Motor skills, 17
- Mutation, 58
- Myeloblasts, 163
- Myelocytes, 162–163
- Nappies, 93
- Nappy changing, 93
- ‘Nappy rash’, 93
- Nasal polyps, and cystic fibrosis, 142
- Naso-gastric feed, 69, 90
- Naso-gastric tube, 90
- National Deaf Children’s Society, 189
- ‘Nature’, 3
- Nausea
  - after adenotonsillectomy, 106
  - in appendicitis, 112
  - after circumcision, 120
  - in diabetes, 149
  - and hydrocephalus, 177, 179
  - in leukaemia, 165
- Neonate, 168
- Neutrophils, 162
- Nocturnal emission, 38
- Nursery nurse, 75
- Nursery school, 20, 24, 27, 77
- Nursing care plan, *see* Care plan
- ‘Nurture’, 3
  - of the infant, 4
- Nutritional requirements
  - of the infant, 12–13
  - of the school child, 29
- Observations
  - on admission, 85, 87–89
  - neurological, 88
- Occulta, spina bifida, 173–174
- Occupational therapist, 171
- Ophthalmoscopy, for hydrocephalus, 177
- Oral feed, 90
- Oral fluids, 90
- Organ donation, 160
- Osteogenesis imperfecta, 58
- Osteomyelitis, 56
- Otitis media, 53, 56, 100, 172, 185–186
- Oxygen
  - for cystic fibrosis, 143
  - for dyspnoea, 158
  - for leukaemia, 165
- Oxytocin, 12
- Paediatric hospices, 157
- Paediatric ward, 173
  - for long-term illnesses, 139
- Pain, 8, 32, 66
  - after adenotonsillectomy, 106
  - after appendicectomy, 116
  - assessment of, 88
  - after circumcision, 120
  - control of, 157
  - and diabetes, 149
  - in leukaemia, 163, 165
- Pancreatic fibrosis, and cystic fibrosis, 142
- Papilloedema, 177
- Paracetamol elixir, 55
- Peer groups, 30, 34, 42
- Peritonitis, 111
- Permanent teeth, 28
- PHAB club, 183
- Phenylketonuria, 52
- Physiotherapist, 171, 179
- Physiotherapy, 137
  - for cystic fibrosis, 145
- Pituitary gland, 12
- Place of Safety order, 51
- Platt Report (1959), 71
- Play, 8–9, 12, 51, 64, 67–68, 72, 75–77, 84
  - after adenotonsillectomy, 106
  - after admission, 86
  - and cystic fibrosis, 145
  - development of, 12
  - and Down’s syndrome, 193
  - the infant and, 12
  - and long-term illness, 139
  - the pre-school child and, 23–25, 27
  - the school child and, 31, 33
  - the toddler and, 18, 20–21
- Play items, and isolation, 130–131
- Play leader, 63–64, 75–76, 96
- Pneumonia, 111
- Pneumothorax, and cystic fibrosis, 142
- Poliomyelitis, 168
- Portage system, 194
- Portal hypertension, and cystic fibrosis, 142
- Posterior fontanelle, 4–5, 177
- Potty training, 20
- Pre-admission programme, 63
- Pre-eclamptic toxæmia, and deafness, 185
- Pre-operative care, 15
- Pre-school child, the, 3, 23–27, 66, 68, 71–72, 75
  - behaviour of, 23
  - blood pressure of, 23
  - with cystic fibrosis, 139–147
  - dentition in, 23
  - education of, 77
  - head injury to, 132–133
  - hearing tests for, 186
  - height of, 23
  - in isolation, 132
  - motor development of, 24
  - play and, 23–25, 27

