

CHAPTER 21

HEART DISEASE IN THE ELDERLY

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INTRODUCTION

The elderly represent the fastest-growing segment of the American population. By the year 2000, it is estimated that people over age 60 will account for more than 15 percent of all U.S. citizens; those over 80 will constitute about 4 percent, or some 10 million Americans. Clearly, the nation's efforts to prevent and effectively treat heart disease must include older Americans and take into account their special needs and concerns.

Any discussion of heart disease in the elderly must begin by defining just what "elderly" means in the context of cardiovascular health. When does old age begin? There are various criteria: chronological age, or the number of years one has lived; physiologic age, including the presence or absence of diseases of old age; and, of course, mental acuity.

As medical progress continues to lengthen expected life spans, the concept of "elderly" has shifted upward. Although there is no clear-cut threshold of old age, for purposes of medical classification physicians tend to define "elderly" as beginning in the range of 65 to 70. In practice, however, treatment decisions are based not on age alone but on a person's entire medical profile and mental outlook—both of which may be "young" or "old" for a particular chronological age.

HOW THE HEART GROWS OLD

As a person ages, the heart undergoes subtle physiologic changes, even in the absence of disease. (See box, "Physiologic Changes in the Aging Heart and Blood Vessels.") The muscles of the aged heart may relax less completely between beats; as a result, the pumping chambers (ventricles) become stiffer and may work less efficiently, especially if specific cardiac diseases are present. In old age, the heart also may not pump as vigorously or as effectively as it once did. The older heart also becomes less responsive to adrenaline and cannot increase the strength or rate of its contractions during exercise to the same extent it could in youth. We all come to realize that although a 50- or 100-yard dash was easy when we were 20, it is extremely difficult as we get older—the heart just can't get enough blood out to muscles to supply them with adequate oxygen.

The rate of this change or decline in cardiovascular function varies greatly among individuals. In an otherwise healthy person, the decline is not likely to be of great importance, but when another condition, such as coronary artery disease or a valve disorder, affects the heart, these age-related changes may compound the problem or its treatment.

The vascular system, too, experiences gradual changes over the decades. The walls of the arteries

Physiologic Changes in the Aging Heart and Blood Vessels

The Heart

- Muscle relaxes less between beats (becomes stiffer).
- May not pump blood as efficiently.
- Is less responsive to stimulation by the nervous system.
- Is less able to increase strength of contractions during exercise.
- Walls may thicken.

The Blood Vessels

- Walls become less elastic.
- Reflex that maintains blood pressure upon standing up may become slower.

Note: Despite all of these changes, most older individuals function quite well unless a specific heart muscle or valvular disease is present.

tend to lose their elasticity and stiffen, even without internal blockage from fatty deposits (atherosclerosis). Commonly, this may lead to a specific kind of high blood pressure among older people called isolated systolic hypertension (discussed below).

Cardiovascular disease—including coronary heart disease, hypertension, heart valve disease, and rhythm disorders—becomes increasingly common with advancing age. (See box, “Types of Cardiovascular Disease More Common in the Elderly.”) By the

Types of Cardiovascular Disease More Common in the Elderly

- Isolated systolic hypertension
- Orthostatic hypotension
- Heart failure
- Aortic stenosis
- Mitral annular calcification
- Complete heart block
- Sick sinus syndrome
- Atrial fibrillation
- Stroke

age of 80, for example, 20 percent of Americans have symptomatic coronary heart disease. The changing role of various risk factors over time is discussed in this chapter, as are the arguments for making so-called life-style changes to prevent or slow the progression of coronary heart disease in old age. Heart problems in old age may affect quality of life, length of life, or both. While coronary heart disease is the leading cause of death in elderly Americans, it and other problems—such as rhythm disturbances and valve dysfunction—are also important because of the symptoms they present for example, chest pain, as well as fatigue, shortness of breath, or fainting.

