What Every Senior *Needs to Know* About Health Care

James J. Nora, MD

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To Audrey, my beloved wife.
We've grown old together
and more in love every day.

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PREFACE

Profound changes are occurring in health care, health policy, and demographics. At a time when astonishing medical advances appear in the media almost daily, access to these advances and even to routine health care and satisfactory doctor-patient relationships is becoming progressively more difficult to find. And inadequately anticipated has been the rapid growth of the population of seniors—who do not want to settle for just getting old. They want to be physically and emotionally healthy, active, and secure while getting older. However, patients must now contend with gatekeepers, profiteering health maintenance organizations, pharmacy-benefit managers, the greedy health insurance industry, greedy pharmaceutical companies, greedy hospitals, and—let's be honest—greedy doctors.

The U.S. health care system is broken. Although we pay more for health care per capita than any other country, 40 million of us do not have health insurance—as expensive and restrictive and limited as it may be. We are the only industrialized country besides South Africa that does not have universal health care—derided by its opponents by the pejorative name *socialized medicine*.

A nonsolution floating around Washington is to surreptitiously dismantle Medicare—the one program that protects

seniors—by sneaking in the back door with a phony prescription drug benefit prohibiting Medicare from bargaining with the overcharging drug companies to limit profits to the reasonable rather than the exorbitant. Seniors are fairly well informed; many are activist and annoying to their elected representatives. Many more are not annoying enough to their physicians and other professionals because they do not have readily available the information they need to protect their health and well-being—physical, emotional, and financial.

Take the pages that follow as a guide. For anything I don't discuss directly, I'll tell you where to find the information you may need. If you're not comfortable with the Internet, have a grandchild or some other young person teach you how to use it.

Good luck, and good health.

ABBREVIATIONS

AARP	American Association of Retired Persons
AD	Alzheimer disease
AHA	American Heart Association
BMI	body mass index
BPH	benign prostatic hypertrophy
COPD	chronic obstructive pulmonary disease
CRP	C-reactive protein
dl	deciliter
DMA	Direct Marketing Association
ER	emergency room
FDA	Food and Drug Administration
FFS	fee for service
GERD	gastroesophageal reflux disease
GI	gastrointestinal
HDL	high-density lipoprotein
Hg	mercury
HMO	health maintenance organization
HRT	hormone replacement therapy
LDL	low-density lipoprotein
mcg	microgram
mg	milligram
MHC	major histocompatibility complex
MHR	maximum heart rate
mm	millimeter
NABCO	National Alliance of Breast Cancer Organizations
NCCAM	National Center for Complementary and Alternative Medicine
NHLBI	National Heart, Lung, and Blood Institute
NIA	National Institute on Aging
NIH	National Institutes of Health
NSAID	non-steroidal anti-inflammatory drug
PDR	*Physicians' Desk Reference*
PPO	preferred provider organization
PSA	prostate-specific antigen

RLS	restless legs syndrome
SS	Social Security
SSA	Social Security Administration
SSN	Social Security number
TB	tuberculosis
TIA	transient ischemic attack
TSH	thyroid-stimulating hormone
U.S.	United States used as an adjective
VLDL	very low-density lipoproteins
WHO	World Health Organization

WHAT EVERY SENIOR NEEDS TO KNOW ABOUT HEALTH CARE

ONE

WHAT'S HAPPENED TO HEALTH CARE?

Financial ruin from medical bills is
almost exclusively an American disease.
—Roul Turley

My doctor is nice; every time I see him I'm ashamed of
what I think of doctors in general.
—Mignon McLaughlin

During my lifetime as a physician, medicine and the delivery and financing of health care have changed so drastically that I sometimes find it difficult to recognize my own profession. I introduce my concern with a brief personal history. In 1955 I started out as a general practitioner in rural Wisconsin, charging $2 for an office call and paying only $60 per year for malpractice insurance. By contrast, in today's market some readers may have been billed over $1,000 for an office or clinic visit plus laboratory work—before insurances or Medicare mandated a steep reduction. (If you don't have Medicare or an insurance company to negotiate for you, payment of the full bill is required.) And some readers probably have heard on the television evening news that for certain medical specialties, malpractice insurance may cost $100,000 to $200,000 per year.

More personal history. I was one of those old-fashioned country doctors, trying to do everything in medicine, often doing more than my level of training should have encompassed. Eventually, I realized that no one is smart enough to do what I was attempting. Medicine was moving too fast. So I specialized and superspecialized, becoming both a cardiologist and a geneticist—a medical school professor, caring for patients, doing research and

teaching, becoming active in heart transplantation, and writing medical books in both cardiology and genetics.

THE PLAN OF THE GUIDE

This book is a guide, only a guide, to the points I consider most relevant—at least from my own experience. It will not cover all the medical and social issues important to seniors. It will not even cover in substantial detail many of the topics it introduces. But it will discuss, however briefly, the ten leading causes of death and disability among patients over age sixty-five and many other related and unrelated diseases and social problems for seniors of varying ages. You may feel too much attention is paid to diseases of the heart and blood vessels—even though they account for more deaths and disability than all the other leading causes combined. As a cardiologist I find it difficult not to expound on the topic closest to my heart—pun intended. Also as a cardiologist I take great satisfaction in noting that deaths from cardiovascular diseases have diminished greatly over the last three decades, according to a January 2003 report in *Reuters Health*. Of particular interest to my fellow seniors is that the typical cardiac event is less often a fifty-year-old man dying suddenly with a heart attack and more often a seventy-year-old man or woman sustaining a heart attack—*and surviving*.

As you read, you may find what you consider to be glaring omissions. Why didn't I even mention conditions A, B, or C or diseases X, Y, or Z? My emphasis is on prevention, not treatment. Treatment is what your doctor does. Why isn't the latest information on this or that included? One reason is that on the very day of publication, a book at the cutting edge of information on a subject is already out-of-date in some areas. That's where the Internet, TV, and newspapers may be useful. (Frequently, I give dates on specific information so you will know how old it is.) As a guide, however, I hope to point you in the right direction and help you and your doctor by making you a more knowledgeable patient. To supplement the material I do not cover in sufficient detail (or at all), I'll provide fairly extensive lists of resources, most often at the ends of chapters but also in a bibliography at the end of the book.

In writing textbooks for two rapidly moving fields of biomedical science, I have always tried—as I will try here—to present the latest information right up to the time of publication. The problem for this book is that not only is science advancing rapidly, but the rules and the current health care activities in government and the insurance companies, which I must also discuss, change almost daily. You should also know that infor-

mation I present in this and later chapters may be more technical than some readers care to pursue. When explaining certain material to patients face-to-face, I can see if they're tuning me out, so I simply pass lightly over the subject. Other patients ask me pointed questions. I'm therefore going to provide a few details for such questioning readers and advise those who prefer to skim when it's all right to do so.

WHO IS A SENIOR?

You need to be fifty (an age that now includes baby boomers) to join the American Association of Retired Persons (AARP). So I take that as the beginning of the target age for this book. For purposes of Social Security and Medicare, you qualify at sixty-two and sixty-five, respectively, but the threshold for age of eligibility for *early entry* into Social Security is increasing two months each calendar year. In other words, you have to be two months older next year than you do this year to enter the system. If you're a man over seventy (which I am), you may be entitled to use the term *geezer* as well as senior (as sort of an advanced degree). On the flip side (that dates me, CDs don't have flip sides), an all-too-familiar tune plays—you could even be a "senior" as early as your forties, when your hard-earned raises have put you in an income bracket that makes you a target of downsizing and unemployment or underemployment. Too high an income encourages bean counters to discount the contribution of workers in their most productive years in favor of younger economy models. Does all this mean baby boomers will find guidance in the pages that follow? Yes. You've come a long way, baby boomer.

What can a geezer share with fellow seniors? For me, there's been a sense of surprise. I frankly never expected to become a geezer. As a cardiologist interested in the genetics of heart disease, I did a calculation over twenty-five years ago based on my understanding of risk factors at that time and determined that my life expectancy should have been about age forty-three. Since I'd already surpassed that prediction, I decided to take vigorous steps to continue to advance my longevity even further. (It has been documented repeatedly—most recently in 2002 in the GENECARD project—that except for very rare gene mutations, even familial premature coronary disease still thrives on risk factors such as smoking, diet, and high blood pressure.) I learned much more about prevention and shifted an emphasis of my research interest away from crisis care—including heart transplantation—to preventive cardiology.

You've really got to be a senior to understand clearly the problems of health and life management that perplex older people. For example, it is

now difficult to find a physician who can take care of most of your medical needs. Also, you will not be charged $2 for an office visit. Last week I had an appointment in an allergy clinic where I saw a doctor in training who was eventually checked by a staff doctor. The history of my allergy was taken, a stethoscope was placed on my chest, and some blood was drawn for laboratory studies. The cost: $1,168. Prudently, Medicare would not accept the exorbitant charge. They paid $142. But if these sorts of problems can perplex an "old" physician, what can the layperson expect?

Of course, the younger you are when you embrace healthful living, the better. And the more you know about yourself and your family, the better. Wearing my geneticist hat, I'm going to emphasize immediately that diseases run in families. (You already knew that, didn't you?) Hippocrates appreciated this fact almost 2,500 years ago when he wrote concerning the cause of epilepsy, "Its origin is hereditary like that of other diseases." So here's a recurring theme: in each section of diseases that will be discussed, familial implications must be kept in mind. And in the case of seniors, this is not just so you are aware of the illnesses that afflicted your parents and siblings and other older relatives, but it's to let your children and grandchildren know about the illnesses you've experienced so they can take timely steps in prevention.

FINANCING HEALTH CARE FOR SENIORS: PROMISES AND PITFALLS

As much as I'd like to, I can't go right into the topics of disease prevention, optimal health care, and healthful living because everything in health care is now so costly. And what if a senior can't afford good health care? (Too many can't.) Therefore I feel I should share some background and problems about health care financing and delivery.

If this topic is not important at this time of your life or if I'm telling you more than you care to know about this subject, please skip to the next section, The Quality of Medical Care. Some definitions. I often use SS for Social Security and HMO (health maintenance organization) as shorthand terms for managed care, which also includes PPOs (preferred provider organizations) and other organizational structures. One hundred sixty million Americans are enrolled in some form of managed care. HMOs are relevant for seniors under age sixty-five and for seniors older than that who are on Medicare and who deal with managed care through Medigap insurance or through electing HMO coverage through Part B of Medicare, which then pays the HMO a fixed sum per enrollee. If you're already in an HMO, at sixty-five you can directly enter Part B Medicare

coverage in your current HMO (if it hasn't terminated Medicare HMO coverage).

Medicare/Medicaid came into being in 1965 as part of Lyndon Johnson's Great Society Program, and the cost has been rising at the current rate of $20 billion a year to its present annual level of $300 billion. Enrollment in Medicare, which now covers about 39 million Americans, is automatic if you have Social Security or Railroad Retirement benefits. If you have not been covered by either of those plans, you have to apply for Medicare starting three months before you turn sixty-five and extending for seven months as the initial enrollment period. You may apply at and get the rules from any Social Security Administration office.

Private health insurance began only a few years before Medicare. During the summer of 1950, just before starting medical school, when I was going from door to door and farm to farm selling health insurance, I never would have guessed what a monstrosity the insurance industry and managed care would eventually become. Later, during my time in country practice, we didn't send bills; we kept a record, and the patients would pay when they had the money. Today a doctor's office often has more people involved with insurance forms and billing than in delivering care. Would I be willing to give up the high-tech advances in medicine to return to a sentimental Norman Rockwell vision of medical practice? Of course not. I participated in developing some of those advances.

Is there a middle ground? I believe so. And I want to be up front with you: I don't want you to fear getting medical care. Demand the best care you can get now—and I hope you will work to improve the system. We geezers vote. And lobby. And contact our politicians. We can make changes. We must. During the past three decades, health costs have soared out of control. Managed care was one approach to this potentially disastrous (insurance-initiated-and-fueled?) threat to our economy. I take the advocacy position that many leaders in health insurance, HMOs, and pharmaceutical companies are prepared to defend their economic advantage by the most egregious, if not dishonest, methods (in alliance with their congressional supporters). Remember the Harry and Louise TV commercials that spoke against universal health care? The dire predictions of what would happen if the government provided a basic health plan for everyone?

Pitfalls in Health Care Delivery

But those very predictions were already taking place, with insurance companies, pharmacy-benefit companies, and HMOs doing the dirty

work. What was so dishonest was that many of the horrors Harry and Louise were describing on TV do not take place in a universal health care system such as Canada's, but they *do* take place in the United States under the supervision of HMOs and health insurance providers in a for-profit system. Most of you will be more interested in the optimal health care aspects of this book. But for those who lean toward activism, I'll discuss a few more pitfalls in today's health care financing and delivery and refer you to two books listed at the end of this chapter—*Bleeding the Patient* and *Health Care Meltdown*—from which much of the data in the following pages can be found.

Recently, another actress on TV, the elderly Flo, starred in a $30 million campaign quietly funded by the drug companies and their allies under the deceptive title Citizens for Better Medicare. "I don't want big government in my medicine cabinet," Flo indignantly pitches to the TV audience. But just a minute, Flo; who runs Medicare, the very program that has been providing seniors with health care? Why, it's big government, of course, in or out of your medicine cabinet. But Flo became a little less obvious in a later round of commercials. Now the drug and insurance companies have decided they'd like a piece of the prescription drug action through government subsidies, so they deceptively attack the Canadian system for using lower-cost prescriptions as if that is responsible for delays in elective surgery in Canada—when in the United States our HMOs and insurance companies force similar cost cuts and some delays in surgery.

So how about rounding up another usual suspect in the Harry and Louise and Flo melodramas? The pharmaceutical industry. The truth is that the pharmaceutical companies don't want government to lower their profits. They fight to delay patent-name drugs from going generic and selling for a fraction of the former price. According to the Public Citizen Health Research Group, average prices for prescriptions have doubled in the past ten years, making prescription drugs the fastest-growing component in health care inflation (up 17 percent each year). The Health Care Finance Administration revealed that from 1990 through 1998, annual prescription drug spending rose from $38 billion to $91 billion—and continues to rise. Public Citizen has also recently determined that Americans pay, on average, twice and up to seven times as much for the same drugs as is paid in the other industrialized countries surveyed, all of which have universal health care and with it a control on profiteering (amoxicillin costs 83 cents a tablet in the United States, compared with 12 cents a tablet outside the country). Busloads of seniors cross the border into Canada to fill their prescriptions.

A standard explanation for the high cost of drugs in the United States is the need to invest in research. Baloney. More money, according to the Health Research Group, is now being spent on advertising and marketing (30 percent of revenues) than on research (20 percent of revenues). One example: advertising and marketing for the statin drugs (such as Zocor and Lipitor) we take to lower cholesterol cost $2.8 billion in 2001—for just that one small group of drugs. And are we to believe that no research is being conducted outside the United States where some of our major drug companies are actually European-owned and where drugs are so much cheaper? British companies count on making major profits through selling their products to the United States at higher markups than are permitted at home. Even the House of Representatives couldn't stomach the overcharging by U.S. drug companies (which spend more than any other industry—$197 million in 1999 and 2000 alone—for lobbying and political influence), so it passed a bill to allow Americans to fill prescriptions abroad.

What Harry and Louise and Flo didn't tell us is that huge pharmaceutical companies may also run the subsidiary pharmacy-benefit programs used by insurance companies. These benefit programs delve into your personal and private medical history by going through your prescriptions and may contact you to *insist* on what medications or treatments you should have if you want to continue to use this or that category of drugs. The *Washington Post* had an article on this subject that described a woman who was quietly having her depression treated with medications her doctor felt to be appropriate. She did not want the fact that she required treatment for depression to be known outside the doctor-patient relationship. But the pharmacy-benefit company knew. It had other ideas and contacted her to prescribe its own course of treatment. The inviolable doctor-patient relationship seems as much in the past as my old two-dollar charge for office visits. By contrast (take note, Harry and Louise and Flo), that big-government program Medicare cannot release information about patients without their consent, in compliance with the Privacy Act.

Pharmacy-benefit managers can also change your prescription without your consent. Our medical school's health insurance program contracted with PCS Health Systems, formerly owned by the drug company Eli Lilly & Co., to manage our pharmacy benefit. The cholesterol-lowering drug I used to take was Zocor made by Merck & Co., which also owned a rival pharmacy-benefit program, Merck-Medco. Well, PCS refused to pay for Zocor made by this rival company and substituted the

cholesterol reducer Lipitor. The company did this even to a medical school professor who is a cardiologist and was having excellent results from Zocor, with few side effects. Fortunately, it turns out that Lipitor works even better for me than Zocor did. So I suggested that my wife switch to Lipitor. Guess what? Her pharmacy-benefit program, Merck-Medco, wouldn't pay for the rival product Lipitor but will, of course, pay for Zocor. (A word of warning on these "statin" drugs: do not stop taking them abruptly and completely. A heart attack could result. *Talk to your doctor.*)

In preceding paragraphs I've used the dirty words "universal health care." Think about it. Every other industrialized country except South Africa, as well as many developing countries, has universal health care (or the dirtier words "socialized medicine," meaning the same thing)—but not the United States. Ask yourself why. Better still, if you're inclined to activism, ask your elected representatives why. Ask why we pay a higher percentage of our gross domestic product for health care than any other industrialized country, all of which have the security of universal health care—*that means care for everyone in those other countries*—yet over 40 million Americans are without health coverage while U.S. health care costs in 2001 were $1.2 trillion.

As I write this, the electronic and print media are filled with stories of abuses of managed care and insurance providers because a patients' bill of rights is again under congressional consideration. Abuses include denial of access to specialists and to other appropriate or even necessary care, delays in approving life-saving procedures until the patient dies, forbidding doctors to disclose to patients medical care options the HMO has ruled out of bounds, refusal to pay for emergency room (ER) care that has not been preauthorized—and all of this under a blanket of protection managed care plans enjoy against lawsuits for malpractice. Consider the experience of a young woman who fell off a cliff while rock climbing. She was airlifted to an emergency room, unconscious, with multiple fractures of the skull, arms, and pelvis. Her HMO initially refused to pay the $10,000 hospital bill because although she was unconscious on arrival at the ER, she had failed to obtain preauthorization before going to an emergency room. In 2001 HMOs' premium rates were triple the national rate of inflation while providing childhood immunization for only two-thirds of their patients and blood pressure control and cholesterol management for only half their patients, even after a heart attack. However, in July 2001 Blue Cross of California decided to reward doctors for quality of care and patient satisfaction instead of exclusively for cost cutting. It's a start. And we'll see how many other HMOs

will follow—kicking and screaming—and how this will influence Congress to act on a true patients' bill of rights.

For the patient, fear is the operative word. Workers desperately fear losing their jobs or changing jobs before Medicare coverage begins. Being without health insurance is one of the great threats to Americans' sense of security. So along comes the Kennedy-Kassenbaum legislation that mandates the right to purchase health coverage. But my fellow senior, you know what happened, don't you? The providers may now have to cover you, but they can charge what they want—which could easily be much more than a family can afford. I hope that enormous loophole is closed by the time you read this.

This is not to say there are not some good HMOs. Many of the plans are compassionate and offer a high level of comprehensive and preventive care. I'm not on the payroll of the Kaiser plans, but from my personal experience and from presumably objective outside evaluation, they rank at or near the top in all the markets they serve (although they recently suffered an acrimonious strike in Colorado). *U.S. News & World Report* annually rates colleges, graduate schools, and hospitals. It's also rated HMOs. Some states, such as Massachusetts, have an abundance of four-star plans. Other states have no plan rated higher than three stars. However, most patients appear satisfied with their plans.

But it's the horror stories that are receiving attention in Congress and on the national news. The obscene multimillion-dollar compensations for the chief executive officers of some for-profit plans can never be justified, especially at the very time they are denying their patients their legitimate benefits while increasing the costs to those patients. A study in 2002 looked at the quality of primary care for Medicare patients in HMOs versus fee-for-service (FFS) plans. It found that the quality of care was higher in FFS plans, but so was the cost. However, the money-saving advantages of managed care may be disappearing as the plans aggressively raise their prices—as high as 20 percent this year for one health care plan. HMO stocks, the darlings of Wall Street with their 32 percent annual returns until recently, are beginning to tumble. Seniors would do well to look for an objective rating (such as that of *U.S. News*) of their present or future managed care companies. But at the end of 2000 another half dozen HMOs opted out of Medicare, leaving almost a million former patients scrambling for coverage. In some areas there are no alternative HMOs, or those that remain are unable to add new patients to their already full capacity.

On balance, unscrupulous people have fraudulently ripped off insurances (particularly Medicare and Medicaid). In fact, the magic formula

for reducing the cost of Medicare/Medicaid and health care in general by billions of dollars a year has been enunciated over and over: eliminate waste, fraud, and abuse. (Recently, Ralph Nader stated that fraud costs the entire health care system $110 billion per year). Fraud is self-explanatory. An example is an infamous HMO caught "cooking its books" on Medicare charges. It turns out that fraud is potentially so lucrative that organized crime has been reported to be moving in for a piece of the Medicare/Medicaid action. Something that borders on fraud is the practice of many doctors and hospitals (and dentists) to "unbundle" and upgrade charges. Forms of waste and abuse of the system include overutilization and improper utilization. Of course, HMOs and health insurance companies focusing on their bottom lines would rather not have to deal with sick people or old people. What a break for the companies to have Medicare cover seniors who need care that could damage the bottom line of private insurances. However, some seniors are quite healthy. They're the ones to go after with proposals for so-called medical savings accounts that permit "cherry picking" rather than more evenly distributing the burden. Could privatizing *all* the picked cherries to increase the insurance industry's profit be far behind?

The trend had already started with the big managed care companies constantly soliciting seniors to use Part B of Medicare to enroll in a private plan. The companies thought they were on an unlimited 10-percent-price-increase-per-year gravy train. Then Medicare said, you get only a 2 percent increase in prices next year—and what happened? The companies that had been bombarding me every week to turn my Part B of Medicare over to them dropped Medicare in a snit, leaving the patients they had aggressively solicited to find other care. From January 1, 1999, to January 1, 2001, about 1.4 million beneficiaries lost their HMO coverage through Medicare. Too bad. Business is business. And for-profit managed care is definitely a business.

The existence of Medigap insurance acknowledges that Medicare, as expensive as it is to the wage-earning taxpayer, does not cover the costs of health care. By the way, if you've been retired for only a few years, you're probably already taking more out of the system than you put in during your entire working life. It's today's wage earners who are paying for you. I'll discuss this later.

Description of Medicare

The details for you as a beneficiary are provided in publications entitled *Your Medicare Handbook* and *Medicare and You 2004*, the latter of

which is the latest edition at the time of writing. These booklets, which are sent to you as soon as you become eligible, have many pages of phone numbers to call for help on specific Medicare questions, so I won't repeat those numbers here. To review briefly, Part A of Medicare is hospital insurance. Anyone who worked and accumulated enough quarters on the job to be eligible for Social Security or Railroad Retirement automatically qualifies for Medicare. Others have to apply when they are about to reach age sixty-five. A beneficiary is entitled to a certain number of days of inpatient hospital care but must pay a deductible, which seems to increase every year. If the hospital stay exceeds the entitled amount during a benefit period, co-payments are required. But for other charges, such as prescription drugs, there is currently almost no benefit. Medigap plans will pay the deductibles, co-payments, and some other charges not covered by Medicare. Yet Medigaps have their own deductibles and co-payments.

Part B of Medicare is optional supplementary medical insurance, which 95 percent of beneficiaries elect to carry in addition to Part A. The premium is deducted directly from the Social Security check. Part B covers services provided by a physician and other approved health care professionals. Medicare sets the allowable charge for the service and pays 80 percent of that amount after the deductible is paid. You'll find many more details of the complex workings of the plans in *Your Medicare Handbook*. There are serious limitations to Part B, particularly in preventive services. Some bean counter must have calculated that it was more cost-effective to deny the test for early detection of prostate cancer (prostate-specific antigen, or PSA) to all beneficiaries than it is to pay for treating a few thousand men a year with more expensive surgery, radiation, and hormone therapy for the advanced disease they may get because of not having early detection. I'm expressing a personal bias here regarding prostate cancer. To be fair, there is a legitimate argument against testing, particularly in older men, that goes like this: most older men will die *with* prostate cancer but not *from* prostate cancer. Fortunately, Medicare now covers PSA.

Where it gets confusing is how to decide whether to have your own Medigap insurance, which many workers receive as a retirement benefit, or to let an HMO take over your Part B and provide many items Part B may not offer. About 15 percent of patients on Medicare have elected to have an HMO serve as their combined Part B and Medigap. If you receive Medigap as a retirement benefit, the choice, at least for me, is easy. If you have to pay a sizable Medigap premium to avoid the hassles and restrictions of the HMOs, your financial state will be a deciding factor.

But once more I warn you that some managed care companies are opting out of Medicare coverage, leaving the patients they persistently solicited to find other care. *And most frightening of all is not to have insurance before you're eligible for Medicare but when you are not eligible for Medicaid.* Hospitals are required to accept emergencies (with long delays), but some have waiting lists for nonemergency admissions that make the Canadian system look supersonic.

Recent Changes in Medicare

If you're on Medicare, you've probably received the publication *Medicare and You 2003* that details the options available in many areas. These include the Original Medicare Plan that most of us are on (the plan available in all areas) and the Medicare + Choice Plans, which include Medicare Managed Care Plans (such as HMOs) and Medicare Private Fee-for-Service Plans. The information in your booklet on Medicare + Choice should be studied carefully before making a decision.

Another decision will have to be made before 2006 if the prescription drug plan being debated in Congress goes through in one of its current forms. A goal of the present administration is to privatize Medicare completely. A first step would be to privatize a prescription drug plan for Medicare beneficiaries. Most Democrats and the AARP oppose the plans being hyped by congressional leaders and the president. The opposition hopes that even if the legislation is signed, it can be overturned before 2006. If not, seniors may be asked to decide on a private plan, which will cost premiums and offer less than optimal benefits. My choice would be to stay with my present Medigap insurance.

Doctors and hospitals do not like Medicare, which approves only a fraction of charges. Many doctors refuse to take Medicare patients, as do some hospitals. A minicrisis in our own University Hospital has just been averted. For a short time it appeared that for reasons of fiscal prudence, the hospital in which we as physicians devoted our professional lives would not accept many Medicare patients, including us. Our Retired Faculty Association won a commitment that we would still be accepted.

As a segue to the next section, there is a debate concerning the ethics of recent developments in the delivery of managed care. Since Hippocrates, the focus of medicine has been on the individual patient, and a 1995 American Medical Association ethics report reaffirmed this approach. Surprisingly, at least to me, is that there is some support for a population-based system of ethics to distribute care among members of a managed care plan to achieve the best overall results *within* that plan,

even if it means some would receive minimally acceptable rather than optimal care—in deference to achieving a satisfactory bottom line. I'm strongly opposed to "minimally acceptable."

THE QUALITY OF MEDICAL CARE

I wish I didn't have to write this section, but we must face the fact that even if you have become familiar with the problems of financing discussed in the previous section and can afford optimal health care, you may not get it. To me, the quality of medical care today is even more important than the cost. I don't want to frighten my fellow seniors, but I have to share a recent study from the National Academy of Sciences, which you may have seen on television. The number of medical errors, both fatal and nonfatal, made every year is alarming. In hospitals alone, between 44,000 and 98,000 patients die annually because of medical errors and accidents—that's more than are killed in automobile accidents, more than die of breast cancer or AIDS. A medical ethicist asked the all-too-relevant question: Can we simultaneously reduce costs and the risk of error?

We've got the high-tech gadgets and breakthroughs, which your managed care provider may or may not permit you to use depending on the decision of the gatekeeper—but where is a doctor who has the time to know all about you? Such a doctor is sometimes hard to find. For seniors and patients of every age, it's important to have your own doctor. And your doctor should participate in decisions made by other doctors who may be treating you for various conditions in their specialized areas of expertise. You need a colonoscopy? The doctor to whom you've been referred sees a polyp and decides to snip it out. Does he know you're taking Coumadin and could hemorrhage from his snipping? (This error is highly unlikely; before your colonoscopy, you should fill out a history form that will ask if you are taking Coumadin or even aspirin.) But *don't assume anything.* You're taking drug A for condition X. Your consulting doctor feels you need drug B for condition Y. Does the consultant know you're on drug A, which *never* should be taken with drug B? *Don't assume anything.* And as hard as it may be for you to understand this, even if he or she knew you were being prescribed both drugs A and B, the doctor possibly *may not* know they shouldn't be taken together. Pretty scary, isn't it?

Of course, your own doctor can't be at your beck and call twenty-four hours a day, seven days a week. I've done it for prolonged periods, and I know there are physical, emotional, and intellectual limits. Frankly,

I was so stressed being constantly on call during four years of country practice that it was one major reason I decided to specialize. I commiserated with my son (when he was working 110 hours a week with one or two days off per month as a resident specializing in internal medicine) and told him that at the end of the first week of my own internship, I was afraid I was going to die. But at the end of my second week, I was afraid I *wasn't* going to die. A physician cannot be effective if he or she is too exhausted to think straight or has no life outside of medicine. This situation contributes to many errors. We have to be able to renew ourselves and raise our families and enjoy the harvest of our labors. Solo practitioners in small communities burn out quickly. A physician has to have backup, interactions with other physicians, and downtime with adequate nights and weekends off and vacations.

If your own doctor is away, his records should be available, but you should also be able to provide the information noted in the next paragraph—information you should always have in your possession. Ideally, for elective procedures, such as the aforementioned colonoscopy, there should be an informing interaction between the doctors collaborating in your care.

So what should the patient do? *Take charge*. Know and write down your medical history. Know every medication you're taking, including over-the-counter drugs; why you're taking each one; how much you take; and for how long you've taken it. Whenever a new medication is prescribed, whip out your lists and ask the doctor how the new medicine will affect other conditions you may have (for example, asthma); how new medications will interact with drugs you're already taking in the dosages for all medicines, old and new, prescribed and over-the-counter; and what the interaction with foods may be. And if a drug is new on the market, for me the "five-year rule" should apply. *Unless a new drug is vital to saving your life and your health, don't take it until it has been on the market for five years and the adverse effects have been identified*. Rest assured, many doctors will consider you a pain in the butt. The insecure ones will feel threatened. Too bad.

A provocative 1998 article by Marc Fisher in the *Washington Post Magazine* walks my recommendations about taking charge many steps further. He discusses the fact that some HMOs and insurance companies prefer that patients get the answers to their medical questions from the Internet rather than annoy their doctors with a lot of calls. He even notes that some doctors feel they are so rushed that they urge patients to do their own research. Presumably, once the patient has made his or her

own (let's hope) correct diagnosis and decided on the proper course of treatment, he may report these findings to a physician for confirmation and appropriate action. (I'm exaggerating a little to make my point.)

Over 40 million Americans now use the Internet, but although seniors make up 27 percent of the population, they represent only 13 percent of online users. The computer revolution passed by many of us. However, *Modern Maturity*, the magazine of the AARP, ran a cover story on the growing use of computers among seniors and has advertisements that say you can learn to access the Internet in one day. There are 25,000 health sites on the World Wide Web, so seniors with computers and Internet skills (or children or grandchildren to teach them) may get useful information from legitimate sources such as the National Institutes of Health. Those who become addicted to the Internet may prefer it to 800 numbers. If the resources I provide in the sections that follow have only street addresses and phone numbers, you may be able to get an update and a Web site by calling the 800 number. If you don't have a personal computer, you can get online at your public library or senior center.

The Internet address (Web site) of the National Institutes of Health is http://www.nih.gov. Most of the time you won't need the introductory http://, so from now on I'll just give Web addresses starting with www. If that doesn't work, add the prefix http://.

Unfortunately, a lot of "online medicine" may be a minefield for the unsophisticated and unwary. Anyone can go online and claim to be an expert, but the so-called medical adviser could have no relevant skill beyond the ability to access the Internet to display his or her misinformation.

At the end of this and other chapters, I list many online addresses useful for seniors. But my preference is still books. It's quicker to look something up in a book than to try to get onto the Net and put up with the delays and disconnects. I'll mention several books in this presentation. One book, *The Merck Manual of Geriatrics*, which covers diseases and related issues for the elderly, is an incredible bargain ($25, 1,500 pages). It's designed for physicians and other health care professionals but may be used for reference by many seniors. The print is so much larger and darker than that in *The Merck Manual of Diagnosis and Therapy* that it makes me believe the publisher deliberately designed it to be read by seniors (senior doctors anyway). However, a similar book by the same company covers conditions of patients of all ages, is intended to be read by laypersons, and adequately and clearly describes most relevant problems of seniors: *The Merck Manual of Medical Information* ($29.95, 1,500 pages). This is the Merck manual I suggest you get. There is also a paperback

edition for $7.95, but seniors may find the print too small. If you can't find it on the shelves of your local bookstore, the store can order it for you. The paperback edition may also be in your supermarket and drugstore.

If you are a newcomer to the status of senior, you might be uncomfortable with the term *geriatrics* referred to in the title of the first book mentioned. Although there aren't enough of them to go around, patients in their seventies and above might find a physician who specializes in geriatrics. Such a physician has made a decision to care mainly for seniors and has taken training, passed an examination, and obtained certification of special competence in geriatrics. He or she should not only be more knowledgeable about older patients but be more attuned to their special needs than other doctors are. Specialists in internal medicine and family practitioners, in that order, if they take a sincere interest in seniors, can also do a good job. My personal physician is a knowledgeable specialist certified in both internal medicine and geriatrics.

MEDICATIONS

To help seniors navigate more safely through present-day health care, I must discuss medications before delving into medical conditions. I've seen the estimate that around 100,000 patients die every year in America not from their diseases but as a direct consequence of the medications they're taking. (I'm not sure how that statistic was arrived at, but another estimate reported by Reuters Medical News Service in July 2001 reduced the number to 5,000–15,000, which is still unacceptably high.) A case in point: several years ago my mother-in-law, in her eighties, was having more problems than her family doctor could cope with, so he referred her to a specialist in geriatrics. The first thing that physician did was discontinue almost all of her many drugs. Her improvement was immediate and remarkable.

Like my mother-in-law, those who have lived to be older seniors have likely acquired a number of chronic conditions, so on average we regularly take four to five prescription drugs and three to six over-the-counter drugs. Some are necessary. Some are not.

Let me give you a deliberately exaggerated hypothetical. You have pain in your fingers from arthritis. To relieve the pain, you take one of the newer non-steroidal anti-inflammatory drugs (NSAIDs) you see advertised on TV and that are being used liberally by doctors, but you don't take it with food and an acid reducer. (I'll discuss NSAIDs more in Chapter 7.) Your doctor detects that your blood pressure is going up (but he doesn't realize it's secondary to taking the NSAID), so he pre-

scribes an expensive antihypertensive drug (an ACE inhibitor). Soon you develop an annoying cough (from the ACE inhibitor), which keeps you awake at night and requires a cough suppressant that only relieves the cough for short periods. Later you notice edema, puffiness of your feet and legs (also secondary to the NSAID), so you receive a prescription for a diuretic. (Actually, the diuretic alone would probably have been enough to reduce your blood pressure—*not that any drug was really needed in the first place*.) You begin to experience the minor problem of constipation (from the diuretic and the cough suppressant) and have to add a laxative to your drug program. Then come the major problems. You could feel faint and fall (from the antihypertensive drug and the diuretic, which is also an effective antihypertensive drug) and break a hip. Or you could get a bleeding gastric ulcer from the NSAID and end up in a medical intensive care unit getting blood pumped into you. At some stage you could die. You took all those drugs for a minor problem or for problems being caused by all those drugs—when all that was needed was for you to *stop* taking the drugs going all the way back to *stopping the one drug that started the whole medical nightmare*.

> A little Tylenol or accepting some pain as part of being alive could save your life. The First Noble Truth of Buddha is that life is pain.

So the lesson as far as I'm concerned is, *the fewer drugs the better*—especially the psychoactive drugs that influence mood and behavior, drugs that make the patient more agreeable to caregivers, less feisty. But feisty is good. The patients who live longer, with a higher quality of life, are feisty as hell. It's the docile ones who die sooner, quietly, not wishing to be a burden. A term that's commonly used is *polypharmacy*, the use of many medications at the same time. Older patients often have multiple conditions that require treatment with multiple drugs. Older patients also, all too frequently, receive more medications than they need, sometimes in a chain reaction of one drug to counteract the side effects of another drug and soon a third drug to treat the unwanted effects of the second drug and on and on until someone says, let's see how the patient will do without any of these drugs. And in the case of my mother-in-law, the patient did much better, thank you.

Relevant Publications

More books I'd like to recommend at this point are a small medical dictionary and *The PDR Family Guide to Prescription Drugs* ($23). The

latter is much less expensive than the standard *PDR* (Physicians' Desk Reference), but it contains over 800 pages of valuable information. However, it's not quite as up-to-date as the standard *PDR*. There is also a *PDR Pocket Guide to Prescription Drugs* ($6.99), which has smaller print and appears to have less material, but you can buy it at your drugstore. For seniors, the *PDR* I suggest is the *PDR Family Guide to Prescription Drugs*. Look up the drugs you're taking, see what they're used for, read how they act in your body. You may discover, as I did with a patient who recently talked with me, that you're taking three drugs that do the same thing in approximately the same way. You're thus getting three times as much drug as you should safely take. This patient was taking three "blood thinners" that act on platelets and was rewarded with a severe hemorrhage that landed him in the hospital.

The beauty of this *PDR Family Guide* is that for each drug there is a subheading titled the "most important fact about this drug," and it gives foods, beverages, and medications to avoid while taking a particular drug. I wouldn't advise testing your doctor on the subject (you might make him defensive), but I bet most doctors would be unable to remember many of the avoidances without looking them up. (To get a feel for the information in the *PDR*, look up what to avoid with Nardil, a commonly used psychoactive drug. Amazing, isn't it?) Then, armed with your reading material, be ready to ask educated questions of your doctor and pharmacist, bearing in mind the warnings of adverse drug reactions—including those interactions between drugs and with foods that you assume your doctor knows about, but he or she may not.

As for medical dictionaries suitable for laypersons, there are several possibilities including the *Random House Health and Medicine Dictionary* ($7.99), *The New American Medical Dictionary and Health Manual* by R. E. Rothenberg, MD ($6.99), and *Bantam Medical Dictionary*. The type in the Bantam is too small for me, so I'd advise one of the first two.

Drugs and Aging

Something you and your doctor should appreciate is that getting older influences the way you react to drugs. Elderly patients are twice as susceptible to drug reactions as younger adults are. The aging kidneys and liver contribute to the problem. The relative quantity of water in the body decreases and thus is not as available to dilute the medication, and the kidneys are less capable of excreting drugs. The liver is also less able to metabolize drugs. I mentioned Coumadin earlier. The dosage of that drug suitable at a younger age is too high a dose in an older person

because of the effect of aging on prothrombin response. Another example: less morphine is needed for pain. Many drugs stay in the body longer, so a rule of thumb is lower doses further apart for most drugs and most seniors.

There are special problems for seniors and patients of all ages in hospitals (and especially for seniors in nursing homes). You mustn't think you're safe because you're in a hospital. Far from it. I don't want to worry you, but you will want to take your *Merck Manual* and *PDR* and medical dictionary with you. *They could save your life.* Remember how many patients die in hospitals because of medical errors. Don't contribute to that frightening statistic.

Be sure you know your diagnosis and whether it's tentative or firm. And ask what your drugs are. Look them up in the *PDR*. At the very least, the presence of the books at your bedside will alert the health professionals that you're involved and are watching them. Be sure the titles are visible because the *Merck Manual* and the *PDR* are very familiar to health care workers. They'll know you're *not* getting your information from John Smith's Handy-Dandy Manual. Some exhausted intern may follow your lead and use the *PDR* at the nurses' station to double-check for adverse interactions between the drugs he or she may be prescribing.

All too often, in hospitals and nursing homes patients receive drugs that are potentially hazardous, that may adversely interact, or that may be contraindicated. The overuse of psychoactive drugs in nursing homes is a particular problem. There even more than at home, patients board the merry-go-round of one psychoactive drug following another and another, each causing side effects, so it's the side effects more than the patients that are being treated.