- pulse rate of, 23
- respiratory rate of, 23
- safety of, 24–25
- vocabulary of, 23
- weight of, 23
- Pre-school play group, 24, 27–28, 77
- Prematurity, and deafness, 185
- Pressure sores, 88
- Primary dentition, 14
- Primary health care team, 53–54, 56
- Primitive reflex, 10–11
- Psycho-social development, and spina bifida, 183
- Psychosomatic pain, 111
- Puberty, 3, 28–29, 31, 37–39, 45
  - in boys, 38
  - of diabetics, 152
  - in girls, 38
  - and spina bifida, 182
- Pulse
  - determination of, 87
  - in diabetes, 149
  - and hydrocephalus, 177
- Pulse rate
  - of the infant, 8
  - of the pre-school child, 23
  - of the school child, 28
  - of the toddler, 17, 69
- Pyrexia, 17, 23, 53
  - in appendicitis, 112, 116
  - in gastro-enteritis, 123
  - in leukaemia, 163
- Quinsy, 100
- Radiation, and leukaemia, 162
- Radiotherapy, 157
  - for leukaemia, 163
- Reflex
  - blinking, 10
  - gagging, 10
  - gastro-colic, 20
  - grasping, 10
  - in the infant, 8, 10
  - Moro, 10
  - primitive, 10–11
  - rooting, 10
  - sucking, 10
  - tonic neck, 10
  - walking, 10
- Relapse, in leukaemia, 163–164
- Remission, of leukaemia, 162–164
- Renal diseases, 156
- Renal failure, 156
- Replacement therapy, 90
- Residential care, 52
  - for the handicapped, 170
- Respiration
  - determination of, 87
  - in diabetes, 149
  - and hydrocephalus, 177
- Respiratory rate
  - of the infant, 8
  - of the pre-school child, 23
  - of the school child, 28
  - of the toddler, 17
- Rheumatic fever, 100
- RNIB, 170
- Role model, 19–20, 34, 42–43, 45, 64, 75
- Rooting reflex, 10
- Royal National Institute for the Deaf, 189
- Rubella, 39, 59, 168
  - and deafness, 185
- Safety, 74–75, 77
  - and administration of medicines, 94
  - of the deaf, 190
  - in hospital, 88, 102, 104–106, 114, 119, 125
  - of the infant, 9, 12
  - of the pre-school child, 24–25
  - of the school child, 28–29, 33
  - of the toddler, 18
- Scalds, 18, 27, 34, 57
  - isolation during, 130
- Scans, 89
- School
  - after appendectomy, 116
  - attendance at, 28, 31, 33–37, 39, 45, 49, 78
  - and cystic fibrosis, 145
  - friends at, 28, 34, 41, 78
  - for the handicapped, 170
  - and long-term disorder, 137
  - and long-term illness, 137
  - meals at, 29–30
  - special, 137, 170, 172, 194
  - work at, 78
- School child, the, 3–4, 28–36, 42, 66, 68, 72, 75, 78
  - behaviour of, 33–34, 36
  - blood pressure of, 28
  - communication in, 32–33, 74
  - dentition of, 28
  - development of, 28–29, 31–33
  - fears of, 35
  - handicap and, 53
  - head injury in, 132
  - hearing of, 29
  - hearing tests for, 186
  - in isolation, 132
  - motor development in, 30
  - nutritional requirements of, 29
  - play and, 31, 33
  - pulse rate of, 28
  - respiratory rate of, 28
  - safety and, 28–29, 33
  - with sensory handicap, 184–190
  - siblings and, 30, 34
  - vision of, 28–29
  - vocabulary of, 30
- School medical service, 186
- School nurse, 52
- School teachers, 77–78
- Schooling
  - for the deaf, 188
  - of diabetics, 154
  - and Down's syndrome, 194
  - for the handicapped, 170
  - and long-term disorder, 137
- Self-care model, for infant with gastro-enteritis, 122–129
- Sensory handicap, care plan for, 184–190
- Sexual abuse, 51
- Sexual experimentation, 44, 49
- Siblings, 53, 60, 66
  - the school child and, 30, 34
  - the toddler and, 19–20
- Sign language, 189
- Single-parent family, 44, 51
- Skull x-ray, for hydrocephalus, 177
- Smiling, 8, 20
- Smoking, 38, 44, 49, 59
- Social interaction, 34, 45
- Social services, 170
  - and long-term illness, 138
- Social skills, development of, 9, 16, 20–21, 26–27
- Societies, for diabetics, 154
- Source isolation, 125, 129–130
- Source isolation cubicle, 130
- Source isolation nursing, 130
- Spastic Society, 170
- Specimens
  - blood, 89
  - collection of, 88–89
  - stool, 88
  - swab, 89
  - urine, 88
- Speech defects, 168
- Speech therapist, 171, 189
- Speech therapy, 52
- Speech, and Down's syndrome, 192, 195
- Sphincter control, 9, 20, 27, 45
  - regression in, 35, 66
- Spina bifida, 59, 168, 172–176, 178–180
  - diagnosis in fetus, 175
- Spina bifida meningocele, 173–176
- Spina bifida meningomyelocele, 173–176, 178
- Spina bifida occulta, 173–174
- Spitz–Holter valve, 178
- Status asthmaticus, 135
- Stepping stones, *see* Milestones
- Steroids, and diabetes, 149
- Stoma, *see* Ileal loop diversion
- Stools, 15
  - changing, 15
  - elimination of, 15
  - specimens of, 88
- Sucking pads, 4, 7
- Sucking reflex, 10
- Suffocation, 25
- Sunsetting eyes, 177
- Sunshine Homes for the Blind, 170
- Support, for the handicapped, 170–172, 194
- Surgery
  - day, 71, 86, 116–122
  - planned, 63
  - preparation for, 96
- Swabs
  - nasal, 89
  - throat, 89
- Sweat test, for cystic fibrosis, 142
- Syphilis, and deafness, 185
- Talipes, 173, 180–181
- Teeth, 14, 27, 29, 34
  - decay of, 30
  - deciduous, 20
  - and Down's syndrome, 194
  - permanent, 28
- Temper tantrums, 19
- Temperature, 28
  - determination of, 87
  - in diabetes, 149
- Test weighing, 13
- Toddler, the, 3–4, 16–23, 66, 68, 72, 75
  - admission of, 117
  - circumcision of, 116–122
  - dentition of, 16–17
  - development of, 17–20
  - diet of, 84
  - education of, 77
  - emotional immaturity of, 67–68
  - hearing tests for, 186
  - in isolation, 132
  - motor development of, 17
  - play and, 18–21
  - pulse rate of, 17, 69
  - respiratory rate of, 17