HYPERTENSION: UNSAFE AT ANY AGE

High blood pressure is more common with advancing age, and so are its associated complications, of stroke, kidney disease, heart attack, and heart failure. By the seventh decade of life, close to half of all Americans have hypertension, usually of unknown cause. (Chapter 12 presents a general discussion of the diagnosis and treatment of hypertension.)

Elderly people should have blood pressure measured annually, and high levels (generally defined as 160/90 mm Hg and above) should be treated. The notion has long persisted that a certain degree of high blood pressure is a normal part of the aging process, and may even be necessary to pump sufficient blood to vital organs. More recently, however, convincing evidence has been gathered that hypertension in the elderly is *not* benign. Even in old age, lowering elevated blood pressure can save lives. Control of hypertension may not be achieved as readily as in younger patients, but even so, partial treatment can lower the rate of potentially serious complications, a conclusion backed up by well-documented evidence from several long-term research studies.

How aggressively should high blood pressure in the elderly be treated? In general, lowering even mildly elevated blood pressure is potentially beneficial, and perhaps of greatest benefit for people with other kinds of cardiovascular disease. For those with no other heart disease, a trial of diet modification, moderate exercise, and (if indicated) smoking cessation and weight loss may be sufficient to lower blood pressure and reduce other concomitant risks.

On the other hand, highly restrictive or rigid programs of diet or exercise for the elderly are inadvisable and unlikely to succeed.

If antihypertensive drug therapy is prescribed for an older person, he or she will probably need to visit the doctor for regular checkups to monitor the results. It is important that the patient report any possible side effects; in most cases, they can be controlled or eliminated by adjusting the dosage or the type of medication used. (Medication should not be abruptly stopped, since that may, under certain circumstances, cause blood pressure to rebound to high levels.)

Even among those with normal blood pressure, some degree of light-headedness or dizziness is not unusual in older people, especially upon arising from a sitting or lying position. This condition, called *orthostatic hypotension* (position-related low blood pressure), is caused by a slowing of the body's reflexes that maintain blood flow from the heart to the brain and other organs in an efficient manner. Medication for high blood pressure can worsen this tendency—another reason that careful monitoring of therapy is important. Many physicians prefer to start older patients on a lower dosage of medication and increase the dosage more gradually than they might with younger patients.

For a majority of older people, a simple treatment regimen with small doses of a diuretic or other drug, such as a beta blocker, calcium channel blocker, or ACE inhibitor, will be sufficient to lower blood pressure to a safe range with few, if any, unpleasant side effects. In prescribing a drug to lower blood pressure, the physician must also consider other medications a patient is taking, other medical problems that may be present, and what financial limitations, if any, may affect a person's ability to afford medication. (Some types of antihypertensive drugs are significantly more expensive than others.) If the doctor doesn't inquire about these factors, the patient should not hesitate to discuss his or her concerns.

A special type of high blood pressure that is more common in elderly people is called *isolated systolic hypertension*. In this condition, only the upper, or systolic, reading in the two-part blood pressure reading is elevated (for example, 160/70 or 200/80). The systolic reading represents a recording of the pressure exerted against the arterial walls when the heart contracts and pumps blood out; the lower, or diastolic, number represents the arterial pressure between heartbeats. In younger people with hypertension, both the upper and lower readings are likely to be elevated. But as the arterial system stiffens with age, the systolic pressure alone may be elevated to

as high as 200 mm Hg or more during ejection (pumping) of blood from the heart.

Elevated systolic pressure is a known risk for cardiovascular disease. The value of lowering it has recently been proved by a major study called the Systolic Hypertension in the Elderly Program (SHEP). Yale was one of the major participating centers in this study. Treating isolated systolic hypertension can now be recommended to reduce the incidence of stroke, heart attack, and heart failure. When other symptoms of heart disease (such as angina) are also present, it may be even more important to lower the systolic pressure than if no symptoms are present.