According to Dr. Sidney Wolfe, director of the Public Citizen Health Research Group, 70 percent of doctors treating Medicare patients failed an examination on their knowledge of prescribing drugs for older adults (the majority of physicians refused even to take the exam, some stating that they had a lack of interest in the subject); 48 percent of patients taking three or more drugs received drugs that had one or more harmful interactions with other drugs. Each year drug reactions put 659,000 older adults in the hospital, and drugs induce or worsen memory loss in 163,000 seniors annually. Every year adverse drug reactions lead to over 30,000 falls and hip fractures in seniors, many of which are eventually fatal.

Not that I'm against drugs. They're an important part of my stock-in-trade as a physician. And one reason I'm still around to plunk away on the keyboard of my computer may be because I take a cholesterol-

lowering drug and aspirin as part of an overall plan for cardiovascular and general health. I'll discuss this in Chapter 3.

There's a word physicians use, *compliance*, that means how well the patient follows directions for taking his or her medications. I've learned as a geezer that missing dosages or taking a dose twice is not deliberate and does not show a lack of respect for the physician's recommendation, rebelliousness, or anything more sinister than challenges with memory. I frankly need my compartmentalized week's-supply pillbox. It's hard to keep several drugs straight. But it's important. For example, not remembering to take your antihypertensive medication could lead to a rebound, and your blood pressure could shoot up to a dangerous level. If you discontinue a blood pressure drug, as with the statins, taper the dose gradually under your doctor's direction. If you're taking Coumadin because you have atrial fibrillation or you've had a stroke or a TIA (transient ischemic attack, also called strokelet), don't stop the medicine without strict medical supervision. You could be risking another stroke or TIA.

In each chapter and section that follows, specific considerations regarding the use and misuse of drugs will be discussed where indicated.

RESOURCES

Three books you must have are:

1. *Merck Manual of Medical Information*
2. *PDR Family Guide to Prescription Drugs*
3. A medical dictionary (*Random House Health and Medicine Dictionary*)

If your bookstore doesn't have these books, you can order them through the Web sites amazon.com or bn.com (Barnes & Noble) and receive them quite promptly.

Wherever possible, I will supply postal addresses, phone numbers, and Internet addresses of resources that could be as up-to-date as your daily newspaper.

The National Institutes of Health
9000 Rockville Pike
Bethesda, MD 20892
301-496-3000
www.nih.gov

U.S. Food and Drug Administration
Office of Consumer Affairs Inquiry Information
301-827-4420
www.fda.gov

Social Security Administration (SSA)—You should work with your local SSA office and State Health Insurance Assistance Program. If you have trouble finding these numbers call 1-800-772-1213 or use their Web site for general information: www.ssa.gov.

Medicare
1-800-MEDICARE (1-800-633-4227)
www.medicare.gov

AARP booklet D17195 on what to do if your Medicare HMO plan leaves: 1-877-276-5950

Web sites for information on health and medicine:

www.healthscout.com (rates the accuracy and value of health Web sites)

www.chid.gov (Combined Health Information Database); a good search engine

www.mayohealth.org (a top site for patients of all ages)

www.cdc.gov (public health and prevention)

www.fda.gov/medwatch/safety.htm (latest drug safety information)

www.webMD.com

(See disease- and condition-specific Web sites in the chapters that follow.)

The books I promised for potential activists:

Bleeding the Patient by D. Himmelstein, MD, and S. Woolhandler, MD

Healthcare Meltdown by B. LeBow, MD

Other sites useful for seniors

www.aoa.dhhs.gov/aoa/webres/craig.htm (Administration on Aging directory of Web sites)

www.aarp.org (American Association of Retired Persons)

www.ncoa.org (National Council on the Aging, a watchdog service)

www.seniorlaw.com (SeniorLaw—information relevant for seniors)

T W O

THE AGING PROCESS

I learned to know the love of bare November days.
—Robert Frost

I grow old learning something new every day.
—Solon

In a health guide for seniors, we need to explore the process of aging, and I state at the outset my personal opinion that *if you stay healthy* and have even the most modest necessities, growing older can be interesting, if not exciting. I say this confidently from my vista on the sunset side of seventy. I hope my readers will share this view. The poet Yaedi Ignatow beautifully captures the aging of her poet father with the lines "It is an age of symphony for him / when each step taken is one more note played / bringing him closer / to his reconciliation."

If an organism lives long enough, survives injury and disease, it begins to get old—humans at about 70 years and bristlecone pines at 4,000 years. Why the difference? One would have to conclude that genetics has something to do with it, otherwise humans might not start getting old until 4,000 years of age and the bristlecone pine would be getting old at 70. As for the human subject, we all know life expectancy varies from family to family and from person to person. But barring accidents and other chance events, there is only small variability in life expectancy between identical twins (who have the same genetic makeup).

The question is, what are the factors that produce aging in anyone? The answer is, an interaction between genetics and environment. Nature and nurture.

GENETICS

Although heredity in both humans and bristlecone pines is carried by DNA, it's obvious that the DNA in humans sends different messages than the DNA in bristlecone pines. Our DNA does not send messages to grow a root system to anchor us to soil in the harshest climatic conditions. And the tree does not receive messages to grow a heart and a brain. There is a genetic program that says this organism is to become a human and this organism is to become a tree. There are also programs to tell individual cells in a living organism when to die (apoptosis) to make way for other processes of living and development. To carry this forward, there are genetic programs for how big, how strong, and how smart we are likely to become and to which diseases we might be susceptible or resistant. And there is something called *programmed senescence theory* that determines how long we will live.

A region on chromosome 6 has a lot to do with susceptibility and resistance to disease and may have a role in the aging process. It's called the major histocompatibility complex (MHC). I had to learn about it when we were setting up our heart transplantation program in Houston in the 1960s because the MHC is also involved in rejection of transplanted organs. The MHC controls to a large extent the functions of B cells and T cells, which have a critical role in immunity and the body's ability to fight disease.

As we age, the function of B cells and T cells declines, and our vulnerability to infection and the frequency of cancers increase. The immune cells controlled by the MHC are essential to distinguish between "self" and "nonself." Your normal tissues, such as your own heart, are "self" and would be accepted by the immune cells; but a cancer, a virus, and a heart transplant are not normal to your body, are therefore "nonself," and are attacked by immune cells if those cells are functioning properly. (In the case of transplants, the object is to override the body's self-protection with antirejection drugs.) With decreasing function of immune cells, cancerous cells may be able to proliferate, and infections to which you have not previously established an immunity can be devastating.

Of course, as you get older you may die from cancer, heart disease, stroke, pneumonia, or one of the many conditions that afflict older persons. But is there evidence that the actual level of function of B cells and T cells correlates with life expectancy? Apparently there is, at least according to studies conducted on mice. Another genetic program may

cause blood vessels to constrict as we get older. This, of course, in some of us can raise blood pressure, with all of the resultant complications.

Genetic-Environmental Interaction

Your DNA, which has programmed you to be a human with certain characteristics, is subject to damage from many sources throughout your entire lifetime. Obviously, the damage isn't going to change you into a tree (your direction of development has already been determined), but it can mean that your DNA, if it can't be constantly and accurately repaired, will be unable to maintain cellular functions at an optimal level. Recently, attention has been directed at the very ends of chromosomes (telomeres), where in some organisms the damage through loss of DNA from these apparently critical regions correlates with aging. The influence on aging of a decrease in the body's ability to repair damaged DNA continues to be investigated.

Damage to DNA as well as to enzymes and membranes may come from what are called *free radicals*, which arise from metabolism. Over time, an accumulation of damage caused by free radicals produces findings associated with aging. Antioxidants (examples are vitamin C and vitamin E) fed to animals to combat the effects of these free radicals produced a longer life span. And a high level of naturally occurring antioxidants in certain primates is associated with increased longevity.

Genetic factors interact with environmental influences to produce bodily changes to be expected with aging, which are discussed in other chapters. For example: blood flow decreases to the brain, the kidneys, and the liver; maximum output of blood from the heart decreases; maximum heart rate decreases (but resting heart rate doesn't change); the kidneys' capacity to clear toxins and drugs diminishes; the ability of the liver to clear toxins and metabolize drugs also diminishes; respiratory function and glucose tolerance decrease.

Usual Aging and Successful Aging

We've all heard that life expectancy is much longer today than it was a century or several centuries ago. Does this mean everyone got old sooner in past centuries, or are such calculations based on deaths from all causes at all ages—including a high rate of deaths in infants, children, and young adults from illnesses that can now be treated or prevented? Montaigne in *The Essays* mentions Xenophilus who lived 106 years in perfect health. I would argue that so-called life expectancy in previous centuries does not tell us that people who took good care of themselves

and escaped fatal injuries, illnesses, and severe wear and tear couldn't get old at somewhere near the same age people do today—*those who lead healthy lives*. That's the key: leading a healthy life.

A study, *Aging Well,* by George E. Vaillant, published in fall of 2001, discusses a cohort of Harvard graduates who were followed for almost six decades, which leads us into the concepts of *usual aging* and *successful aging*. It's common sense that living hard and abusing your health (for example, through smoking, poor diet, lack of exercise) may not only increase your risk of death from illness or injury but may accelerate the aging process itself through the additive result of many damages, thus making you more vulnerable to the illnesses of the elderly. At this time it appears a healthy person need not reach a point of showing irreversible effects of aging until about age eighty-five. Even that age may be advanced a small amount by interventions such as increasing use of antioxidant vitamins, further exceeding the biblical life expectancy of three-score years and ten. As I have noted, there's variability from person to person. However, the body can be aged sooner by excessive damage—and this is the idea of usual aging.

I look to the Norwegian side of my ancestry for an illustration. Today the life expectancy in Norway is among the highest in the world. Compare the vigorous eighty-year-old cross-country skiers in present-day Norway with the Vikings, who if they did not die in battle or from exposure or disease or drink, possibly aged more rapidly than Norskies today. For whatever combination of factors, they often died younger than present-day Norwegians. In addition to "a bad omen," another reason Eirik the Red gave for not accompanying his son Leif on the voyage in which he discovered America was that he was "too old." Eirik was about fifty and died not long after he declined the invitation. Leif Eiriksson also died at age fifty. It is not known whether Leif considered himself old at the time or how much his death at that age was a result of genetics and how much it was caused by environmental factors. We do know that many Vikings lived hard and died early, but some lived longer. The Viking poet Egil Skallagrimsson survived, although debilitated, to age eighty. The secret of his survival may have been that, although he was a pugnacious killer (as were a lot of Vikings), he spent most of his life as a more peaceable, properly nourished farmer, lawyer, and poet rather than enduring the hardships of and physical damage from unending exploration, battles, and disease.

So usual aging for Vikings, for Americans today, for the poor in *Les Miserables* or in the England of Charles Dickens, and for anyone else at

any time in history is the result of genetics interacting with adverse environment. For Vikings the adverse environment included long, dark winter nights, disease, drinking large quantities of mead, damaging exposure in open longships sailing the frigid North Atlantic, poor nutrition, and wounds from battles. Adverse environment for Americans is made up, among other things, of disease, poverty, and an unhealthy lifestyle.

It's important to stress that being poor at any time in any place is bad for your health—not only from the point of view of aging you more quickly but because of the specific diseases and disabilities that tend to strike the poor and those who do not follow a healthy lifestyle. The southeastern United States has been dubbed "Coronary Valley." Most intervention programs are geared to individuals and families above the poverty line. Too many of the poor in Coronary Valley have not been educated about living a healthy lifestyle and can't afford to do so anyway. They eat high–saturated-fat diets, don't exercise, are overweight, and smoke. So they have heart attacks at the highest rate in the country (along with strokes, cancer, and pulmonary disease). The usual aging and incidence of disease in this population is not only unacceptable, it's intolerable in a presumably prosperous country.

But successful aging has also occurred throughout history and is determined strictly by the aging process itself—in the absence of substantial damage from disease, lifestyle, or the environment. The ancient Greeks are instructive. Hippocrates followed his own advice and lived to age eighty-three, Plato to eighty, and Sophocles to ninety-one. While in his eighties, Sophocles was still writing plays and was a commissioner governing Athens. He may also have been a general in the long Peloponnesian War in his seventies or even eighties. In 1998 the National Presbyterian Church, a church my wife and I attend while in Washington, D.C., commissioned as a missionary to space seventy-seven-year-old astronaut/Senator John Glenn, who went on to orbit the earth thirty-six years after his first space flight. This is not to say that every senior should be expected to do what a senior with a lifetime of conditioning can accomplish. Immediately after the Glenn mission, the *AARP Bulletin* published a cartoon showing in the first picture a geezer pushing his walker in front of him while being followed by his wife. In the second picture the geezer had flipped himself into a handstand on the walker, and his wife grumbled, "I blame John Glenn for this." With or without handstands, it appears the timetable for life expectancy and successful aging spans at least twenty-five centuries, just as an accelerated timetable for usual aging has also existed throughout history.

If you're old enough to be a senior, your aging process has been fairly successful so far. I don't think many of us want to do what the T-shirt slogan says: "Live long and be a burden to your rotten kids." I believe we would rather live as long as we are healthy and active and not a burden. But that wouldn't make a catchy slogan.

The World Health Organization (WHO) has introduced an additional idea: *healthy life expectancy*. It's not how long you live that's key, it's how long you live healthy. Enduring the last years of life bedridden or sucking oxygen from a tank is not what many of us would wish. According to the WHO, although the United States spends more money on health care than any other country, we rank only 24th internationally in healthy life expectancy, at 70 years compared with 74.5 years in Japan and lower than many countries in Western Europe. Much of this disparity is caused by the living conditions and lifestyle of poor Americans.

We each have personal decisions to make about how long we want to live and under what conditions. I've heard estimates that as much as 50 percent of health care dollars goes to maintain the last six months of life. If true, this is unconscionable. Of course, the last six months of life applies not only to the elderly but to critically and terminally ill patients of any age, including premature infants who fail to survive. But the emphasis still seems to me to be misplaced.

In Chapter 1 I mentioned how surprised I was to live into my seventies. Something else has astonished me, as I imagine it has astonished many others my age. On the outside we may look old (well, not that old), but on the inside we don't feel old. I believe I feel and think the same way I did when I was a medical student or even a teenager. This became apparent a few years ago when our medical school class held its fortieth reunion. I'd never gone to a reunion, but I was conned into helping organize the event. I had thought I'd rather remember my classmates when we looked the way we felt—young, vigorous, optimistic. But within hours of meeting again, the faces of old physicians replaced for the rest of our lives the shining features of the young students we had been.

So I wrote a poem about our fortieth reunion. I also tried to capture the feeling of remaining young on the inside by writing a poem about my experience of sitting in a waiting room with three chattering eightyish women. Probably bridge partners. Their fourth (blue hair, stooped shoulders, the full little-old-lady persona) entered the room, smiled cheerily, and called out "Oh, *girls*." (If the elderly Sophocles could continue to write poetry, why can't you and I?)

For over thirty years my wife and I have belonged to a small fellowship group within a large church. We've had the opportunity to grow older together. I consult with these friends about shared experiences and milestones along the path of aging.

LIVING WILLS AND ADVANCE DIRECTIVES

Because it expresses my own orientation, I carry in my wallet a membership card to the Society for the Right to Die, which has imprinted on the back a signed statement of my living will.

When the aging process accelerates inexorably, you usually don't just fail to wake up one morning because of old age. One of the many illnesses that afflict the elderly with increasing frequency will likely be the cause of death. Here is where I feel a *living will* is important. I frankly don't want to go into a hospital and be kept alive by extraordinary measures, which do little more than attest to the skill of the medical personnel in maintaining vital signs in someone who is essentially dead.

The other side of the issue is, you don't want to go into a rehabilitation facility or nursing home and have uncaring people decide for you that you are incurable or irreversible and find that the staff withholds food and water and doesn't move you, thus causing you to develop bedsores. So you die when you were supposed to be rehabilitated.

There is something called an *advance directive*, which all hospitals receiving federal funds are required to inquire about when you're admitted. It's part of the Patient Self-Determination Act of 1993. Hospitals and nursing homes should ask if you have an advance directive. If they don't ask, tell them. Bring a copy of your living will. Specify unwanted treatments. This should be decided with your doctor and your family. The point is that it's up to you to decide what represents death with dignity for you. Some patients may specify in an advance directive that they want all possible care and procedures to be attempted, including resuscitation.

It's important to be aware that advance directives and living wills fall under state jurisdiction—which I find borderline ridiculous. What if you've got a Maryland advance directive card in your wallet and you're in an auto accident a mile away across the river in Virginia? If you arrive unconscious at a hospital in Alexandria, Virginia, will your wishes not be followed because they're stated in a Maryland document? I hope that's not the case. But your advance directive card should include the name and address of an appointed health care agent. Backing up what's on the card should be witnessed documents of your living will and appointment

of a health care agent. State regulations and documents can be obtained from your state attorney general or (here in Colorado) from many doctors.

A generic "national" advance directive from the Society for the Right to Die contains this key paragraph in the living will declaration: "If I should be in an incurable or irreversible mental or physical condition with no reasonable expectation of recovery, I direct my attending physician to withhold or withdraw treatment that merely prolongs my dying. I further direct that treatment be limited to measures to keep me comfortable and to relieve pain."

A beloved journalist and radio personality in Denver, Gene Amole, wrote of his experiences with death and dying after withdrawing from treatments that were merely prolonging his dying. The book, *The Last Chapter,* was published in late 2002. I wholeheartedly recommend it.

I obtained permission from my wife to offer a personal illustration. When my mother-in-law was eighty-seven, she was admitted to the hospital for emergency surgery for a ruptured bowel. She came out of the operating room comatose, on life support, and remained in that condition for days. The attending physician was unwilling to discontinue what I would consider the unwarranted, undignified, and cruel assault of the tubes and machines of "life support" on this helpless elderly patient, which was taking place even though my wife is a physician and asked for an end to the violence being perpetrated on her mother and the rest of the family. There was no living will or advance directive to help stop the obscenity—and no common sense in the physician until the family was emotionally drained and an extra hundred thousand health care dollars were sucked into a bottomless pit of dying rather than being invested in life.

If you don't have a living will, make one. If you don't have an appointed health care agent, designate one. It seems like a pain in the neck to have to go through all this, but it's necessary. If you'd like advice, contact the Society for the Right to Die at the address in the Resources.

If you've purchased *The Merck Manual of Medical Information,* you'll find additional information in chapter 4 and Appendix I on legal issues and decisions regarding death.

You may be surprised to learn that within the National Institutes of Health—along with the National Cancer Institute, the National Heart, Lung, and Blood Institute, and other heavy hitters—there is a National Institute on Aging (NIA). To find out about and receive its useful publications, see the NIA Information Center at the end of the chapter.

DYING, GRIEF, AND BEREAVEMENT

Having the right to die with dignity goes beyond advance directives and living wills. How should terminal illnesses be handled? We would all prefer to be at home surrounded by loved ones. Unfortunately, dying at home has changed since the time of Don Quixote and Jean Valjean, and even since the time of Washington and Montaigne, both of whom died of strep throat long before penicillin was developed. There are medical interventions that don't require that the patient be in a hospital and that can be more effectively handled in the late stages of a patient's life through medical home care or in a facility that offers skilled care that exceeds the ability of family to provide—especially regarding management of pain.

Hospice care, which is what Gene Amole elected, answers this need remarkably well. Actually, it's something I've just been learning about. When one daughter, as a medical student, first told me she was a hospice volunteer, I had only a vague idea of what was involved and didn't ask her for details of the program but asked only what she was doing as a volunteer. Then another daughter and my wife gave me more information, which allowed me to appreciate what a marvelous and compassionate service hospice care is. Your community likely has a hospice program with all the associated support groups: grief education, loss of spouse, loss of child, loss of parent, caregivers. Amole remained at home in hospice care until near the very end, writing his newspaper column, sharing his experiences. During his final days he availed himself of inpatient facilities. If your community doesn't have such resources, do something about it. Take the initiative as a fund-raiser and a volunteer.

Here are some core services that are free of charge to terminally ill patients because they are covered by Medicare, insurances, grants, and donations.

1. Medical home care—Medical professionals, clergy, and volunteers go to the homes of terminally ill patients. For those on Medicare, up to six months of medical visits, all medications and necessary supplies, and even hospital beds are provided. (Hospice home care is still a real bargain for Medicare and insurers.) The patient is registered with the hospice so that in many communities, at the time of death 9-1-1 can be removed from the loop and the interaction with the coroner expedited. The relationship of the hospice caregiver with the patient is sustaining, comforting, and mutually rewarding.

2. Inpatient facilities—Some larger communities have residential facilities in which terminally ill patients who need around-the-clock pain management can live and have continuous, unhindered visitation with family members. In contrast to the usual hospital, of first importance here is the comfort of the patient rather than the routine of the medical staff. Medicare and insurances fully cover inpatient hospice care.
3. Volunteer hospice organizations—These organizations do not receive Medicare or insurance funds. They aid the dying patient and family before, during, and after death through individual and group support.

As death approaches, loved ones begin to grieve. Most often the caregiver has been a middle-aged or elderly woman confronted not only by the loss of a loved one but often by the financially depleting expenses of the illness. The family requires closure after the death, part of which is feeling that all that needed to be done was done. Talking with the doctor a few weeks later to find answers to lingering questions is usually helpful.

Loneliness, emotional pain, even feelings of unreality must be managed. You don't get over the death of a loved one. Don't even try. Memories confront you many times each day. After a variable length of time, the pain becomes more tolerable through focusing on happy memories, determining to get on with life in a new reality, and finding support from family, friends, religion, and specific resource groups in the community.

RESOURCES

National Institute on Aging
Public Information Office Building 31, Room 5C27
Bethesda, MD 20892-2292
800-222-2225
www.nia.nih.gov

National Association of Area Agencies on Aging
1112 16th Street NW
Washington, DC 20036
202-296-8130
e-mail: jbn4a@erols.com

National Council on Aging
409 Third Street SW
Washington, DC 20024
www.ncoa.org

Compassionate Friends, National Headquarters
PO Box 3696
Oak Brook, IL 60522-3696
630-990-0010

Society for the Right to Die
250 W. 57th Street
New York, NY 10107

American Association of Retired Persons
601 E Street NW
Washington, DC 20049
800-424-3410
www.aarp.org

National Hospice Organization
1901 N. Moore Street, Suite 901
Arlington, VA 22209
800-658-8898
www.nho.org

T H R E E

THE HEART OF THE MATTER
Cardiovascular and General Health

My strength is as the strength of ten / Because my heart is pure.
—Alfred, Lord Tennyson

As he thinketh in his heart, so is he.
—Proverbs 22:5

It should not be unexpected that the earliest and most extensive chapters dealing with specific health concerns would focus on cardiovascular and general health. Strategies to maintain the health of the heart and blood vessels are totally applicable to maintaining good health in general. (I use the term *cardiovascular* to include the heart and all blood vessels, including those to the heart, brain, kidneys, legs, and everywhere in the body. All forms of cardiovascular disease combine to cause almost 1 million deaths per year.) Heart disease and strokes are the leading causes of death among Americans. Every year 1.5 million Americans have a heart attack and 500,000 have a stroke. Every year 490,000 Americans die of heart attacks and 145,000 die of strokes. And because of the substantial influence of aging (interacting with other risk factors), three-quarters of all heart attacks and an even larger proportion of strokes occur in patients over age sixty-five.

The good news is that progress in prevention and treatment has been so dramatic that the rate of death from heart attacks is only 40 percent of the rate in the 1960s, and the rate of death from strokes is less than half what it was in the 1970s. A continuing problem is that the first sign of coronary heart disease for 20 percent of Americans is sudden death. The first sign: sudden

death. And 46 percent of Americans with high blood pressure don't know they have it. To me this is a compelling argument for learning about heart disease, hypertension, and risk factors in your family and potential risk factors in yourself if you don't already know them.

This chapter will emphasize the prevention of heart attacks and strokes, the most common and dramatic manifestations of atherosclerosis (hardening of the arteries). It will not presume to deal with treatment of heart disease or management of your cardiovascular condition if you already have had a heart attack or have some form of cerebrovascular disease. These issues require a personal physician. I will, however, mention some therapeutic options you may wish to discuss with your doctor. The closely related topic of high blood pressure, which is one of the most important risk factors in coronary disease and strokes as well as a major disease in itself, will be covered in a separate section in this chapter. For openers you've got to know what your blood pressure is.

Most heart attacks and strokes are caused by a narrowing of the blood vessels to the heart and brain interacting with inflammation and disruption of the deposits that line the vessels. If the narrowing is gradual and the heart muscle stays alive (but receives poor circulation), congestive heart failure may occur without the more dramatic event of a heart attack. A plugging up and inflammation of blood vessels to the brain by atherosclerotic disease causes a stroke. (Both congestive heart failure and strokes may also have high blood pressure as a primary cause.) The major blood vessel to the body, the aorta, may narrow because of deposits of cholesterol and scarring over the sites of the deposit. Therefore, much of what is said regarding the prevention of heart attacks applies to the prevention of strokes, chronic ischemic heart disease, kidney failure caused by renal artery thrombosis, and other problems produced by hardening of the arteries.

As a bonus, a program for cardiovascular health is unavoidably a program for general good health. Cigarette smoking provides one example. If you kick the smoking habit to improve cardiovascular health, you'll also be doing a great deal to reduce risks from the second leading cause of death among seniors, cancer; the fourth leading cause of death, chronic pulmonary disease; and the seventh leading cause of death, accidents.

Most seniors can remember that up to a few decades ago doctors really couldn't do much for patients. So when the means became available to treat and actually cure disease, you can imagine the enthusiasm and joy within the profession. Good-bye ineffectual sugar pills and dangerous arsenicum. Hello penicillin. Western medicine went through an

incredible growth phase. Anything was possible as long as there was enough money, and there always seemed to be enough money in the reservoirs of ever-expanding economies. (In the past decade, though, the wells have at last begun to run dry.)

In the late 1960s something happened. We became aware of one of the limits of these new healing methods. The spindle-legged fantasy of technology bent under the weight of a reality we could no longer ignore. For me, the intruding reality came from my experience with heart transplantation. Can you imagine a more profligate approach to heart disease? And yet there I was, one of those on a medical-surgical ego trip, pursuing a therapeutic vapor that in the 1960s would benefit only a few dozen people annually at a time when a million Americans were dying of cardiovascular diseases every year. (Today, thanks to a fungus found in a Norwegian bog, a drug has been developed called cyclosporine that helps about 2,300 Americans each year to gain a few more years of life through a heart transplant. But this occurs at enormous expense, while half a million people still die of heart attacks every year.)

However, I owe a debt to heart transplantation because it started me thinking in what I believe is a better direction. Instead of trying to treat, patch up, or replace hopelessly damaged hearts, why not prevent the hearts from getting damaged in the first place? After all, heart attacks are not the birthright of every American. In fact, there are many places in the world where heart attacks are infrequently encountered—in central China, for example, where blood cholesterol levels hover around 125 mg/dl (milligrams/deciliter). (Another example comes from Prof. Kåre Berg of the University of Oslo. While coauthoring a book with me on the genetics and prevention of heart disease, he shared a World War II experience. During the Nazi occupation of Norway and with the meager diets for Norwegian citizens that accompanied it, heart attacks essentially disappeared from the country. But heart attacks immediately began a comeback with the return to richer diets after the war.)

To return to technology, please don't get me wrong. Although there are sometimes setbacks and limits that may last for a period of years as well as unrealistic adventures that will never become reality, for the most part there has been steady progress. The limiting factor we did not foresee in the 1960s is clearly more economic than technological. No program can provide unlimited utilization of resources. Conversely, basic and realistic services should not be denied. A heart transplant for a seventy-year-old? Of course not. A bone marrow transplant that has a better than 50 percent chance of curing a ten-year-old with leukemia? Of course.

The fact that you've lived to be a senior indicates two things with respect to heart disease: either you were at relatively lower risk to begin with, or you were at relatively higher risk and took preventive measures (as I have). But now you've passed the early-onset cardiovascular disease milestone and are required to contend with a new obstacle: the aging of the heart and blood vessels.

NORMAL AGING OF THE CARDIOVASCULAR SYSTEM

First the blood vessels. The walls of the arteries stiffen with age. And the largest blood vessel in the body, the aorta, gets longer and dilates as you get older. These developments can occur just from aging and in the absence of significant atherosclerosis in the vessels. They are secondary to changes that are happening to collagen and elastin and to deposits of calcium. The actual tonus (or tension) of the arteries also increases with the progressive thickening of the layer of the arterial wall that is present under the inside lining. These changes *may* contribute to high blood pressure and damage to the arteries, which encourage atherosclerosis. (High blood pressure and atherosclerosis ultimately adversely affect circulation to the brain and the rest of the body, as well as the healthful functioning of the heart.) But blood pressure does not have to rise substantially just because of age. Many other factors are involved. And many medications are now available to reduce blood pressure.

Several structural changes take place in the heart itself. The heart may enlarge, especially the upper chamber on the left side. The heart muscle may change as a result of the size of the muscle cells increasing or becoming replaced with fibrous tissue.

Functional changes, frequently referred to as "pump performance," occur. The rate at which the heart fills with blood decreases steadily throughout adult life, and in the elderly the rate may slow to half that of a young adult. The way the heart muscle contracts is related to structural changes within the heart itself and to the increasing resistance of the arteries to the flow of blood.

The good news is that some changes of aging that appear inevitable may be delayed or modified by changes in lifestyle and diet. I'll discuss this more later, but I'll make my first attack on salt here. It can be poison to many of us.

GENETICS AND HEREDITY: KNOW THYSELF AND THY FAMILY

Where it all begins is with knowing yourself. Through the thousands of years from Delphi to pop psychology, the admonition has been: know

thyself. The discussion of heredity in this chapter will serve as the basis for comments on this subject in other chapters. For disease prevention it's important to know a lot not only about yourself but about your family.

> I'm going to stress here that knowing you have an inherited risk provides an opportunity to take steps to prevent the disease. And there's no excuse to say the problem is in your genes, so you can't do anything about it.

So let's begin by looking at your family. We'll get into diseases later. You as a senior member of your family may delight in chronicling the family history and passing it on to your children and grandchildren. If this exercise doesn't appeal to you, feel free to skim it. I (and many other seniors, I believe) enjoy becoming familiar with the family tree. It seems important to let your children and their children know as much about the family as possible. Where they came from. Names and what the names mean. Occupations. That's the fun part. The serious part is learning about illnesses and causes of death in the family.

What I've learned about my family is of no interest here other than to provide an example of how you may learn both entertaining and serious things about your own family. My children gave me a computer program with access to computer files on family trees. I've gone so far as to look up things in the Library of Congress, which has a genealogy room and excellent reference stacks surrounding the main reading room. Hundreds of names are used as either a first name or a last name. My first name, James, is also a fairly common last name. In fact, many times we've received correspondence addressed to Nora James. I've learned that Nora (found in Ireland commonly as a first name and uncommonly as the last name O'Nora and in France more commonly as the last name Nora) is from the Celtic word for honor and that the Celts—although you think of them as being mostly in Ireland, Scotland, and Wales—originated in the Alpine region, where in France they were called Gauls. The language of the Gauls (from which the word *Gaelic* derives) persists as a second language among many Celts in the British Isles and in Brittany in France. My paternal grandparents came from the French Alps, the province of Savoie. (The duchy of Savoy was part of Gaul all the way back to the time of the Roman Empire.) But my mother's maiden name, Jackson, (meaning nothing more interesting than Jack's son) is quite common, and a specific family would seem more difficult to trace. A "son" ending is frequently Scandinavian, and curiously enough, I was

able to trace my Jackson (originally Jakobson) ancestors all the way back to the 1400s in Norway using the resources of the Web site Ancestry.com. Playing on the computer with genealogy programs may be entertaining, but pursuing your family history by whatever means may be essential to good health.

Although Hippocrates, the father of Western medicine, was possibly the first physician to discuss the familial nature of diseases and traits (e.g., epilepsy and baldness), he did not specifically comment on familial heart disease. Very likely, heart attacks were not common 2,500 years ago. Actually, one of the first individuals to appreciate that heart attacks run in families was not a physician but the English poet and essayist Matthew Arnold. While traveling in America, Arnold began to experience episodes of chest pain that he noted to be "the sign of a malady which had suddenly struck down in the middle life . . . my father and my grandfather." Arnold lived with chest pain for less than a year before dying of his familial "malady." One of his biographers must be faulted for surprisingly deficient scholarship when he described the cause of Arnold's death as "heart failure . . . sudden and quite unexpected." Unexpected to others, perhaps, but not to Matthew Arnold. (Today you should know if you're at risk of familial maladies because today—unlike in Matthew Arnold's time—you can do more than expect a malady, you can prevent or significantly delay it.)

Matthew's grandfather, William Arnold, was a collector of customs who died when his son, Thomas, was only six years old. Thomas Arnold, Matthew's father, died at age forty-six. We are indebted to Sir William Osler, the consummate physician-scholar, for bringing the Arnold family to the attention of the medical profession. In the textbook widely used a few decades ago, *Clinical Heart Disease*, Samuel Levine followed Osler's lead when he wrote that heredity was "the most important etiologic factor" in heart attacks. Then for a period of years, perhaps because of the emphasis on other risk factors, the hereditary nature of heart disease received less research attention.

Who are you? What is your risk of having a heart attack or a stroke? One way to find out is to determine whether you possess certain risk factors that are often familial. For example:

1. What are your levels of total cholesterol, low-density lipoprotein (LDL) and high-density lipoprotein (HDL) cholesterol, triglycerides, C-reactive protein (CRP)?
2. What is your blood pressure?

3. Find out as much as possible about the presence or absence of cardiovascular disease and risk factors in other members of your family. And you, as a senior member of the family, should be in a good position to pass information down to your children.
4. Has anyone had a heart attack before age fifty-five? Before sixty-five?
5. A stroke?
6. Who has high blood pressure? At how early an age did it develop?
7. Do you know family members who have high total and LDL cholesterol levels, low HDL cholesterol level, or related problems with lipoproteins in the blood? (People often have cholesterol determinations performed during routine physical examinations and at screening centers.)

It will be useful to discover, if possible, the causes and ages of death of your relatives. In this chapter I'll introduce the basic ideas about genetic pedigrees (or family trees). And at the end of this chapter, a model pedigree (Figure 3.1) will be provided as a guide for you to record your family history. The accompanying instructions will enable you to be the geneticist for your family. This takes work, but it's something many seniors enjoy doing. Please pay attention to any diseases running in your family—not just cardiovascular disease but cancer, diabetes, kidney disease, Huntington disease, sickle cell disease, and others. You must be aware to be prepared.

I've stressed the well-known concept that each of us is the product of our heredity and environment. In a very complex manner, genetic and environmental risk factors play important roles in heart and blood vessel disease caused by hardening of the arteries.

> And the more risk factors, the greater the chance of having a heart attack or stroke.

I've mentioned that patients over sixty-five have three-quarters of all heart attacks. So I'll begin risk factors in Table 3.1 with age. You can't do anything about your age, and you can't change your parents. But you can change other risk factors—and you must—if you wish to be healthy for as long as possible, with a high quality of life. It may not be necessary

for you to impose rigid dietary and other restrictions on yourself if your cholesterol and blood pressure are normal. A more moderate program designed to promote fitness, ideal weight, and good cardiovascular health should be sufficient. What is important at the outset is to know as much as possible about yourself, your family, and your risks.

This information on risk factors is current with the National Cholesterol Education Program report of May 16, 2001. In rating the most important risk factors as I understand them, I have placed age and hereditary predisposition at the top of the list. Cholesterol (encompassing lipoprotein abnormalities, such as high total and LDL cholesterol, high lipoprotein (a), low HDL cholesterol, and high triglycerides—all of which may be hereditary), high blood pressure (also a strong hereditary component), and smoking are the three most important risk factors to emerge from many epidemiologic studies. Diabetes is also a factor. And the interaction of poor diet, obesity, and lack of exercise is relatively easy to visualize. Recent progress has been made in combatting risk factors except for obesity and lack of exercise. Risk factors such as CRP are currently being explored that may eventually prove to be even more important than factors described earlier.

Now back to heart attacks running in families. Long before I began to recognize that our own family was at high risk, I had learned the concept of familial heart disease from my patients. I hadn't been in my practice as a family physician in rural Wisconsin for more than a few weeks when I was called on to care for a thirty-nine-year-old farmer of Norwegian ancestry who used the same matter-of-fact tone as Matthew Arnold to tell me the "family malady" was beginning to afflict him. He was having chest pain with exertion. One brother had died at age thirty-eight, another at forty-two, and his father at forty.

Country doctors have the opportunity to get to know their patients and their families well. Soon I had identified several such families; and using what was state of the art over forty years ago, I tried to develop programs that would prevent or forestall the heart attacks, including using long-term anticoagulation with Coumadin. I was sufficiently pleased with my efforts as a young country doctor to report my study to the *Journal of the American Medical Association* and to decide that I could work more effectively in this area if I undertook specialty training. But while I was still in cardiology training, I began to get unsettling reports about the patients in my former family practice. Although their heart attacks had been delayed, the simple techniques I'd used were not sufficient to have the long-term impact I'd hoped to achieve. There was a lot

Table 3.1—Selected Risk Factors for Heart Attack and Stroke

Age	Diet	Male gender
Cholesterol (lipoprotein abnormalities)	Family history	Obesity
CRP (C-reactive protein)	Fitness	Smoking
Diabetes	High blood pressure	Stress

more to preventing heart attacks than a family doctor almost fifty years ago could devise. During my training and afterward, I drifted inexorably into the traditional curative mainstream of cardiologic care, which eventually reached its high point (or low point) in heart transplantation.

I maintained my interest in the genetics of cardiovascular disease but for years concentrated more on congenital heart disease (such as holes in the heart present at birth). But what about coronary heart disease in my own family? It came as somewhat of a surprise to me. I found out about my high risk from a free screening test for lipoproteins offered at the annual meeting of the American College of Cardiology. Here I was, trained and experienced in both cardiology and genetics—and I first understood about my own familial heart disease as the result of a free screening test. Of course, I knew my mother had died in her fifties of "heart disease." We knew she'd had rheumatic fever, but starting in her forties she became subject to angina, the chest pain of coronary heart disease. And some uncles had also succumbed to heart attacks at relatively young ages. The free screening test informed me that my cholesterol, triglycerides, and other lipoproteins were distinctly abnormal. Now the whole family picture came into focus.

My wife and I began to talk about this problem and discovered that her family also had members who suffered from early-onset coronary heart disease. What a legacy for our children. We studied them in our laboratory and found that they too had abnormalities in their lipoproteins. Needless to say, my interest in preventing heart attacks took on a personal and urgent character. In fact, an original intent of my program was to protect children—mine as well as the children of others—who through no fault of their own were born into families with a high risk of having heart attacks. As I began to develop what evolved into the Whole Heart Program, it became obvious that preventive measures are a family affair.

Although infancy and childhood are theoretically better ages for starting to take preventive measures, patients at risk at any age or stage of their disease process need not be abandoned. Although we were trying to ensure that our children would have full lives and life spans, my wife

and I didn't give up on ourselves. I'm convinced that there's a suitable program for every age and stage of coronary heart disease. Although I believe younger seniors will profit more from some of the preventive measures described in this book, older seniors will also benefit, and all might wish to be concerned with the cardiovascular health of their children and grandchildren.

Angina

I will not discuss diagnosis and treatment of coronary disease in a book on prevention except to say that the older you get, the less typical and apparently less severe are the chest pain and other symptoms and signs of a heart attack. *Be aware. See your doctor.*

Know Thyself

You should obtain and keep a copy of the following data from your doctor:

1. Your latest blood pressure reading
2. Your latest total LDL and HDL cholesterol, triglycerides, and C-reactive protein (If these are not normal, you should have additional studies of lipoproteins, which I'll discuss later. Lipid tests are also clues to hereditary abnormalities.)

You should know some basics about your physical condition, which will be the foundation for the development and progressive recording of your health program. We'll start with a watch, a yardstick, and a scale and the blank spaces in Table 3.2 at the end of the chapter.

1. Your heart rate. As you sit there, take your pulse. If you have trouble finding your pulse, the two most convenient arteries to use are the carotid and the radial. The carotid artery is in the neck. Find your Adam's apple and slide your finger along either side of it until you feel a pulse. Feel it on just one side of your neck (I don't want anyone passing out from massaging both carotid arteries at the same time). This is the pulse you'll probably most often want to check during exercise. The radial pulse is the one you're used to having doctors and nurses check—the one on the inside of your wrist, back from the thumb. Count your pulse for 15 seconds and multiply by 4. This is your pulse (or heart) rate per minute. Record your pulse rate in pencil in the appropriate space in Table 3.2. If

the heart rate of any male family member over age fifteen is above 80 beats per minute (85 for females), that individual is likely to be less fit than the average American.