- safety of, 18
- siblings and, 19–20
- weight of, 17
- Toddler clubs, 21–22, 28
- Tonic neck reflex, 10
- Tonsillitis, 53, 56, 99–100, 102–103
- Tonsils, 56, 99–101
- Traction, 65–66, 75, 77
- Trans-illumination of the skull, for hydrocephalus, 177
- Transductive reasoning, 25, 45
- Transfusion, 90
- Trauma
  - as a cause of death, 159
  - and hydrocephalus, 177
- Tumours, and hydrocephalus, 177
- Tuning fork tests, 187
  
- Ultrasound, 168, 175
- Unemployment, 51, 58
- Universal self-care needs, 125–128
- Upper respiratory tract infection, 56
- Urine
  - collection of, 88
  - retention of, after appendicectomy, 114
  - specimens of, 88
  
- Ventricular puncture, 177–178
- Ventriculography, for hydrocephalus, 177
- Verbalisation, 19–20
- Vision
  - in the infant, 7–8
  - in the school child, 28–29
- Vitamins, 15, 30
- Vocabulary
  - of the pre-school child, 23
  - of the school child, 30
- Vocalisation, 9, 16, 20
- Voluntary organisations, 96, 170
- Vomiting, 52
  - after adenotonsillectomy, 106
  - in appendicitis, 112
  - after circumcision, 120
  - in cystic fibrosis, 141
  - in diabetes, 148–149
  - in gastro-enteritis, 123, 126
  - and hydrocephalus, 177, 179
  - in leukaemia, 163, 165
  - source isolation for, 129
- Waldeyer's ring, 99
- Walking reflex, 10
- Warnock Report (1978), 137, 194
  
- Weaning, 14–15, 92
  - and Down's syndrome, 192, 194
- Weight loss
  - and diabetes, 149–150
  - in leukaemia, 165
- Weight
  - of the adolescent, 39
  - changes in, 88
  - of the infant, 7, 15
  - of the pre-school child, 23
  - of the toddler, 17
- Which?* Consumer Report (1980), 71
- Whooping cough, 56
  - source isolation for, 129–130
  - vaccine, 48–49
- 'Wind', 8, 13
  - see also* Colic
- Writing, 32
  
- X-rays, 89