Another condition resulting from high blood pressure, especially in old age, is *left ventricular hypertrophy*, or thickening of the heart's main pumping chamber, the left ventricle. After many years of pumping against heightened resistance, the heart enlarges under strain and its walls begin to thicken. This condition bodes ill for the heart's future health; it may eventually lead to heart failure, as the heart works harder to fill with blood or eject it. Drugs are the primary treatment for hypertension with left ventricular hypertrophy. In general, many drugs—including ACE inhibitors, calcium channel blockers, and beta blockers—can prevent or sometimes reverse hypertrophy; calcium channel blockers may be used to enhance the hypertrophic heart's relaxation between beats. Effective treatment will reduce heart size in about half of people with high blood pressure and enlargement of the left side of the heart.

CORONARY HEART DISEASE

Coronary heart disease is the leading killer of older people; half of all heart attack victims are over 65. While men have markedly higher rates of coronary heart disease in middle age than do women, women's rates of coronary disease begin to rise sharply after menopause; ultimately their rates are about equal to those of men.

In the past few decades, efforts to prevent coronary heart disease have centered primarily on so-called premature heart disease—blockage of the coronary arteries that occurs in middle age. The very term implies that some degree of coronary blockage is a natural consequence of aging. But this isn't necessarily so. In some cultures, where the average blood cholesterol and blood pressure is lower than in many

industrialized societies, the prevalence of coronary heart disease among the elderly is not nearly as great.

The perception of heart disease in old age as virtually inevitable has thus given way to a more intervention-minded approach that seeks to prevent heart disease and preserve heart function—and overall health and well-being—as long as possible, or at least as long as seems reasonable.

Coronary heart disease may be manifested as reversible episodes of myocardial *ischemia*, characterized by chest pain (angina) or shortness of breath, or by a more severe form, a heart attack, in which inadequate blood flow leads to the death of heart muscle and scar formation. In older patients, heart attacks often result in more complications and longer hospital stays, with slower and more difficult recoveries. Heart failure and rhythm changes may be more frequent in this age group.

So-called silent heart attacks—those occurring without the classic symptoms of chest pain—are more likely in old age, especially in diabetic individuals. Instead of causing the typical crushing chest pain or pressure, a heart attack may announce itself with a symptom such as “heartburn,” shortness of breath, fainting, or confusion; in some cases, the symptoms are few or none. Older people accustomed to minor illnesses and discomforts may also be less likely to notice or complain of such vague symptoms. The elderly, and those who care for them, should be aware of these atypical warning signs of a heart attack and seek prompt evaluation. Evidence of heart damage may be detected on an electrocardiogram or echocardiogram.

It is not surprising that the treatment of coronary heart disease may involve a somewhat different set of considerations in a 75-year-old than in a 45-year-old. Prophylactic administration of lidocaine, an antiarrhythmic drug used to prevent ventricular rhythm changes, may not be given initially in the elderly, because this drug tends to produce confusion or other side effects in older patients. Thrombolytic therapy—medication to dissolve blood clots obstructing flow to the heart—maybe used when the physician judges its benefit to outweigh the risk of bleeding in an elderly person, but it must be used with caution. Treatment decisions may also reflect differences in patients’ expectations in terms of physical activity; some patients may accept physical limitations with advancing age more readily than others.

The management of angina may also differ. Older patients may be more willing to accept some degree of angina rather than undergo surgery or other intervention. The elderly may be more prone to

dizziness and other side effects of anti-anginal medications than younger people, and further, they may not tolerate them as well. This maybe especially true with nitroglycerine derivatives. Beta blockers also tend to slow the heart more in older people. This is not a cause for concern unless the rate decreases to less than 50 beats a minute and symptoms of weakness or dizziness occur.