2. Your true height. Maybe you've been referring to charts of what you should weigh if you are 5 feet 10 inches tall, and it turns out you're only 5 feet 8 inches. Obviously, you've been kidding yourself about how many pounds overweight you are. So take off your shoes, stand to your full height on a hard surface with your back against a wall, put the yardstick (or a ruler) on your head, be sure it's parallel to the floor, and put a mark on the wall to record where the undersurface of the yardstick touches the wall. This measurement can be done more easily if someone helps you.
3. Weight. You may wish to postpone the next measurement until first thing in the morning. You should have a good, accurate scale; and if it's not a balance scale it must be placed on a hard surface, not a carpet. You should weigh yourself at the same time of day in the same minimal amount of clothing (or no clothing) under the same general conditions. On arising and before breakfast is usually a convenient time. Record your weight in Table 3.2.
4. Pinch tests. The final measurements acknowledge that there is a difference between muscle and bone weight and fat weight. A 5-foot 10-inch 220-pound fullback may be all muscle, but a 5-foot 10-inch 175-pound desk jockey may be mostly blubber and at least 30 pounds overweight. If a man's arms and legs are like toothpicks and he has a spare tire around his middle, he could be fat even if his weight is "below normal" for his height. This is where the pinch test comes into play. You may also use a tape measure on your hips and waist. A *large belly compared to hips* is a cause of concern among obesity risks for heart disease for both men and women, as well as for breast cancer. You can accomplish something like a caliper test (with a moderate sacrifice in accuracy) by using your thumb and index finger, pinching a roll of fat, and measuring it against a ruler or your yardstick. Men and women collect fat in different places, and individual men and women may have their own special fat depots. So you may have to check yourself to find where

you're storing unneeded fat. If you can pinch an inch of fat anywhere, you're overweight.

Men. Just being a man is an important risk factor. The rate of coronary heart disease is three to four times higher in men in the middle decades of life than it is in women and is twice as high in the elderly. Now to measuring. Stand up straight. Tighten your belly muscles and dig your opened index finger and thumb right down to the muscle on either side of your belly button. Next, pinch; bring the fingers together until you have a roll of fat that won't get any smaller. Have your ruler ready, and hold your fingers so they maintain the measurement. More than an inch here means you're fat, no matter what you weigh. You may also measure love handles if you wish. Belly fat is probably the most sensitive guide to obesity in males.

Women. Coronary heart disease, although less common than in men, is still the leading cause of death among women. After menopause, risks climb rapidly. A rule of thumb is that women lag about ten years behind men. Cholesterol and triglycerides start shooting up. Over half of middle-aged women have elevated cholesterol compared with only a third of middle-aged men.

Problems with obesity increase in middle age. To help judge where you are with weight control, you can measure your waist and hips, as long as you measure in the same place each time. If you pinch an inch in any area, that's excess fat. You can measure the back of your upper arm and your thigh, too, if you want to fill in all the boxes.

5. Aerobic exercise. The final box in Table 3.2 relates to present physical activity. It's relatively easy. Do you get regular aerobic exercise? If you have to ask what that is, you probably don't. But I'll give you a definition that will help you fill out the table now rather than wait for the more detailed explanation that comes later. If you exercise regularly three to six days a week with no more than two days between exercise periods for no less than a total of sixty minutes a week and at least thirteen consecutive minutes per workout at your target heart rate, you're getting aerobic exercise. I'll discuss exercise and target heart rates in Chapter 5.

Know Thy Family

The preceding section was only a small step toward knowing yourself. The second small step will require that you know some things about your family. If such information is unobtainable (because of adoption or other loss of contact), you can still learn a workable amount about the genes you inherited from tests that can be done on you and on your children. (If you're not interested in this exercise, skip to the next section.)

You'll eventually need to draw your own genetic pedigree (or family tree), and you can see how it's done by following the technique in the model in Figure 3.1 the end of the chapter. This part can be fun. You have the branches stretching out and stems pointing down into circles and squares or pointing into nothing because you have to draw in who your relatives are. Therefore, you need to hang a circle for female or a square for male from as many stems as necessary to decorate the tree. The branches I've drawn are not likely to be long enough, so when you draw your own family tree, use a large piece of paper to accommodate all the brothers, sisters, and children in each generation and to extend down to grandchildren (if you have them).

The legend in Figure 3.1 tells you once more that a circle is a female and a square represents a male. You can completely darken a circle or square for individuals who have a clearly established diagnosis of some disease that concerns you. Darkening half of a circle or square could be used for high cholesterol but no known heart disease. Or you may leave all the circles and squares open and simply write the diagnoses under the symbols. A slash through a circle or square extending outside the borders means the patient has died, and the number under the circle or square can be used to specify the age of death.

Of particular importance in a genetic history are (1) how closely related a family member with cardiovascular (or other disease) is, and (2) how young the individual was at the onset of coronary disease. First-degree relatives are the most important (these are your parents, siblings, and children), as are heart attacks starting before age fifty-five. On a genetic pedigree:

1. A first-degree relative is one related directly to you without going through another person.
2. A second-degree relative goes through one other person.
3. A third-degree relative goes through two other persons.

Your grandfather is a second-degree relative because you have to go through a parent to get to him. If your grandfather (a second-degree relative) or great-uncle (a third-degree relative) died at seventy-eight of a heart attack, this is less important than your father or brother dying at forty-eight. And if a second cousin died at forty-eight, that doesn't mean nearly as much as a father or brother dying that early. Another common problem in getting a family history is making sure the individual who had the disease is actually a blood relative. If Uncle George had a coronary but it was Aunt Mary who was your father's sister, then Uncle George's coronary has nothing to do with your genetic risk. He's not a blood relative.

In obtaining your family history, you have to be discriminating and cautious. You will be assuming a role similar to that of a clinical geneticist or even a detective. You are told that an uncle died at fifty of a heart attack. But what was the evidence? You need to ask how the diagnosis was made. Was it a reputable medical diagnosis? Was he being treated for heart disease? In a hospital? If it was a sudden death, was the diagnosis made by autopsy? If Uncle Joe really died at age fifty by falling off a bar stool and hitting his head, you shouldn't make that the basis for getting uptight about heart attacks in your family. It should usually take only a few minutes to ask key questions to confirm the diagnosis.

CHOLESTEROL AND ITS RELATIVES

If you don't have total cholesterol higher than 200 mg/dl, LDL cholesterol higher than 100 mg/dl, HDL cholesterol lower than 40 mg/dl, or a history of early heart attacks or strokes in the family, you can skim this fairly technical section and go on to the section on high blood pressure.

It's funny how your perspective changes as you get older. A few years ago, using the data of a large epidemiologic study, I considered that high cholesterol was more important in patients with early-onset coronary heart disease (age fifty-five and younger) than it was in older patients. Now I think seniors should pay as much attention to cholesterol as younger patients do.

> Some problems with high cholesterol (>200 mg/dl) and many problems with high triglycerides (>200 mg/dl) can be solved by weight loss and proper diet alone.

Unfortunately for patients and for health care financing, drugs (at four dollars a pill and accompanied by side effects) are often prescribed

before diet and weight loss have been given an appropriate trial. It takes time to work with patients, talk with them, direct them, follow their progress closely, encourage them—but it takes only seconds to write a four-dollar-a-pill prescription.

Cholesterol Education

Some of the information in this section comes from the National Cholesterol Education Program coordinated by the National Heart, Lung, and Blood Institute (NHLBI) within the National Institutes of Health (NIH). You can avail yourself of printed material from the NHLBI at www.nhlbi.nih.gov.

And you can get educational material on heart disease and high blood pressure and special diets from your state affiliate of the American Heart Association (AHA). I won't provide the addresses of all AHA state affiliates, but their national office is the American Heart Association National Center, and the address and Web site appear at the end of the chapter.

I realize that in some of the addresses I'm giving I'm expecting more Internet skill than many seniors may have. So I often give alternative addresses. If you want to use the Web addresses and don't have the expertise, ask your children or grandchildren for help.

What's Wrong With Having High Cholesterol?

First, there's the epidemiologic evidence. Many studies have documented that your risk of having a heart attack or a stroke is increased if your blood cholesterol, triglycerides, and certain lipoproteins (LDL, lipoprotein (a)) are increased. And the higher the values, the greater the risk. There is also a substantial risk if the beneficial lipoproteins (HDL), also called "good" cholesterol, are decreased.

But what do cholesterol and these fatty and protein elements do to you? This is a very complex subject, which doesn't deter me from offering an oversimplified answer. First, cholesterol doesn't just float freely in the blood. It is delivered in a lipoprotein package. Certain lipoproteins in which cholesterol is bound interact with the inner walls of injured arteries and with clotting elements of the blood to form a cholesterol- and fat-rich deposit (plaque) that works its way into the lining of the blood vessel. What causes the injury in the first place? Probably many different factors, including smoking and high blood pressure. There seems to be an immunologic (disease-fighting) component involved—that is, the blood vessel tries to heal the injury by drawing into the damaged site

cells and molecules and clot dissolvers. Unfortunately, the attempts at healing often lead to a buildup of scar tissue. This scar tissue, this cholesterol-rich plaque, has a tendency to grow until the blood vessel is obstructed and the blood supply to whatever structure the artery serves is cut off. If the artery that is closed off serves the heart muscle, the piece of muscle nourished by that artery is injured or dies. A heart attack results. A stroke occurs when a blood vessel to the brain is interrupted. The stages of acute obstruction of a coronary artery leading to a heart attack or unstable angina (the chest pain that is the forerunner of a heart attack) usually involve additional factors and further injury to the inside of the artery; the clumping of platelets (clotting elements of the blood) and white blood cells; the release of mediators, thromboxane A_2 serotonin, and other substances; and arterial spasm. This information about clotting and spasm prepares you for a discussion of the use of aspirin as a preventive medication in some patients at risk of heart attacks and strokes.

What is still being investigated is how much the lipoprotein itself injures the inside of the blood vessel versus it just being deposited in response to an injury caused by something else (such as high blood pressure or clotting elements). Both mechanisms, as well as other mechanisms (mutations in the vessel-lining cells or immunologic injury), may all play roles in this drama. However, what appears evident is that no matter how the plaque starts to form, it needs to be fed by lipids (fats) and lipoproteins. In experiments, an animal's artery may be injured by puncturing it with a tube, blowing up a small balloon on the end of the tube, and rubbing the inner surface of the vessel. If the animal has low cholesterol and low levels of certain lipoproteins in its blood, the vessel heals cleanly. However, if the animal has high levels of certain lipoproteins, the vessel forms a plaque at the site of injury, which may build up until the blood vessel clogs.

There are several types of lipoproteins. The low-density lipoproteins are probably the most damaging. The very low-density lipoproteins (VLDL) are also involved in hardening of the arteries. But one form of lipoprotein, high-density lipoprotein, clearly protects blood vessels. Low levels of HDL cholesterol, the so-called good cholesterol, may be as high a risk as high levels of LDL cholesterol, the so-called bad cholesterol. Think of it as HDL directing the traffic of harmful deposits away from the blood vessel walls while LDL is leading the wall-hardening deposits into the vessels.

There's a great deal more to the lipoprotein story than is covered here. The protein portion (apolipoprotein, or apoprotein of the lipopro-

tein) correlates better with risk than does the entire lipoprotein. For example, low apolipoprotein A-1 more accurately predicts coronary disease than does low HDL, and high apolipoprotein B is more predictive than high LDL. Many recent markers of risk for cardiovascular disease—including lipoprotein (a), the isoforms of apolipoprotein E, and markers of DNA (the hereditary material of genes)—are being investigated. These newer tests are presently available more in the context of research projects, so you shouldn't go to your local hospital laboratory to get such studies. What you should be able to get is an accurate test for total cholesterol, HDL cholesterol, and triglycerides. From these values, LDL cholesterol is also calculated. Homocysteine and certain infectious agents—such as chlamydia (sexually transmitted), *H. pylori* (linked to peptic ulcer), and cytomegalovirus—have been implicated as possible factors to add to the mix of what causes plaques in blood vessels. (These infectious agents may be some of the culprits C-reactive protein is telling us about as a risk factor.)

The first line of treatment of cholesterol problems includes diet, weight loss, and fitness (see Chapters 4 and 5). If these modes are insufficient, medications are available.

Here's something surprising: on March 2, 2001, data from the Honolulu Heart Study were presented that suggested that Japanese American men over age seventy have an *increased* risk of heart attack if their cholesterol is *below* 160 mg/dl. The study proposed that the ideal level of cholesterol in men over age seventy is 200 to 219 mg/dl. Hemorrhagic stroke may *rarely* occur if there is very low cholesterol. But heart attack? I accept that a cholesterol level between 160 and 200 mg/dl is desirable.

HIGH BLOOD PRESSURE (HYPERTENSION)

A critical risk factor in epidemiologic studies of coronary disease and stroke is high blood pressure. The blood pressure of seniors tends to increase mostly because of the accumulation of risk factors other than aging itself.

High blood pressure (hypertension) is a treacherous and potentially devastating condition. Although over 63 million Americans suffer from high blood pressure, 46 percent are not aware of it. That's the treacherous part. You can appear to be the picture of health, but under this glossy surface the canvas is beginning to fray—21 percent of those who are aware of their disease are not taking medication, and 22 percent who are on medication are not adequately controlled.

What if you've got high blood pressure; what can it do to you? It can damage the inside of your blood vessels to allow cholesterol and other fatty substances to leak into the wall (and in fact be pushed through the damaged areas under excessive pressure). Through a series of interactions between constituents of the blood and blood vessels, the arteries begin to narrow and may eventually plug up, depriving critical organs of their blood supply. As mentioned earlier, if the organ is the heart, you have a heart attack; if it is the brain, you have a stroke. Or if the organ is the kidney, you may experience loss of kidney function. And high pressure by itself can burst weakened or defective blood vessels in the brain so a stroke results.

There are many causes of high blood pressure. A category of conditions—called secondary hypertension—includes such problems as narrowing of a segment of the major blood vessel of the body (called coarctation of the aorta), kidney diseases, and certain tumors. The various causes of secondary hypertension can be identified by your physician. But this category is only a small part of high blood pressure. The great majority of cases come under the heading of primary (or essential) hypertension. That sounds impressive. If you name something, people get the idea that you know a lot about it, but *essential hypertension* means high blood pressure of unknown cause. At least until recently. We are at last beginning to understand some of the causes of essential hypertension. (From now on when I use the term *high blood pressure*, I am referring to essential hypertension unless otherwise noted.)

But back to causes. To begin with, high blood pressure runs in families. Surprised? It seems everything I write about in this book "runs in families," and high blood pressure is no exception. Furthermore, hypertension affects blacks more—and more severely—than whites. That may be compatible with some underlying genetic differences. Then, within the category of essential hypertension there are complex interactions among sodium (salt), the kidneys, blood volume, stress, blood chemicals, and hormones. Indeed, it should be possible in the near future to divide the category of essential hypertension into several etiologic subgroups using information from the Human Genome Project. And that's about as deep as we'll go for the purposes of this book.

Now I need to define blood pressure and high blood pressure—that is, how high is high. For blood to move through blood vessels or for water to move through a pipe, there has to be some pressure behind it, such as a gravity column or a pump. The fluid, whatever it is, exerts its pressure in all directions, including against the wall that confines it. Blood

in humans is propelled by a pump (the heart). Blood pressure is most accurately measured by putting a needle or tube inside the artery and connecting it to a manometer. But it can also be measured, with only a slight sacrifice in accuracy, by compressing the artery with a blood pressure cuff and noting the onset and disappearance of pulsations.

Many physicians accept 140/90 as the beginning of high blood pressure in adults age eighteen and older. Anything below that is generally accepted as "normal." The 140 part is the systolic pressure, the force of the heart when it contracts and pushes blood out. The 90 part is the diastolic pressure, the resistance of the blood vessels to the flow of blood. The numbers 140 and 90 are measured in millimeters of mercury (mm/Hg). The top number and the bottom number are both important, so if either the systolic or diastolic pressure is elevated, some form of high blood pressure is said to be present. For many years an elevation of the lower part, the diastolic pressure, has been emphasized as producing an increased risk of total mortality as well as mortality from coronary heart disease and stroke. However, a recommendation from the National Institutes of Health in spring of 2000 stressed that *an elevation in systolic pressure may carry more risk than an elevation in diastolic pressure, particularly in older adults*. Data also support the idea that when adult blood pressure exceeds a level as low as 130/80, risk of cardiovascular disease begins to increase. Some accept a diastolic pressure of less than 85 as normal and 85–89 as "high normal."

The higher the pressure, the greater the risk: 180/120 represents more risk then 160/100, which in turn is a more serious risk factor than 140/90. Blood pressure has a tendency to increase with age. Certainly, this is evident throughout childhood and is associated with growth. Whether the magnitude of increase in childhood is inevitable can be debated. However, the progressive increase in blood pressure in adult life among many Americans, Europeans, and especially Japanese is not the universal experience in certain other cultures.

Heredity and Salt Plus Stress

I don't want you to believe that we know all the answers about essential hypertension any more than I want you to think nothing is known about the cause and treatment of this disorder. When I was younger I was impressed with the "objectivity" of physicians and other professors who would respond to a question with "We simply don't know the answer to that yet." I've since learned that this statement frequently means it's the speaker who doesn't know the answer to the question and, furthermore,

that he or she doesn't even know the current state of knowledge about the subject. So we can talk for a long time about how complex a problem hypertension is and how little we know about it, or we can concentrate on some of the things we do know that have practical consequences in prevention and treatment.

Often, physicians and other biomedical scientists, especially geneticists, search for lower animals to use as models for what happens in humans. These models are called animal homologies. Now, it's far from invariable that what happens in one particular animal (say, a mouse) will also happen in the same way in another animal such as a rabbit or a baboon or a human. But these animal homologies are extremely useful aids in understanding *possible* disease mechanisms in humans. There are some interesting strains of rats (ALR and SHR) that give us ideas on what may produce high blood pressure in humans.

First, there's hereditary predisposition. Some rats don't get hypertension, but ALR and SHR strains do. So if you start off with unfavorable heredity and add salt and stress, you end up with a rat with high blood pressure. And in the SHR strain, the high blood pressure leads to stroke. In the ALR strain, the high blood pressure produces plaques (deposits) in the blood vessels, similar to those found in humans, that harden and narrow the blood vessels.

So one strain has strokes and the other has more generalized hardening of the arteries. And other strains of rats can be subjected to stress and salt and not get high blood pressure or experience any other apparent adverse changes. Until it's demonstrated that this sort of model doesn't apply to humans, I submit that this is a reasonable way to look at high blood pressure and its consequences in many families. So my idea of the first line of defense against high blood pressure is to control both salt and stress.

Salt. A U.S. Senate committee published dietary goals for the United States, some aspects of which I will discuss in Chapter 4. One of the six goals was to reduce salt consumption to approximately 3 grams per day from the present intake, which may be two to six times that amount in American diets and eight to ten times that amount in Japanese diets. This original recommendation has been revised to reduce salt intake to 5 grams (one teaspoon) per day. Yet in some tropical cultures, which you would think would require considerable added salt because of heat and sweating, the intake is about ½ gram of salt per day. And these people do not suffer the effects of heat. In fact, a committee of the National Academy of Sciences suggested the human need for salt is indeed about ½

gram per day. Clearly, salt added to food is an acquired taste, and the body needs much less salt than we have been led to believe.

Prudent salt diet. Without any sacrifice in legitimate dietary needs, the goal of ingesting no more than 5 grams of salt per day (2,000 mg of sodium) can be met by anyone who does not have a rare disease involving salt requirements (such as an adrenal disorder). Table salt is roughly 40 percent sodium and 60 percent chloride, and one gram of salt contains 400 mg of sodium. But a salt intake of about 4 grams per day is the level found by some investigators to be associated with increasing blood pressure *among susceptibles*, so there are differences of opinion about reasonable salt consumption. Most Americans consume between 6 and 18 grams of salt each day. To achieve a prudent salt diet, you need to do three main things:

1. Add little or no salt to table food and no salt in cooking. For table salt you may want to use a low-sodium product that is only one-half or one-third sodium chloride and the rest potassium chloride.
2. Don't eat foods with visible salt on them such as potato chips and similar snack foods.
3. Become familiar with foods high in sodium, and avoid them or use them sparingly. The Food and Drug Administration has mandated that food processors list the amount of sodium in a portion of a product. *Please learn to read labels* if you haven't already.

If you don't have high blood pressure and you don't have a history of high blood pressure, stroke, or heart attacks in your family, you don't have to be as strict about low salt ingestion as those who have these individual or familial problems. Some individuals and families are genetically susceptible to the adverse effects of salt; others can eat larger amounts of salt with no deleterious effects on blood pressure.

The following guidelines are appropriate. The most stringent salt restriction is in effect for those high-risk people who actually have high blood pressure and are likely to be "salt susceptible." These people should be under a doctor's care and should be consuming 3 grams of salt or less per day, depending on severity. The next category, those who have normal blood pressure but a positive family history of cardiovascular disease, could use more salt but should stay at an intake level between 3 and 5 grams per day. The final category, those who have neither high

blood pressure nor a positive family history, could use salt more liberally. They are likely not to be salt susceptible. Although 5 grams is the maximum recommended by the Select Committee, I feel these people should be permitted additional latitude.

You know from the experience of your taste buds that a lot of common foods are salty. But food substances like catsup, pickles, peanut butter, and sardines may not have occurred to you as being high in salt. An example: a typical McDonald's lunch—a hamburger (with pickle, catsup, and mustard), french fries, and a shake—contains almost 4 grams of salt. Thus, in one meal you can consume more than is prudent for a high-risk individual to ingest in twenty-four hours—and almost as much as the Select Committee recommends *anyone* take in during an entire day.

Stress. The need for stress control and the use of meditation and relaxation techniques in hypertension patients have been popularized by Dr. Herbert Benson in his book *The Relaxation Response*. Up to now I've emphasized preventing high blood pressure from ever occurring, even in individuals at risk. Low-salt diets and meditation are also used in the treatment of patients who already have high blood pressure. The techniques of meditation will be described at the end of this chapter, and they are to be regarded as an integral part of your program for preventing high blood pressure as well as heart attacks. As a corollary to stress control, a 1998 report noted that regular church attendance correlates with lower blood pressure levels.

Potassium. When we have been talking about salt, we have really been talking about sodium—sodium chloride is the salt, and sodium is the positively charged ion (or cation) in the molecule. There is evidence that another cation, potassium, may be useful in preventing high blood pressure. Certain societies in which hypertension rarely occurs not only have a low-sodium diet but also have a high-potassium diet. This idea requires further investigation, but in the meantime common foods that are rich in potassium include orange and other citrus juices, tomato juice, and bananas.

Obesity

High blood pressure and obesity are strongly associated. I'll discuss this topic in more detail in Chapter 4. The overweight person is inviting trouble from many directions, and high blood pressure is as important a complication as any.

Treatment

In 1972 the federal government launched a blood pressure awareness program. Since then *the annual rate of fatal strokes has been cut in half* through identifying patients at risk and undertaking needed prevention and treatment programs. Remarkable. (In the same time frame the rate of fatal heart attacks has dropped by 40 percent for a variety of reasons, including the attack on high blood pressure.)

Throughout this book prevention is our theme, but to prevent a serious consequence resulting from a risk factor, the preventive strategy is to institute treatment of the risk factor. There are now excellent medications for treating high blood pressure. Obviously, this is something to work out with your doctor, who will likely institute individualized therapy if he or she determines that you need drugs. But let me emphasize that the techniques that prevent high blood pressure from ever getting started are the first line of defense in treatment as well. These include restriction of sodium to prudent intake levels, relaxation and stress reduction, weight reduction (if obesity exists), aerobic exercise (see Chapter 5), adequate potassium intake, avoidance of tobacco, and restriction of alcohol to moderate levels (e.g., preferably no more than four ounces of wine for women and eight ounces for men per day).

The one essential to take from this discussion of high blood pressure is: *make sure your blood pressure is not high*. Years ago it was relatively difficult to lower one's blood pressure. That's not the case today. With modern medications and management, most patients can have a "normal" blood pressure level, one that does not represent a risk to good health. What should the numbers be? In a study recently presented at a large international meeting, the data suggest that the lower number, the diastolic pressure, should be 83 or below; and the upper number, the systolic pressure, should be 138 or below. So a blood pressure of 138/83 is a reasonable goal, and 130/80 is an ideal level. (A study in 2003 found that in some patients Alzheimer's disease may be prevented by maintaining a normal blood pressure.)

TIA (transient ischemic attack)

I have not described symptoms and signs of full-blown stroke. This is a catastrophic event that would be very obvious, such as paralysis and loss of speech, and would lead to immediate medical involvement. There are episodes that occur, usually lasting only a matter of minutes, that present only minor symptoms of stroke: a brief period of blurring or loss of vision, weakness or numbness in limbs on one side of the body, confu-

sion, dizziness, slurred speech, legs buckling (drop attack). Such episodes require medical attention and may be forerunners of complete strokes.

SMOKING

Smoking is a risk factor that will be discussed in more than one chapter, including the one on cancer. If you as an older senior are still smoking, your genetics has protected you to allow you to live so long. Some people are able to resist the serious health-destroying effects of tobacco for relatively long periods. But don't count on your luck continuing. Other people more sensitive to tobacco smoke may die without even being smokers themselves, just because they are exposed to tobacco smoke in their homes and workplaces. A recent study from New Zealand suggests that nonsmokers breathing secondhand smoke have an 82 percent greater risk of stroke than nonsmokers who are free of this exposure. The risk of heart attacks, lung cancer, and even breast cancer increases among nonsmokers exposed to secondhand smoke. Of course, the tobacco industry has been telling you for years that its product is not a health hazard and is not addictive. The industry's congressional supporters (who receive generous campaign contributions) are able to prevent a strong tobacco bill from getting through Congress to discourage children from taking up the addictive, killing habit—which usually begins in childhood. But the stonewalling is coming to an end. Some tobacco companies are now admitting they've been deceiving the public (but not admitting that they lied before Congress).

Meanwhile, smoking continues to be the largest preventable cause of death in America, accounting for over half a million deaths per year in the United States. That's more than the entire population of Wyoming. Dead. Every year. The largest number of these excess deaths, almost 150,000, are from coronary disease (plus over 30,000 deaths from stroke); approximately 135,000 deaths are from lung cancer (30,000 deaths from other cancers); and 65,000 deaths are from chronic lung disease. The attributable cause of death of more than *one of every six* Americans is smoking. The massive reviews of thousands of studies presented in reports of the surgeon general are impressive indictments.

Whereas smoking by men has declined substantially during the past three decades, it has not declined comparably among women. And "women who smoke like men die like men who smoke." In fact, recent evidence suggests that women are more susceptible to mutations leading to lung cancer than are men and may be more vulnerable to secondhand

smoke. Lung cancer has increased fivefold among women since 1955. Mortality rates from all causes are significantly higher among those who start smoking early in life. Hardening of the arteries (atherosclerosis) in the coronary arteries and the aorta is positively associated with cigarette smoking, and premature atherosclerosis is associated with early initiation of smoking.

The good news is that over half of Americans who have ever smoked have stopped. Although over 50 million Americans continue to smoke, over 90 million would be smoking were it not for campaigns conducted since the first surgeon general's report was released in 1955. Although the tobacco industry loses over half a million of its best customers to death each year, a total of 3 million smoking-related deaths had been postponed or avoided by 2000 because of the decline in smoking. Each avoided or postponed death represents an average gain in life expectancy of twenty years.

Smoking Hazards to Health Other Than Cardiovascular Disease

Although this chapter is mainly concerned with diseases of the heart and blood vessels, this is a reasonable place to point out some of the very serious consequences of smoking as it affects health in general. First, death rates, *no matter what the cause of death,* are higher among smokers than in nonsmokers. For example, middle-aged smokers (ages thirty-five to fifty-four) have a death rate *from all causes* that is 2.6 times greater than that of nonsmokers. (The death rate from coronary heart disease in this age group is 4.7 times higher in smokers than in nonsmokers.)

Cancer is the second leading cause of death and the second largest disease category in which smoking plays a major role. If it were not for smoking, certain common cancers, such as cancer of the lung, would be fairly rare. Approximately 87 percent of the annual deaths from lung cancer in America are directly attributed to cigarette smoking. Cancer of the throat is another smoking-related disease; about 3,000 deaths were estimated in 1985. Almost all cancer of the throat is found in smokers. Cancer of the mouth was estimated to have caused 6,700 deaths in 1985—and again the great majority of deaths were among users of tobacco, smoking and smokeless. We can go down the line with cancers of the esophagus, kidney, bladder, pancreas, and even the cervix. Smoking has been implicated in all of these types.

Peptic ulcer is found almost twice as often among smokers as in nonsmokers. Chronic lung disease, highly associated with cigarette smoking, is second only to coronary heart disease as a cause of Social Security–

compensated disability. The lung disease may be long-term and severely disabling, characterized by a constant exhausting struggle just to breathe. Cigarette smoking is estimated to be responsible for approximately 60,000 deaths in the United States each year from chronic lung disease.

Quitting

If you haven't quit smoking yet, there are many methods—from cold turkey to behavior modification to the various patches and gums—to wean you away from the serious addiction to nicotine that the tobacco companies have denied exists. There are pamphlets and booklets from your state affiliate of the American Heart Association, American Lung Association, and American Cancer Society. The addresses, phone numbers, and Web sites will be found in other discussions in this guide. Hospitals offer courses on how to kick the habit. Whatever you do, do something to quit. Now.

OTHER RISK FACTORS

The chapters in which diet and fitness and diabetes are discussed will cover the relationship of these risks to cardiovascular disease. Although I've said it before, I'll say it a few more times before I'm through: recommendations to prevent heart attacks prevent other leading causes of death as well. Not just stroke but cancer, pulmonary disease, type II diabetes, even accidents. Think about it. A simple thing like not smoking will greatly reduce your risk for several forms of cancer. And a low-fat, high-fiber diet recommended for cardiovascular health has been proposed to reduce the risk of cancers of the gastrointestinal tract. In fact, the 1988 *Surgeon General's Report on Nutrition and Health* estimates that 65 percent of cancers are attributable to two factors: tobacco and diet. As I mentioned earlier, obesity and lack of fitness are the two risk factors that are not diminishing.

A risk factor in heart attacks and strokes that has recently been emphasized is C-reactive protein, which reflects inflammation of the vessel walls. The measures already being used for prevention—such as diet, exercise, no smoking, and specifically and importantly, medication with aspirin and cholesterol-lowering statin drugs—are recommended to combat the inflammation. An obviously important factor in inflammation is infection. The bacteria *chlamydia pneumoniae* has been found in artery-clogging plaques in atherosclerosis. A study is under way to treat patients with coronary heart disease with antibiotics to see if such treatment reduces heart attacks. Another risk factor, homocysteine, may prove to be

important and is combatted by eating less meat, taking supplements of B vitamins, and reducing stress.

SETTING AND KEEPING REALISTIC GOALS

Do not assume that a physician has personal experience with what he or she advocates. In this case, however, the programs discussed in this book are not only for our patients but are those with which my family has lived for decades. You have trouble with diets? We know all about that. *We also have trouble with diets.* And you hate to exercise? We know about that, too. We've been through all the struggles ourselves. And we'll be the first to admit that our children do much better with their health programs than we do. A lot of that we can take credit for because we started them on their programs when they were small children. They formed healthy habits as their way of life and don't have bad habits to unlearn and battle constantly.

First, a pep talk. Whatever goal you set for yourself, if it means breaking bad habits and developing good habits, it will require recognizing what your habits are and then progressing a step at a time, identifying the habits that don't promote good health and replacing them with habits that do. If you're in your fifties or sixties, you can be pretty aggressive in your goal setting; in your seventies you should be less aggressive; and if you're in your eighties, you're already doing the right thing.

I'll gear this strategy for someone who has just retired at sixty-five, and you can modify your personal plan up or down depending on your age and present state of health. I'll begin with the disclaimer you see on every TV exercise program: *do not undertake these recommendations without your doctor's approval* (not even taking aspirin). I must make that statement, although I noted in Chapter 1 that a growing trend is to get health information from the Internet, and patients get more than half of their "medical advice" from independent reading.

What if you've been fighting the battle of the bulge all your life and losing? And, with Mark Twain, you've found smoking to be the easiest habit you've ever broken because you've broken it so many times? But what about willpower? I believe those who claim behavior modification does not require willpower are guilty of a fundamental error. It takes an act of will to start something that is not already a habit, and it takes inner control to maintain a new habit. An act of will is where it begins. Behavior modification follows.

Why do we do what we do? We don't stick our hands into fires. Why? Because it hurts, obviously. It's not a rewarding thing to do. In fact, it's a

very punishing thing to do. But we often ladle out a dish of ice cream from the freezer. Why? Because it tastes good to most of us. It's rewarding. Behavior gets established through rewards and punishments. We repeat what's rewarding and avoid what's punishing.

So let's face it, we're talking about rewards and punishments. Punishment does not have to be sticking a hand in fire or the reward eating ice cream. You can reward yourself by looking forward to doing something that makes you happy. Reward yourself with a mental picture. Madison Avenue has also noted this. Think of cigarette ads. Do they show a room filled with choking smoke? Do they portray the brown teeth and stained fingers of those who smoke? Is the smoker coughing uncontrollably with lung cancer or emphysema or clutching his chest while sustaining a heart attack? These images, especially the last ones, are too much to expect from the dishonest tobacco industry. But do tobacco ads even associate smoking with smoke? They show a crystal mountain stream, preferably with a bubbling waterfall. Everywhere you look you find green leaves and blue sky and fresh air. And nowhere is there a suggestion of air pollution from tobacco smoke. It's a beautiful image—intended to associate the pleasant, tranquil experience (or fantasy) in the clean air with smoking. You see the ad, and you want to take a deep breath of that pure mountain air. But that's not what's being sold. They've thrown you a curve that would be the envy of the entire pitching staff of the New York Yankees. They're selling you the visual image of clean air and giving you choking, killing smoke.

All of this is to say that if behavior modification using only images can work to establish destructive habits, the rewards games (as transparent as they may be) can be employed with more than equal hope of success to establish constructive habits. You develop your own ways to reward yourself. Your own plans for the future as you lose weight. Your own picture of a slimmer you on vacation beside a mountain stream or on a beach. I'll make suggestions as we go along.

All right, we'll assume you've made a commitment to undertake a program of cardiovascular and general health suitable for your age and present physical condition and that you understand you will have to take it a step at a time through simple behavioral techniques described in sections that follow. Behavioral modification programs are initially quite successful for diet, smoking, and other habits. But then a curious thing happens. Having learned and established good health habits, people turn around and relearn and reestablish the old habits that offered considerable gratification in the past, which is why they became established

in the first place. This is what is known in the trade as reversion or recidivism. And it's disappointingly common. Where to now? Your program, to be successful, must become an integral part of your life. It must be incorporated into your frame of orientation. Your frame of orientation is your road map, and (to continue the metaphor) the behavioral techniques serve as signposts along the way.

I also suggest that you'll need all the help and support you can get from family and friends. A health program should be a family program to be successful. That isn't to say you can't undertake your personal health program if you live alone. But if you live with others, you won't have an easy time if others are passive, active, or even belligerent nonparticipants. If you were reasonably sated after supper and an uncommitted family member offered you an eclair, it might be difficult to resist. Or if those responsible for the purchase and preparation of food for the family made junk food and convenience food constantly available, you'd have to have enormous, if not rigid, discipline to resist. The reason these foods sell so well is because they taste good. That takes us right back to habit formation. What's rewarding gets established. So obviously, it's unwise to constantly confront temptation while trying to break those bad habits and establish good ones. A few saints may be successful, but you and I are not likely to qualify.

Cardiovascular epidemiologists have been studying select populations in which a health program and a healthy lifestyle are part of the religion. The Seventh-Day Adventists and Mormons are two such groups. And their morbidity and mortality statistics for cardiovascular and other major diseases are better than those of the American population at large.

I don't belong to either of these religious denominations, so I'm not attempting to proselytize on their behalf. But I think they serve as a model for the success that can be achieved when a health program is incorporated into your frame of orientation—in these cases, when health and lifestyle are part of your religion. Actually, threads of health programs are woven throughout the history of many religions. Dietary abrogations are common and in many cases have a valid medical basis, such as the prohibition of pork in Judaism and Islam. For decades, fundamentalist and some mainstream Protestant churches frowned on smoking and alcohol. And most world religions have encouraged a simple, temperate, and abstemious orientation.

Make no mistake: you can make your own decision, as an act of will, to institute changes in your life. And that decision will come in an instant, like the town drunk hitting the sawdust trail of conversion. But if

the decision is to be sustained, it should have an enduring support structure—frame of orientation, family, belief system, religion, you name it. Select the help that best meets your needs. Just be sure the help is there.

STRESS CONTROL AND MEDITATION

Emotional stress is a risk factor in both high blood pressure and heart attacks. But emotional stress is not so much what happens to you and what you do as it is your *attitude* toward what happens to you and what you do—a point stressed by William James, the American philosopher/psychologist.

Seniors are not without stress, even after we've disengaged from the striving related to work. The emphasis here will be on methods of stress control. The Stoic philosopher Epictetus made a useful distinction between "inner realms" and "outer realms." The inner realm is what lies within our power to change, such as attitudes and desires. The outer realm is what we cannot change. A lot of stress comes from the outer realm. Seniors should reach a point at which they can reduce stress by changing the inner realm and letting go of the outer realm.

In this and in several sections in subsequent chapters, we're going to rely on knowledge of meditation techniques. You can probably see how it would be relevant in the discussion of stress control, but it also comes up in smoking, diet, and high blood pressure. I consider meditation as valuable an adjunct in general health (including cardiovascular health) as it is a technique in helping to achieve the inner control necessary for behavior modification. Although meditation does not have the medical panache of an operation or even an injection, it is a long and respected tradition in the major religions of the world. My introduction to the technique of meditation occurred over forty years ago from reading a single sentence in Erich Fromm's *The Art of Loving*.

I know people attend courses (some fairly expensive) to learn how to meditate. You can also buy books (some of them best sellers) devoted to the subject of how to meditate. As far as I'm concerned, there has to be a fair amount of filler in such books because I can't see how to improve on this one sentence in which Fromm describes how to meditate on page 112: "It would be helpful to practice a few very simple exercises, as, for instance, to sit in a relaxed position (neither slouching, nor rigid), to close one's eyes, and to try to see a white screen in front of one's eyes, and to try to follow one's breathing; furthermore to try to have a sense of 'I,' I = myself, as the center of my powers, as the creator of my world."

That's it. That's the technique from *The Art of Loving*. I'll do a little amplifying, but the technique of meditation is all there in one sentence.

The first bit of additional information concerns how long you should meditate. A standard recommendation is twenty minutes, but I would aim initially for ten minutes. Next, when should you meditate? Most meditators agree that it's good to meditate first thing in the morning upon arising. There are those who meditate twice a day, whereas many choose to meditate only once daily. It is necessary from the point of view of habit formation to schedule your meditation for the same time or times each day. When subject to acute stress, you can employ a minute or so of meditative techniques at any time to help you through the episode.

The next point of technique has already been described. As Fromm puts it, you can just sit in a relaxed position. A chair does nicely. If a lotus position were required, most seniors would be out of luck. You can try modifications of cross-legged positions on the floor or in a chair (as long as your joints tolerate the strain), or you can just sit naturally in a chair.

Once you start trying to meditate, you'll appreciate some of the requirements as well as some of the problems. One problem is having a quiet place. Most people need to be alone in a quiet room or, if outdoors, far enough away from people and noises to avoid distraction. The next problem is keeping competing thoughts out of your consciousness. The goals are to see a white screen (some see colors), to focus on the blank screen with your eyes closed, and to follow your breathing. No thoughts. Just relax and follow your breathing. If thoughts about your problems or plans for what you're going to do next enter your consciousness, you're not being very successful with your meditation. When competing thoughts enter your awareness, simply say "No" or "Stop." Say it in your mind. Say it so forcefully that it seems you're shouting "No" in your mind. During that moment of mind clearing you can regain control and exclude thoughts and worries.

The mantra is a popular technique used in transcendental meditation, where you repeat a secret sound or word over and over again. Although there may be some advantage to the secret sound, it's not clear to me how it is superior to using such words or phrases as "I = myself" or "Love" or "In" and "Out" while following your breathing. Some word or sound is useful to achieve control, but some people can meditate for long periods without focusing on any word or sound. The deeply vocalized sound "Aum" is preferred by many, but be cautious in its use to avoid being abruptly spirited away and beamed to a remote timberline ledge in the Himalayas.

When you begin to practice meditation, set aside no more than 10 minutes a session—and don't be discouraged. Your first 10 minutes may contain no more than 30 seconds of actual meditation. And if you extend your first session to an hour, you still may not achieve more than 30 seconds of true meditation. But as you practice daily you'll find that more and more of that 10 minutes passes in genuine meditation, not in mind wandering and worrying. You'll gain progressively more control of your mind. And as you gain control of your mind, you may gain greater control of every aspect of your life—your behavior, your attitudes, your reactions and responses to stress, and your ability to do what needs to be done, whether it's diet, exercise, quitting smoking, or eliminating counterproductive worrying.

There are different points of view, however. A review article, published in March 2002, suggests that meditation and other religious activities do not provide the health benefits claimed in other studies. My personal position is, don't knock it until you've tried it. But some people just can't seem to get the hang of meditating. If you're one who needs personal guidance in the technique, there are seminars and symposia. I can't vouch for the legitimacy or efficacy of any of them, but you should be able to inquire around until you reach an informed decision. The point I want to make is that you shouldn't conclude that meditation doesn't help you modify your behavior if you haven't actually meditated regularly but have only unsuccessfully tried to do it.

Because meditation has been integral to my Whole Heart Program, I recommend strongly that you start as early as possible to develop this skill. The investment is only a few minutes a day to help you take control of your life and your health.

RESOURCES

National Heart, Lung and Blood Institute
Information Center, PO Box 30105
Bethesda, MD 20824-0105
301-251-1222
www.nhlbi.nih.gov

American Heart Association
National Center
7272 Greenville Avenue
Dallas, TX 75231-4596
800-AHA-USA1
www.amhrt.org

National Stroke Association
96 Inverness Drive East, Suite 1
Englewood, CO 80112
800-787-6537
www.stroke.org

Genealogy
www.ancestry.com

Figure 3.1.

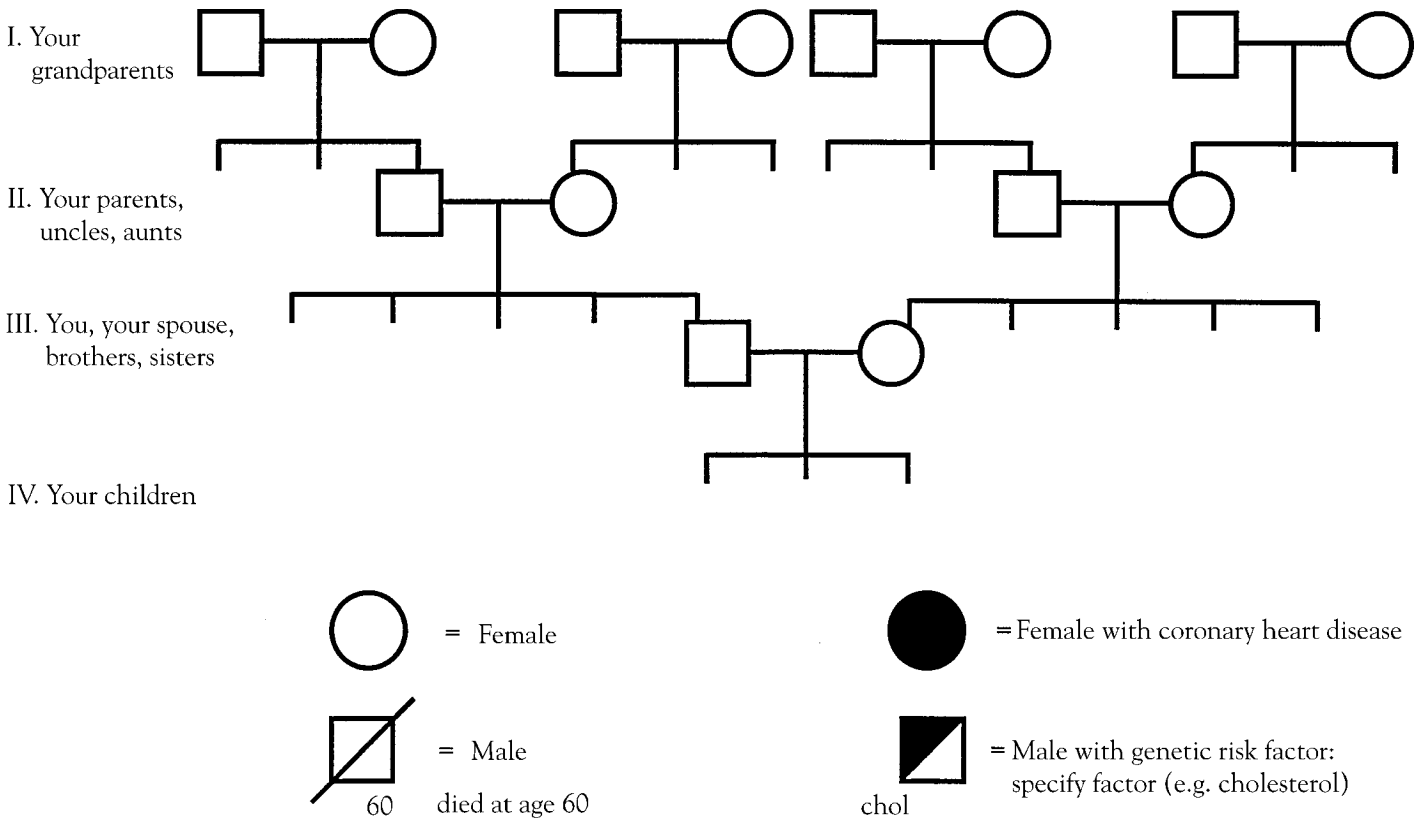

Table 3.2—Basic Measurements

Pulse rate						
Height						
Weight						
Pinch Tests						
Belly						
Upper arm						
Thigh						
Chest						
Love handles						
Aerobic Exercise						

F O U R

NUTRITION, DIET, AND WEIGHT CONTROL

Eat, drink, and be merry, for tomorrow ye diet.
—Lewis Henry

Obesity is really widespread.
—Joseph O. Kern II

Although this chapter will provide nutritional recommendations for general health, there will be an unavoidable emphasis on cardiovascular health. Seniors need a balanced diet with adequate protein and vitamins. A quart of skim milk has most of the protein you need. (Obviously, you'll get your protein from other sources as well and will not be likely to drink a whole quart of milk a day.) A multivitamin tablet that has the minimum daily requirements of essential vitamins and minerals should be taken. I prefer one without iron so I don't build too high a store of iron, but others may need iron. I also take additional vitamin E and vitamin C for possible antioxidant benefits for the immune system, cancer, aging, and perhaps cardiovascular diseases. In addition, we all need fruits, vegetables, and whole grain for fiber. Seniors who live alone have a tendency to eat poorly balanced diets and must pay close attention to proper nutrition.

If you're not obese by the pinch-an-inch test or by the desirable weight tables later in this chapter, you don't need to worry about weight reduction. If you have a cholesterol problem, you need some dietary restrictions—but oddly enough, over the past three decades of public health education reaching the marketplace, what would have been called a special diet is now routinely

adhered to by careful people who read labels and avoid foods high in cholesterol, saturated fat, and salt. If you don't read food labels, now mandated by the Food and Drug Administration (FDA), you're missing important guideposts for your nutritional health.

FOOD FACTS YOU NEED TO KNOW

These facts are important if you're simply seeking a balanced diet to maintain your present weight, are trying to lose weight slowly and safely, or are trying to establish a diet that will lower your cholesterol. Doctors too often prescribe cholesterol-lowering drugs—at four dollars a pill—rather than taking the time to work with a patient to help him or her lose weight and reduce dietary fat and cholesterol. You should know that calories do count and that you've got to know how to count them. A gram of fat contains nine calories, whereas there are only four calories in a gram of protein or a gram of carbohydrate. If you consume more calories than you burn up, you gain weight. Information on calories and protein now appears on labels by FDA mandate.

You should already have measuring cups and spoons, and you would also benefit from having a dietetic scale. You'll be asked to measure and weigh things carefully until you've learned to estimate with reasonable accuracy, although some items don't measure easily in cups or tablespoons (dry spaghetti, for instance). But without a scale you can still make fairly close estimates. Dietetic scales cost from $3.00 up. (Our scale cost $1.49 a few years ago.)

You already know that the people who process and distribute food exert enormous influence over what you eat for the purpose of their greater profit. They put unwholesome products together and, through their advertising agencies, tell you how great they are. How about examples?

You've heard that saturated fat raises your blood cholesterol and that bran may help lower it. And oat bran is supposed to be a particularly beneficial bran in lowering cholesterol. A few years ago I looked at this wonderful cereal, Cracklin' Oat Bran. Tastes just like granola. (I don't know if the cereal in its early form is on the market any more.) I examined the label on Cracklin' Oat Bran. Calories per serving: 180 (compared with 100% Bran, which has only 70 calories per serving). Ingredients included coconut oil—*which is almost entirely saturated fat*. So you feel virtuous buying something with bran to lower your cholesterol, but the food processing company puts into the product saturated fat in the form of coconut oil, which can raise cholesterol.

More examples of how food processing changes food for the worse. You probably know that only animal products contain cholesterol, and they may be high in saturated fats. So to get polyunsaturated fatty acids, you buy margarine instead of butter and vegetable shortening instead of lard. But beware. Food processors "partially hydrogenate" the fats in many margarines and vegetable shortenings to harden the oil. This means *they saturate the unsaturated fats* you bought the vegetable products to obtain and in the bargain produce undesirable trans-fatty acids, which don't even occur in nature. And eating saturated fat may raise your blood cholesterol even more than eating cholesterol itself. Read the labels. There are many soft polyunsaturated margarines. And cooking oils may be substituted for "hard shortenings." One of the sneakier things the food processing industry does is to use animal fats, beef tallow or lard, and very highly saturated vegetable fats like palm or coconut oil in grain products and baked goods. Did you know that prepared cake frostings may be made from beef tallow or lard? These twists and spins are disconcerting to those who have made a commitment to be vegetarians.

I'll put in a plug here for monounsaturated fat, such as is present in canola oil, canola-oil margarines, olive oil, and nuts. Monounsaturated fat seems even better than polyunsaturated fat in lowering total cholesterol and may help raise the "good" high-density lipoprotein (HDL) cholesterol. We only use canola and olive oils in our house.

Resist the marketplace. Don't be manipulated. *Read the labels*. Be appalled. Perhaps you'll even want to become a food activist and pressure the distributors, the processors, and your legislators. The *Surgeon General's Report on Nutrition and Health* (1988) stressed the need for food labels to reveal total fat, saturated fat, cholesterol, and sodium content. And eventually the FDA received the authority to implement the recommendations.

Follow with me in Table 4.1 the nutritional, vitamin, and mineral requirements for adults over age fifty-one.

Be sure you have enough protein in a balanced diet. The number of calories you require to maintain your weight depends on your weight. For example, a 120-pound woman would maintain a steady weight on a diet of 1,800 calories, but a woman of 165 pounds should lose a pound a week on that caloric intake (see Tables 4.2 and 4.3).

You don't want to buy a vitamin supplement that contains excessive quantities; just purchase a product with the minimum daily requirements. If your doctor agrees, you could add an additional separate dose of vitamin E (400 IU) as an antioxidant. Beware of overdosing on vitamin and

Table 4.1—Daily Dietary Allowances Adults >51 Years (modified from National Academy of Sciences)

Dietary Allowance	*Men*	*Women*
Calories	2400	1800
Protein (grams)	56	46
Vitamin A (IU)	5000	4000
Vitamin D (IU)	400	400
Vitamin E (IU)	15	15
Vitamin C (mg)	90	75
Folic acid (mcg*)	400	400
Niacin (mg)	16	12
Riboflavin (mg)	1.5	1.1
Thiamine (mg)	1.2	1.0
Vitamin B6 (mg)	2.0	2.0
Vitamin B12 (mcg)	3.0	3.0
Biotin (mg)	3.0	3.0
Pantothenic acid (mg)	10	10
Calcium (mg)	1200	1500
Phosphorus (mg)	800	800
Iodine (mcg)	110	80
Iron (mg)	10	10
Magnesium (mg)	350	300
Zinc (mg)	15	15
Copper (mg)	2.0	2.0
Manganese (mg)	4.0	4.0
Selenium (mcg)	55	55

*mcg = micrograms

mineral supplements. You may get sizable amounts of calcium in your diet if you eat dairy products like yogurt, skim milk, and low-fat cheese. A few years ago it was maintained that seniors didn't need as much calcium as teenagers (1200 milligrams [mg] daily). Wrong. Older men trying to combat the threat of osteoporosis need calcium as much as kids do. And postmenopausal women need even more: 1500 mg daily. A quart of skim milk or a pint of skim milk and two eight-ounce cartons of yogurt will give a man all the calcium he needs (plus almost all the protein he needs). But a woman needs another glass of milk. If you don't have a balanced diet rich in dairy products, you may need to take a calcium supplement. Perhaps 500 to 1,000 mg per day.

Labels will warn you about high sodium in packaged foods (which you want to avoid because it contributes to high blood pressure). But labels won't tell you about potassium (which you want to have because it may protect against high blood pressure and strokes). Many fruits and vegetables are rich in potassium, such as bananas, oranges, and beans.

Opinion is still uncertain about taking supplemental iron over and above what you get in a balanced diet. Some data indicated that excess iron increases the risk of coronary disease. Then another study failed to confirm that risk. If your hemoglobin is normal, you don't need iron in your multivitamin. If it is not normal, you'd better find out why not before taking iron.

Table 4.2—Daily Calorie Intake for Men to Lose Weight

If You Weigh (pounds)	*Maintain Weight (calories)*	*Lose 1 Pound/Wk (calories)*	*Lose 2 Pounds/Wk (calories)*
130	2300	1800	1300
135	2350	1875	1375
140	2400	1950	1450
145	2450	2025	1525
150	2500	2100	1600
155	2600	2150	1650
160	2700	2200	1700
165	2750	2250	1750
170	2800	2300	1800
175	2850	2375	1875
180	2900	2450	1950
185	3000	2525	2025
190	3100	2600	2100
195	3150	2650	2150
200	3200	2700	2200
205	3250	2750	2250
210	3300	2800	2300
215	3350	2875	2375
220	3400	2950	2450
225	3450	3025	2525
230	3500	3100	2600
240	3600	3200	2700

Source: James J. Nora, *The Whole Heart Book* (New York: Holt, Rinehart, and Winston, 1980).

HERBS AND OTHER SUPPLEMENTS USED IN COMPLEMENTARY/ALTERNATIVE MEDICINE

Consumers are apparently spending out-of-pocket the same amount of money ($27 billion per year) for complementary medicine as they spend out-of-pocket for physicians' services. At this time I have seen no need for our family to use nutritional supplements or herbal products other than those mention__ in the preceding section; but when I received my monthly newsletter from the American College of Cardiology, which had a feature article on the subject, I considered trying some of the highly advertised herbal supplements so I would have the personal experience

Table 4.3 Daily Calorie Intake for Women to Lose Weight

If You Weigh (pounds)	*Maintain Weight (calories)*	*Lose 1 Pound/Wk (calories)*	*Lose 2 Pounds/Wk (calories)*
110	1700	1200	700
115	1750	1250	750
120	1800	1300	800
125	1850	1350	850
130	1900	1400	900
135	1950	1475	975
140	2000	1550	1050
145	2050	1600	1100
150	2100	1650	1150
155	2200	1700	1200
160	2300	1750	1250
165	2350	1825	1325
170	2400	1900	1400
175	2450	1950	1450
180	2500	2000	1500
185	2550	2050	1550
190	2600	2100	1600
195	2650	2150	1650
200	2700	2200	1700
205	2750	2250	1750
210	2800	2300	1800
220	2900	2450	1950

Source: James J. Nora, *The Whole Heart Book* (New York: Holt, Rinehart, and Winston, 1980).

to write more knowledgeably about them. So far I haven't followed through—*except to note that ephedra may be very dangerous*—but I can tell you a few things from my reading.

A critical concern of environmentalists is the destruction of rain forests and the potential permanent loss of the herbs and other plants that could be tomorrow's wonder drugs. Most doctors, probably including yours, don't know much about herbals. Although they realize that many major drugs including digitalis for heart failure and vincristine for cancer have herbal origins, they won't have a clue about St. John's wort and gingko. Interestingly, St. John's wort and many other herbals are used extensively in Europe, where the products have been carefully standard-

ized for years. If you ever consider herbal remedies, you might wish to purchase those of European origin. Our old friend the *Physicians' Desk Reference* (*PDR*) tells about these and many other agents. In fact, the company that publishes the *PDR* now has a volume devoted exclusively to herbal medicines, *PDR for Herbal Medicines*.

The role of nutritional supplements in the health of seniors is complex. And the role of herbs in therapy is even more so. An entire book rather than two paragraphs could be written on the subject, as the *PDR* has concluded by publishing its own. At the beginning of the chapter I gave the nutritional program I follow. If you want more information on nutrition and herbals, you may ask your physician if he or she has an interest in the subject and would be willing to advise you. But I'm afraid a lot of the research will have to be done by you. Herbal medicines and nutritional supplements are not without risk, especially with respect to drug interactions and anesthesia. *Be careful.* A new resource at the National Institutes of Health is the National Center for Complementary and Alternative Medicine. It has a toll-free line, 888-644-6226, and a Web site: www.altmed.od.nih.gov/nccam.

LOSING WEIGHT

If you don't need to lose weight, and most people in their eighties probably don't, skip ahead to the next section, the prudent diet. This narrative is going to be fairly long and detailed.

In 1994 Dr. Koop followed up his 1988 *Surgeon General's Report on Nutrition and Health* by launching Shape up America, a crusade against obesity and in favor of physical fitness. He is frequently seen on TV and in his eighties appears to be a model of fitness—as well as an articulate spokesman. The current emphasis on obesity and fitness reflects the failure of public health programs (which have been working reasonably well in the areas of smoking, cholesterol, and high blood pressure) to combat these two risk factors.

Unhealthy weight is blamed for 300,000 deaths each year in America, and rather than showing a slight improvement or even no improvement, obesity is getting worse. Two decades ago, 25 percent of Americans were overweight; now it's 34 percent—32 million women and 26 million men. The risk of coronary disease, type II diabetes, high blood pressure, gall bladder disease, osteoarthritis, gout, breast cancer, and colon cancer appears to increase in overweight individuals. Whether in studies of mice or humans, the thin outlive the fat. And as cardiologist Paul Dudley White was fond of saying, "a lean horse for a long race."

Achieving normal weight is not only important for cardiovascular and general health and well-being and the prevention of certain forms of cancer, it is essential in the management of diabetes. For example, almost 90 percent of older adults who come down with type II diabetes are obese. This will be discussed in Chapter 7.

There are countless fad diets of string beans and raw cabbage leaves or liquid shakes that almost always fail when you go back to normal food. Then there are diets that have you continue to eat your usual food in smaller quantities. A distinguished nutritionist has stated that a weight reduction program can be summarized in nine words: "Eat half as much and exercise twice as much." That keeps you eating your usual food, but I think most of us require more structure. And I think seniors might risk a little protein deficiency on a "half-as-much" diet. I prefer two programs that are more difficult. As President Kennedy said when announcing the American program to go to the moon, "We don't do this because it's easy. We do this because it's hard." If it's any consolation to nondiabetics, patients with diabetes have to follow strict diets all their lives. That's even harder. But the concepts of portion control, exchanges, and substitutions (used by Weight Watchers as points) are applicable to any diet. The magic words are *portion control*. An excellent way to achieve control of portions as well as calories and fats is by using frozen dinners put out by Healthy Choice, Weight Watchers, Lean Cuisine, and other diet food distributors.

The two weight loss programs in this book are hard, but the first is more the approach of a kindly teacher. Both programs require a strong commitment, but the second program is more drill sergeant oriented. *Both programs require at least twenty minutes of exercise every day* (see Chapter 5). Diet without exercise is bad for your health.

Kindly Teacher Program

Commitment. We've already devoted considerable space to commitment. You make your decision and make it an important part of your frame of orientation. You get all the help you can. You get a helper (the whole family can be the "helper"). Make a big deal of it, broadcast your intentions. And divide and conquer a day at a time, a meal at a time.

Post your weight loss graph in a conspicuous place (see sample in Figure 4.1). Draw your line for a loss of one or two pounds per week. No more. Then every week at the same time, plot your weight on the graph. Your weight may bounce around a little, but the course should be constantly downward. And your achievement should be clearly visible to

yourself and the rest of the family because the graph should be prominently displayed (say, on the refrigerator door). Seeing the line go down will be encouraging. That's a reward in the scheme of behavior modification. Seeing the line plateau should spur you to more intense efforts.

Then at the end of your diet, when your goal is achieved, make another big deal of it. You reward yourself emotionally, and your helpers should provide a big serving of psychological reward. Many strokes and great praise.

And finally, indulge in some very consequential material reward. This does not mean splurging on a diet-busting indiscretion (we so often celebrate with food and drink) but perhaps buying new clothes for your new shape. Plan and save for it all during your diet. Keep that reward and goal in front of you every day. And if possible financially, the reward should include a little vacation. Your dieting may have actually produced enough of a saving from your usual food budget to pay for part of the vacation.

Your dietary allowance. Table 4.4 provides a basic dietary plan that offers balanced nutrition for any healthy person. And it does it in only about 1,200 calories while providing even more protein than needed. *Balanced nutrition in only 1,200 calories a day.* Its only deficiency is in calories and calcium for seniors (but you take calcium and a vitamin supplement). Anything you add to this basic diet will provide more food energy (calories) or, if excessive, will deposit fat. Initially, the diet won't fill you up if you're an adult used to 3,000 calories a day, and it would produce too rapid a weight loss for someone with that maintenance requirement. But after only a few days of burning fat, your appetite will be suppressed by the breakdown products of your own fat. Until this natural suppression occurs, fill up with water, tea without sugar, and carbonated no-cal beverages. Most weight loss diets permit more calories. The first food groups to add calories from are low-calorie vegetables, fruits, and skim milk. If your diet calls for 1,800 calories, you can eat twice as much of the fruits, vegetables, and even some fats. However, when you begin your diet, supplement mainly with appetite-suppressing proteins as allowed in Table 4.4—particularly skim milk and yogurt—but no added carbohydrates.

That's it. Commitment, balance, and portion control. From Tables 4.2 and 4.3 select the number of calories needed to lose one pound per week (best for seniors) but no more than two pounds. Why? Because crash diets fail. Copy Table 4.4, and stick it on your refrigerator. My hope is that anyone trying to lose weight can do so on the kindly teacher program.

Weight Loss Chart

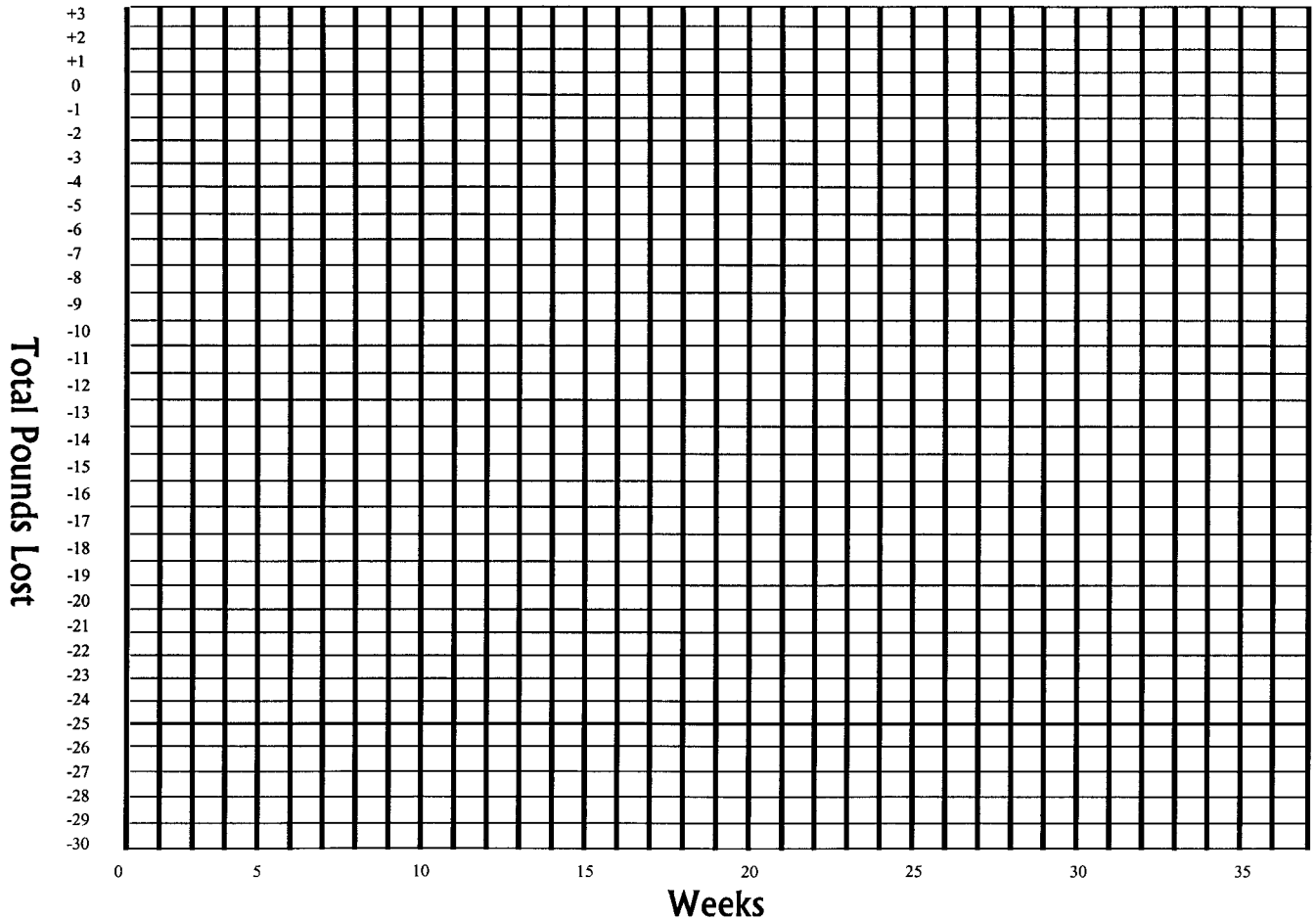

Table 4.4—Basic Balanced Daily Food Plan (1200 Calories)

Protein—Meats and meat substitutes (an adult requires 50 grams of protein daily)
Calories 400; protein 50 grams. Two servings of three ounces skinned poultry, fish, or trimmed lean meat (cooked weight) provide about 50 grams of protein and 400 calories. You may substitute two eight-ounce servings of skim milk, two eight-ounce servings of nonfat sugar-free yogurt, or two half-cup servings of low-fat cottage cheese for each serving of meat.
Dairy products
Calories 160; protein 16 grams. Two eight-ounce servings of skim milk (two servings of nonfat sugar-free yogurt will give you the same protein but 40 more calories).
Breads and cereals
Calories 200 to 300; protein varies. Three to four servings from this group. Breads are 60 to 75 calories per slice. Cold cereals are 70 to 110 calories per one-ounce serving (about a cup), hot cereals 150 calories per cup. All without added fat or milk.
Fruits and vegetables
Calories 200 to 300; protein varies. Four servings (cups): one green or yellow vegetable (for vitamin A), one citrus fruit or juice (for vitamin C). A serving of many vegetables is 20 to 50 calories, but a serving of beans, peas (both high in protein), corn, or potatoes is nearer 100 calories without added fat.
Fats and oils
Calories 200; no protein. Five teaspoons of liquid canola oil in cooking or salad dressing or canola margarine in some combination provides adequate nutritional balance.

Drill Sergeant Program

I hope this doesn't happen, but let's say you gave the kindly teacher approach a month-long trial and you didn't lose even a pound a week. All right. No more Mr. Nice Guy. You think following the previous program was hard? I'm now going to provide enough detail to gag a hippopotamus. If you follow this program faithfully and don't lose weight, it's no one's fault but yours. Here are the elements:

- Making a strong commitment
- Knowing your present dietary habits and dietary intake
- Acquiring skills to change your dietary habits and content to produce weight loss
- Maintaining desirable weight through your newly acquired skills and habits

Making a Commitment. We've already discussed that.

Knowing your present dietary habits. For three days before you start your diet, keep a food diary in a pocket notebook or on three-by-five cards. Everything of food value that you put in your mouth should be recorded, including a careful measure of the quantity. A glass of skim milk? How many ounces? An eight-ounce glass or a sixteen-ounce glass? Measure it. Every ounce of skim milk has a gram of protein and ten calories. Whatever food you eat, if the calorie count is immediately available on the package, record it on the spot. Or look it up in your cookbook. Then the first night, at bedtime, add it all up. Using package information, record calories and protein.

It sounds like a lot to do, but it's only for three days. So think of all the calories you're burning just doing this work. And you're learning a whole new subject while you're doing it. You're learning about the nutritional content of the foods you've been consuming all your life. And you're learning what you eat and how much. Now, if you happen to eat unusual foods or mixtures of food, you may have to break them down into their basic constituents.

So your three-day food diary may have some informational holes in it and may require some estimates based on the components of food mixtures. But what about when you're actually dieting? Then I recommend that you not eat anything if you can't find its caloric and fat content on the package or can't estimate calories from various sources, including information in this book, various cookbooks, and especially *The American Heart Association Cookbook,* which I'll discuss later. As I've emphasized, the nutritional content of packaged foods is on the label.

Acquiring the skills. Because the first week is the hardest, you should divide it into days and subdivide it into meals. And then you'll need to rededicate yourself at the beginning of every week until your new habits are firmly established.

Your first decision in plotting your diet concerns is how much you want to lose. Tables 4.2 and 4.3 give an appropriate schedule of daily caloric intake to lose 1 or 2 pounds per week, based on your starting weight. In general, you can lose a pound a week by eating 500 fewer calories each day than you need to maintain your weight, and you can lose 2 pounds a week by consuming 1,000 fewer calories daily. (Conversely, if you eat 500 calories more than you need each day, or 3,500 more per week, you'll gain a pound a week.)

Let's start with a 192-pound man who needs to get down to 160. Does he want to achieve his goal in thirty-two weeks or sixteen weeks? A lot depends on his personality. Let's say our man wants to lose 2 pounds

a week (although I'd advise only a pound a week for fellow seniors). From Table 4.2 we see that he needs to cut down to 2,100 calories per day. Does this represent cruel and unusual punishment? Look at Table 4.3 for women. A woman of 120 pounds requires only 1,800 calories a day to keep her weight at 120 pounds. So our dieting, 192-pound, slightly chubby man still gets to eat considerably more than a 120-pound woman who isn't even dieting.

(Another way to look at Tables 4.2 and 4.3 is that for men and women of the same weight, the woman requires around 15 to 20 percent fewer calories to maintain her weight. Although it seems the generous thing to do when a couple scoops out equal portions of food for each other, it's not a kindness to the wife to keep giving her excess calories she shouldn't have and doesn't need.)

Six weeks later our man, who has been completely faithful to his 2,100-calorie diet, hasn't quite lost 12 pounds. Perhaps 10 pounds. Why? Because he now weighs about 180 pounds, and he needs fewer calories to maintain his weight. He needs to reduce his calories to 1,950 per day to continue losing 2 pounds per week. Check Table 4.2.

Please don't get hung up on the exact numbers. We all have different metabolisms, and different people of the same weight may lose a little faster or a little slower on the same caloric intake. These are approximations, and you'll have to play around with your own caloric requirements and make slight adjustments to fit your needs. My preference for seniors over seventy is to limit weight loss to only 1 pound a week. *And all weight loss diets should be cleared with your doctor.*

Five weeks later our man is a more svelte 170-pounder because he's been reducing his calories to the requirements of his declining weight. He's now taking 1,800 calories a day, and his appetite center has become accustomed to that intake. At this point our man may make a decision. He might want to go all the way down to his target weight in the next five weeks, or he might want to wean himself back toward a maintenance caloric intake by increasing calories to 2,300 daily with the goal of losing only 1 pound per week until 160 pounds is reached.

If our man had stayed at 2,100 calories per day, the velocity of his weight loss would have been decreasing, and he would now be at about 175 pounds. This weight loss strategy is satisfactory as long as you appreciate what's happening. Some dieters experience a good initial weight loss and then find that each subsequent pound becomes harder and harder to lose. They get discouraged because they don't understand that as they lose weight, they have to consume fewer calories to maintain their new weight.

The next point is the one I talked about in previous sections: changing habits. If you focus only on the content of your diet—as many diet books do—you're doomed to failure. The two components of dieting, habit and content, must receive equal attention.

When you start the diet, you've made your commitment. You've got your pocket notebook and food labels and *The American Heart Association Cookbook* and other cookbooks that give you calorie and fat content of foods. (You can also buy a pocket calorie counter.) You've kept your three-day food diary, so you know what you've been consuming in calories and other constituents. D-Day (D for diet) is here. A Sunday or Monday is a good day to start, but any day of the week is suitable.

For the duration of your diet, you should record in your pocket notebook (or cards) a running tally of foods. Before you put a bite into your mouth, record what you plan to eat. Know the exact quantity and content, and take no more than the amount specified. *Record all calories and protein you consume.*

An orange or four ounces of orange juice provides 50 calories, one gram of protein, and valuable potassium. A banana adds more potassium. Breakfast cereals tell you on the box what a serving (one cup) contains (usually 70 to 110 calories for unsugared cereals and three to four grams of protein). A cup of oatmeal is 150 calories and about five grams of protein. Let's select a cup of Cheerios—110 calories and four grams of protein. A cup of skim milk (eight ounces) provides 80 calories and eight grams of protein. If you wish, you may subtract an ounce from your skim milk to put in your coffee (with artificial sweetener if you like). Same number of calories. Add it up:

	Calories	*Protein (g)*
orange juice	50	1.0
medium banana	100	1.3
Cheerios	110	4.0
skim milk	80	8.0
coffee or tea	0	0.0
totals	340	14.3

That turns out to be a substantial and nutritious breakfast. You have two fruits and one whole grain toward your balanced diet. Note that you'll not be asked to record the amount of fat or cholesterol in the food you eat while you're trying to lose weight. Your weight reduction diet will already be low in fat and cholesterol according to the guidelines of

what is called the Prudent Diet and the recommendations of the U.S. Senate Select Committee on Dietary Goals for the United States.

I'll discuss the Prudent Diet in the next section. If it turns out that you need to be on a maintenance diet even more restrictive than the Prudent Diet, you will have to record fat and cholesterol intake. But not at this stage. Not while you're just trying to lose weight. That chore alone requires your full attention.

As I keep telling you, we're not doing this because it's easy. We're doing it because it's hard. And because it can succeed.

You've been provided with an approach to behavior modification, so next we'll catalog some of the knowledge, skills, and problems associated with dietary programs.

1. Recording what you eat in advance makes you aware of your eating habits and also keeps you within the caloric restrictions of your diet. The pen and notebook must be at hand at all times. You see a goodie? Reach for your pen before you reach for the food. You don't know the caloric content of the goodie? Then don't eat it. It's that simple. You can't carry a book on the composition of foods with you everywhere you go. So if you don't know what's in it, forget it—or be sure you can make a close estimate. Your running tally of calories lets you know when you're reaching your daily allotment. And the protein tally and exercise make certain that you don't experience a muscle-wasting problem. If you reach the end of the day with calories to spare but not enough protein, make up for it with skim milk, nonfat (plain or artificially sweetened) yogurt, or uncreamed low-fat cottage cheese.
2. How you eat turns out to be important. Apparently, it takes about twenty minutes for the message that you've eaten something to get from your stomach to the appetite center in your brain. So a smaller amount of food eaten slowly, taking twenty minutes to consume, will turn down your appetite almost as effectively as eating two or three times as many calories in half the time. Remember, take at least twenty minutes before you decide that what you're eating hasn't filled you up. Other gimmicks include sipping a full glass of water before starting on the food, putting the silverware (or sandwich or whatever) down after each bite,

chewing each bite fifteen times, and swallowing before raising food to your mouth again. Overweight people tend to devour their food rapidly. Slim people tend to pick at their food.

3. Don't allow yourself to get too hungry by skipping meals or having too small a lunch. You've got X number of calories, and you can divide them any way you want to keep your appetite and nutritional needs satisfied. Many diet programs call for six small meals a day. Skinny people tend to nibble a lot and not eat much at a single sitting. My approach to dieting for myself and my patients has been to advocate three small meals and three very low-cal snacks, including one at bedtime. If you still work, I suggest taking low-cal snacks with you so that when the hunger pangs start you don't follow the path of least resistance to the candy machine or doughnut tray. Skim milk, nonfat yogurt (plain or with artificial sweetener), and carrot sticks cool the hunger, provide good nutrition, and don't cost many calories.
4. Be a smart shopper. You'll eat what's available. So if you have lots of junk food around, you'll eat it. When you or your spouse shops, don't buy convenience junk foods, the high-sugar, high-salt, high-fat, high-cholesterol stuff. Buy fresh fruits and vegetables, whole grains, lean meats, fish, and poultry. If what you buy comes in a package ready to mix or cook directly, beware. Prepared and processed foods have all sorts of additives, caloric and otherwise. But nutritional values are now printed on the package or can. There is also a list of contents according to the relative quantities of the ingredients. Whatever is listed first is the main ingredient. So a breakfast cereal that starts off with sugar (or sucrose) has more sugar than anything else.

   If the high-caloric stuff isn't in your refrigerator or cupboard, you won't be able to eat it. Your automatic reflex when you enter the kitchen may be to open the refrigerator. But instead of a pie or cold cuts or cheese, have oranges, carrots, unsweetened iced tea, diet pop, club soda, skim milk, low-fat cottage cheese, and "light" yogurt available. In the cupboard replace the cookies, potato chips, and snack crackers with unsugared cereals. And you might try some

dry-roasted, unsalted soybeans (in moderation). If these specific food items don't appeal to you, find things that do—as long as what you select is nutritious, low calorie, and not high in calories, salt, fat, or cholesterol.

5. Keep foods out of sight. First, make it a rule that foods be kept only in the kitchen and that eating take place only in the kitchen or dining room while sitting down and doing nothing else. No parking in front of the TV set with a bowl of empty calories. Your full attention must be devoted to eating and nothing else. Through meditation and the practice of being fully concentrated on what you're doing, you'll become aware of when you're eating. It's amazing how many calories can be consumed while you're ostensibly doing something else. So the rule is, when you eat you do nothing else. Then what about parties, including those infamous cocktail parties, designed for doing two or more things at once? Hang on to a glass of club soda or an ounce of wine. Drink it slowly, nurse it, but that should be your only dietary crutch during conversation. Eat your allotment of low-calorie food before going to the party, position yourself as far from the hors d'oeuvres as possible, and don't touch the food. Cling to that glass of club soda or wine as a drowning man clings to a life preserver.

   A lot of the social life of seniors involves eating—entertaining friends or being entertained by friends or dining out with friends. When you're on a weight loss diet, this is torture. Even after you've lost the weight you set out to lose, it's hard to be disciplined to stay on a maintenance diet. I warned you this was going to be hard.

   Back to keeping foods out of sight. Even after you've consigned food storage to the kitchen alone, you have to keep foods out of sight within the kitchen. But since man does not live by carrots and club soda alone, you'll still have to store the more tempting foods in the refrigerator and cupboards. Store them in the back. Keep them covered. Make it difficult to reach those foods. And keep the low-cal items at the front where they are the most accessible.

6. While you're trying to lose weight, family-style eating has to go. The exact portions you're entitled to should be carefully

measured, put on the plate, and eaten. No serving bowls visible. No opportunity for seconds. Once again, that's called portion control.