HEART VALVE DISORDERS

The four valves that perform the vital function of keeping blood flowing properly through the heart’s four chambers are subject to a broad range of malfunctions (discussed in detail in Chapter 13). Certain types of valve disorders are far more common among the elderly. Some can be treated effectively with medications, regardless of age; others will not respond to medication but can be treated surgically, an option that may merit consideration if symptoms interfere with the activities of daily life.

The most common valvular problem in old age is aortic valve disease. The aortic valve is the gateway for blood pumped from the left ventricle to the rest of the body. *Aortic sclerosis* refers to the process of thickening and stiffening (fibrosis, or scarring) in the valve. It affects up to a third of all elderly people. The valve itself, however, may continue to function adequately for years, with nothing more than a heart murmur heard by the physician on examination with the stethoscope. The murmur is caused by turbulence of blood passing through the valve.

In aortic *stenosis*, the aortic valve becomes narrowed and blocked by hard, calcified deposits. This condition is present in about 4 percent of all elderly people. Severe aortic valve stenosis can cause fainting (because of impaired blood flow to the brain across the narrowed valve); heart failure (when the heart’s muscle becomes unable to pump blood in a forward direction through the too-small opening); and chest pain (because of increased work and a lack of sufficient oxygen reaching heart muscles).

Aortic stenosis can usually be diagnosed from the physical exam, but echocardiography is a key technique used to assess the severity of this and other valve abnormalities. Surgical replacement of the aortic valve is an accepted and often highly successful treatment in elderly as well as younger patients. In patients who are otherwise healthy, valve replace-

ment (using either a specially treated heart valve from a pig or an artificial valve) may return the heart's function to normal or near-normal.

In addition to valve replacement surgery, newer, nonsurgical options are sometimes considered for opening up a narrowed aortic valve. *Aortic valvuloplasty*, in which a balloon-tipped device is threaded through the heart and opened to expand the diseased valve, may be recommended for individuals who are at especially high risk for surgery. At present, however, this procedure has had limited success and is not very widely recommended. Surgery is a much more effective treatment for long-term relief. In the absence of other complicating medical factors, aortic valve replacement can be achieved at an acceptable, albeit somewhat higher, risk than in younger people. The decision concerning surgery must, however, take into account the total condition of the patient.

Another valvular problem seen almost exclusively in the elderly is mitral annular calcification, or calcification of the ringlike support structure around the mitral valve. The resulting malfunction usually causes either blockage of the valve or blood to leak back (regurgitate) into the atrium from the ventricle. The condition is seldom severe, and typically does not require surgical correction.

Older people with a valvular problem such as aortic stenosis, or even mitral valve prolapse, are more prone to endocarditis, or infection of the heart valves. The infection-causing bacteria may enter the bloodstream from infection in other sites, such as the urinary or gastrointestinal tract, or from the normal mouth during dental work. Prompt treatment for infection and the use of prophylactic antibiotics before dental work and other procedures with a risk of infection are especially important for people with valvular heart disease.

RHYTHM DISORDERS AND PACEMAKERS

Problems with the heart's rhythm and the electrical system that governs it can occur at any age, but are more common in old age. Rhythm abnormalities, or arrhythmias, may cause no symptoms, or they may be sensed as slow or missed beats, "flutters," palpitations, light-headedness, dizziness, or fainting. The heart's rhythm may be too slow (bradycardia) or too fast (tachycardia). (See Chapter 16.)

SLOW RHYTHM DISORDERS

Among elderly people, slow rhythms are a chief concern. In old age, the electrical system that carries the signal to trigger the heart's timely contractions may run into trouble at several points in its pathway of specialized tissues.