7. Much overeating is a response to tension and anxiety. Some of us unconsciously reach for food when we are tense. But the circle is broken by having to pull out a pen and notebook. At least you have been made conscious of your behavior. If you can afford a few calories, take them—carrots, skim milk. What if, after having pulled out your pen, you're still hungry and you can't afford any more calories? Then take a glass of no-calorie beverage and get away from the food. Curiously, some people confuse the sensation of hunger with that of thirst. They eat something when a glass of water or tea or diet pop is really what they want. Still hungry? Try two minutes of meditation. A few warm-up exercises. Go for a walk, and reward yourself mentally for successfully resisting the temptation by conjuring up a happy scene (a beach, a mountain stream) or a happy memory. Better yet, visualize yourself at the end of your successful diet, slim and healthy. Keep that picture of the new slim you always in mind. Associate your resistance with happy thought-rewards. But if those thoughts occasionally fail you, leave the thought-carrot and go for a thought-stick. Visualize yourself in the morgue—the victim of a sudden heart attack. Make it gory. See the family identifying your fat remains. I don't advocate the thought-stick as often as the thought-carrot. But sometimes it's what is needed.
8. Restaurants represent a major problem for those trying to lose weight and for those trying to watch cholesterol. If you're traveling away from home, eat early (to avoid getting too hungry) and select a restaurant where you can get something light. Order broiled fish, vegetables, and a salad without the usual high-calorie salad dressing. Ask them to allow you to add the teaspoon of margarine or sour cream to your baked potato. Have fruit for dessert. If you can't eat early, have a low-calorie snack before you go to the restaurant, and be sure the basket of rolls is kept on the other side of the table. If you're dining out with friends or relatives as an important part of senior socialization, let them know

you're dieting, but don't be aggressive about it. (Some dieters get positively hostile.) When going to dinner at a restaurant or at a friend's house, don't arrive hungry. A low-calorie snack before leaving will be helpful.

For those who prepare meals and clean up afterward, there are special problems that are best handled by having helpers during these periods. It's entirely reasonable that the tasks of cooking and cleaning be shared. You don't have to announce that you want someone to keep you from snacking, but it should be mutually understood that only a designated caloric snack is permitted during meal preparation. A glass of tomato juice or skim milk can be nursed throughout this period or taken before the cooking begins. No-calorie beverages can be the focus of follow-up oral gratification. A cup of tea, a club soda with plenty of ice cubes. Keep your mouth and hands busy with these items and away from sampling what you're cooking.

The cleanup may require even more control. If you have a real problem in this area, don't save leftovers until you gain control. Dump the table scraps immediately into the food that hasn't been served, and dump everything promptly into the garbage.

9. Putting it together. Your plan is to space your allotted calories over six feedings: three meals and three snacks. Designate the times for all six feedings in advance. Don't miss a meal, and don't be late with a meal if at all possible. Don't miss the mid-morning or mid-afternoon snack, either. Set the times for them, and try to stay on schedule—say, 10:00 A.M. and 3:00 P.M. Always, unless you have serious gastroesophageal reflux disease (GERD), take a bedtime snack so you don't wake up hungry in the middle of the night. If you have GERD, chew a couple of Tums instead of having a snack, and see your doctor for an appropriate prescription.

Reread the section "Losing Weight" a couple of times, including the morning you start your diet. Read it at bedtime and every night for the first week. Be sure your weight loss graph is prominently posted. Be sure your clothing and vacation rewards are planned. Talk about them often—especially at supper time.

As you resist your old dietary habits and replace them with new ones, as you turn down the high-cal goodie, reward yourself in your mind. Keep seeing yourself at the end of your diet, slim and healthy, strolling along a beach.

When you have lost the amount of weight you proposed to lose, do your pinch-an-inch test. While you've been dieting, you've also been exercising according to recommendations in Chapter 5. You should have good tone, good muscle mass, and no excess fat. If you don't pass the pinch-an-inch test, reevaluate your exercise program and work at it more faithfully. And while doing that, continue to lose until you can't find a pinch of excess fat.

When that goal is achieved, reward yourself with new clothes. If you can't take the little vacation at that time, give yourself a rain check and keep looking forward to it. If you have been planning a vacation anyway, make taking the vacation contingent on reaching your weight loss goal. Let the whole family get on your back for holding up vacation plans.

Maintaining desirable weight. Carefully begin what will be your maintenance diet. I've supplied Tables 4.5 and 4.6 for the sake of completeness. But how do you decide what your frame size is? If you've got broad shoulders and thick wrists, you probably have a large frame. One way to estimate, however crudely, is to wrap the index finger and thumb of one hand around the narrowest part of the other wrist. If they don't meet, you have a large frame. If they do meet but don't overlap, you have a medium frame. And if they overlap, you have a small frame. Recently, some controversial standards were published that set desirable weights too low in the opinion of many observers. The desirable weights recorded in Tables 4.5 and 4.6 are more realistic to me. Some people use a calculation for body mass index (BMI) that doesn't take into account frame size or gender and seems less valid as far as I'm concerned, but I'll give you the formula anyway to punch out on your calculator:

1. Multiply your weight in pounds by 703.
2. Multiply your height in inches by itself.
3. Divide number 1 by number 2.

   Example: You weigh 170 pounds and are 5'10" tall.
   Weight: 170 × 703 = 119,510
   Height: 70 × 70 = 4900
   119,510 ÷ 4900 = 24.39

Table 4.5—Desirable Weights for Men Age 25 and Over (weight in pounds according to frame)

Height (in bare feet)	*Small Frame (pounds)*	*Medium Frame (pounds)*	*Large Frame (pounds)*
5'1"	112–120	118–129	126–141
5'2"	115–123	121–133	129–144
5'3"	118–126	124–136	132–148
5'4"	121–129	127–139	135–152
5'5"	124–133	130–143	138–156
5'6"	128–137	134–147	142–161
5'7"	132–141	138–152	147–166
5'8"	136–145	142–156	151–170
5'9"	140–150	146–160	155–174
5'10"	144–154	150–165	159–179
5'11"	148–158	154–170	164–184
6'0"	152–162	158–175	168–189
6'1"	156–167	162–180	173–194
6'2"	160–171	167–185	178–199
6'3"	164–175	172–190	183–204
6'4"	168–179	177–195	188–209
6'5"	172–183	182–200	193–214
6'6"	176–187	187–205	198–219

Source: James J. Nora, *The Whole Heart Book* (New York: Holt, Rinehart, and Winston, 1980).

What does the number you get mean? The calculation above means you're just within the upper limits of the range of healthy weight.

BMI under 19 means underweight.
BMI 19 to 25 means healthy weight.
BMI 26 to 30 means overweight.
BMI 31 to 39 means very overweight.
BMI over 40 means extremely overweight.

But be guided by your own pinch-an-inch test and by where fat is deposited. Men and women must avoid the beer-belly deposit.

If you can get your spouse and family reoriented to a Prudent Diet that becomes incorporated into the family lifestyle, you've leaped the major hurdle. If you can't get your spouse to cooperate, it may not necessarily mean he or she is deliberately out to do you harm, but it does indicate a need for serious negotiation.

Table 4.6—Desirable Weights for Women Age 25 and Over (weight in pounds according to frame)

Height (in bare feet)	*Small Frame (pounds)*	*Medium Frame (pounds)*	*Large Frame (pounds)*
4'8"	92–98	96–107	104–119
4'9"	94–101	98–110	106–122
4'10"	96–104	101–113	109–125
4'11"	99–107	104–116	112–128
5'0"	102–110	107–119	115–131
5'1"	105–113	110–122	118–134
5'2"	108–116	113–126	121–138
5'3"	111–119	116–130	125–142
5'4"	114–123	120–135	129–146
5'5"	118–127	124–139	133–150
5'6"	122–132	128–143	137–154
5'7"	126–135	132–147	141–158
5'8"	130–140	136–151	145–163
5'9"	134–144	140–155	149–168
5'10"	138–148	144–159	153–173
5'11"	142–152	148–152	157–178
6'	144–156	152–167	161–183
6'1"	148–160	156–171	165–188
6'2"	152–164	160–175	169–193

Source: James J. Nora, *The Whole Heart Book* (New York: Holt, Rinehart, and Winston, 1980).

A problem for those trying to develop a healthy lifestyle may be where in the country you live. In parts of the South and in rural areas, skim milk and low-cholesterol, low–saturated-fat items may not be as available as in some health-conscious locales. (And aerobic exercise may still not be a popular concept in a few places.)

Parties and eating out have been discussed and may continue to be traps whether you've graduated to a maintenance diet or are still following a weight loss regimen.

There's good news and bad news regarding alcohol in a study from January 2003, reported in Physicians On Line. Daily moderate drinking of wine, beer, or even hard liquor appears to be associated with increased life expectancy compared with total abstinence, possibly because for some people it increases the "good" HDL cholesterol. (For some others it does

not.) Heavy drinking, of course, is associated with a greatly decreased life expectancy. I would say a glass of wine or beer with the evening meal is not a bad idea for those who don't find alcohol objectionable and don't have a familial problem with alcoholism. The benefit of red over white wine or some other form of alcohol is debatable. If you have reached middle age and have not been a moderate drinker before, there is probably little benefit in starting to consume a glass of wine at the evening meal.

Now let's take an example of a maintenance diet. Our 160-pound man (former 192-pound chub) will feel almost stuffed on 2,700 calories. He may be a high-risk patient who will always need to be very strict about cholesterol, fats, and salt. He may be lower risk and just need to be on the Prudent Diet described in the next section. Whatever his next step is, he must always be aware of what he consumes. For the rest of his life, he must think of himself as a recovering foodaholic.

For the first three days on the new 2,700-calorie maintenance diet, our now slim 160-pounder should record his dietary intake faithfully, just as he did before starting his diet. He should become familiar with the calories, cholesterol, fat (saturated and unsaturated), protein, and sodium in his new diet. He should weigh himself at least weekly and do a one-day food diary and reread this chapter the first of every month for the next three months.

If there is any weight gain, he should immediately switch to his pound-a-week weight loss diet (2,200 calories for a man of 160 pounds). After several months to a year or two, the new behavior is established. It may have to be defended occasionally or frequently. You may have to read this material, do a one-day food diary, and switch to your pound-a-week diet a couple of times a year. But you have what I consider an optimal number of tools.

Many people will do just fine without following most of the many recommendations I've given here. That's fine. You've been given the tools to use as you see fit. There are also diet dropouts, but you're not going to be one of them because your diet and health have become incorporated into your lifestyle, your frame of orientation.

Look at that slim, healthy, attractive person strolling along the beach. That's you!

THE PRUDENT DIET

Table 4.7 gives you an idea of what to expect and will help you work more knowledgeably with your doctor. In fact, it's the material I've given

Table 4.7—The Prudent Diet

1. Avoid becoming overweight.
2. Increase consumption of fruits, vegetables, and whole grains to 48 percent of calories.
3. Decrease refined sugar to 10 percent of calories.
4. Decrease fat to 30 percent of calories.
5. Reduce saturated fat to 10 percent of total in number 4; substitute monounsaturated and polyunsaturated fat for remaining 20 percent.
6. Reduce cholesterol to 300 milligrams per day.
7. Decrease salt to 5 grams per day.

to my own patients. I want you to be a well-informed medical consumer. But I don't want you thrashing around destroying what could be a mutually rewarding patient-doctor relationship any more than I would want you to be subjected to an ill-informed, ineffectual program for managing your high risk, if you are in that category.

This section will tell you in nontechnical terms how to change your non–weight loss diet to the Prudent Diet recommended for all Americans by the U.S. Senate Select Committee on Dietary Goals for the United States. These are general guidelines that don't require nearly as much dietary knowledge as you've obtained from the previous sections. In fact, the entire program for change consists of just the seven points listed in Table 4.7.

For Those at Lower Risk

If your family history does not reveal a first-degree or second-degree relative who had a heart attack or stroke before fifty-five years of age, this low-risk diet proposed in the Dietary Goals for the United States is appropriate for you. If you have relatives who had heart attacks or strokes between ages fifty-five and seventy, you'll want to follow this diet strictly. However, there is considerable room for discretion. If there is no heart disease or stroke in your family before relatives reach their seventies and eighties and if you have normal levels of total cholesterol, HDL cholesterol, and triglycerides, I find it difficult to recommend that you must adhere strictly to the Prudent Diet. If I personally did not have high risk, I would be much more liberal in my diet than the committee recommends. My weaknesses would be desserts, cheeses, and omelets. However, I would also keep my weight very close to the desirable weight for my height and frame.

The amplification of Table 4.7 that follows combines and slightly modifies (with the Step-One Diet) elements of the original and revised U.S. Dietary Goals into a list of general recommendations for those at lower risk. We'll go through the Prudent Diet point by point.

1. Overweight. The problem of being overweight has been discussed in previous sections, along with methods for losing weight to reach your desirable weight and to maintain that level.

2. Increase consumption of fruits, vegetables, and whole grains. The time frame 1909–1913 has been taken as the baseline for determining what happened to the American diet during the twentieth century. From 1909 to 1913, starches accounted for 68 percent of the carbohydrates in the American diet, and sugars constituted only 32 percent. In 1976 starches were down to 47 percent, and sugars were up to 53 percent of carbohydrates in the diet. The Senate Select Committee on Dietary Goals' recommendation is that fruits, vegetables, and whole grains be restored to the American diet to the level of accounting for almost half of caloric intake.

When you keep your food diary and calculate your calories, see what percentage comes from these sources. The average is only 28 percent, and you're probably somewhere near the average. That means you're going to have to figure out ways to almost double the amount of fruits, vegetables, and whole grains in your diet and significantly reduce your caloric intake from the sources identified in the next paragraphs. Somehow the idea has been established in our culture that bread and other grain foods are in themselves high in calories and poor in protein. To be sure, grains are not as high in protein as meats; you have to eat a lot of excess carbohydrate to satisfy your daily protein requirement. And if you make cakes and cookies from grains rather than making breads, you end up with many empty calories. But in parts of the world, grain provides 80 to 90 percent of protein needs. And if I was not deceived by my high school history teacher, the Roman Legions that conquered the world lived mainly on bread. If you are trying to lose weight, you cannot do it while relying almost entirely on grains and other starches for your protein unless you exercise vigorously (as the Roman Legions must have done on long marches and in pitched battles). But if you are at a maintenance weight, you can be more liberal with starches.

3. Decrease refined sugar. Here's a real trap. You don't buy nearly as much sugar as your parents did. In the period 1909–1913 consumers purchased 52 pounds of refined sugar per person per year. In 1971 the

amount purchased was less than half that amount—down to 24.7 pounds. But we are consuming much more sugar than we used to, not less. So where do we get it? In processed foods and beverages. There's nothing like a little sugar to cover up a taste deficiency in processed food. The processors doctor up our food with sugar until our palates become "hooked" on it, until foods not sugared begin to taste unusual. Let me repeat what I say elsewhere: these corporate decisions are made for profit, not for the benefit of your health and well-being.

In 1971 we took in 70.2 pounds of sugar per person in processed foods, compared with 10.3 pounds in 1909–1913. In fact, Americans now consume 23 pounds of sugar per person per year *in vegetables alone*. You've got to be an aware label reader because the food industry sticks refined sugar into almost anything it can think of, from so-called whole grain cereals (some of which actually contain more calories from sugar than from grain) to peanut butter. So it's not just candy bars and cakes that you will have to watch; it's a wide, wide variety of food products. Please read those labels.

4. Decrease total fat in your diet from 42 percent to 30 percent of total calories. Whereas our protein intake stayed the same and our total carbohydrate intake actually decreased, our fat consumption rose dramatically in the twentieth century. One gram of fat contains nine calories, whereas one gram of protein or carbohydrate contains only four calories. Some people, including an occasional hospital dietician, express the concern that lowering the fat content of food to 30 percent will make it unacceptably unpalatable. I agree that our palates may be accustomed to high fat content, but the Japanese live on a diet containing only 10 percent fat.

5. Specifically reduce saturated fats in your diet to 10 percent of total calories. This can be accomplished relatively easily by reducing your intake of animal fat and hydrogenated fat. Substitute monounsaturated (canola oil) and polyunsaturated margarine for butter and saturated, hydrogenated margarine. In general, soft margarines in a tub are more likely to be higher in polyunsaturates. Read the labels, and do not buy margarines that have a high content of hydrogenated vegetable oils. Hydrogenation takes unsaturated fatty acids and saturates them with hydrogen. Use cooking oils rather than solid (hydrogenated) vegetable shortenings, butter, or lard whenever possible.

Use skim milk instead of whole milk. Cut down on your quantity of red meat per serving and the number of times you serve red meat per

week. Three times a week is plenty. Use chicken or turkey white meat and fish more abundantly. When using red meats, know how much fat they contain. For example, did you know T-bone steak contains almost six times as much fat as flank steak?

6. Reduce cholesterol in your diet. Cholesterol occurs only in foods of *animal* origin. The richest common sources of cholesterol are egg yolks and liver. (Brains have even more cholesterol, but they are not consumed very often in the traditional U.S. diet—and with the problem of mad cow disease, I hope no one will ever again eat brains in any country of the world.) Also, liver is much less likely to be eaten than eggs are. Let's start with eggs. (I personally love eggs.) If you're allowed 300 mg of cholesterol per day, one egg yolk, at 250 mg, almost shoots your entire day's allotment. But it is *the egg yolk that you need to avoid*; that's where the cholesterol is. The egg white contains good protein. So if you want fried or boiled eggs, leave most of the egg yolk on your plate. When you scramble eggs, use one-half egg yolk per person. We add one slice of nonfat yellow processed cheese per person for color and flavor. And we don't care for the flavor of egg substitutes, but we use them in cooking when the recipe calls for whole eggs.

Meats and dairy products are important sources of cholesterol. Figure about 25 mg of cholesterol per ounce of meat. Sadly, most kinds of fish also contain 20 to 25 mg per ounce (but fish has certain beneficial, cholesterol-lowering omega fatty acids). Whole milk, which our family never uses, contains 50 mg of cholesterol in a 12-ounce glass. Almost half the calories come from fat, mostly saturated. But a glass of skim milk has only 7 mg of cholesterol and almost no fat. Read labels often until you learn what is in the foods you eat.

7. Decrease consumption of salt. Since salt consumption is related to blood pressure, it will be included in the discussion of high blood pressure. Those at low risk may consume 5 grams of salt (sodium chloride) a day, whereas those at higher risk must take less. Five grams of salt contains about 2,000 mg of sodium, which is the part of salt that must be restricted. Five grams of salt is a level teaspoon. That does not mean you should feel free to consume a level teaspoon of added salt. The 5 grams is all the salt recommended for your entire diet per day. Items such as bread and milk, for example, contain a considerable amount of sodium. When you look up the salt content of a given food on a label, you'll be given sodium content. Remember, the prudent 5-gram salt diet converts to 2,000 mg of sodium. There are thus 400 mg of sodium per gram of

salt. The Prudent Diet for those at low risk suggests 2,000 mg of sodium from all sources per day.

For seasoning, we use a salt that's one-third sodium chloride and two-thirds potassium chloride. It tastes the same as regular salt and gives us a little extra potassium, which tends to reduce blood pressure in contrast to sodium, which raises blood pressure in some predisposed patients.

High-Risk Diets

Some cardiologists feel high-risk or Step-Two Diets should not be used in the elderly because of the risk of nutritional deficiencies. One question is, how elderly is elderly? And if a patient has to take a cholesterol-lowering drug and can take a lower dose of that drug if he or she is on a moderately strict diet, it may be safer dieting than being on a higher dose of the drug with the potential for increased risk of side effects.

This section contains information to help you work with your doctor in a knowledgeable way. By and large, these diets are for patients with coronary heart disease or those at high risk. If you've survived to be a senior, you may have already experienced the onset of coronary disease and are under a doctor's care for it. Most doctors today will bypass the time-consuming work involved with diets and go right to cholesterol-lowering drugs. However, the better the results you get from diets, the less medication you'll need—if any. It is unlikely that your physician would want you to undertake a strict diet without the help of a registered dietician.

If you work with a dietician, you will learn that there are three basic diets: one for patients with high cholesterol, one for patients with high triglycerides, and one for patients who have both high cholesterol and high triglycerides. The third diet combines elements of the first two. There has been a debate for years as to whether high triglycerides without another associated lipoprotein abnormality (such as high LDL cholesterol or low HDL cholesterol) contribute to atherosclerosis (hardening of the arteries). Some investigators have concluded that in most cases in which heart attacks and strokes are associated with high triglycerides, there is also low HDL or high LDL. But correcting the triglyceride abnormality may improve the outlook. The decades-long Framingham Study of morbidity and mortality in a community suggests that there is a specific syndrome of high triglycerides and low HDL in coronary heart disease. This proposal has been expanded and is now known as the metabolic syndrome.

Let me stress that the most important and usually most effective way to reduce high blood triglycerides is to lose weight. One further point:

you may wonder what foods contain monounsaturated fatty acids. They are present in almost all fats of vegetable and animal origin but are generally higher in vegetable fats and especially in nuts. I believe one should consume monounsaturated fats (such as from canola and olive oils) in place of saturated and even polyunsaturated fat.

There are some important points of difference between the Prudent Diet and the high-risk diets. For those with high cholesterol, it is recommended that your intake of cholesterol be reduced to 100 to 200 mg per day. Remember that cholesterol is only present in foods of animal origin and is absent in foods of plant origin (except when food processors sneak animal fats into foods where you may not expect them). It's extremely difficult to rely on our traditional sources of animal protein—such as meat, fish, poultry, whole milk, whole eggs, and cheese—and control cholesterol to the level of 100 mg per day. However, vegetable proteins such as beans, peas, certain grain components, and some "fake" meats provide reasonably good protein and no cholesterol.

Low-cholesterol animal sources of protein include uncreamed low-fat cottage cheese and nonfat, low-cholesterol processed cheese products. Skim milk provides good protein and low cholesterol, and nonfat plain or artificially sweetened yogurt has about the same amount of protein as skim milk (a little more or a little less depending on how it's made). Egg whites have satisfactory protein, no cholesterol, and are very low in calories. As mentioned earlier, it's the yolks you have to worry about (250 mg of cholesterol in each one). So figure out creative ways to use and eat egg whites. Nuts have good protein and no cholesterol but are high in calories and very high in fat. The white meat of chicken and turkey is extremely versatile and can be used in veal recipes as well. White fishes and tuna canned in water are low in fat and relatively low in cholesterol.

My advice for high-risk patients with high cholesterol is to reduce both cholesterol and saturated fats. Strive to hold cholesterol to 100 mg per day, but absolutely do not let it go above 200 mg per day. Read labels. They will tell you how much cholesterol and saturated fat you are getting.

But remember, the idea isn't just to beware of cholesterol. You have to *watch out for saturated fats* because they contribute to raising your cholesterol levels—perhaps even more than the cholesterol you eat. One way they may do this is by decreasing the LDL receptors on the surfaces of body cells so the message can't get inside the cell to tell it to stop making cholesterol (which the body is capable of making in great abundance).

And saturated fats (unlike cholesterol) are not just confined to animal sources. Coconut oil and palm oil contain almost 90 percent saturated fats.

Because I want to emphasize the content of canola oil, I need to break down the category of unsaturated fat to show how much is monounsaturated. Canola oil is only 8 percent saturated fat but is 31 percent polyunsaturated and 61 percent monounsaturated fat.

Avoid tropical oils in any product, particularly baked goods. Hydrogenated (hardened) vegetable shortenings and margarines are not only artificially saturated but end up containing those unnatural trans-fatty acids. To repeat the admonition made earlier, read the labels, and you'll be amazed at how food processors feel the need to pound hydrogen atoms into vegetable oils to "partially hydrogenate" and thus "partially saturate" a previously more healthful product.

It used to bother me (it doesn't anymore) that some of the people who worked in my laboratory could eat two eggs for breakfast every morning and have extremely low cholesterol levels. One cardiology trainee, when he'd see how low his cholesterol was, would joke and say, "Maybe I ought to start eating three eggs for breakfast every day from now on."

Having read to this point, you know enough about genetics to realize that if you're in the high-risk group, a lot of the reason is your heredity. And if your cholesterol stays low despite the fact that you eat two eggs for breakfast every day, it's also because of your heredity. We can't let our heredity concern us further. We can just be grateful that we've learned about it and understand enough about the subject to permit us to follow the path most likely to lead to good health *despite our heredity*.

You or your physician can get diets from various sources. The American Heart Association (AHA) provides diets for managing hyperlipidemias. (I gave the address in Chapter 3.) There are recipe books that you can purchase at bookstores, particularly the *American Heart Association Cookbook,* which not only gives the calorie count for each recipe but provides tables telling you the amount of fat, calories, and cholesterol in a variety of foods. There's no need to buy high-priced cookbooks, some promoted as "coauthored" by famous doctors, when the paperback edition from the AHA costs only $6.99. (The hardcover edition is $27.50, and there's a large-print edition at $29.95.)

The way you handle the preparation of routine food items can make large differences in the calorie, fat, and cholesterol content of your diet. You must skin poultry, trim meat, use egg substitutes and canola oil in

cooking in place of whole eggs and solid shortenings; and you can chill cooked meat juices and skim off the fat to make low-fat gravies and stews. If you like red meat, stick with carefully trimmed round steak. (It has about one-third the fat of T-bone steak.) For hamburger, we grind the trimmed round steak ourselves or purchase it at a meat market where they prepare the ground round on the premises. Unfortunately, most people buy packaged hamburger sent in million-pound shipments all over the country and sometimes contaminated with bacteria. (The same holds for buying hamburgers and hot dogs at fast-food restaurants. Seniors and children are more vulnerable to food-borne infections than are those in other age groups.)

The Prudent/Step-One Diet in Table 4.7 is more than strict enough for the majority of the population. Since you've already lived to be a senior, you probably don't need a stricter diet. And even the stricter high-risk diets don't have to be punishing. My family lives on one, and our diet varies between wholesome and gourmet. There are a lot of possibilities for gourmet and ethnic cooking, especially Chinese and other Asian cookery. Even modified French cuisine (*la cuisine minceur*) is possible on a high-risk diet.

Delicious recipes abound. I don't want you to feel that in undertaking a strict diet you're going to lose the real joy we all obtain from eating. On the contrary, the increased effort you'll be putting into your diet and cooking may very well add joy to this part of your life. I'm not sure that greaseburgers have contributed greatly to anyone's happiness.

I'm trying to be encouraging and not harsh. But if you are substantially overweight, with a BMI above 30 (as calculated by the formula shown earlier in this chapter), you should try to bring your weight down. A study published January 8, 2003, in the *Journal of the American Medical Association* stresses that life span is greatly reduced by obesity, particularly obesity beginning in young and middle-aged adults. You've survived long enough to be a geezer, but you should try not to be an obese geezer.

More aggressive treatment than diet (unfortunately, often suggested before giving diet and weight loss a chance) is generally recommended for patients with abnormal cholesterol. I mentioned that I take a baby aspirin daily and a cholesterol-lowering drug. (The baby aspirin is to inhibit clotting in arteries that cause heart attacks and strokes. The cholesterol-lowering drug is self-explanatory.) Discuss such medications with your physician, and look them up in your *PDR Family Guide*. If you've had a heart attack or have a diagnosis of coronary heart disease, be sure to discuss with your physician beta-blockers and ACE inhibitors.

RESOURCES

The resources for this chapter include the American Heart Association and the National Heart, Lung and Blood Institute, the addresses for which appear at the end of Chapter 3.

Physicians' Desk Reference (see the bibliography for the complete source)

National Center for Complementary and Alternative Medicine (NCCAM)
888-644-6226
NCCAM Web site: www.altmed.od.nih.gov/nccam

American Dietetic Association
216 W. Jackson Blvd.
Chicago, IL 60606
313-899-0040
www.eatright.org

America On The Move
www.AmericaOnTheMove.org

www.FoodFit.com

Further, I recommend:

A copy in paperback or hardcover large print of *The American Heart Association Cookbook* (see the bibliography for the complete source).

Free booklets from your local American Heart Association office.

F I V E

FITNESS

The wise for cure on exercise depend.
—John Dryden

Bodily exercise, when compulsory, does no harm to the body [with proper medical clearance].
—Plato

In this chapter my emphasis will be on cardiovascular health, but, of course, overall fitness is essential for general health. The topic of fitness will come up repeatedly in discussions of issues ranging from diabetes to osteoporosis. Fitness and obesity reduction are the laggards among the public health initiatives of the past three decades.

Getting into good physical condition through exercise (after medical clearance) is not as difficult as you may think. A few years ago the motto was, the more vigorous the exercise, the better. Now it's becoming clear that regular aerobic exercise at the lower level of target heart rate is entirely satisfactory. The operative word is *regular*.

But the most important word for geezers and geezerettes is *caution*. Common sense regarding even moderately strenuous activity is essential. Sudden exertion may be more of a risk than careful aerobic exercise. Snow shoveling is at the top of the list, followed by mowing the lawn in hot weather. If you get chest pain, stop immediately and see your doctor. If you aren't cleared to do such work, hire it done or move to a condo or an apartment.

In Chapter 3 I gave a partial definition of aerobic exercise. I'll repeat it here and make it more complete. If you exercise regularly three to six days a week with no more than

two days between exercise periods for no less than a total of 60 minutes a week and at least 13 consecutive minutes per workout at your target heart rate, you're getting aerobic exercise. What's your target heart rate? There is more than one way to calculate it. I opt for the simplest method.

The three numbers you need are 220, your age, and 70 percent. Say you're sixty-five years old:

220 – age = MHR (maximum heart rate)
220 – 65 = 155
0.70 × 155 = 109 (your target heart rate)

There is a great deal of individual variation, so the range for target heart rate is often given as 70 to 85 percent of MHR. The 85 percent upper limit would be suitable for someone who is not a senior or who is already fit and has been fit for years. The level of 85 percent is what I reach, but I've been exercising regularly for decades. And as I stated earlier, the 70 percent lower limit will help you achieve aerobic fitness. If you are exercising at the 70 percent level, I recommend 20 minutes a day, every day if possible. That much exercise is mandatory if you're on a weight reduction diet. My wife and I exercise 20 minutes twice a day.

What can you reasonably expect regular aerobic exercise to do for you? Among other things, it can:

1. Improve the performance of your heart, lungs, circulation
2. Improve coronary collateral circulation and possibly coronary blood vessel size
3. Improve your blood lipid and lipoprotein profile, decreasing cholesterol, triglycerides, and the undesirable low-density lipoproteins (LDL) while raising the desirable and protective high-density lipoproteins (HDL, or "good" cholesterol)
4. Favorably influence blood clotting mechanisms by increasing fibrinolysins and decreasing platelet stickiness
5. Help you lose "fat weight" while maintaining and improving muscle mass and tone
6. Make the heart less vulnerable to rhythm disturbances
7. Lower blood pressure
8. Reduce stress and tension
9. Favorably influence hormonal and metabolic mechanisms, glucose tolerance, thyroid function, and catecholamines

10. Give you a sense of well-being

And if that's not enough, researchers at the Centers for Disease Control suggest that physical inactivity is one of the most common threats to cardiovascular health. The list here provides what I consider compelling reasons to get involved in a regular exercise program. But you'll also need further information.

WALKING AND MALL WALKING

How do you get your heart rate into the target range? If you're in miserable shape, it doesn't take much. Walking at a moderate to brisk pace may do it. Just feel for your pulse in your neck and count for fifteen seconds immediately at the end of your walk, then multiply by four. If you're in better shape, the walk has to be brisk, perhaps swinging the arms high or carrying and swinging hand weights. However, do *not* wear ankle weights. They're hard on the joints, and they can throw off your stride.

If you're fortunate enough to live close to a shopping mall, problems with inclement weather are bypassed, and there's the opportunity for socialization among the regular walkers at the mall.

Walking is a suitable starting point for any age, together with the stretching and flexibility exercises I'll soon describe. First, you may want to lay out a measured course for yourself. The odometer on your car or bicycle or a pedometer will help you determine the distance for 1 mile, 1.5 miles, and so on. Then begin walking. The first day, walk a mile at a comfortable pace and see how long it takes and how fast your heart rate is at the beginning and end of the walk and ten minutes later. Be sure your heart rate returns to your resting rate within ten minutes after completing the walk. If it doesn't, even this minimal exertion is too much for you, and you should decrease your walking distance and rate until you have a medical examination.

After as few as one to as many as eight weeks of daily comfortable walks of one mile (depending on your progress, age, and stage of conditioning), you may increase the distance to 1.5 miles—again checking your heart rate before and after the walk and ten minutes later. If your recovery rate is satisfactory, maintain a comfortable pace without trying to improve your time until you have medical clearance. After you have medical clearance, you may begin walking more briskly.

A goal in walking that is as important as aerobic conditioning for seniors is to engage in *weight-bearing exercise to help prevent osteoporosis*.

Strive for a minimum of two hours a week of walking that is as vigorous as you can tolerate.

Be sure you're reaching your target heart rate.

EQUIPMENT

My wife and I have exercise equipment in the basement, a Schwinn Airdyne that requires pushing with the arms while pumping with the legs and a rowing machine that also requires simultaneous upper- and lower-body exercise. With these two pieces of equipment, we are able to exercise together as we watch videotapes or TV programs. Our kids gave us a new piece of equipment for weight-bearing exercise, but I also recommend walking as much as you can when weather conditions and cranky bones and joints don't preclude doing so.

If you don't invest in exercise equipment, you can use such machines at a health club, and you can also swim and exercise in water if you have a convenient facility. Speaking of machines, treadmills are good, especially for weight-bearing exercise, but I think seniors should absolutely avoid cross-country ski simulators. They may be fine for younger people with good coordination and balance, but I think the risk of a geezer falling off and injuring himself outweighs the potential benefit.

It's obvious from what you know about yourself and human nature that you can't begin the day by saying "sometime today I'm going to exercise." You need to designate the time you plan to exercise every day. We exercise in the morning and in the evening, twenty minutes each session. After a while it becomes automatic, a habit. Occasionally, some activity prevents us from doing our evening exercise. And when we're away from home, we improvise or pass on exercise entirely.

With exercise equipment, as with walking, check your heart rate to make sure you're in your target range.

What about running? We'll discuss that later.

WHERE DO YOU START?

In Chapter 3 we obtained some basic information on your physical condition. And in Chapter 4 we made further determinations concerning your weight and how much overweight you may be. I have also pointed out repeatedly that diet and exercise are almost inseparable if you're going to lose weight in a way that will promote your health rather than undermine it. Diet without exercise is often not beneficial and may indeed be contraindicated.

Next I'm going to throw you a curve and tell you that you can't safely do vigorous exercise if you're significantly overweight and out of condition. Contradictory? No, just cautious. In fact, I must add the disclaimer you'll see in almost all books written for lay consumption: you may need an exercise stress test (usually using a treadmill) under the supervision of a physician before getting into vigorous exercise.

But you're not going to be doing vigorous exercise. If you're in poor shape, your aerobic exercise may need to be no more vigorous than walking at a brisk pace. Sorry. I still recommend physician authorization for any exercise program.

Physical Lifestyle

For many, the American lifestyle might be characterized by the philosophy never run when you can walk, never walk when you can stand, never stand when you can sit, and never sit when you can lie down. We have been a spectator society interested in watching others be physically active in sports but dedicated to saving our own energy. Saving it for what? It shouldn't take an exercise physiologist or a cardiologist to tell you that the less physical work you do, the less physical work your body becomes capable of doing. And the converse is also true: the more physical work you do (up to defined limits), the more you become able to do. Your body can adapt to doing almost nothing or to achieving remarkable physical feats for your age. It depends on what you train it to do. Demand little and you get little. Demand a lot and you may get a lot. That's the homeostatic wisdom of the body.

Maybe you're one of those who has developed habits of saving your energy, waiting for elevators rather than walking a flight of stairs or backing your polluting gas guzzler out of the garage to go two blocks to mail a letter. If you are, you probably also hire someone to mow your lawn to save your valuable time (so you can plop in front of the TV, stuff your face with high-calorie, high-cholesterol, and high-salt goodies, and watch other people get exercise). Or when you're outside and have some time, you lie in the shade rather than exert yourself. Whatever you do, you do it with the least expenditure of energy possible—and possibly with considerable expenditure of petroleum and other nonrenewable resources.

That is what I'd call a nonphysical lifestyle. And it's the lifestyle of too many Americans—possibly even you. We can all speculate as to how we were sold on such a physiologically unsound way to live. But let's just turn from it as quickly as we can.

Well then, what's a physical lifestyle? Just the opposite. Look at your activities and ask yourself how you can perform them in a way in which you can extract some good exercise. I've given some simple examples, such as taking the stairs rather than elevators and walking in preference to using the automobile whenever possible. But you know what goes on in your life and the opportunities you have for exercise. A lot more possibilities should come to mind as we go along. You may be surprised at how many chances you've been overlooking.

Stretching and Flexibility Exercises

These exercises can be safely started at any age. Walking and stretching and flexibility exercises are the only physical activities suggested for those waiting for medical clearance.

Quite a few years ago, on the way to a cardiology conference in Tokyo, I stopped in Hong Kong for a couple of days and had the opportunity to observe some interesting exercise rituals. Knowing how polluted the air was from auto exhaust I had observed and realizing how hot and humid the weather was, I knew I'd have to run very early in the morning before the pollution became too unpleasant. So my first morning in Hong Kong, before six and before sunrise, I was out running and trying to find a congenial area for this activity. I turned up a steep road toward St. John's Cathedral and the central government offices. Here there were trees and grass, a small park in the middle of a very crowded city. And here, before dawn, were countless residents of the city—exercising. I kept running uphill along Battery Path and saw signs pointing to the botanical and zoological gardens. All along the route were early-morning exercisers, and when my run finally led me into the gardens, the paths were so choked with people exercising that I had to slow down to a jog to avoid a collision.

Running slowly, I was able to study what these mostly older men and women were doing. There were no stiff hup-two-three-four Germanic/Swedish routines. Nothing an American gym teacher or army drill sergeant would recognize as exercise. Just gentle stretching movements, almost like a ballet. The men would sometimes go through a series of movements that would end with them striking a pose reminiscent of the martial arts. But everything they did basically involved stretching, balance, and flexibility to promote relaxation and put the exerciser in harmony with the chi. This was my first encounter with tai chi, the ancient Chinese meditative exercise. As I returned, running along Garden Road, I encountered my first fellow runners—Caucasians and younger Chinese.

(I've since recognized practitioners of tai chi in Golden Gate Park in San Francisco and in Honolulu.)

I was intrigued by this approach to exercise. And when I arrived in Tokyo I witnessed a slightly more vigorous variant of Asian exercise in the small park near my hotel. The early-morning activities here were more directed, coordinated, and less individualized. But the emphasis again was on stretching, balance, and flexibility rather than strength.

I can still see vividly the gentle exercisers along Battery Path, and I conclude that doing these exercises is a very pleasant way to begin the day. But since I don't know the routines, I can only offer American versions of stretching and flexibility exercises, which are presented in the sections that follow. Of course, you can devise your own routines. The principles underlying all of these exercises are to develop a full range of motion around joints and articulations *without* straining against resistance (head and neck, shoulders, trunk, hips, and knees) and to stretch muscles rhythmically in a natural flow that involves every part of the body.

These exercises have intrinsic value in producing good muscle tone, maintaining mobile joints and suppleness, and producing a sense of well-being. If you have been on your duff ever since you got your high school gym teacher off your back, you should ease into exercise as painlessly and pleasantly as possible. This is especially true for seniors. You can't just barrel into an activity like a teenager. Your muscles and joints will rebel, and you'll end up with a punishing experience (sprains, strains, and pains). And as we've already discussed, desired behavior gets established through rewards, and undesired behavior gets discouraged through punishment. Don't get these two reinforcement mechanisms turned around.

Flexibility and Strength

Aerobic exercise is the key to your heart's health. However, a balanced health program requires that you have adequate strength and tone in your muscles and a good range of motion in your joints. Your muscles and joints are going to hurt. You always have to be careful of sudden and straining movements no matter what you do, even if it's just getting out of a chair. You've noticed that your joints aren't as flexible as they used to be. How about backing the car out of a parking place? Can you see as well behind you as you did a few years ago by just turning your head? Your head doesn't turn that easily or that far? And with the seat belt fastened, it's hard to turn your whole body? Joint flexibility is going to diminish. Your goal is to delay and minimize these changes of aging as much as possible.

A first principle of exercise for seniors is, make it nonpunishing. Easy victories, small victories, a step at a time is the way to proceed. For a younger person who is exercising vigorously, the activities described here would appear ludicrous. The point is that they're designed to be such easy victories that anyone can start exercising at any time of the day—dragging out of bed in the morning, dragging home from work at night, during the lunch hour. Warm-up exercises should be performed daily.

When you're just starting out learning a routine, take as long as you need to perform the series. After the routine is established, a series should require around 3 minutes to complete. I recommend three series for no more than a total of 10 minutes. An overly competitive individual can probably do a series in 58.4 seconds. But by now you realize that's not the objective of the exercises. In fact, some would advocate that rather than do a series of ten stretching exercises, such as the push-away tendon stretch and the wide-leg sit-up, it would be advisable simply to hold the maximally stretched position of each exercise for the period of time it would take to do repetitions. I guess this is what ballet dancers do at the bar. My recommendation is one to three series of sets of ten of each exercise, but feel free to hold a position as long as you wish each time you perform a movement.

Out of some distorted sense of Mosaic symmetry, my personal geezer program consisted of ten exercises in sets of tens—the first seven of which I considered warm-up routines. Well, as I sit here at the computer rewriting this section, barely able to stand because of strained lower back muscles, I'm now willing to accept that the seven warm-up exercises are quite sufficient for strength as well; and I'm eliminating standard sit-ups, push-ups, and butterflies from my own program and from what I recommend for you.

1. Ten head rolls. Stand comfortably, feet apart, belly sucked in, and begin by simply rolling your head around ten times. Put your chin on your chest, let your head lean to the right side, then let it fall to the back, to the left, and return to the front. Five times starting to the right, followed by five times starting to the left. This is an easy victory to start your exercise program. But be careful of dizziness (and ignore the crackling sounds you hear coming from your elderly neck).
2. Ten arm circles. Consider your straight arm to be a propeller. Do a full circle with your right arm, reaching forward, above, and behind, as if you were doing a backstroke in

swimming—five times with your right arm. Then reverse the direction for five forward strokes (in the direction of the crawl in swimming). Repeat the same routine with your left arm.

3. Ten trunk twisters. Be careful of this one. To avoid getting dizzy, do only five in one direction before doing five in the other direction. Feet apart, raise your arms straight up over your head and rotate your body at the waist, reaching to the right, stretching back, coming forward to the left and bending over, reaching toward the floor. Do not try to touch the floor. If you feel any dizziness, *stop* or decrease the amount of movement. This exercise involves gentle rotation.
4. Ten toe stands. Simply stand up on your toes (as high as you can) ten times. You may want to support yourself by holding on to something.
5. Ten push-away tendon stretches. Stand about two feet away from a wall. Keeping your heels flat on the floor, reach out with your hands and let your body come forward to the wall before pushing back. The trick here is to keep your heels on the floor and to feel your calves stretching.
6. Ten halfway knee bends. Keeping your back straight, hands on hips, bend your knees halfway down toward a squatting position—just halfway and up again.
7. Ten wide-leg sit-ups. Now you can get off your feet. Lie down, legs wide apart, then sit up. Stretch your body forward as far as you can, first over one leg, then the other before lying back. Repeat to a total of ten sit-ups, stretching as far forward as is comfortable, reaching out toward your toes and aiming your head to your knee. Feel it in the back and inner areas of your thighs. You may find it difficult to do ten of these sit-ups the first day. Do only as many as you feel comfortable doing.
8, 9, 10. I was almost ready to reinstate sit-ups, push-ups, and butterflies until I tried to get out of my chair. I now unequivocally state that these exercises are not suitable for seniors unless you've been doing them regularly for years *without incident*. John Glenn probably does them, but you and I are not planning a space mission.

Repeat the series of seven exercises in sets of ten as many times as you feel comfortable doing them in your workout.

Running

If you're a senior and have not been running regularly for years, *don't start*. A genetics colleague (not a cardiology colleague) in England decided to take up marathon running in his early sixties. He suffered a fatal heart attack while running. I don't believe a colleague in cardiology would have considered such an ill-advised undertaking. And I also can't imagine this geneticist had clearance from a cardiologist.

The type of conditioning you want for good cardiovascular health and pleasant relaxation is aerobic. Aerobic conditioning starts after about two to three minutes of sustained heart rate between 70 and 85 percent of your maximum heart rate. The beauty of heart-rated exercise and aerobic training is that it takes into account your physical condition. Say you're in terrible shape. You have all you can do to push the elevator button or the remote control of your TV set. What does it take to start getting you in condition?

Actually, very little. Walking at a moderate pace will probably take you above 70 percent of your maximum heart rate—right into the aerobic range. Say you've been training regularly for two months or are starting off in pretty good condition. What does it take now to reach a level of conditioning? You probably will have to walk briskly—maybe with arm swinging and hand weights—or use exercise equipment. And what does it take to get the heart rate of a conditioned marathon runner into the aerobic range? Probably something like eight-minute miles. Conditioning, predictably, takes place sooner if you achieve higher training heart rates for longer periods at those higher rates. But you have sense enough not to try to make a transition from lifetime couch potato to marathon runner.

I went through the little routine in the previous paragraphs to catch those overly competitive individuals who have been thinking ahead, trying to figure out how to speed up the process if not beat the system. It took you a long time to get into lousy shape. The program suggested here or the exercise prescription you may receive from a cardiologist is designed for gradual and safe conditioning. And gradual as it is, it doesn't really take very long. But please don't rush it. There's no one to compete with. *Your goal is to be healthy, not to achieve a given time or a given distance.*

Your maximum heart rate slows with age, but your resting rate does not. So the training heart rate that is recommended also decreases with

age. However, these numbers are not engraved in stone. They're based on surveys of "normal" individuals and on such simple arithmetic approximations as I showed earlier in the chapter: subtracting your age from 220 to obtain a predicted maximum rate. Those of you who have stress tests will find out what your maximal rate actually is. Your personal exercise prescription can then be based on 70 percent for most seniors and, for early in your conditioning program, to as high as 85 percent of that specific rate. My maximum heart rate turns out to be higher than the formula predicts. And because I maintain a reasonable level of conditioning, my resting heart rate is lower than the American average.

PRE-ENROLLMENT REGULATIONS

In the middle of all this, I must emphasize a few points—some of which have been discussed before and some of which will be discussed again (and again).

1. Don't enter an exercise program without medical clearance. Why? Because severe and sudden exertion in a poorly conditioned individual can seriously stress the cardiovascular system.
2. Don't expect that exercise can be taken as an isolated activity rather than as a component of an entire lifestyle to reduce your risk of coronary heart disease. Most marathon runners are, by the requirements of their avocation, committed to a healthy lifestyle. But marathoners can have heart attacks. And people aspiring to be marathoners who may have medical conditions or who are not properly conditioned are at significant risk. I believe most runners who get into trouble *do not* approach their exercise as only one component of an overall commitment to healthful living. They are not sufficiently in touch with themselves to recognize when they are doing something unphysiologic, punishing, and damaging.

   Two more examples should suffice. In the New York Marathon, a runner began having chest pains at 8 kilometers but ran 5.6 kilometers more before collapsing with a heart attack. Another runner who was training for the same event died of a coronary a month before the marathon—after a hard run. As a sign of his obsession with running, one week before his death he had emblazoned on his T-shirt: "You haven't really run a good marathon until you drop dead at

the finish line.—Pheidippides." So the word is, *do not undertake serious aerobic exercise unless you embrace a full health program in a nonobsessive way.*

3. Don't do vigorous exercise when you have an acute infection. Believe me, I've done it, and it's counterproductive and risky. And don't exercise if you've got a strained back (as I have right now) except maybe pedaling an exercycle if you don't feel pain.

After aerobic exercise—the cornerstone of the basic minimum—the next building blocks are stretching, flexibility, and strength for the major muscle groups and large joints. Recreational exercise adds variety: hiking, climbing, mountain biking, swimming, golf, tennis, even cross-country skiing if you're trained to do it.

If you're still working, your exercise program must be faithfully followed on weekdays when the demands of the job are maximal. Aerobic exercise confined to weekends may be counterproductive. As a rule of thumb, it has been suggested that deconditioning starts after about three days of layoff. If you've had three days without aerobic exercise, you should restart at a lower level. It follows that if you don't exercise during the work week, you are unlikely to get satisfactorily conditioned on the weekends alone.

As for running, those of you who have been running for many years, feel free to continue as long as your bones and joints tolerate the punishment. I read about someone named Walter Stack who at age seventy-one ran seventeen miles and swam one-half mile every day before going to work at the physically taxing job of hod carrier. For recreation, in his seventy-second year he scheduled five marathon runs. Incredible. And most unusual. I can't imagine how his feet and ankles and knees could tolerate the punishment.

I love running, but I had to make a decision in my early sixties that if I wanted to be able to keep walking and enjoy hiking in the mountains, I'd have to stop running. Over 50 percent of runners get washed out because of injury, frequently because of poor preparatory conditioning. You can also get washed out even if you're well prepared. My problem is heel spurs, which my orthopedic surgeon reminded me is what ended Joe DiMaggio's career. So I mostly use exercise equipment. Arthritis is a similar cause of concern. If you're getting joint pain (feet, ankles, knees, hips) from running, you may have to switch to low-impact exercises if you want to continue to be able to walk.

How fast a rate you achieve during your walk, walk/run, or run is of no real interest. What's of interest is how fast you heart rate is. *It's not how fast your legs go but how fast your heart goes.* If you're older than sixty, you may never progress beyond walking, stretching and flexibility exercises, and using exercise equipment *if* you're just beginning to exercise after many years or decades of sedentary activity. That's fine—whatever exercise conditions you in the aerobic range.

For seniors who are able to maintain their love of running and want to continue as long as possible, start at a very slow pace and slow to a walk if you become uncomfortable. As you run, notice how your feet hit the ground. Don't run on your toes or land on your heels. The impact can be damaging to muscles and joints, as well as being painful. When running, your foot strikes with a force about three times your body weight. An average male of 165 pounds slams his foot on the ground with 500 pounds of force 1,000 times in just a mile. That's 250 tons of crunching stress on each foot, ankle, and knee for every mile you run. Before I washed out on running, some mornings—for a few minutes until I warmed up—I had trouble just putting weight on my legs because of pain in the feet, ankles, and knees. Pay attention when you begin your runs. Be sure your feet are striking as lightly and smoothly as possible. You'll note that it's the outer edge of the foot that touches first, then the whole foot, before pushing off with the front of the foot and the toes. This is the natural way to run. But check yourself and make sure you're not slipping into an unnatural gait.

SPECIAL CONSIDERATIONS

Lap swimming is also an excellent aerobic exercise for those who have the opportunity to pursue it. You'll have to find a swimming pace that increases your heart rate to the recommended level and maintain that pace for thirteen minutes to achieve your aerobic workout. Climbing stairs is another good exercise; I often resort to thirteen minutes of climbing when I'm traveling and am unable to do anything better. And cross-country skiing is the best of all aerobic exercises, but only if you're experienced. The eighty-year-old cross-country skiers in Norway did not take up the sport the previous year. They've been skiing since they were two.

If your finances permit, high-quality stationary cycles, rowing machines, and treadmills provide a good workout. A cycle that combines a handlebar push-pull option offers more exercise than a cycle for legs alone. I personally favor this type of equipment. But a word of caution: don't buy a "cheapo." Some chain stores and discount stores offer what

appear to be real bargains. I tried one, and it was a lemon. My advice is to get heavy-duty, high-quality equipment from a reputable sporting goods or exercise equipment store—or forget it and walk in the rain. Be prepared to pay a minimum of $500 for a single piece of equipment. If you're not able to walk a couple of hours a week, you'd do well to have a treadmill for weight-bearing exercise.

Finally, many of you who remember back to physical education classes and the military should know that you can get an aerobic workout from calisthenics if you sustain an appropriately high heart rate while going from one routine to another. Burpees, straddle hops, squat jumps. I rate such routines somewhere between a hernia repair and a root canal in desirability. But those who don't object are welcome to use this alternative. Television programs with such workouts abound. *But beware*. Don't start off trying to keep up with those young, scantily clad TV cheerleaders. Many of them are in such excellent aerobic condition that they don't even breathe heavily from routines that may easily wipe you or me out. (Of course, they have to remind the audience not to forget to breathe. I guess they don't know people can't just forget to breathe.)

Intuitively, you know that even a little exercise is better than no exercise. What I've tried to give you is a guide to a program and lifestyle that will provide optimal return for a modest investment of your time. The Harvard alumni study, in which I participate, has shown that mortality from any cause was reduced by increasing amounts of exercise-expended calories from fewer than 500 up to a maximum of 3,500. Table 5.1 shows how many calories are burned for various activities and exercises. Mortality rates were a quarter to a third lower among alumni expending 2,000 or more calories per week through exercise than among less active men. This observation is independent of whether the exercise was aerobic. Although aerobic exercise is preferred for cardiovascular health, even modest amounts of any number of exercises reduce mortality.

Not long before he died, I had the pleasure of having dinner with the dean of American cardiologists, Dr. Paul Dudley White. Dr. White had maintained a lasting interest in the state of health of Harvard graduates—particularly former athletes—so I asked him what he knew about the current findings of the alumni study, in which I participate, and about his own studies. He pointed out that an entire eight-oar Olympic gold medal–winning crew had returned to Harvard for their fiftieth class reunion. Most were still rowing but were single-sculling rather than pulling in an eight-oared shell.

Table 5.1—Calories Burned During 10 Minutes of Continuous Activity for a Body Weight of 150–200 Pounds

Activity	*Calories Burned*
Sleeping and sitting	12–16
Standing	15–20
Walking 2 mph	35–40
Walking 4.5 mph	65–85
Walking upstairs	175–225
Walking downstairs	64–90
Running 6 mph	120–180
Bicycling 12 mph	100–140
Office work	20–40
Housework	40–55
Gardening	50–75
Light work in shop	30–50
Shoveling snow	75–100
Chopping wood	70–95
Dancing	45–75
Golf	40–55
Tennis	60–90
Swimming, vigorous	80–100
Cross-country skiing	120–160

The former football players presented another situation. Their involvement in exercise had rapidly diminished in many cases. With heavy muscles and heavy appetites to support, they'd deposited a lot of fat that could not be burned off by getting twenty-two guys together in a board room to scrimmage. Their morbidity and mortality data were unacceptable compared with classmates who had prepared for and continued to exercise throughout their entire adult lives. But so many coaches and gym teachers, probably yours, have had great difficulty conveying this message to their charges in preparing people for a lifetime of exercise.

By the way, Table 5.1 is obviously useful in your weight reduction program because burning calories goes hand in hand with reducing intake of calories. Regarding exercise, what's important is finding a suitable aerobic, flexibility, and weight-bearing program that you can maintain for your lifetime. By way of encouragement, a report in *Circulation* (September 18, 2001) tells us that exercise improves cardiovascular fitness even after thirty years of inactivity.

RESOURCES

Supplemental literature can be obtained from the resources with addresses that appear at the end of Chapter 3: the American Heart Association and the National Heart, Lung and Blood Institute.

In the bibliography, for those who would like diagrams of exercises, you will find illustrated books such as *The New Whole Heart Book* by James J. Nora.

S I X

CANCER AND BLOOD DISEASES

For thy sake tobacco, I / Would do anything but die.
—Charles Lamb

You can only cure retail, but you can prevent wholesale.
—Brock Chisholm

In this chapter we'll discuss a major fear, not only for seniors but for people of all ages: cancer. In the practice of medicine, the specialty that treats cancer also covers blood diseases, so I'll follow that convention here. As with other diseases, genetics and genetic predisposition influence susceptibility and resistance. For breast cancer, quite a bit is known about genetics.

The older you get, the more likely you are to have and to die of cancer. More than two-thirds of cancer deaths and more than half of all new cases of cancer occur in patients older than sixty-five, although only one-eighth of Americans fall into this age group. For most types of cancer, the rate of survival is lower for older adults than for younger adults, and that reality takes into account the diagnosis being made at the same stage of the disease. During the first three decades of life, the incidence of cancer is approximately the same for males and females; during the next three decades, women develop cancer slightly more frequently than men. But during the later years of life, cancer is much more common in men than in women and is more than twice as common in men over seventy.

Why so much cancer and so many cancer deaths among the elderly?

AGING AND CANCER

Two processes associated with aging appear to relate to the increase in cancer rates in older adults.

1. The longer you live, the more exposures and the longer duration of exposures you have to cancer-causing agents (carcinogens) in the environment. Cancer of the lung relates mostly to longer years of smoking, skin cancers develop from more years of sun, stomach and colon cancers result from longer periods of exposure to ingested toxic substances. Other cancers are triggered by inhaling or ingesting the many pollutants and toxins to which we're exposed. These cancers can occur at younger ages if the exposures and genetic predispositions are greater, but they become much more common as we get older.
2. Systems aging (senescence). The systems in the body that functioned well when new are like the systems in your car; they get old and wear out—the brakes, the clutch, the water pump. So, too, your heart and blood vessels, your bones and joints, your eyes and ears, your immune system are all vulnerable to decline. In Chapter 2 I mentioned a region on chromosome 6 (the major histocompatibility complex) that has a lot to do with susceptibility to disease through controlling the functions of B cells and T cells, which play a critical role in immunity and the body's ability to fight disease. With aging, the function of B cells and T cells diminishes, and the frequency of cancers increases. As I noted earlier, the immune cells are essential to distinguish between "self" and "nonself." Your normal tissues would be accepted by the immune cells, but a cancer is not normal to the body, is therefore "nonself," and is attacked by immune cells if they are functioning properly. However, with aging and decreasing immune function, cancerous cells have a better chance to proliferate.

The above mechanisms account for some of the increasing risk of cancer in older adults, but why do seniors have higher death rates than other age groups?

Attitudes about cancer in seniors among both health care workers and patients themselves have adverse effects on mortality. First, let's dis-

cuss attitudes within the health care establishment. Unfortunately, professionals make judgments—which they may not even recognize—that older patients have less social worth and quality of life, poor prognosis, and shorter life expectancy (only the last criterion is undeniable). So seniors receive less screening for cancer and less intensive treatment or no treatment at all. The American Cancer Society recommends a number of screening tests for cancer, including what is called fecal occult blood (for colon cancer) every year for patients over age fifty. How many seniors even over sixty-five get the test? Medicare didn't pay for it when I wrote the first draft of this book, but in November 1998 Medicare staff notified us that they will now cover the test. How about prostate examinations? Supposed to be every year after you turn fifty. Medicare just started to pay for prostate-specific antigen (PSA)—finally. How often do you have a flexible sigmoidoscopy? How about mammograms and pelvics with Pap tests? Women are generally better about getting checkups. But if you're over sixty-five, is your doctor making sure you have these exams?

However, the ultimate responsibility is yours. Older patients may blame symptoms of cancer on the aging process and delay too long in seeking medical attention. Seniors also tend to decline treatments and diagnostic procedures because they believe a diagnosis of cancer means a hopeless outcome. (And their physicians sometimes do little to change that opinion by pointing out the advances being made in medicine.) We must add to this mix that many seniors are reluctant to become involved in the hassle associated with managed care and Medicare. It seems they'd rather wait until symptoms become so obvious that they can no longer be ignored.

SOME COMMON CANCERS

Obviously, I won't be able to review the many forms of cancer that can afflict seniors (and people of all ages), so I'll discuss a few things to look for and to be aware of in the most common cancers and those that cause greatest concern. (For greater detail see your *Merck Manual* and contact the resources I will mention in this chapter.) Four cancers account for the three most frequently found in men (lung, prostate, colon) and in women (lung, breast, colon).

Lung Cancer

This is the most common cause of cancer deaths in the country. It is first among men and recently has become the most common death from

cancer among women as well—thanks to women having learned to smoke like men. As I noted in Chapter 3, 87 percent of lung cancer is attributable to smoking—135,000 deaths per year. There's been about a twenty-year lag period for smoking in women to catch up in the mortality statistics. Almost two-thirds of lung cancer deaths occur after age sixty-five. For those who are still alive and smoking at seventy-five, the chance of dying of lung cancer is twenty times higher than if they had never smoked. Lung cancer deaths begin to decline by the time you reach your seventies because smokers die sooner, and most cancer of the lung occurs in smokers. If you stopped smoking in your sixties, you cut the risk in half. Stopping in your early fifties reduced the risk to 20 percent compared with those who keep smoking. There are yet to be defined genetic reasons why some individuals can smoke or have exposure to asbestos and not get lung cancer, which the Human Genome Project may elucidate; but the biology of this protection is no better understood than is the biology of much of the genetic predisposition to the disease.

Screening for lung cancer has not proved as useful as screening for some other cancers. Chest X-rays will reveal cancers in relatively early stages. Symptoms of lung cancer include cough (and coughing up blood), difficulty breathing, chest pain, wheezing, hoarseness, and—depending on what the tumor presses on—difficulty swallowing and heart failure. Severe pain may come from cancer cells spreading to distant sites (metastasis) such as bones. Once you have lung cancer, there is a projected five-year survival rate depending on the stage of the cancer. As you might expect, patients with small tumors that have not yet spread have a better survival rate than people with larger tumors and those that have metastasized.

The medical intervention prior to getting the disease and needing to have a cancerous lung removed and being treated with chemotherapy and radiation (with perhaps a low survival rate) is relatively straightforward as prescriptions go: *stop smoking*. The problem with that simple prescription, as any smoker or ex-smoker can tell you, is that it's not easy to stop. It's very hard. It's a powerful addiction. On behalf of my fellow World War II–era veterans, I have a serious grudge against the tobacco companies. They generously donated free cigarettes to those of us in the service. Very generous of them—to hook millions of young men on tobacco. The routine became "take ten and smoke 'em if you've got 'em." And you always had 'em because they were free. I don't know how I avoided becoming a smoker. Fortunately in this case, I have trouble forming habits, good or bad. There are about 17 million veterans of

World War II. Over half a million Americans die from tobacco every year. I think a fairly simple study could be designed to determine if the tobacco companies' addicting GIs with free cigarettes ultimately killed more people than were lost in combat in World War II.

Addresses and Web sites of resources appear at the end of the chapter. The Web site for the American Cancer Society is easy to remember: www.cancer.org.

Table 6.1—Selected Risk Factors for Breast Cancer

Age
Family history
Reproductive history
Estrogen use after menopause
Diet
Abdominal obesity

Breast Cancer

Breast cancer is the second most common cancer in women, with about 175,000 new cases each year, half of which occur in patients over sixty-five. The incidence of breast cancer increases with age until eighty. The cumulative risk of a woman having this cancer sometime in her life is about 10 percent, and, cumulatively, about one-third of those who have this cancer will die. Table 6.1 shows selected risk factors for breast cancer. Not surprisingly, the first two risk factors are the same as those for cardiovascular disease in Table 3.1: age and family history.

Age has already been discussed. Family history is receiving considerable research attention. Certain mutant genes confer a high risk of breast cancer recurring in family members, most often at younger ages. Genetic predisposition, less clearly defined than that from known mutant genes, is also of concern. All cancers, including breast cancer, that have occurred in family members should be recorded when you draw out your family history. The risk of breast cancer increases in some families in which there are other forms of cancer, such as colon, ovary, uterus, and bladder. However, as with any genetic predisposition, the more distant the relationship of the individual with the disease, the less the risk.

Reproductive history (early age of the onset of periods, late menopause, and no pregnancies or a first pregnancy after age thirty-one) has been associated with increased risk of breast cancer. The proper use of estrogens after menopause contributes positively to cardiovascular health and to the prevention of osteoporosis. There is only a small risk of breast cancer from taking estrogens at a dosage level of 0.625 milligrams (mg) daily, but apparently some modest increase in risk occurs at a higher dose of 1.25 mg. Diet—particularly one high in fat—and regular use of alcohol have been investigated. Low-fat diet has already been recom-

mended for other conditions. Whether the cardiovascular benefit of a glass of wine with dinner outweighs any potential risk for breast cancer can be discussed with your physician. Abdominal obesity in women of the type one sees in men (prominent belly) appears to constitute a risk for breast cancer as well as coronary disease.

The main preventive strategy is regular breast examination. Examine your breasts once a month when you shower or bathe—without fail. Have an annual medical examination and annual mammography. The American Cancer Society recommends that these examinations be performed throughout your lifetime. Medicare now pays for an annual mammogram.

Treatment options depend on the stage of the disease and the general condition of the patient: lumpectomy to radical mastectomy, radiation, chemotherapy, and hormone therapy. A useful Web site is that of the National Alliance of Breast Cancer Organizations: www.nabco.org. A more complete address for NABCO and related groups appears at the end of the chapter.

Prostate Cancer

Prostate cancer is the second most common cause of death from cancer among men. There are more cases of prostate cancer among older men than there are of lung cancer, but the mortality rate is not as high. Debate continues over the preferable diagnostic and therapeutic approaches. Although the American Cancer Society recommends annual digital and PSA examinations, enough committees and task forces have provided a contrary opinion that allowed Medicare to avoid paying for PSA for years—although up to 50 percent of prostate cancers are clinically advanced at initial diagnosis. One argument is that if a pathologist looks carefully at prostate tissue under a microscope, about half of men over seventy have a few cancer cells. The cancer progresses more slowly after you reach your seventies, and death becomes less likely from prostate cancer than from other causes. So goes the reasoning for less radical treatment in the elderly.

However, a study conducted in 2002 overturns previous conceptions and suggests that surgery yields better outcomes. The symptoms may be negligible or similar to those of an enlarged prostate, which all older men have, called benign prostatic hypertrophy (BPH). Getting up twice or more at night, urinating more frequently than every two hours, a sense of urgency to void, difficulty starting to urinate, stopping and starting when urinating, a weak stream, and feeling that your bladder has not emptied completely are all symptoms of BPH *and* cancer—if there are symptoms.

The obvious course of action is annual digital examination of the prostate and PSA, no matter who has to pay for it. Treatment includes surgery, radiation, and hormones.

Table 6.2—Selected Risk Factors for Colon Cancer

Age
History
Socioeconomic level

Colon Cancer

Colon cancer, or colorectal cancer, is the third most common cause of cancer deaths in men and, depending on the age, the second or third most common in older women. The incidence of colorectal cancer doubles every five years after age forty, making age an important predisposing factor.

I've listed the second item in Table 6.2 as history alone to cover not only family history but the clinical history of the individual patient. Diseases that predispose a patient to colon cancer are inflammatory bowel diseases such as ulcerative colitis, Crohn's disease, radiation colitis, and some chronic parasitic infections. Polyps represent a risk and familial polyposis a high genetic risk. There are other genetic forms of colon cancer (about 20 percent of colorectal cancer is genetic), but familial forms are more often present at earlier ages. Higher socioeconomic level has emerged as a risk factor, possibly because of a diet higher in animal fat—another reason for the recommendation of a low-fat diet for everyone.

How do you know if you have colorectal cancer? If you're getting properly screened, it will turn up as fecal occult blood or a visible lesion on sigmoidoscopy. My children, who are younger in the practice of medicine, were appalled to hear that I'd never had a sigmoidoscopy or a colonoscopy. They insist that it is the standard of care today. So I finally complied at age seventy-four and had a colonoscopy. Even though Medicare now pays for a fecal occult blood screening test, you can also do your own. Buy a ColoCARE test kit at your pharmacy. Follow the directions. You can read the results yourself, like a pregnancy test, and fill out the card for your doctor to confirm. Most often a false positive test results from eating red meat, from hemorrhoids, and from taking certain drugs that are mentioned in the kit. Also, large doses of vitamin C may lead to a false negative result. Discuss the findings with your doctor. I've checked at my pharmacy to see if they have fecal occult blood screening kits on the shelves for consumers. They don't but are happy to special order them.

If the tumor is not discovered by screening, the presenting findings might be a bowel obstruction, an abdominal mass, or bleeding. Treat-

ment is surgical resection with or without chemotherapy and radiation, depending on the stage of the cancer.

Gynecologic Malignancies

Although endometrial, cervical, and ovarian cancers peak before age sixty, they do occur in older women, and the risk they represent is the reason for annual pelvic examinations and Pap tests (now paid for by Medicare).

Other Cancers

Essentially, any organ or any part of your body is susceptible to cancer. For example, starting at the mouth and working down to the anus, there's a cancer that can occur at any step of the way. A textbook would be required to discuss all possibilities and risks. In general, if you experience any unusual change that does not go away, be suspicious. If you experience a pain, a lump, a cough, difficulty swallowing, bleeding, a growth, a mole that gets darker or changes shape, any of the symptoms of the four most common cancers already discussed—any changes—*be suspicious*.

Smoking and Cancer

I mentioned this in Chapter 3, but it bears repeating. Smoking not only causes most cases of lung cancer, it is implicated in a wide variety of other cancers. Almost all cases of cancer of the throat occur in smokers; the great majority of deaths from cancer of the mouth are in users of tobacco, smoking and smokeless. For cancers of the esophagus, kidney, bladder, pancreas, and even the cervix, the risk is higher in smokers.

BLOOD, BONE MARROW, AND LYMPH NODES

Both red and white blood cells are manufactured in the bone marrow, and the amount of marrow devoted to making these cells begins to decline at about age seventy. Average values of hemoglobin and hematocrit decrease slightly in the elderly; iron is slower to be incorporated into red blood cells, whereas white blood cells and platelets (clotting elements) remain normal to slightly decreased.

Because I've just reviewed common cancers that are sometimes referred to as solid tumors, I'll discuss malignancies of blood-forming tissues before I talk about anemias.

Acute Leukemias

People tend to think of acute leukemia as a childhood disease. Actually, acute leukemia is ten to twenty times more common in the elderly than in children, depending on the respective ages. The genetic contribution to the disease is being studied at the molecular and cellular levels. For instance, it is known that patients who have an extra chromosome 21 with Down syndrome are at greatly increased risk of leukemia. Oncogenes appear to act in the malignancy, but that topic exceeds the scope of this book. Viruses are triggering factors, as are radiation and chemical exposures.

Some older patients with leukemia may first seem to have an acute infection with high fever, but then bruising and bleeding become apparent—bleeding from the nose and mouth, into the bowel and urine. Enlarged lymph nodes, spleen, and liver are common. The disease may also come on quietly, with the older patient only experiencing weakness and pallor. The outlook for survival in older patients is poor compared with children and may be measured in months, even with chemotherapy.

Chronic Leukemias

Chronic lymphocytic leukemia is the most common leukemia in America, and, as its name denotes, it progresses more slowly than acute leukemia. Most patients are over age sixty, and men are affected twice as often as women. The disease has a clear familial predisposition and also relates to certain viral infections. Unlike the situation with acute leukemia, radiation does not appear to be a cause. More than one-fourth of patients have no symptoms and are only discovered at a routine examination with a blood count taken, in which low platelets, anemia, and abnormalities of white blood cells are detected. Some symptoms are fatigue, decreased exercise tolerance, and bacterial infections (because the cells that become abnormal are B cells, which are needed to fight infection). Treatment relates to the stage of the disease.

Recently, a highly successful experimental treatment of at least one form of leukemia most often affecting older patients has been explored that consists of nothing more drastic than taking a pill. Your cancer specialist and the Leukemia Society of America (address is at the end of the chapter) will have information on the latest breakthroughs.

Bone Marrow and Lymph Nodes

A multisystem disease called multiple myeloma, which occurs more commonly in older patients, is caused by an overgrowth of plasma cells in the bone marrow. The first sign may be bone pain. Anemia and kidney

disease are prominent. Many cancers spread to the lymph nodes. Some cancers originate in the nodes, such as Hodgkins disease and non-Hodgkins lymphoma, in which viruses and immune disorders have been implicated as causal in some patients. These conditions occur in the elderly, and the risk increases the older you get. I mention them here to call attention to the need to check for nodes (lumps) in the neck, armpits, and groin. You should check personally for nodes when you shower, and your physician should check when you have an examination.

CANCER PREVENTION

The foundation stones in the prevention of cancer are (1) knowing who is at risk and how great the risk is (you get some of this information from your family/genetic history); (2) leading a healthy lifestyle, as described in preceding chapters (e.g., not smoking, avoiding other toxic exposures, having a balanced low-fat diet, and avoiding obesity); and (3) having regular examinations and screening tests. The American Cancer Society recommends the tests in Table 6.3 for seniors.

At menopause and at the discretion of a physician, endometrial biopsy is recommended for patients considered at high risk for endometrial cancer.

COPING WITH CANCER

It's natural to feel anxiety and distress about cancer. But don't let your anxiety interfere with screening and regular examinations. Some women have such a fear of breast cancer, for example, that they won't get mammograms. Don't be one of those women. But what if you have cancer? There's plenty of help and support. In addition to the resources you get through your doctor and hospital, you may find other emotional support groups such as those centered in a community hospice. The American Cancer Society has information on such support groups and on psychologists and social workers in communities. Contact the society at the address at the end of the chapter.

The National Cancer Institute of the National Institutes of Health offers the Cancer Information Service to answer questions, provide printed material, and direct you to community resources. See the address at the end of the chapter.

ANEMIAS

Approximately one-third of elderly people seen as outpatients have some form of anemia. If your hemoglobin is below 12 or your hematocrit is

below 36, you have the *symptom* of anemia. There are numerous types and causes of anemia, from genetic disorders to bleeding in the gut to many chronic illnesses to adverse reactions to various chemicals and drugs to vitamin B12 deficiency. Anemia is a symptom, not a disease. If you have anemia, you and your doctor should discover why—and don't just "try a little iron." Iron deficiency is never normal in older patients.

Table 6.3—Screening and Examinations for Cancer

Annual cancer checkup and counseling
Annual fecal occult blood
Annual digital rectal examination and prostate-specific antigen
Annual pelvic and Pap test
Annual mammography and medical breast examination (and monthly self-examination)
Every 3–5 years: flexible sigmoidoscopy

RESOURCES

American Cancer Society
1599 Clifton Road NE, Dept. P
Atlanta, GA 30329
800-422-6237; 800-ACS-2345
www.cancer.org

National Cancer Institute
Cancer Information Service
9000 Rockville Pike
Bethesda, MD 20892
800-4-CANCER (800-422-6237)
www.nci.nih.gov

National Alliance of Breast Cancer Organizations
9 East 37th Street, 10th Floor
New York, NY 10016
800-719-9154
www.nabco.org

Prostate Cancer
www.prostate.urol.jhu.edu
www.ustoo.com

Leukemia Society of America
600 Third Avenue
New York, NY 10016
800-955-4LSA

S E V E N

MORE LEADING CAUSES OF DEATH AND DISABILITY

Medicine to produce health has to examine disease.
—Plutarch

Diseases desperate grown / By desperate appliance are relieved / Or not at all.
—Shakespeare

So far we've covered four of the ten most common causes of death in patients age sixty-five and older. I've combined heart disease (the most common) and cerebrovascular disease (the third most common) and atherosclerosis under the single heading *cardiovascular disease*. (Lumping these causes of death is arbitrary at best.) Cancer is the second most common cause of death in older Americans. In this chapter I'll discuss the remaining six leading causes of death among persons over sixty-five, using data from the National Center for Health Statistics. (A list of the top ten is given in Table 7.1.) What may surprise some readers (until they read the section on smoking) is that the fourth most common cause of death among seniors is chronic obstructive pulmonary disease.

LUNG

Pulmonary function declines as people age. Lungs get old and damaged for many reasons: biologic changes, inflammations, infections, environmental insults, pollution—and smoking, most emphatically.

Chronic Obstructive Pulmonary Disease (COPD)

Not only is COPD the fourth leading cause of death among seniors, it ranks second only to heart disease as a disability

Table 7.1—Ten Leading Causes of Death in Persons 65 and Older

1.	Heart disease
2.	Cancer
3.	Cerebrovascular diseases
4.	Chronic obstructive pulmonary diseases and associated conditions
5.	Pneumonia and influenza
6.	Diabetes mellitus
7.	Accidents and adverse effects
8.	Nephritis, nephrotic syndrome, and nephrosis
9.	Atherosclerosis
10.	Septicemia

Source: National Center for Health Statistics.

compensated by Social Security. COPD is really a group of diseases that includes emphysema, bronchiectasis, asthma, chronic bronchitis, and small airway disease—all of which have in common obstruction to the flow of air into the lungs. The obstruction may be reversible or irreversible. And the cause is the familiar one we've discussed with other diseases: a genetic-environmental interaction, a genetic predisposition in some patients to react unfavorably to environmental insults. Over 80 percent of cases can be attributed to the environmental insult of smoking. Symptoms are cough with increased production of sputum, wheezing, and shortness of breath.

The goal of treatment is to allow the patient to maintain as much independence as possible through attention to general health, proper nutrition (as in Chapter 4), a graduated exercise program (along the lines of that in Chapter 5), oxygen, prevention of infection, and medical management of bronchospasm. Supplemental oxygen is required for patients with poor respiratory reserve and may be administered at home through an oxygen concentrator and on trips outside the home from a small tank of liquid oxygen. Annual flu shots, pneumococcal vaccine, and prompt antibiotic treatment when the sputum becomes purulent (thick and colored) are essential elements in preventing infections from becoming a significant threat. A variety of oral and inhalant medications are prescribed for bronchospasm.

For further information and literature, use the Web site www.nhlbi.nih.gov. Also, for a lot of useful literature, particularly a booklet entitled *Around the Clock With C.O.P.D.*, contact your local American Lung Association office or the national address, which appears at the end of this chapter.

For a patient with COPD, it's a little late to begin lecturing him or her about the hazards of smoking.

INFECTIOUS DISEASES

Infectious diseases are by far the leading cause of death in the world, although not in America. According to the National Center for Health

Statistics, the fifth leading cause of death among seniors is combined into one category called pneumonia and influenza. The tenth leading cause is septicemia. I prefer to handle these categories together as infectious diseases, since they're all infections. To start with, let me emphasize three immunizations older patients should have.

1. Pneumococcus every six years
2. Influenza every year
3. One I admit I haven't had in a long time, a tetanus booster every ten years

Pneumonia

Sir William Osler, whom I mentioned in Chapter 3, called pneumonia an enemy of old age but later revised his opinion to call it a friend of old age. (I apologize for references that are historical, but the older I get, the more interesting I find history.) Depending on a senior's state of preparation for death, pneumonia can be either a friend or an enemy. What is indisputable is that the risk of dying of pneumonia increases dramatically with age. The pneumococcus is the most frequent cause of bacterial pneumonia in seniors and at all ages.

That's why it's recommended that anyone over age sixty-five be immunized with pneumococcal vaccine. If you have not received your immunization, please get it soon. (But, of course, other bacteria and viruses also cause pneumonia.)

How do you know if you have any form of pneumonia? Cough and fever and coughing up sputum (from deep in the lungs, not the throat) are signs at any age. In the elderly, the fever may not be very high, and the cough may be ignored for too long as "just a cold." A chest X-ray will make the diagnosis. *Don't delay* in seeking medical help. The disease can cause death quickly. Specific antibiotics and antimicrobial agents will be chosen to combat the specific organism causing the disease.

Influenza

Influenza is a winter disease that occurs in epidemics. The virus that causes flu mutates regularly (antigenic drift), so the influenza vaccine you received last year is not likely to prevent the disease this year. That's why it's essential to get your flu shot every year. Even then, there is a certain amount of guesswork about which new strains are likely to cause this year's epidemic. Older patients account for about three-fourths of deaths attributed to influenza.

If you do get flu, how do you know you have it? Symptoms include fever (not as high in seniors as in younger adults), headache, muscle aches, cough, occasional chills, and a symptom I find very useful in diagnosis: pain on moving your eyes from side to side. Rarely, there may be diarrhea. ("Stomach flu" is really another disease.) Pneumonia is a major complication in the elderly and may be caused by the flu virus itself or by a bacterial secondary invader. Bacterial pneumonia is treated with appropriate antibiotics. However, resistance is becoming common. There are now drugs (Tamiflu, amantadine, and rimantadine) that may reduce the symptoms of influenza and shorten the course of the disease.

The critical recommendation regarding influenza in the elderly is: get your flu shot.

Tuberculosis

Tuberculosis (TB) was a devastating infectious disease for centuries until the antibiotic era, at which time the illness came under remarkable control in industrialized countries. Unfortunately, during the past decade it has been making a comeback, led by strains of bacteria that are multidrug resistant to almost all antibiotics. I mention the disease here because it can occur in the elderly, but often with milder symptoms than in young adults: weakness, cough, weight loss, and some difficulty breathing in contrast to coughing up blood and night sweats, as in younger patients. Chest X-rays support the diagnosis of TB.