"Sick sinus syndrome," unusual in younger people, is a relatively common cause of rhythm disturbance in the elderly. No relation to the sinuses in the head, this syndrome refers to the sinus *node*, a specialized patch of electrically active tissue that acts as the heart's internal pacemaker. This "on-board computer" may malfunction after decades of trouble-free service, because of disease of the heart muscle or for no known reason. As a result, the heartbeat may slow down—in some cases, to a rate below 35 or 40 beats a minute, which will cause the blood pressure to fall to very low levels. Fatigue, confusion, malaise, and fainting may follow. Drug therapy for high blood pressure or coronary heart disease with one of the beta blockers or, less commonly, with a calcium blocker may sometimes precipitate symptoms in patients with this syndrome. Symptomatic sick sinus syndrome may have to be treated by implantation of an electronic cardiac pacemaker, which often affords immediate and striking improvement of symptoms.

Rhythm problems can also crop up in other parts of the heart's electrical system. The wear and tear of age on the electrical conducting fibers can cause a condition called *heart block* in which the impulses fail to travel efficiently between the atrium and the ventricle; the ventricle may be triggered irregularly or not be triggered to contract at all, and as a result, the individual may faint. Minor types of heart block can be present for many years without symptoms, but if the patient has severe heart block accompanied by fainting, a pacemaker maybe necessary.

Pacemakers are being continually refined and improved to handle a wide range of rhythm disorders. Pacemaker implantation is generally considered a low-risk procedure even for elderly patients, and is done under local anesthesia. The small risk entailed is justified by what is often a marked relief of disturbing or disabling symptoms.

FAST RHYTHM DISORDERS

The atria, the heart's upper chambers, may give rise to an excessively rapid and irregular rhythm called *atrial fibrillation*. This condition, which affects up to 5 percent of the older population, is generally not dangerous and can be controlled with medication.

Occasionally, the patient will require a procedure called cardioversion—very brief anesthesia and an electrical shock to correct this rhythm. In some cases in the elderly, the restoration of regular rhythm does not last long and fibrillation recurs. Patients with atrial fibrillation are at increased risk of developing blood clots in the heart that may embolize (travel) and block blood vessels elsewhere in the body (for example, in the brain, causing a stroke). This risk is somewhat higher in the elderly; for some patients, anticoagulant medications or aspirin may be prescribed to thin the blood and lower the risk of stroke.

Ventricular arrhythmias, those originating in the heart's lower chambers, are particularly likely after a heart attack or in the presence of heart failure. These arrhythmias are usually minor but, when prolonged, may lead to light-headedness, dizziness, or fainting spells, and can occasionally be quite dangerous. Severe ventricular arrhythmias (such as ventricular tachycardia) may require intensive therapy with anti-arrhythmia drugs or occasionally the implantation of an internal electrical device called a cardioverter defibrillator to shock the heart should a dangerous arrhythmia occur.

CARDIAC DIAGNOSIS: CONCERNS FOR THE ELDERLY

Elderly people with symptoms suggestive of heart diseases undergo essentially the same diagnostic process as younger patients. Much can be learned from the medical history, physical examination, and electrocardiogram. In many cases, noninvasive tests will also be used. Echocardiography and nuclear scans may help to reveal more information about the heart's structure and function. In specific cases, the use of cardiac catheterization or other invasive testing is necessary to guide treatment or provide a blueprint for surgery or angioplasty. However, judgment must be employed when considering elderly people for invasive testing, particularly if a patient is too frail to undergo surgery or other intervention without great risk.

The increased range and effectiveness of noninvasive cardiac testing has been a boon to elderly patients. Echocardiography, in which sound waves are bounced off the heart's internal structures, has great value in confirming valve disease and other malfunctions. Helter monitoring, using a portable electro-

cardiograph testing device generally worn for 24 hours, helps pinpoint rhythm disturbances under conditions of daily living.

The exercise stress test, a standard procedure in diagnosing and assessing the severity of coronary heart disease, may prove difficult for older patients who are unable to walk rapidly on a treadmill because of arthritis, decreased muscle strength, or other medical problems. Even at a very low workload, however, the electrocardiogram taken during a stress test may document the occurrence of myocardial ischemia or arrhythmias and yield valuable information.