Septicemia

Septicemia is the tenth leading cause of death in the elderly, but since it's an infection, I'll mention it in this space on infectious diseases. It's not an entity like influenza or pneumonia, but rather it results from bacteria getting into the blood as a complication of a disease or a procedure—particularly catheterization of the bladder in older patients. Fever, chills, and positive blood cultures establish the diagnosis. Despite antibiotic treatment, 25 percent of patients with sepsis from the urinary tract die. Catheterizing the bladder of an elderly patient is not a procedure to be undertaken lightly.

DIABETES AND SOME METABOLIC AND ENDOCRINE DISORDERS

Diabetes is the sixth most common cause of death in patients over age sixty-five. It's obvious that with aging, hormone levels change; menopause is an example. Several hormones show decreased levels with in-

creasing age: sex hormones in men as well as women, aldosterone, thyroid-stimulating hormone. Several others show increased levels: insulin, atrial natriuretic peptide (which contributes to both older men and older women having to get up in the middle of the night to urinate). There are many important metabolic and endocrine diseases that afflict older adults, but I'll cover only four because this is a guide, not a textbook. One of these conditions that can be classified as a metabolic disorder as well as a cardiovascular disease is abnormalities of cholesterol and lipoproteins, which I discussed in Chapter 3. Diabetes, thyroid hormones, and ovarian hormones will be discussed here.

Diabetes

Diabetes in patients older than sixty-five accounts for more than 35,000 deaths per year. About 6 percent of the American population across all age groups has some form of diabetes—that's over 16 million people.

The three general categories of diabetes are type I, or insulin-dependent diabetes; type II, or non–insulin-dependent diabetes; and secondary diabetes.

Type I, insulin-dependent diabetes. This was formerly called juvenile diabetes because most cases occurred in children or young adults. Adults even in their seventies or eighties may first show symptoms of this form of diabetes that absolutely requires insulin for control and survival. That human leukocyteantigen region on chromosome 6 I've discussed before is a genetic basis for this disease. Over 1 million Americans have type I diabetes.

Type II, non–insulin-dependent diabetes. This is by far the most common form of the disease in older patients. It does not absolutely require insulin for survival, but insulin may be used to provide optimal control. About 15 percent of Americans between ages sixty-five and seventy-four have type II diabetes. Of these, almost 90 percent are obese at the onset of the disease, and the more obese you are, the greater your risk of having type II diabetes. (I discussed obesity in Chapters 4, 5, and 6 as a risk for other diseases.) Of the approximately 15 million Americans who have type II diabetes, 6 million don't know it.

Secondary diabetes. This type occurs in response to various diseases and conditions, such as cystic fibrosis and pancreatitis, and in response to certain drugs. Early in our experience with heart transplantation, we used cortisone-type drugs to help prevent rejection. As soon as

I had their rejection under control, some of my patients became diabetic. We learned quickly from the experience, and there are better drugs now to combat rejection.

How would you suspect you had diabetes? Type II diabetes may go undetected or be discovered only at a routine medical examination. Perhaps 75 percent of older adults who have type II diabetes initially had no symptoms. Later, polyuria (excessive volume of urine, not just frequent urination), polydipsia (excessive thirst and drinking large amounts of fluids), and polyphagia (excessive hunger and food intake, which may still not prevent weight loss) are the classical findings in diabetes. Increased susceptibility to infections, blurring of vision, and altered sensation in the extremities—particularly the feet—may occur as symptoms early in the course of the disease.

The tingling, numbness, and diminished sensation of pain in the feet require close monitoring. Check your feet every night for any sore or blister that might not be causing the pain you would normally expect—simply because you can't feel it. These inconsequential-looking lesions may become very consequential in diabetics, leading to severe infections and even amputations.

Diet and exercise. Here we go again—as if we didn't discuss this enough in Chapters 4 and 5. The four components of therapy for diabetes are diet, exercise, oral medications, and insulin.

Because almost 90 percent of patients with type II diabetes are obese at the onset of their disease, your physician will recommend a weight reduction diet. Please note: *your physician must be involved.* However, the techniques for weight loss covered in Chapter 4 could prove useful. Most physicians will recommend the one-pound-a-week weight loss program for diabetics as realistic. In Tables 4.3 and 4.4, you can read the caloric goal for you to lose one pound a week from your starting weight, or you can subtract about 500 calories a day from your maintenance requirement. Exercise goes with a weight loss program and with cardiovascular health. However, if your diabetes requires insulin for control, a safe exercise program becomes more challenging and should only by followed under medical supervision.

Oral medications and insulin. This is a subject you will pursue with your doctor. If diet fails, oral medications called sulfonylureas are usually tried. If optimal management of type II diabetes is still not possible, insulin may be needed. If you are one of the rare patients to have an onset of type I diabetes as an older adult, insulin will be required. Insulin may

also be necessary if you have diabetes secondary to a disease or a drug like cortisone.

For brochures and information, contact the American Diabetes Association, Diabetes Information Service Center (the address is given at the end of this chapter).

Thyroid

Three conditions related to the thyroid gland need to be mentioned: hypothyroidism, nodule formation (both become more frequent with aging), and hyperthyroidism.

Hypothyroidism. Hypothyroidism (too little thyroid hormone production) is a significant problem in the elderly, overtly affecting as high as 5 percent of patients over age sixty-five and more mildly affecting about 10 percent more. The older you get, the more likely you are to have some degree of hypothyroidism, and women have the condition much more often than men.

Most often, vague symptoms of hypothyroidism are simply attributed to aging. More diagnostic findings are fatigue, depression, muscle and joint pain, constipation, and dry skin. But these findings are very nonspecific, so the diagnosis is more accurately made by laboratory studies of thyroid-stimulating hormone (TSH) and T_4 levels. Replacement therapy is with a drug called levothyroxine (you'll find it in your family *PDR* under the name Synthroid). Older patients should take less of the drug than young adults and should start with even smaller initial doses, gradually increasing to a level about two-thirds the amount appropriate for younger adults. Although the risk is relatively small, there is a hazard of heart attack early in the course of treatment—that's why you need to start replacement slowly and gradually and only under close medical supervision.

Thyroid nodules. These nodules, which are more common in the elderly—although still relatively rare—are usually benign but may be malignant, so an evaluation for the possibility of cancer is indicated.

Hyperthyroidism. This means too much thyroid hormone production. The condition in seniors may not be typical of that seen in younger patients. Certain findings that are suggestive may occur, however: increased pulse rate, increased intolerance to heat, sweating, increased appetite, weight loss, fatigue, heart rhythm disturbances, anginal chest pain, irritability, psychiatric disturbances, prominent eyes, thyroid gland enlargement. Diagnosis is made by laboratory studies, the most accurate of which is the s-TSH. Treatment is with ^{131}I.

Ovarian Hormones

This guide is for seniors, so the discussion will focus on their needs, not on birth control and other issues for younger women. The decision to have ovarian hormone replacement after menopause must be carefully reached with a physician, and the patient should give informed consent. Before starting hormone treatment, a patient should have a complete history and physical examination: breast, pelvic with Pap test, mammography, and blood pressure. If there has been abnormal vaginal bleeding, an endometrial biopsy is indicated.

Hormone replacement therapy (HRT) in women over age sixty-five is strongly discouraged. The benefits and risks should be thoughtfully considered. The value to the prevention or delay of osteoporosis is reasonably well accepted. The three legs in the tripod to prevent osteoporosis are adequate calcium intake (either through diet or diet plus supplements), weight-bearing exercise, and, frequently, ovarian hormones. Increased risks of cancer of the endometrium (the lining of the uterus), ovary, and breast are the major concerns. If a woman has an intact uterus, progestins should be given with the estrogen, which should substantially lower the increased risk of endometrial cancer from estrogens. It is presently uncertain if progestins offer the same protection against the increased estrogen-related risk of cancer of the ovary and breast. There are other adverse effects and contraindications that should be explored with a physician.

Postmenopausal women usually have continuous daily doses of an estrogen (no higher dose than 0.625 mg) and a progestin *taken together* rather than cycling the progestin and having withdrawal bleeding. If you're postmenopausal and are still cycling progestins, you might want to ask your doctor why. If you're over sixty-five and are still taking HRT, ask your doctor why.

For further information, check the Web at www.nih.gov.

ACCIDENTS, FALLS, BONES, AND JOINTS

Some of the problems that will be discussed in this section might be written off as simply annoyances of getting old—if it weren't for the contribution conditions such as osteoporosis make to the seventh leading cause of death among the elderly: accidents.

Falls

A 1995 estimate indicated that injuries in the United States from falls among the elderly cost $70 billion annually. Some older patients are

unwilling to mention falls and accidents to their physicians because they fear the prospect of a nursing home lurks in the shadows. And even when a fall is mentioned, both the patient and the physician might superficially conclude that the fall was a result of "normal aging" rather than looking more deeply for other causes that could be treated.

I'm sure that if you're over sixty-five, you've noticed that your sense of balance isn't what it used to be. If you've started to do the seven exercises in Chapter 5, you may have been surprised that the trunk twister and even the head roll made you a little dizzy. If you haven't been exercising adequately, your muscles may be weak, and your joints may betray you. Of course, you may also have significant arthritis, which we'll discuss later. But even joints without noticeable arthritis can cause sudden pain or tend to buckle. You have to be careful on stairs—a knee may start to give way, and you have to catch yourself. (Always have your hand free to hold the bannister or rail. Do not carry anything on the handrail side.) Be cautious getting up in the middle of the night. A knee may buckle, or you may become dizzy. Get up slowly. Roll over on your side, and push yourself up from your side. Pause in the sitting position before you stand. Be sure your legs are supporting you faithfully or that a knee isn't failing to take your weight the way it should, causing you to collapse and end up with a broken hip that will shorten your life. If you're taking cholesterol-lowering drugs in the "statin" family, such as Zocor or Lipitor, you have to learn not to make sudden moves or stress your muscles with exertion to prevent experiencing a couple of weeks of muscle pain. You should still exercise, but exercise carefully.

The symptom *syncope*, which is feeling faint or having an actual brief loss of consciousness, has many causes: orthostatic hypotension (feeling faint upon standing), parkinsonism and various other medical conditions and the drugs used to treat them, and what is called micturition syncope, which is a danger to older people who have to get up in the middle of the night to urinate and may feel faint and fall immediately after urinating (it may also happen after defecating or after a large meal.) Awareness and caution are the approaches to preventing syncopes. Some drugs that can contribute to orthostatic hypotension are psychoactive drugs, blood pressure medications, and several heart medicines. Drugs are perhaps the most common cause of orthostatic hypotension.

A simple tally of the number of medical conditions that contribute to falls can fill a page. I'll list only a few. There are the neurologic problems such as stroke and transient ischemic attack, seizures, parkinsonism, and cerebellar and inner ear disorders. Cardiac problems include heart

attack and rhythm disturbances. Bleeding and anemia, low blood sugar, low sodium, low potassium, hypothyroidism, and dehydration can predispose a person to falls and are among the conditions to consider before attributing falls to "just getting old." One group of causes of falls that I will repeat for emphasis is medication: many psychoactive drugs, some antihypertensives, diuretics, narcotics. If you fall, discuss with your doctor the medications you're taking, if and how they might have contributed to the fall, and what changes can be made.

Falls are not the only accidents seniors have. Auto accidents are also a cause of concern. Illness and medication are principal factors in accidents among older drivers. However, I was surprised to find that drivers in the age group 75–79 have fewer collisions than those in the 20–24 group, and even those in the 80–84 age group have fewer collisions than teenagers.

Parkinsonism

This disease is a major cause of disability in those over fifty years of age. It is basically a movement disorder, which often first presents with a characteristic "pill-rolling" tremor of the hands and progresses through loss of postural reflexes (sometimes leading to falls), muscular rigidity, slowing and slurring of speech, difficulty swallowing, and sleep disorders. It is estimated that 1 million Americans have the syndrome and that 50,000 new cases occur each year. In most cases (primary parkinsonism) the cause cannot be identified. However, several etiologic categories of secondary parkinsonism are described: viral encephalitis, atherosclerosis, certain drugs and toxins, head trauma, tumors, and metabolic and degenerative disorders. Certain drugs and combinations of drugs offer symptomatic relief. A transplantation procedure of fetal cells to the brains of younger patients not responding adequately to drug therapy is being investigated.

Osteoporosis

Before I discuss fractures, I'd better review osteoporosis, which isn't just about getting hunched over in old age but is about having other fragile bones that are also susceptible to fracture. About 20 million Americans have this very serious problem. Women are affected two to six times more commonly than men.

As in many other diseases, a positive family history suggests a genetic-environmental interaction.

Other risk factors include:

- Age
- Low calcium intake
- Insufficient weight-bearing exercise
- White and Asian race
- Small frame
- Low body weight (that's thin and underweight, *not* normal weight)
- Cigarette smoking (surprised?)
- Excessive alcohol consumption
- Excessive caffeine consumption

The most common fractures in the elderly are in the vertebrae of the spine (that's what gets you hunched over), the wrist, and—most dangerous—the hip.

Prevention of osteoporosis occurs through adequate nutrition, exercise, and, for women, ovarian hormone replacement—all of which have been shown to increase bone density. Table 4.2 suggests a daily calcium intake of 1,200 mg for older men and 1,500 mg for postmenopausal women (even more than is recommended for teenagers and pregnant or lactating women). You also need your minimum daily requirement of vitamin D, which you'll get in your multivitamin, in milk, and in other foods. As for exercise, as noted in Chapter 5, weight-bearing activities are essential. If you walk briskly enough, you can get an aerobic workout and weight-bearing exercise together. Finally, the issue of accelerated bone loss in women after menopause was discussed earlier in this chapter in the context of replacement ovarian hormones. Medicare now pays for bone mass measurement. Ask your doctor about it.

For further information, consult the National Osteoporosis Foundation (address is given at the end of this chapter).

Fractures

At the time of this writing, approximately 340,000 hip fractures (80 percent of them occurring in women) requiring hospitalization occur each year in America, about half in people over eighty-five. Hip fractures in women over age sixty-five have risen by 40 percent in the past decade. A hip fracture can be the beginning of the end; 20 percent of patients who had been independent require institutional care for over a year, half of the patients never regain their former mobility, and there is a 15

percent increase in mortality during the first year after breaking a hip. *Preventive measures* were noted earlier. Treatment includes pinning and hip replacement. Fractures of the vertebrae are compression in type and may be silent or may be accompanied by pain requiring bed rest for a brief period, followed by sitting up, walking as soon as possible, and rehabilitation.

Osteoarthritis

This is the most prevalent chronic condition and the leading cause of disability in persons over age sixty-five. At least 40 million Americans have some form of arthritis (including rheumatoid arthritis) in varying degrees of severity. Aging by itself, however, is not the cause of osteoarthritis. Risk factors include obesity (added weight and stress to the legs), inflammatory arthritis, trauma to joints, and congenital malformations. I doubt that any senior doesn't recognize the symptoms and signs of arthritis: pain, swelling, limited movement, and eventually deformity of different joints—particularly the fingers, knees, hips, toes, and spine. An X-ray is helpful in diagnosis.

Treatment includes our old friend exercise, physical therapy, and some medications. Usually, acetaminophen is tried first for pain relief. At the next level are non-steroidal anti-inflammatory drugs (NSAIDs), the most common of which is aspirin. Ibuprofen, indomethacin, and naproxen are three of the many newer NSAIDs. (Curiously, ibuprofen may counteract the beneficial effects of aspirin in preventing heart attacks.) A word of caution: aspirin can occasionally irritate the stomach and possibly rev up an ulcer (but extremely rarely in the dosage of a baby aspirin a day for prevention of heart attacks and strokes). But the newer NSAIDs are more dangerous and can cause gastrointestinal bleeding without the usual warning of ulcer—pain. Taking NSAIDs with food and with an acid reducer should decrease the risk of ulcer. However, other risks go with NSAIDs, including drug-induced acute kidney failure and high blood pressure. Two highly advertised NSAIDs, Vioxx and Celebrex, were implicated in increased risk of heart attacks and strokes in a study published in August 2001. Seniors should be *extremely* cautious about taking the newer NSAIDs. I will not take a newer NSAID for anything, any time. It may appear that I'm going out of my way to knock NSAIDs. They're obviously beneficial to many people, or they wouldn't be so widely used. My bias against the drugs may relate in part to the fact that I've had an ulcer.

An over-the-counter drug that is becoming quite popular is glucosamine chondroitin sulfate. A large study is under way to confirm or deny what some smaller studies and patients' anecdotal reports have sug-

gested: that this inexpensive medication is quite effective.

Those who might like literature on arthritis, including special exercises, may contact the Arthritis Foundation at the address at the end of the chapter.

Fibromyalgia

I used to think that fibromyalgia was the syndrome of the month at best and imaginary at worst. But the Arthritis Foundation offers a brochure on the condition, which is becoming progressively better defined. The brochure states that 5 million Americans have the disorder. The symptoms are generalized muscular pain, tender points, fatigue, depression, and sleep disturbances. Apparently, seniors are more frequently affected than young adults. But there's no laboratory test to confirm the diagnosis, so it has often been dismissed as imaginary. A rheumatologist may need to be consulted to rule in or rule out the diagnosis. Physical and emotional stresses seem to trigger symptoms, which may be relieved by medications best prescribed by your doctor.

THE KIDNEYS AND PLUMBING PROBLEMS

The category called "nephritis, nephrotic syndrome, and nephrosis" is the eighth leading cause of death among patients over age sixty-five and the last item on our statistical list of ten because I've merged atherosclerosis (9) and septicemia (10) with earlier discussions. For the purposes of this brief discussion, the various kidney diseases need not conform to the category in the previous sentence.

It's a fact of normal aging that the kidney gets smaller and function decreases. This has important implications in how an older patient is able to respond to demands and stresses, which may lead to problems with potassium and sodium balance and high blood pressure. An elderly patient with elderly kidneys is not able to tolerate drugs as easily as a younger patient. Dosages have to be designed to take this factor into account. Indeed, some drugs such as newer NSAIDs may not only have to be used with caution but may have to be avoided entirely.

Some Kidney Diseases

Nephrotic syndrome presents a clinical picture of edema, losing protein in the urine, and having low albumin in the blood. The patient is highly susceptible to infections. Cancers of the lung, colon, and stomach may be factors in this syndrome, and an important preventable cause is (surprise?) NSAID administration.

Nephritis is an inflammatory disease of the kidneys, often following a streptococcal infection and having much less edema and protein in the urine.

Also, the arteries to the kidney may become damaged and narrowed just as the coronary arteries and arteries in the brain do from atherosclerosis. Renal artery thrombosis leads to deterioration of kidney function.

Acute and chronic failure of the kidneys may be related to a number of diseases and insults. The treatment of these conditions will not be covered here. For more information, contact the National Kidney and Urologic Diseases Information Clearinghouse (see address at the end of the chapter).

Prostate

We discussed prostate cancer in Chapter 6, but there is another problem with the prostate—enlargement, called benign prostatic hypertrophy (BPH). Getting up twice or more at night, urinating more frequently than every two hours, a sense of urgency to void, difficulty starting to urinate, stopping and starting when urinating, a weak stream, and feeling that your bladder has not emptied completely are all symptoms of BPH—the fifth leading cause of hospitalization of men over sixty-five. Infections and retrograde damage to the urinary tract and kidneys are serious consequences of the disease.

The first order of business is relief of symptoms, of which getting up at night (nocturia) is the most annoying for many men. If you have to get up six times and have difficulty going back to sleep each time, you don't get much rest. Several drugs are useful in reducing the number of trips to the bathroom to one or two each night. One such drug, Hytrin, serves a dual purpose. It lowers blood pressure as well as reducing nocturia. That means you have to start with low doses of the drug until you reach the desired level. You must not stop the drug abruptly, or you may have a blood pressure rebound.

If medications are insufficient to relieve the symptoms of BPH, particularly those of obstruction to urinary flow and retrograde damage to kidney function (increased creatinine levels, blood in the urine), surgery may be indicated.

Nocturia

There are obviously other causes of nocturia than enlarged prostate because older women also have to get up at night. Earlier in this chapter, in discussing levels of hormones, I mentioned one problem that increases

with age (atrial natriuretic peptide), which contributes to nocturia by mobilizing fluid from the tissues when you lie down. If you have edema for any reason (heart failure, blood vessel disease, low albumin in the blood, medications such as NSAIDs), when you lie down the excess fluid is cleared through the kidney, and the volume of urine increases. Medical diuretics, caffeine, alcohol, and fluid intake late in the evening can also increase urine volume. Then there are problems of the lower urinary tract other than prostate: small bladder capacity, sensory urgency, and overflow incontinence.

Urinary Incontinence

This problem afflicts about a fourth of the elderly living at home and about half of those living in nursing homes and similar facilities. Of course, you can joke about it, as was done during the 1996 presidential campaign. The question went: "Clinton wears boxer shorts rather than briefs. What kind of shorts does Dole wear?" The answer was, "Depends." What's not funny is the embarrassment and isolation incontinence causes the elderly. And from the economic point of view, I was astonished to learn that $15 billion is spent annually on management of incontinence, more than is spent on kidney dialysis and coronary bypass surgery combined.

Incontinence can be temporary, resulting from infections, inflammation, psychological disorders, and medications. Diuretics, not unexpectedly, lead the list of drugs that cause incontinence; but psychoactive drugs, alcohol, and even antihistamines and nasal decongestants have been implicated.

Urinary incontinence may become more than temporarily prolonged in disorders accompanied by uninhibited bladder contractions associated with several diseases from Alzheimer, stroke, and multiple sclerosis to conditions of the bladder and prostate.

Treatment must be individualized, starting with a careful history and physical examination leading to the development of courses of medical or even surgical therapy. Yes, special undergarments are valuable in some cases.

A resource shown at the end of the chapter is Help for Incontinent People (HIP).

A FEW OTHER MEDICAL PROBLEMS AND ANNOYANCES

A problem doesn't have to qualify as a leading cause of death and disability in persons over age sixty-five to be a reason for concern to se-

niors. I've worked some of these conditions into discussions of related problems, and I'll now fill in a few more blanks.

Gastrointestinal (GI) Diseases

These diseases, for example, account for one in forty hospital admissions. As you get older, the two primary functions of the GI tract—digestion and absorption—are altered. The interaction between function and stress is particularly relevant to seniors who may be experiencing loss of loved ones and productive activity at a time when their physical capability is declining and disease processes are increasing. Again there are jokes by stand-up comedians about oldsters always wanting to talk about bodily functions related to their bowels—but the three most common GI problems of the elderly are constipation, fecal incontinence, and diverticular disease.

Constipation. This problem becomes much more frequent after age sixty-five and is more common in women and in nonwhites. There are dietary causes (not enough fiber, calories, or fluid), functional causes (immobility, weakness, unsatisfactory toilet opportunities), and diseases (obstruction of the colon from tumors and diverticulitis, stroke, and hypothyroidism). A major cause of constipation is medication, with morphine and its relatives at the top of the list (remember the close relative of morphine, paregoric, is used to stop diarrhea). Psychoactive drugs, antacids, GI antispasmodics, antihistamines, diuretics, antihypertensives—the list of contributors goes on and on.

Treatment obviously depends on finding the cause and could be as minor as making dietary changes, such as adding bran, and providing laxatives—or as major as surgery. A simple dietary addition that serves more than one purpose is to keep a box of prunes in the refrigerator to satisfy your sweet tooth with a relatively low-cal snack and get some fiber at the same time.

Fecal incontinence. This isn't having an "accident" because you have diarrhea and can't find a toilet in time but is being unable to control what should be normal bowel movements because of decreased rectal sensation (with fecal impaction or diabetes), deficient anal sphincter function (from trauma or spinal cord lesions), and mental impairment. Treatment depends on the cause—for example, having enemas for fecal impaction.

Diverticular disease. This disease starts with diverticula, which are outpouchings of the lining of the colon. If they become inflamed, the

condition is called diverticulosis (which may be accompanied by crampy pain from spasm). If diverticulae become infected, you have diverticulitis (which may cause fever, abscess, bowel obstruction, and bleeding). More commonly, bleeding occurs from diverticula that are not infected and may be secondary to erosion and irritants. About 40 percent of persons over age sixty-five have diverticular disease. For painful diverticular disease, analgesics and antispasmodics are used. If there is infection, antibiotics are required. For bleeding, colonoscopy and appropriate treatment is indicated.

Peptic ulcer. This problem occurs most often in the duodenum, but the older the patient, the more frequently it begins to occur in the stomach. The symptoms are a gnawing pain in the abdomen three inches or so above the belly button, which is usually relieved promptly by food or antacid. There are now several effective drugs, starting with what are called histamine H_2-receptor blockers (like Tagamet), advancing to Prilosec, and including antibiotics for the bacterial infection with *H. pylori* that is frequently associated with peptic ulcer. Among the complications are hemorrhage and perforation. Sometimes there are no warning symptoms of ulcer pain before an unexpected gastrointestinal hemorrhage, especially in patients taking NSAIDs.

Inflammatory bowel diseases. These diseases, such as ulcerative colitis and Crohn's disease, are serious conditions that usually present in patients much younger than seniors. If you have one of these diseases, you've probably been under the care of physicians and surgeons for many years, so I won't offer a description.

GERD (gastroesophageal reflux disease). GERD is annoying, but it is more than an annoyance because it has recently been implicated as a cause of cancer of the esophagus. GERD is experienced as heartburn with the contents of your stomach occasionally backing up into the esophagus all the way to your throat. Your doctor should be consulted for diagnosis and recommendations of drugs.

A resource for information on digestive diseases is the National Digestive Diseases Information Clearinghouse, address provided at the end of this chapter.

Eyes, Ears, Nose, and Throat

These items are often lumped together as HEENT (H is for head) on the physical examination outline a medical student and resident write in the hospital chart, so I'll follow that protocol here with EENT.

Eyes. When your arms got too short to allow you to read comfortably, you knew you'd reached a milestone in your life. Also with aging, redness and irritation of the eyes (dry eye syndrome) may require artificial-tears eyedrops. Growths around the eyes may need medical evaluation. When the visual correction provided by your glasses is no longer doing the job, see your ophthalmologist or optometrist and get a new prescription. Even with new prescriptions, it may be hard to read the fine print on maps and labels. I often take a small magnifying glass with me.

Both visual impairment and cataracts make the list of leading chronic conditions among seniors. If you live long enough, you'll probably develop cataracts, which are opacities in the lens of the eye. Although cataracts reduce visual acuity, one stage of one type of cataract corrects the vision for a while, permitting a person to return to reading without glasses (second sight). When visual acuity becomes significantly diminished, cataracts can be removed surgically.

Ears. As you might expect, hearing loss goes with aging. About 28 million Americans have a hearing deficit, over 10 million of whom are seniors. Hearing loss is apparently the number one cause of disability for military personnel (explosions and firing weapons are not conducive to hearing conservation). So by the time we reach age sixty-five, one-third of Americans are hearing impaired, men more often than women.

The problem sneaks up on you. For years, many of us simply do not realize how much our hearing is diminishing until some event or series of events causes us to get a hearing evaluation. If you're beginning to wonder about your hearing acuity, ask a loved one if he or she has suspected a problem. Then get your hearing checked by an audiologist at a hearing center or with your ENT doctor. (The current rage among hearing aids is the type that fits entirely in the ear. My wife wears one, and you can't see it.)

If you think hearing loss is a big problem in our generation, think what the mega-decibel music is doing to the younger generations. A cardinal rule in saving your hearing is: protect yourself from loud noise.

Many genetic causes of deafness are produced by single mutant genes, and there are nongenetic causes of deafness at birth, such as infections like rubella. Among the other types of hearing loss of concern to seniors are the end results of childhood ear infections; otosclerosis, which has a positive family history; ototoxicity from drugs (certain antibiotics, diuretics, quinine); and salicylates, which can also cause an annoying ringing in the ears.

Nose and throat. The main problems here for seniors are sinusitis and nosebleeds.

Sinusitis is a frequently reported chronic condition for which the treatment of symptoms is the main approach. Sinus drainage is an annoyance—that phlegmy cough in the morning, the gunk in the throat that you can't clear out and that affects your voice, sometimes for hours. The main thing is to distinguish a cough coming from the throat (coughing from sinus drainage) and a cough of sputum from deeper down, from the lungs, which could mean pneumonia.

Nosebleeds, which a senior may not have had for fifty years, may recur because of the thinning of the nasal mucous membranes with age and taking "blood-thinner" drugs. Pressing on or packing the nose may be all that is needed. But if the bleeding doesn't go away, seeing a doctor to search for underlying causes beyond aging mucous membranes may be required.

Selected resources are the National Association for Visually Handicapped and the National Information Center on Deafness at Gallaudet University. Both addresses appear at the end of the chapter.

Skin

We've all noticed unattractive spots cropping up all over our bodies—seems like new ones every day. The tan ones on the hands and arms are sometimes called liver spots or age spots, and the small, round red dots are called capillary hemangiomas—no worries about either of these.

The main threat is cancer. And underlying much skin cancer is what is called photoaging. Try to tell the sun-tanned beauties in their teens and twenties that they're going to have skin like prunes in their sixties and seventies, skin that is increasingly susceptible to cancer. At our age, we aren't likely to be lying on a beach at high noon. I hope we've also learned to stay out of the sun, wear brimmed hats, and use sunscreen SPF 15 and above.

Malignant melanoma. This is the most feared of the skin cancers because it metastasizes (sends out tumors to other parts of the body) so readily and so widely. Seniors following the news of Senator John McCain's bout with malignant melanoma do not need reminding that this cancer does not respect gray hair. Although melanomas constitute only 4 percent of skin cancers, they represent 80 percent of deaths from skin cancer. Prevention through early detection is the key. You should examine

your skin from head to toe once a month. Melanomas are usually brown or black, irregular in shape and shades of color. If a mole begins to grow, bleed, or change color (e.g., from brown to black); if the margins become irregular—and, most important, if the lesion becomes thicker, invades more deeply under the skin—that is a sign of possible malignant transformation. Treatment is wide surgical excision and removal of involved lymph nodes. The mortality rate is very high if metastasis has occurred.

Basal cell carcinoma. This cancer appears mostly on the head and neck and is raised and pearly in appearance. The tumor can invade deep tissues, bone, and cartilage and can disfigure but seldom metastasizes. Treatment is by surgical removal and radiation.

Squamous cell carcinoma. This form usually grows in sun-damaged areas but may also appear at a site of inflammation. These tumors metastasize. After diagnostic biopsy, surgery and radiation are used in treatment.

For more information, contact the Skin Cancer Foundation at the address provided at the end of this chapter.

Restless Legs Syndrome (RLS) and Its Relatives

I'd never even heard of this until recently, when my wife came home from an appointment with a neurologist to seek a diagnosis for some annoying symptoms. And that was the diagnosis she received: restless legs syndrome. We asked our son, and of course he knew all about it, being in training in internal medicine. He provided us with an article on the subject. Apparently, this is a common condition among older patients. It's just that no one had put the findings together and given them a name until recently.

The key findings are the need—sometimes involuntarily and usually at night or in repose—to move the limbs (legs but occasionally the arms), accompanied by crawling sensations and discomfort often deep within the calf; relief of the sensations and discomfort by exercise. RLS may be associated with iron-deficiency anemia, diabetes, uremia, rheumatoid arthritis, caffeine and other pharmacologic agents; occasional positive family history; increasing severity with advancing age; sleep disturbance. A related condition is periodic limb movements of sleep. Treatment, including iron supplement, depends on severity and requires medical input.

Viagra

I don't know where else to put this. Right now it's a hot topic on TV and in the stock market. The only comment I care to make is to quote Hippocrates: "Do no harm."

RESOURCES

The resource material for this and all other chapters is offered to help you be a knowledgeable patient in interacting with your doctors.

National Heart, Lung and Blood Institute
Information Center
PO Box 30105
Bethesda, MD 20824-0105
www.nhlbi.nih.gov

American Lung Association
1740 Broadway
New York, NY 10019
800-LUNG-USA (800-586-4872)
www.lungusa.org

National Institute of Allergy and Infectious Diseases
Information Center
Bethesda, MD 20824
www.niaid.nih.gov

American Diabetes Association
Diabetes Information Service Center
1660 Duke Street
Alexandria, VA 22314
800-232-3472
www.diabetes.org

National Diabetes Information Clearinghouse
One Information Way
Bethesda, MD 20892-3560
301-654-3327

National Digestive Diseases Information Clearinghouse
Two Information Way
Bethesda, MD 20892
301-654-3820

National Osteoporosis Foundation
1150 17th Street NW
Washington, DC 20036
202-223-2226
www.nof.org

The Arthritis Foundation
PO Box 7669
Atlanta, GA 30357-0669
800-283-7800
www.arthritis.org

National Institute of Arthritis and Musculoskeletal and Skin Diseases
Information Clearinghouse
National Institutes of Health
1 AMS Circle
Bethesda, MD 20892
www.nih.gov/niams

National Kidney and Urologic Diseases Information Clearinghouse
Three Information Way
Bethesda, MD 20892-3580
301-654-4415

Help for Incontinent People (HIP)
PO Box 544
Union, SC 29379
1-800-BLADDER

National Association for Visually Handicapped
22 West 21st Street, 6th Floor
New York, NY 10010
212-889-3141

National Information Center on Deafness
Gallaudet University
800 Florida Avenue NE
Washington, DC 20002
202-651-5051
e-mail: nicd@gallux.gallaudet.edu

Skin Cancer Foundation
245 Fifth Avenue, Suite 2402
New York, NY 10016
212-725-5176

A FEW MORE WEB ADDRESSES YOU MIGHT FIND USEFUL

MedWebPlus (a search engine)
www.medwebplus.com

The Med Engine (another search engine)
www.themedengine.com

healthfinder (offers a lot of information)
www.healthfinder.gov

Medlineplus (the largest source of medical articles)
www.medlineplus.gov

Quackwatch (a place to monitor potentially bad medical advice)
www.quackwatch.com

E I G H T

MENTAL AND SOCIAL HEALTH AND ELDER ABUSE

I am not young enough to know everything.
—James M. Barrie

Young men have a passion for regarding their elders as senile.
—Henry Adams

Older people greatly fear experiencing diminished mental capacity. Some long-term studies address the effects of aging on intellectual performance. As you've probably noticed, if you don't have an underlying health problem, your cognitive ability remains about the same through your sixties and seventies and into your eighties—and that's what the studies have confirmed. If your health is seriously impaired with a condition such as hypothyroidism, depression, atherosclerotic blockage of arteries that feed the brain, repeated transient ischemic attacks, or severe congestive heart failure, then, of course, you won't think as well. We made some calculations of cardiac output on our heart transplant patients and found that some of them had experienced such severe heart failure that the whole body was trying to live on less than the amount of blood the brain alone normally requires to function optimally. Needless to say, thinking and behavior were adversely influenced.

Mental health problems appear to be more prominent than those of intellectual function. Studies in the United States have found a prevalence of 15 to 25 percent of serious mental disorders in people over sixty-five years of age. Of Americans over sixty-five, as many as 10 percent may have Alzheimer disease. This

condition will be discussed later. Depression is the most common disorder, accounting for about half of mental illness in the elderly. This will also be discussed later. To illustrate the magnitude of the problem of mental illness, right after cardiovascular medications, psychoactive drugs are the most frequently prescribed for older patients.

We don't have to confine our discussion of mental illness to selected psychiatric problems. Many other conditions of life can detract from emotional well-being.

Living alone is one condition. About 10 million elderly persons live alone, and almost 8 million of them are women. Perhaps there has been the loss of a spouse—recently or in the more distant past—through death or divorce. Or perhaps they've always lived alone. Whatever the situation, it is essential for these highly vulnerable, often impoverished people to have a strong support system. If you live alone, you need friends and family, people who care what happens to you. And to have friends, of course, you have to go out of your way to be a friend. After you retire, there won't be interactions with friends at work. But you should maintain those friendships you've cherished in the past. There are church groups, social groups, volunteer placements, senior centers, all sorts of ways to create and maintain friendships.

A particular problem with living alone is diet. It's easier to nibble on anything that's handy and not make the effort to achieve good nutrition. What constitutes a balanced diet was discussed in Chapter 4. A particular problem for those living alone is insufficient protein, vitamins, and calcium.

A few years ago the country got a good laugh from that television ad with the little old lady: "I've fallen and I can't get up." As I remember, the pitch was for an alarm system with a remote alert function. We have an alarm system to notify not only the police and fire departments but to summon medical help. If you can afford it, it's a good investment.

That brings us to what you can afford. Those who have been unable to save for retirement may not be in a position to follow a lot of the suggestions in this book. It's often a choice between things such as alarm systems and necessities such as food, heat, and medications. To me, this is totally unacceptable in a civilized and prosperous nation. The last thing I want to do is be insensitive to such issues. For your safety and well-being, you may want to make an early choice between independent living and assisted living. By assisted living I do not mean a nursing home. And I will not address the potential pitfalls of nursing home care. That could be another book. An example of assisted living that may be suitable, if available, is discussed briefly in Chapter 9.

ILLNESSES

The interaction between mental and physical health is becoming well recognized. Why one person with a physical problem is able to live independently while another with the same problem finds himself or herself confined to a nursing home often relates to psychiatric factors. It is only possible to mention selected common conditions in this section.

Depression

Depression leads the way into a cascade of problems. Among seniors, as many as 15 percent reach a threshold that is diagnostic of severe depression. At least twice as high a percentage is represented among the elderly living in institutions. You can understand why. If you weren't depressed on arriving in some unsatisfactory "residential facility," depression could soon follow.

As with any other condition there are degrees of severity ranging from brief depression to minor depression to major depression to melancholic depression. Manifestations of depression affect mood (down in the dumps, anxious, irritable, fatigued, often with pain and other bodily symptoms). There can be progression through poor concentration, withdrawal, hopelessness, helplessness, thoughts of death, loss of appetite, weight loss, insomnia—and on to the severest psychotic forms with delusions and hallucinations.

Treatment should first be directed at relieving situational causes of brief and minor depressions, reserving medications for more severe and persistent symptoms. And the challenge is to find short courses of drugs that will relieve the symptoms while producing the fewest and least objectionable side effects. These are issues to be worked out with your physician. I will not discuss the various options for drug therapy. But you may wish to inform yourself about your prescriptions by reading the relevant sections in your *PDR* and *Merck Manual*. You can also receive useful information from the National Institute of Mental Health Depression Awareness, Recognition and Treatment Program at the address at the end of the chapter.

Anxiety

There are three divisions of anxiety disorders: anxiety states, phobic disorders, and post-traumatic stress disorders. Anxiety states are common in the elderly and include generalized feelings of anxiety and obsessive-compulsive behavior. Phobic disorders are more common in younger people. And since the Vietnam War, post-traumatic stress disorder is a

popular name for a condition that has probably followed every war. I'm not sure we had a catchy name for this problem after World War II other than shell shock, which I think started in World War I. Post-traumatic stress also follows abuse and hardship in childhood as well as in adult life. How long the symptoms last has yet to be determined, but the Veterans Administration is probably accumulating data—particularly from Vietnam veterans—now that a clear diagnostic classification exists.

Anxiety states require family support and counseling from a physician or therapist with whom the patient feels confident. Once more, medications are often needed to reduce the tension and agitation of the anxiety. Once more, the caution flag of side effects must be raised. Discuss these problems in detail with your physician. And look up your prescriptions in your *PDR* and *Merck Manual*.

Alzheimer Disease

Alzheimer disease (AD), sometimes called senile dementia of the Alzheimer type, is the condition many older people feel might be inevitable. It's a serious problem, but it's far from inevitable. As was mentioned earlier, as many as 10 percent of us over sixty-five may eventually carry a diagnosis of AD. Put that together with Alzheimer patients younger than sixty-five and you find 4 million Americans with the diagnosis. *That still means nine out of ten seniors never have the disease*. This is not to say that AD is not an enormous public health problem, costing the country $90 billion annually and ranking among the leading causes of death among seniors. As the population ages, millions more will have AD. But *at this time, nine out of ten seniors do not have the disease, and new breakthroughs in prevention and treatment are available or soon to become available*.