Thallium, a radioisotope, is sometimes injected into a vein in minute amounts to assess blood flow through the coronary arteries to different areas of the heart during exercise. For those older patients unable to exercise, a drug (either dipyridamole or adenosine) can be used to mimic the effect of exercise on the heart during the thallium scan.

Elderly patients with significant angina that has not responded to various medical therapies may be tested by coronary *arteriography*, in which a catheter is threaded through an artery to the heart. An X-ray-opaque dye is released into the coronary arteries to directly visualize the interior channel of the vessels. While complications from this procedure are low, as a rule such tests are performed only when the patient is a candidate for further intervention such as surgery or balloon angioplasty. Cardiac catheterization is also performed in patients with severe valve disease, in anticipation of corrective surgery. (See Chapter 10 for more detailed information on diagnostic tests.)

TREATMENT OF THE ELDERLY

The issues surrounding treatment decisions for older people are complex, and involve many more factors than age alone. Physician and patient should decide together on an individualized treatment plan, based on overall health, life-style, and expectations.

In some situations, such as the repair of a seriously malfunctioning valve or severe and uncontrollable chest pain, surgical intervention may be the only option. But in other cases, the physician may often try more conservative methods, including different types of medications, before recommending surgery or other invasive treatments. In the elderly, some cardiac procedures or surgery may not necessarily prolong life, but they may improve its quality through

the relief of symptoms such as chest pain, fainting, and weakness. Occasionally, the decision may literally be a matter of life or death, or of the preservation of a patient's ability to function independently.

Procedures such as balloon angioplasty and coronary bypass surgery, which aim to open or circumvent blocked coronary arteries, are considered relatively safe for many older persons. However, no invasive treatment is without risk of complications.

Angioplasty, for example, may be complicated in the elderly by the increased difficulty of threading the catheter past vascular blockage in the legs; complications such as bleeding or clots are also more common in older patients. More diffuse blockage and calcification of the vessels may make opening a blockage with the balloon more difficult. A careful assessment of whether an older person is a good candidate for such intervention is essential.

As surgical techniques have improved, cardiac surgery has been performed with increasing success in the elderly. Even in octogenarians, the risk of not surviving coronary bypass surgery is now as low as 5 to 10 percent in elective (nonemergency) operations, and as low as 15 to 20 percent for emergency procedures. In a typical patient aged 40 to 50, the risk is closer to 1 percent, so the *relative* risk rises significantly with age. Nonetheless, the absolute risk for older patients is still modest when weighed against the consequences of forgoing surgical treatment when needed.

Older patients should, however, expect longer hospitalizations after surgery than younger patients, and a somewhat more arduous recovery. Elderly patients who have multiple medical conditions—and, especially, multiple heart problems—fare least well. They are more prone to complications such as pneumonia and other infections, kidney or bladder problems, poor appetite, and, sometimes, confusion or depression. They require meticulous care from the medical staff and encouragement from their families—not just in the period right after surgery, but during convalescence and cardiac rehabilitation as well. Occasionally, postoperative problems may persist for months.

It is essential for the physician and patient's family to respect the elderly patient as an individual. Some people desire minimal medical intervention in old age, regardless of the consequences, and accept the limitations of age-related diseases; others will wish to take whatever measures are available to maintain an active life as long as possible. Both approaches are valid, and should be discussed thoughtfully by medical personnel, the patient, and his or her family.

ISSUES IN DRUG TREATMENT

Because of metabolic changes, the elderly are more likely to experience side effects from many drugs, and dosages may require more delicate adjustment. (See box, "Drugs and the Elderly.") Complicated dosage schedules may present difficulty; poor vision, arthritic hands, and memory loss may also make it hard for some elderly people to follow a medication regimen. Economic issues increasingly are having an impact on decisions regarding drug treatment. It is not uncommon for a patient who requires three different cardiac medications to pay several hundred dollars a month—a sum that may be impossible on a fixed income. Newer, more expensive drugs are not necessarily better; patients should not be afraid or ashamed to discuss the issue and the cost with their doctors.