What is Alzheimer disease? It's a progressive neuropsychiatric disease, found mainly in older adults and twice as commonly in women, affecting thinking and behavioral functions. Heredity plays a role in that about 20 percent of cases are familial. What the genetic factors may be is still under investigation, but it is known that a mutation in a gene located in chromosome 21 is present in many patients with AD. This gene is involved in the production of beta-amyloid, a material that accumulates as plaques in the brains of Alzheimer patients. Chromosome 21 is the same chromosome that is present in an extra dose in patients with Down syndrome. Supporting the hypothesis of an association between an abnormality located on chromosome 21 and AD is the finding that most patients with Down syndrome who live long enough will develop

Alzheimer brain pathology. Markers on other chromosomes (14 and 19) and various biochemical abnormalities have also been suggested.

The disease is slowly progressive, and diagnosis is based on history, physical examination, and elimination of the dozens of other causes of dementia. The definitive diagnosis is made by brain biopsy, but a report in May 2001 suggests that a confident clinical diagnosis of AD can be reached in 95 percent of patients without examining brain tissue.

There is encouraging news on preventing and treating Alzheimer disease. Of course, identifying patients with genetic predisposition to AD and recognizing early signs of the disease are important in mobilizing preventive strategies. A drug called memantine appears to work better in slowing the progression of symptoms in severe Alzheimer than anything else tried so far. A recent study on hypertension suggests that keeping blood pressure normal not only decreases the risk of having dementia secondary to blood vessel problems in the brain but actually lowers the chance of Alzheimer-type dementia. Another study suggests that patients who take antioxidants such as vitamin E (400 mg daily) lower their Alzheimer risk. Low-fat diet is considered an important preventive measure. A report in June 2001 asserts that having a systolic blood pressure higher than 160 or a cholesterol level higher than 250 more than doubles the risk of AD and having both more than triples the risk. Finally, a preliminary study in March 2002 suggests that the statin drugs patients take to prevent heart attacks also may reduce the risk of Alzheimer disease.

A conference on Alzheimer disease in July 2000 discussed a trial of a beta-amyloid vaccine to combat the plaque formations in the brain that appear to be the underlying pathology in AD. The safety of the vaccine has been ascertained. In the next few years the effectiveness may be demonstrated, and the vaccine will become available sometime between 2003 and 2006 (according to a lead investigator).

Treatment should be directed to keeping the patient as comfortable and oriented as possible while recognizing other health problems as they arise, such as those of the heart. Blood pressure should be carefully controlled. There are drugs that may be of value in relieving some symptoms of this presently irreversible disease.

In the early stages of Alzheimer, before becoming incapacitated, the patient should make it clear what his or her wishes are for financial, legal, and health care arrangements through a trusted relative or agent. Resources for patients and their families are found at the end of the chapter. They include the Alzheimer's Association and the Alzheimer's Disease Education and Referral (ADEAR) Center.

There are also so-called non-Alzheimer dementias that are sometimes difficult to differentiate from Alzheimer disease and exceed the scope of this presentation. One of these is multi-infarct dementia caused by interruption of blood flow to areas of the brain.

ELDER ABUSE

This is an unpleasant topic but is such an important one that there is a center in Washington, D.C., devoted to the problem of abuse of the elderly. I give the address at the end of the chapter. We frequently hear horror stories about fragile older people being mugged on city streets. They're certainly easy victims. And we hear about the homes of seniors being invaded and burglarized and the residents being brutalized or murdered. Later in this section, I'll also discuss nonviolent crimes. But let's start at the top.

Family Abuse

Unfortunately, most abuse comes from within the family. Physical mistreatment—including hitting, restraining, and neglect—constitutes one category; psychological abuse such as verbal cruelty is a second; and a third, which receives less attention in surveys, is financial abuse, misappropriating the assets of a senior.

In a study from the Family Research Laboratory, most physical abuse is perpetrated by one spouse against another (65 percent of cases). I found it surprising that the abuser was twice as likely to be the elderly wife, in contrast to the perception we have of spousal abuse in younger couples. In 23 percent of cases, an adult child abused a parent. Predictably, both the abused and the abuser are anxious to keep the behavior secret. Both need counseling. But the abused senior needs protection through some agency such as adult protective services or the police. State laws mandate reporting elder abuse and protecting the victim.

If you think you're in danger of losing a purse or a wallet in a mugging on a city street, you may be in more danger of losing all your assets to someone you trust, to a loved one. This can happen at all levels of society, in rural areas and quiet suburbs as well as in cities. It can start with pressure from a son or daughter or all your children. "We need money for this or that." "We need our inheritance." "Let us manage your affairs." "Your senility requires that you have a guardian and a conservator." "Just sign this." "Let's go for a nice ride." "Here's where you're going to live from now on."

Think twice before you let anyone, even a beloved son or daughter, be a joint signatory on any of your bank or investment accounts or have

durable power of attorney—a legal but treacherous way to steal your civil rights and take everything from you, not just your house and belongings but your freedom and dignity. Watch out for the words *durable power of attorney, competence, incapacitated,* and *disabled.* They're an open door for perfidious family members to have themselves declared guardians and conservators and to have you declared incompetent, with no control over your assets and with no legal standing before a court as an independent and free citizen in control of your own life.

Also watch out for shifty doctors who, at the behest of greedy relatives, are willing to declare you incompetent without valid medical evidence. You could end up confined in poverty in a miserable room in an "old folks home," with all your possessions confiscated. *Unfortunately, this happens.* It happens so often that chapters are devoted to this topic in textbooks. And it may be done "legally" if you don't have someone to fight for your rights. *Call for help.* Find an advocate—a more distant relative with no financial stake, an agency of the state or local governments. *Be on your guard.*

A Web site that can give you legal information useful for seniors on topics ranging from rights of the elderly and disabled to estate planning and trusts to Medicare and Medicaid is www.seniorlaw.com.

Scams and Other "Nonviolent" Abuse

Since seniors are often at home and often lonely, they're vulnerable to a serious problem that may not be physical abuse but that does great harm to their psyches and financial security. There are unscrupulous, smooth-talking people out there who make their living preying on the elderly. You're lonely? They try to become your friends. Why? So they can make off with your life savings as quickly as you can sign a check or a contract.

Their port of entry is most often the telephone. So your first line of defense is also the telephone. You should know that telemarketing fraud in America is a $40 billion- a-year business. Imagine a single fraud that's larger than the entire gross domestic product of many countries. A successful approach is to say that the money is for police, firefighters, and children's benefits. The *Denver Post* ran a series on this problem in Colorado in February 2001 and showed that as little as two cents of every dollar solicited for so-called badge organizations actually went to the organizations. The rest went to the solicitors and the fund-raising business entity, which often is in a different state.

Screen your calls. If you don't have these items, get an answering machine and a caller ID attachment for your phone. Anyone who needs

to reach you legitimately will leave a message. And you can decide from the message how legitimate a call actually is. As soon as you have caller ID, punch in the code to reject all anonymous calls. When the phone rings and all that shows on the ID is *unavailable* or *out of area* or an unfamiliar caller, let it ring. "Unavailable" is not likely to leave a message. If a message is left, you can decide what you want to do about it. Most often, someone is trying to sell you something or solicit money while keeping their phone number or identity secret. If there is a phone number together with unavailable or out of area or an unfamiliar name, listen to the message on the answering machine and decide if you want to answer, call back later, or simply ignore the call.

Anything you want to buy you should decide about after carefully comparing products. You should never agree to buy anything over the phone or meet with anyone you don't know on the basis of a telephone sales pitch. Don't accept anything over the phone that you are supposed to have won. That's most likely to be fraud. And you should not give any caller information that would identify you, such as your Social Security or credit card number. Repeat: *never agree to buy or give or accept anything over the phone*. You decide what you want to buy and when you want to buy it, what you want to give and to whom you want to give it.

If you screen your calls, you will immediately eliminate sellers of investments and home improvements, fraudulent offers of prizes and trips you have supposedly won, and requests for donations. Some of the calls are designed to separate you from your assets. Some calls may be legitimate. A very few may even be for worthwhile charities. But will you nibble on a possibly legitimate call? No. Why? Because you do *not* buy anything over the phone. Even if it's something you were just going to buy. You don't pledge to give anything over the phone, either. You decide when and to whom you want to donate money. You take your time and make your own selection from among many valid options, not in response to pressure from a phone call. And with caller ID and an answering machine, you never answer those calls in the first place. But as a backup plan, if you inadvertently answer the phone, before anyone can get into a pitch—even if it's for the most noble cause on earth—simply say "no, thank you."

Your second line of defense is your door. Door-to-door salesmen and home repair thieves may try to contact you that way. Having been a door-to-door salesman when I was a student, I sympathize with their job. But I advise seniors to look through a curtain to see who's there. If it's not someone you know or are expecting, like a mailman, don't answer the

door. Be particularly wary of home repair con artists who may try to rip you off at any time, particularly after a storm. You decide if and when you need a repair, and take charge of the repair yourself by getting two or three competitive bids.

A third line of defense is your mailbox. Don't believe anything you receive in the mail that tells you you've won something or are close to winning something. Think very carefully about ordering through the mail. I rarely open material that doesn't come with first-class postage.

Scams are serious forms of abuse. Two recent ones getting attention are living trusts (which Congress is looking into) and promissory note frauds. Protect yourself. With 120 million American households, you've probably received the "Know Fraud" postcard from the postmaster general. I hope it's displayed by your phone. In case you threw it out, the address is given at the end of the chapter.

Identity Theft

This may be the most pernicious and the most difficult and expensive to reverse of all scams. At least 500,000 Americans of all ages become new victims each year. Your Social Security number (SSN), credit card numbers and preapproved applications, driver's license, even telephone number are invitations to thieves to rob you of your financial security, your good credit, your good name—your very identity. Guard these pieces of information. Do not give out your SSN over the phone to a solicitor, a salesman, or almost anyone else. Tear up or shred credit card receipts and especially preapproved offers for credit, which allow impostors to steal your name to obtain a credit card. Can you believe that every year 3.5 billion preapproved offers for credit cards are sent out, including to people who are dead—and in one case to a pet dog? Stop your "credit header" from being sold (this may include everything from your SSN and date of birth to your mother's maiden name) by calling the toll-free credit bureau number (888) 567-8688, which is also listed in the next section. Many banks also sell your detailed credit headers, and some states sell your driver's license information. These practices are being challenged in court. Credit bureaus admit that selling headers earns them tens of millions of dollars each year.

The first place to call if you find your identity has been stolen is the Federal Trade Commission toll free at (877) 382-4357. See the full address at the end of this chapter. The U.S. Postal Service and the police "may" provide help. To report identity theft and correct your credit record, contact Equifax, Experian, and Trans Union Fraud Victim Assistance at

the numbers at the end of the chapter. Other useful addresses appear in the resources at the end of the chapter.

Credit Offers and Marketing Lists

Having read what's gone before, you're not going to accept unsolicited material and will *shred or tear into small bits preapproved credit offers,* but why be deluged with this stuff in the first place? Theoretically, you can opt out of preapproved credit offers and get your name off marketing lists of three major credit bureaus—Equifax, Experian, and Trans Union—by calling one number, 888-567-8688, which is the same number for identity theft. A problem here is that the computerized answering machine requires that you give your Social Security number. I was at first reluctant to provide that information, knowing how important the number is in identity theft. But I eventually did because they already have it anyway. To remove your name from mail and phone lists of the Direct Marketing Association (DMA), you have to write the organization at two addresses: DMA Mail Preference Service, P.O. Box 9008, Farmingdale, NY 11735-9008 and DMA Telephone Preference Service, P.O. Box 9014, Farmingdale, NY 11735-9014.

I've followed the advice I've given here and have seen a substantial decrease in phone and mail solicitations. For a short time I'm also answering calls that show as "unavailable" or "out of area" on my caller ID and asking for the full name of the caller, where the call is originating from, and the phone number. I record the date and time, and I tell the caller never to call again. "Unavailables" usually decline to give their phone numbers. The phone companies have been the worst offenders, but MCI and Sprint have promised to suppress the calls, and MCI has acknowledged that it is illegal to call after being told not to call again. If I receive another call from MCI or Sprint, I'll record the names and times and may be entitled to cash compensation.

Privacy of Medical Records

This is a complex issue of law and regulations. Ask your health plan and provider what their policy and practice is and what your rights are. New regulations are being proposed at the national level. Addresses for advice on this subject are provided in the resources.

RESOURCES

National Center on Elder Abuse
Suite 500
810 First Street NE
Washington, DC 20002
202-682-2470

NIMH Depression Awareness, Recognition, and Treatment Program
Room 10-85
5600 Fishers Lane
Rockville, MD 20857
800-421-4211

Alzheimer's Association
Suite 1000
919 North Michigan Avenue
Chicago, IL 60611-1676
800-272-3900
www.alz.org

Alzheimer's Disease Education and Referral (ADEAR) Center
PO Box 8250
Silver Spring, MD 20907-8250
800-438-4380
e-mail: adear@alzheimers.org

Merck Manual of Medical Information Home Edition
Chapter 4 and Appendix I

Credit bureaus to get your name off marketing lists
Equifax, Experian, and Trans Union. All use the same number:
888-567-8688
To get your credit record from these bureaus
Equifax: 800-685-1111
Experian: 888-397-3742
Trans Union: 800-645-1933

Direct marketing lists (to remove your name, both addresses must be contacted)
DMA Mail Preference Service, PO Box 9008, Farmingdale, NY 11735-9008
DMA Telephone Preference Service, PO Box 9014, Farmingdale, NY 11735-9014

SeniorLaw
www.seniorlaw.com

Know Fraud
PO Box 45600
Washington, DC 20026-5600
877-987-3728
www.consumer.gov/knowfraud

Identity Theft:
Federal Trade Commission
Consumer Response Center
600 Pennsylvania Avenue NW
Washington, DC
877-382-4357 (toll free)
www.consumer.gov/idtheft

AARP
www.aarp.org/confacts/money/identity.html

Credit Bureau numbers for identity theft:
Equifax 800-525-6285
Experian 800-301-7195
Trans Union Fraud Victim Assistance 800-680-7289

Medical Privacy Resources:
Health Privacy Project
Georgetown University
2233 Wisconsin Avenue NW
Suite 525
Washington, DC 20007
www.healthprivacy.org

Privacy Rights Clearinghouse
1717 Kettner Avenue
Suite 105
San Diego, CA 92501
www.privacy rights.org

N I N E

RETIREMENT

And add to these retired Leisure, / That in trim gardens takes its pleasure.
—John Milton

Every man on the foundation of his own sufferings and joys builds for all.
—Albert Camus

Opinions about retirement are as varied as the people who retire. For some it is the most rewarding time of life, an opportunity to fulfill dreams delayed. For others it is little more than a death sentence. For those who have prepared financially, it can be a comfortable, even a prosperous time. For those who have few resources beyond Social Security, it can be a relatively impoverished and stressful time.

Most people of my generation are in a better position to retire than the coming generation will be—unless significant changes are made in the financing of retirement income. In fact, many baby boomers doubt they will be able to retire at all, whereas people in my generation are retiring earlier. I was surprised to read in the *Washington Post* that today only 38 percent of those over age fifty-five are in the workforce and that 70 percent of Social Security beneficiaries take early retirement before age sixty-five. Of course, the 38 percent working at over age fifty-five encompasses *all* ages over fifty-five—including people in their nineties, eighties, and so on, down to age fifty-five. I worry about future generations, and I want to see something done to stabilize financing.

In Chapter 2 I discussed aging from the point of view of the physical process and touched on implications for the indi-

vidual and the family. Unfortunately, there are societal and even global implications of aging. So before concentrating on the problem in the United States, it might be useful to review the concept of the graying of the planet. In the 1970s I agonized over reports to the Club of Rome (an international think tank analyzing populations and economies), starting with its book *The Limits to Growth*. Researchers fed data into a computer model on five basic factors that will deplete earth's capacity to maintain a satisfactory life for its inhabitants. The first factor was population growth. When my contemporaries and I were young children, the population of the planet was 2 billion. Now the population is 6 billion—it's tripled in my lifetime. There are more people living on earth at this moment than have lived here throughout all the centuries of human existence put together. So the Club of Rome was rightly concerned about the population explosion. A recent follow-up to the Cairo Conference on population growth held a few years ago proposed a modest strategy of holding the planet's population to 9.8 billion by 2050. Too much time at the latest conference was devoted to wrangling over issues such as contraception, sex education for teenagers, and abortion—including resistance from several Roman Catholic and Muslim countries to pledge to ensure safe abortions where abortions are legal.

What *The Limits to Growth*, the first report to the Club of Rome, didn't feed into the computer model was a dramatic change in the age of the world population. The developed and, to a lesser extent, developing countries are experiencing a much needed decline in fertility rates. In 2000 elders over age sixty began to outnumber the generation under age fourteen in developed countries. The developing countries will follow suit by 2050, so somewhere around 2043 the earth will host more inhabitants sixty and older than people fourteen and younger. Can you believe it? But whereas the developed world became relatively prosperous before it turned gray, the developing world is turning gray but remaining poor—and that population is still growing much too fast to avert the disasters foreseen by the Club of Rome.

Mankind at the Turning Point: The Second Report to the Club of Rome corrects deficiencies in the first report and proposes less industrialization in the rich countries and more in the poor nations. What are the projections for the developed world? Quite a bit different than those in the first Club of Rome model. Take Italy, for example. Today there are only 1.3 contributors for every retiree in public pension systems. France, Germany, Britain, and Japan all hover around 2.5 contributors per retiree. For France, Germany, and Italy, the payroll tax rates to cover retirees

already exceed one-third of taxable income. By 2030 the rate for Italy will be over 70 percent. By contrast, the United States is in great shape.

How great is great? Our projected payroll tax will be only 31.9 percent in 2030. Only?

Too often (and frequently justifiably) the senior lobbies are characterized as the "greedy geezers." Most seniors are no longer subsisting on dog food in unheated rooms and dying because of lack of medical care and life-sustaining medications. But the pendulum may have swung a little too far, not only in Europe and Japan but here as well. We shouldn't be on tropical cruises while working people trying to raise families are paying taxes to help provide monthly checks we don't really need. (Of course, most of the people who receive Medicare and Social Security [SS] are also taxpayers. I'll discuss later my bias as to who really needs monthly SS checks.)

But please don't think the money you've put into Social Security and Medicare necessarily covers all you may be taking out right now. You can do the arithmetic. You may be getting a lot more back than you've contributed. Think of the small deductions thirty and forty years ago. Think of the progressively larger deductions the past decade or two. Add it up: your SS check with cost-of-living increases and Medicare-financed hospital and medical bills (if you've had them). In three to five years, most of us have drawn out everything we put in—although some who paid the maximum over many years and have used very little Medicare may still be drawing on their own contributions after ten years. Conversely, in only one year, some of us with large hospital expenses can easily exceed a lifetime of our contributions. As an extreme example, the first Social Security check went out in January 1940 to an individual whose total payroll contribution had been $24.75 and whose lifetime benefit totaled $22,888.92.

There are presently 3.3 workers for every Social Security beneficiary. Taxpayers are the ones funding a lot of our monthly checks and picking up our hospital bills. If you're disabled and getting Social Security income, that comes completely from the general fund, not the Social Security Trust. In 2030 there will be twice as many seniors as there are today and only 2.0 workers per retiree. (As President Clinton said in his 1999 State of the Union Address, we have converted from a baby boom to a senior boom.) And if the baby boomers are worried, how do you think their kids are feeling?

Back in 1983, wasn't there a sweeping reorganization to raise payroll deductions to "save Social Security"? What happened? Well, as I under-

stand it, money to save Social Security went into government bonds (some critics call them IOUs) to pay daily expenses of government. To illustrate the recent cash flow, in 1997 payroll taxes put $457.7 billion into the system, and benefits to 44 million people receiving Social Security totaled $406 billion. Surpluses from these payroll taxes go into reserves, which will reach a peak around 2020; then they'll go into deficit, and the reserves will decline rapidly until they disappear by 2032. But apparently this isn't the only or even the major problem. Critical problems include the fact that a lot of baby boomers are going to be retiring *and* that people are living longer. Then as soon as the budget was balanced and there was a surplus, a new administration came in and declared a disastrous tax reduction while leaving Social Security and particularly Medicare unprepared for the next generation of retirees.

In the meantime, some states want to opt out of Social Security for all state employees. The University of Colorado allowed its faculty and other employees to choose between Social Security and an alternative state-run plan. I elected Social Security. Now Colorado and Oregon (other states may also be lining up) have passed resolutions to ask Congress to allow them to drop out of Social Security entirely for all their employees. Other workers, specifically many teachers in public schools, may have a different pension plan instead of Social Security. Even at its present rate of funding, without other significant dropouts, Social Security (as of this writing) will become insolvent in 2032.

I've got to share something that is discussed almost in whispers among academics in public health. We deplore the early deaths and disease caused by smoking but quietly acknowledge that smoking greatly reduces the cost of paying out Social Security benefits. And if you die before age sixty-five, Medicare gets off free. Even if you die in your late sixties or early seventies, there's a potential saving of lots of Medicare and Social Security payments. As I write this, a White House Conference on saving Social Security is playing on C-SPAN. If they mentioned the previous fact, I missed it. I will also add a personal observation. Because people are stopping smoking, embracing healthful diets and exercise, and taking cholesterol-lowering drugs, antihypertensives, aspirin, and antioxidant vitamins, seniors will live even longer and collect even more SS checks. So in 2030 there may be only 1.7 instead of 2.0 workers for every retiree.

Because the insurance industry is not prepared to cover the hospital and medical expenses of seniors at a premium anyone other than the very wealthy can afford, essentially all retirees need Medicare. But who

needs the monthly Social Security check? Unfortunately, a lot of people do. Many seniors have no other source of income. And for those in that predicament, the standard of living is spare. I know of one person who not only lived on her Social Security check but saved a little money from it even after buying medications, which were her largest single expense. She had gifts from her children, but her monthly check more than covered her basic expenses. She had a comfortable, small, air-conditioned, three-room apartment a few blocks away from where her son and his family live. She prepared some of her meals in her own kitchen and took other meals in a congregate dining room. This assisted-living facility offered many activities, such as quilting, games, and conversations among peers—all under the care of in-house supervision. But that remarkable achievement was possible because she lived in federally subsidized housing for the elderly in a small town in the South. Many places in the country charge more for rent alone than the entire monthly SS check. (You may have guessed that I've been talking about my mother-in-law again.) Of course, she couldn't possibly pay her own Part A hospital and Part B medical expenses.

Who *doesn't* need the monthly Social Security check? I'll start out with me. I don't need the check; however, I do need Medicare because I would find it difficult to pay $50,000 a year (or some such exorbitant figure) as a premium for health insurance. And you don't need the SS check either as long as you have a sound retirement plan. But what politician has the courage to take on well-organized geezers and geezerettes? The strands of our safety net are being unraveled and transferred from the needy to be rewoven into comforters for the greedy—transferred from the poor to the middle class and well-to-do. Are there relatively straightforward solutions to provide a safety net for those who need it when they need it and for as long as they need it? Of course there are. You and I could sit down and write out several approaches. One is what is known as means testing for Social Security benefits. Another is beginning benefits at a later age.

What about Medicare? Not a difficult question either. How about doing what all other industrialized countries (except South Africa) do? Institute one health program for all citizens: universal care for old and young and everyone in between. Harry and Louise and Flo and managed care organizations and pharmaceutical companies and hospitals and many doctors might not like it, but I can tell you from conversations I've had with colleagues in Canada (where I did my genetics training and have many friends), their universal health care works much better than our present system.

This is not to say there are not constant complaints in Canada about the cost to the national budget, the slowness of getting approval for certain treatments, long waits in emergency rooms (similar to the United States), and the less than astronomical financial compensation for doctors. A lot of the problem in Canada is supply and demand. When the Canadian budget was not balanced, too many doctors and nurses were urged to take early retirement. Some emigrated to the United States. Now that the Canadian budget is balanced, immigration of foreign doctors is still prohibited, and spaces in Canadian medical schools have been cut 20 percent. Many hospitals in Canada have closed and merged, just as they have in the United States. But the cost for the health care program in Canada compared to the United States is a much smaller percentage of the gross domestic product, even though everyone is covered—and the abuses and delays appear to me to be minor compared to what HMOs are doing to Americans.

DECISIONS

These are very personal. If you work for an organization that allows you to remain on the job for as long as you wish and doesn't want to face an age discrimination suit, you could work until you collapse and die at your desk. For some workers their jobs mean everything. There is, in fact, no life for them outside of the job. In their late seventies and even their eighties, many may work just as effectively as they did two decades earlier. However, some of these workers' productivity may be diminished, but they hang on to their positions and salaries and prevent younger workers below them from advancing. This is known as being "retired on the job."

What happened to downsizing and the gimmick of transferring (demoting) people into an undesirable job within the organization? It depends on how savvy the worker is at the litigation game. Most downsized workers of any age go quietly, deeply wounded. They would not want to stay where they're not wanted. But a lot depends on your finances and the thickness of your skin. If you need the money, you may have to go to the mat and bite and gouge and pull hair.

In Chapter 2, I used the word *apoptosis*, which means programmed cell death—the process in the living, healthy organism of causing some cells to die to permit the growth and development of other cells, which promotes the ultimate benefit of the body. You might think of the workplace and society in general in terms that apply to a living organism. There's a time to make way for new growth. But what's right for one person may not be right for another.

TO FULFILL DREAMS DELAYED

Family activities are at the top of dreams to be fulfilled and not delayed—if you have family. If your spouse is alive, spoil her or him. Spoil the grandchildren. Of course, a parent shouldn't spoil his or her own children, but you can share in their lives as much as possible without being too intrusive. What a joy that can be.

With respect to work, let's start from the position many of my retired colleagues and I share. We're satisfied with the careers from which we've retired and are happy to find a new direction for the remainder of our lives. Some call this "recareering." As a medical school professor, I enjoyed teaching, doing research, and taking care of my patients. I also enjoyed writing, including writing textbooks and research articles. But they were part of my old job. What I also enjoyed but had little time for was writing novels and poetry. That was my dream delayed. Now it's my new job. And I love it. I write mainstream novels under my own name and mysteries under the pen name Allan Conan. I have published a small book of poetry. And I write books in the area of health for consumers. Also, I've written a memoir.

Some retirees prefer a step-down approach and do part-time consulting in their fields of expertise. Some would rather establish a new, even a full-time, career. There is also full-time volunteer work, such as with the homeless or even overseas, if you have a skill that is needed and a sponsor like a church or the Peace Corps. All of us want to continue to have full lives, but we want lives filled with activities of our choosing. Activities that please and delight us. And for some, the activity that pleases most is continuing to work full-time at our original job.

Travel is high on most retirees' dream-delayed wish list. Look at any tour group, in the flesh or in TV footage, and you'll see mainly the Medicare set. Some older travelers want to go out on their own. A week in Hawaii. A week in Nepal. Whatever your budget and physical condition allow. But the older you get, the more secure you feel if you're part of an organized group. My wife and I receive travel brochures once or twice a week from our universities—an opportunity for people of similar backgrounds and interests to get to know one another or to get reacquainted after many years. The schools have our records, they know we're in the traveling-retirees age bracket. Travel clubs, church and social groups, even the standard two-week if-this-is-Wednesday-it-must-be-Lucerne guided tours work fine.

Volunteer charitable work, increased time in church activities, political activism, volunteering for hospice work—all provide opportunities for

social involvement and giving back our fair share to society and to the planet. There's also time for entertainment, plays, concerts, and movies we couldn't squeeze in to previously full schedules. And how about all the books you've been wanting to read but didn't have time? Now you have time.

So often we hear from retired friends who say they're so busy they don't know how they fit their former jobs into their schedules. And we say the same thing.

WHERE SHOULD YOU LIVE?

That depends on your financial resources. Many retirees, including us, prefer to live in the communities in which they raised their children. Some continue to live in the houses in which the children grew up. Some prefer houses that are more convenient, more senior friendly. If it's a two-story house, having a bedroom and full bath on the main floor is important, if not essential. A quiet street or cul-de-sac with sidewalks that encourage pedestrians is highly desirable. More important would be close proximity to neighbors. Townhouses in developments and in gated communities provide more closeness and sense of security (more closeness than some may wish). Apartments, whether condominium or rental, should be on lower floors if possible. However, if you have a rent-controlled apartment on a higher floor, you might not want to lose it.

Moving to the Sunbelt is another option many seniors choose. Communities designed specifically for seniors have considerable appeal.

Because of our society's mobility and the demands of professions and businesses, it is often not possible for the children and grandchildren to live as close as we would wish. A multigenerational extended family, living in close proximity, frequently existed in the "good old days." Such an opportunity is not as common today. If you have only one child, you might wish to retire close to him or her to be able to interact with the family in a mutually supportive way. Or you may want to live close to one of your children with whom there is supportive interaction.

ESCAPING A DEATH SENTENCE

If you had no life outside the job, if you haven't got dreams to fulfill, do something about it—even at this late date. If your spouse is alive and you have children and grandchildren, give of yourself to them. You don't have to do basket weaving or painting by numbers or turning into a couch potato in front of talk shows and soaps. Read. Read history, novels, poetry, philosophy, religion, current affairs. Find out what mischief

Congress is perpetrating. Be a political activist. A community volunteer. Become part of church and social groups. Take dancing lessons. Take piano or guitar lessons. Whatever. Become involved.

WHAT'S NATURAL?

Is it natural to retire? Many other species, after they've reproduced and contributed their genes to the next generation, simply die or are sufficiently weakened that they easily fall victim to predators. But we're not salmon or caribou. As marvelously instinctive as these creatures are, we have discerned no evidence that they are capable of creating art or religion/philosophy or science or what we might call higher symbolic functions. Retirement can be an opportunity to put our higher functions and everything else in our lives together. I'll discuss this more in the final chapter.

RESOURCES

Donella H. Meadows, D. L. Meadows, J. Randers, and W. W. Behrens, *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind* (New York: Universe, 1972).

Mihajlo Mesarovic and Eduard Pestel, *Mankind at the Turning Point: The Second Report to the Club of Rome* (New York: E. P. Dutton, 1972).

Medicare and You 2003.

T E N

ENVOI

This thou perceivest which makes thy love more strong,
To love that well which thou must leave ere long.
—Shakespeare

I've reviewed the aging process, some illnesses and conditions "that flesh is heir to," and approaches to disease prevention, healthful living, optimal health care, and protecting yourself from medical errors. One point I've made has been that aging can be pleasant, even interesting, *if you maintain a reasonable level of good health*. We've looked at the challenging issues of financing health care, retirement, and protecting assets and even your identity. You've been given my thoughts on having a living will and being an active participant in decisions made before and during hospitalization, including such issues as advance directives.

Finally, there is preparation for death. Marcus Aurelius said: "Short is the little that remains to thee of life. Live as on a mountain."

Like many people our age, I receive frequent brochures and phone calls from funeral directors and cemeteries ("rumors of my death are highly exaggerated"). However, we've made up our minds—but not in response to solicitations. In the Viking tradition, a dead warrior might be sent out to sea on a burning ship as his funeral pyre. Among Hindus and Buddhists, after cremation the ashes are often consigned to a river. I used to think I'd like my ashes to be scattered off the morning side of the mountain on our land an hour from Denver or deposited in our church columbarium. I

was leaning toward cremation (the current option of 21 percent of Americans) until my mother-in-law died. Her grandsons, including our son, were pallbearers. The funeral service turned out to be a true celebration of life. Funerals are for the living, to put the living in touch with the trajectory of life and with one another.

My personal experience with the funeral industry has not been negative, perhaps because it hasn't recently been a direct one. Apparently, there has been a trend toward mergers and consolidations within the $25 billion-a-year industry that has led to the opportunity for and practice of substantial overcharging. SCI, Loewen, and Stewart are the three largest chains (constituting 15 percent of funeral homes), and York and Batesville are the two largest casket and urn manufacturers (accounting for two-thirds of sales). A casket that wholesales for less than $700 may be sold to the bereaved family for $3,495. The incidentals, from thank-you cards to monuments, may have a 300 to 800 percent markup. The industry has also found ways to increase the price of cremation by such devices as "cremation calls" and pressuring bereaved families to purchase unnecessary caskets ($1,000 to $3,500 rather than $50 for a container) and embalming ($500 to $900). Even the Neptune Society for burial of ashes at sea is owned by SCI.

Here are some guidelines to protect your family.

1. Plan ahead. Select your cemetery, plot (or crypt for ashes), and funeral director, and be sure your family has this information. If you want a simple inexpensive funeral, tell the family so some swifty doesn't lay a guilt trip on them. Pay for everything that can be paid for in advance, and have money set aside for the rest.
2. Comparison shop. An inexpensive funeral with a metal casket can cost as little as $2,000, but you may wish to be prepared for a price of $5,000 to $10,000.
3. Get price lists. Federal law requires written price lists for every charge. Ask for all lists, not just the high-end list.

Some useful Web sites on funerals, funeral goods, services, laws, and consumer protection:

- AARP: www.aarp.org/confacts/money/funeral.html
- Federal Trade Commission: www.ftc.gov/bcp/rulemaking/funeral/index.htm

- Funeral Consumers Alliance: www.funerals.org

We've decided to be buried in a cemetery not far from the house in Denver where our children grew up and through which they sometimes rode their bikes. We've concluded that funerals and "resting places" are for the benefit and convenience of family members in the next generation or two. We have contacted the locally owned funeral facility associated with the cemetery of our choice and have purchased our site.

As seniors, you and I have the time and opportunity when we can, when we *must*, examine our lives. We should recognize that we are fortunate. We've survived and have had the chance to live through many experiences over a relatively long period. We haven't died young. We've been given the time to prepare our minds and spirits for death. Whether we're eighty-five years old or have just retired at sixty-five or even fifty-five, we've survived that long. And our personal assessment of our lives is critical.

I hope you conclude that although life is suffering according to the first noble truth of Buddha, life has not been only suffering—rather, that you consider life to have been generally rewarding. This isn't to say there should be nothing you would change if you had the opportunity. There are certainly many things I'd like to change, to do better. I'm astonished every time I hear an interviewer ask a celebrity the cliché question, "If you had the chance to do it all over again, is there anything you would do differently?" The almost inevitable answer is, "No, I wouldn't do anything differently." Hard to believe. Talk about unexamined lives.

In Chapter 2, I mentioned that one of the great surprises to me about aging was that inside I don't feel any older than I did when I was a medical student or even a teenager. Another surprise is how much I love—really love—to learn. New things. And relearning old things. Soaking up knowledge like the proverbial sponge. Just for the joy of it. As a medical school professor I had to learn. I had to stay ahead of the curve for the benefit of my patients, "to publish or perish," and to teach (and to be prepared for some smart-aleck resident or student trying to one-up the professor with a question based on information that had just been reported). Writing books in two rapidly moving subjects at the cutting edge of biomedical science—genetics and cardiology—demanded that I keep learning. Now I learn for fun. I love museums and travel and educational programs. But most of all I love to read.

So I read a lot. I hope you like to read. What an opportunity we have. We no longer need to compromise with competing demands. At

this moment in our lives, retirees have been given the time to read the great writers and reflect on the great thoughts of the human race. I read literature, history, science, about people and nations and the entire universe. That's a magnificent bonus. And at bedtime I most often read religion and philosophy. I've been trying to put the puzzle of my own life together with help from reading those who've devoted their lives to such endeavor.

From my reading I've concluded that humans became truly human *not* when they began to use tools or learned to communicate (other animals can less skillfully perform those activities, including a little simple mathematics) but when they developed art and religion, followed by science. The first two functions seem to go together, and all three require symbolic reasoning. I've had a sometimes rocky relationship with religion, but I now subscribe to the precept of Ashoka—the great Buddhist emperor of India in the third century B.C.E.—that all religions should be honored. I take it a step further to say that those who insist that only their religion is true are guilty of arrogance and delusion.

But my tradition and culture is Christian, so I'm Presbyterian, just as I would be Buddhist if I had been raised in Bhutan. The influence of culture is inescapable. Joseph Campbell tells us that when Buddhist nuns have a vision, it's of Buddha, not of Jesus; and when Catholic nuns have a vision, it's of Jesus, not of Buddha. Certainly cultural. Over the past four or five years I've developed a relationship with religion that meets my needs at this time of my life but that may not appeal to another person in the world. I like to regard myself by the clearly extravagant designation as a Zen Presbyterian Neoplatonist. With Zen Buddhism I have the gamut of Eastern religions, not just Buddhism but Hinduism and Taoism. As a Presbyterian I inherit the continuum from Zarathustra on through the Judeo-Christian-Islamic tradition. As a Neoplatonist I receive the important influences of Western philosophy—Plato, Aristotle, and the Stoics through to Plotinus and St. Augustine and their successors. (I guess there's nothing original about this approach if you recall in *Moby Dick* that Ishmael, having just stated "I was a good Christian; born and bred in the bosom of the infallible Presbyterian Church," joined with Queequeg to honor his shipmate's Pacific island god, Yojo.)

My frame of reference encloses philosophy and religion together in a single picture. Cicero said the study of philosophy prepares oneself to die. The same may, of course, be said of religion. The problem many Americans and Europeans have with their traditional religions (which I've also had) is really with the arrogance and *literalism* of certain de-

nominations. Therefore, some people become agnostic. (It's easier to become agnostic in our presently more tolerant Western society than it was only a few centuries of intolerance ago or than it would be in today's Iran.)

I feel that for physical and emotional health and preparation for death, there should be a deep commitment—a "religious" commitment, if you will. Personally, I don't see how a human being or a culture can prevail without some form of "religious" orientation. (That sounds awfully pompous. I apologize.) What I'm doing is using the term *religion* in the sense Erich Fromm does in *To Have or to Be:* "any group-shared system of thought and action that offers an individual a frame of orientation and an object of devotion." A person's religion may indeed be one of the traditional forms, such as Christianity, Islam, Judaism, or Buddhism. Or it may be more of a modern secular orientation, such as humanism, commitment to social justice, political activism, ethnic pride—or communism (a movement that writers in the 1950s stated must be understood as being a religion). There are even opportunities to join structured atheist organizations for those with a strong and specific objection to traditional religion who still need some form of fellowship. And I imagine there are some people who feel no need for support structures of any kind.

Whatever makes a person most comfortable in his or her orientation to life and death—traditional religion or nontraditional religion or no religion—should be nourished during the critical period of aging when death becomes a closer reality. Tolstoy called this period the fourth stage, which he also called the religious stage. (However, I doubt many of us would wish to carry our personal religious stage to the lengths that Tolstoy did of forming his own extreme religious sect—and thereby earning excommunication from the Orthodox church.)

In "Invictus," William Ernest Henley apparently took a no-religion strength from defiance: "Beyond this place of wrath and tears / Looms but the horror of the shade / And yet the menace of the years / Finds and shall find me unafraid." And Dylan Thomas urged, "Do not go gentle into that good night." I know about wrath and tears, but I elect to participate with compassion in the suffering of the world. And I would *prefer* to "go gentle into that good night." I also know that Freud termed religion "a universal obsessional neurosis" and that commentators from Democritus, Lucretius, and down the centuries through Hume, Marx, Sartre, and many others to the present day have offered less than positive views of religion. But I love the metaphors and myths of my religion and most religions. And I accept them as such. Yet what gives meaning

to me may be repugnant to you, and vice versa. So each of us must find our own personal meaning with which we are comfortable.

As a medical student, at graduation I took the Hippocratic oath: "I swear by Apollo . . ." Do I believe there literally is an Apollo? No. But did I visit Delphi in Greece, where Apollo's Oracle resided? Yes. Do I accept poetic myths of the Bible as literal fact? No. I accept what distinguished Christian theologians of the twentieth and twenty-first centuries say when they tell us that many biblical stories are metaphors and myths and should not be taken literally. For me, these metaphors and myths are symbolic ways of capturing deeper truths. Truths deeper than the literal.

So there's comfort for me in religion. And whatever you find that gives meaning to your life, reach for it, embrace it. This is the time to fit the pieces together. A personal goal for me is to rise above fear and desire, to go forth and joyfully participate in the sorrows of the world. That's very Buddhist. But it's also Judeo-Christian, as in "Yea, though I walk through the valley of the shadow of death, I will fear no evil."

My fellow seniors, I wish you good health and security and a life filled with love as we participate in what can be among the most meaningful and joyful years of our lives.

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