RISK FACTOR MODIFICATION

BETTER LATE THAN NEVER?

Data from the Framingham Heart Study and other population studies have shown that most cardiac risk

Drugs and the Elderly

Slower metabolism and other physiologic changes in the aging body may cause drugs to act differently in elderly patients than in younger ones. The following are some of the cardiovascular drugs to which the elderly may be more sensitive. Many of these drugs can still be used, but the dosage must be adjusted accordingly.

- High blood pressure medication may produce dizziness and orthostatic hypotension, especially the vasodilators, diuretics, or some of the calcium blockers.
- Dizziness from anti-anginal medications (especially nitroglycerin derivatives) is also more common.
- Toxicity from digitalis (used in heart failure) may be more common.
- The use of anticoagulant drugs (to prevent clots) may result in bleeding more readily and is dangerous in people who are unsteady and subject to frequent falls.
- Beta blockers tend to slow the heart more.
- Intravenous lidocaine may cause more confusion,

SPECIAL SITUATIONS

factors continue to exert their influence in old age. Although few research trials on risk factor intervention have included significant numbers of elderly people, there may be benefit to corrective measures that do no harm at virtually any age.

BLOOD PRESSURE

As mentioned, controlling blood pressure in old age has been proved to reduce the risk of stroke. Two large studies demonstrate a reduction in coronary heart disease complications and heart failure in patients treated with medication. Control of blood pressure is critical in patients who have active coronary heart disease and symptoms of angina, or who experience a heart attack. Reducing the amount of work that the heart has to do, by lowering blood pressure, reduces the need for oxygen and helps to alleviate symptoms.

SMOKING

In population studies, smoking has produced confusing results in terms of its importance as a cardiac risk factor among the elderly. It appears to be a greater statistical risk for those under 65, but this may be because older smokers die at such increased rates from other causes, such as lung cancer; this fact may mask to some extent the real impact on coronary heart disease. The deleterious effects of smoking probably continue regardless of age. Smoking may promote easier clotting of the blood and affect the ability of the heart muscle to take up oxygen from the bloodstream; cigarettes are therefore especially dangerous for older people with lung disease or angina.

OBESITY

The worst impact of excess weight in old age maybe the added strain on the heart, lungs, and vascular system; diabetes may also be more difficult to control. In older people with symptomatic heart disease who might be candidates for surgery, obesity may significantly increase the risk of the procedure.

LACK OF EXERCISE

A sedentary life-style has been shown to be a preventable cardiac risk. In old age, it is probably too late to undo the results of a lifetime of inactivity-but

it's not too late to begin mild exercise, such as a daily walk, with almost immediate benefits in terms of overall physical condition and well-being. With or without heart disease, older people will feel better if they become—or remain—active, provided such activity is done in moderation with the advice of a physician. There is some evidence that it will promote mental acuity as well.

DIABETES

The incidence of non-insulin-dependent (Type II) diabetes rises with age, and this disorder compounds other cardiac risk factors in elderly people. Many factors that help control diabetes, such as weight control and exercise, do the heart a favor as well.

CHOLESTEROL AND THE ELDERLY: HOW REAL A RISK?

Is high blood cholesterol a risk factor for heart disease in the elderly, as it has proved to be for younger people? And, if so, does lowering cholesterol levels in older people help them lead longer or healthier lives? These two questions are difficult to answer, for some of the reasons discussed more fully in Chapter 4. Older people as a group have higher rates of coronary heart disease than younger people, making it seem logical that cholesterol control might benefit this group the most. Yet studies of risk factors have shown that blood cholesterol is a weaker predictive factor of heart disease in the old than in the middle-aged.

Does this mean that older people needn't be concerned about their blood cholesterol levels? Not necessarily. There is some evidence that not only high total cholesterol but particularly high levels of "bad" (LDL) and low levels of "good" (HDL) lipoprotein components are indeed risk factors for older people. Data gathered by the Framingham Heart Study have shown that elevated blood cholesterol may increase heart disease risk for those as old as 80. However, treating cholesterol disorders in the elderly, whether by diet or drugs, has been studied little. At this point, there are no data showing that such treatment prolongs life in this age group.

How to treat high cholesterol in the elderly, then, should depend on the degree of cholesterol abnormality plus an individual's overall risk factor and

health profile. In general, an older person with symptoms of heart disease is a more logical candidate for cholesterol lowering (to prevent progression of the disease) than a person with no apparent coronary heart disease and few other risk factors.

For example, an active, otherwise healthy person in his or her late 60s who has just undergone a coronary artery bypass graft would be well advised to keep blood cholesterol low, to keep the new coronary bypass grafts “clean” (without atherosclerosis) as long as possible. (In people with high cholesterol levels, bypass grafts are particularly prone to clogging, or closure.) On the other hand, a person at age 80 with various other medical problems is probably not a candidate for sweeping dietary changes or, most especially, a course of cholesterol-lowering medication.

At any age, cholesterol lowering should start with the most conservative measures, such as dietary modification, moderate exercise, and weight loss when needed. In older people, whose nutritional status is more likely to be inadequate, dietary changes should be monitored to avoid doing more harm than good. Older people need foods that are digestible, affordable, and convenient, and prefer foods that are familiar. They don’t need to abandon red meat or eggs completely, for example, and should not be expected to make sweeping alterations in their daily diet. The indications for cholesterol-lowering drug therapy in the elderly are still uncertain at this point, given the need for long-term therapy and the incidence of inconvenient side effects from some of the more affordable prescribed drugs.

SUMMARY

By the time a person reaches 65, his or her heart has done an astounding amount of work. The adult heart beats more than 100,000 times a day, pumping roughly 2,000 gallons of blood through 60,000 miles of blood vessels every 24 hours. The strongest muscle in the body, the heart at 65 still has the capacity for

many more years of service. Nevertheless, natural physiologic changes in old age will somewhat lessen its efficiency. The aging heart (as well as the blood vessels) becomes less elastic, so it is not able to relax as completely between beats. The heart’s walls thicken, especially in the pumping chambers, and it may enlarge in size. The heart also becomes less responsive to stimulation by adrenaline, so it isn’t able to “gear up” for exercise by increasing the strength and rate of contractions.

Physiologic changes in the heart and blood vessels make the elderly more prone to certain types of cardiovascular disease. These include isolated systolic hypertension, orthostatic hypotension, heart failure, certain valve disorders (particularly of the aortic valve), and certain rhythm abnormalities, particularly bradycardias, or slow rhythms.

The outlook for most of these conditions is excellent. Many can be treated by medication, while others are helped by surgery or pacemakers. In mild cases, life-style changes may be enough. In many cases, drug treatment is successful and preferred over surgery or other invasive therapy. This is primarily because the risks associated with these procedures are somewhat higher in the elderly, especially those with other health problems, and because the recovery period is usually longer. Drugs may affect the elderly differently from younger patients, however, and care must be taken to achieve the right dosage and type of drug or combination of drugs.

Although life-style changes made in old age may no longer have the same impact on reducing the risk of heart disease, some—such as regular exercise and smoking cessation—can positively affect the quality of life. Maintaining an appropriate body weight is important. Control of high blood pressure, whether by life-style changes, medication, or both, is also important in maintaining health. All patients should maintain a prudent low-fat diet, in order to reduce blood cholesterol. However, the case for aggressive treatment of high cholesterol is not as strong. In the absence of symptoms of coronary artery disease, it may not be justified. However, for people who already have heart disease, especially those who have had bypass surgery, it maybe beneficial.