

Prevention

Traditional medical care focuses on improving health by identifying and treating health problems that have already produced symptoms or complications. In contrast, preventive medical care focuses on preventing health problems from occurring. Preventive care also focuses on diagnosing problems before symptoms or complications arise, when the

chances of recovery are greatest. When done well, prevention improves overall health and reduces health care costs.

The general goal of prevention is to reduce a person's likelihood of becoming ill or disabled or of dying prematurely. Preventive medical care is not a case of "one size fits all"; specific goals are devel-

EXAMPLES OF RISK FACTORS FOR HEALTH PROBLEMS

CATEGORY	RISK FACTORS
Diet	Eating an imbalanced, improper diet
Genetic	Family predisposition to specific disease, such as heart disease, colon cancer, breast cancer, cervical cancer, diabetes, mental health disorders, and substance abuse
Mental health	Stressful situations such as <ul style="list-style-type: none"> ■ A new job ■ Difficulty at work ■ Death of a loved one ■ Not getting sufficient sleep ■ Getting married or divorced
Physical activity	Sedentary lifestyle (not getting enough exercise)
Physical environment	Failure to maintain a safe environment, which would include the following: <ul style="list-style-type: none"> ■ For all people: Failing to keep firearms locked; not using bicycle helmets and seat belts; not having working smoke detectors and fire extinguishers in the home; not having heating systems and fireplaces inspected and cleaned periodically ■ For children: Not using child safety seats, bicycle helmets, flame-retardant sleepwear, window and chair guards; not assessing the home for leaded paint and removing if applicable; not safely storing drugs and toxic substances ■ For older adults: Not protecting against falls
Race and sex	White men: Higher risk of heart attack Black men: Higher risk of high blood pressure
Social environment	Neighborhood violence Family violence High-risk sexual behavior (such as multiple partners or not using condoms) Difficulty getting along with others
Substance use	Smoking cigarettes, cigars, or pipes Chewing tobacco Using illicit drugs Misusing alcohol or prescription drugs
Vaccinations	Not having received all recommended vaccinations
Weight	Weight that is above what is recommended for height and gender, particularly by 20% or more
Work environment	Working with potential toxins (for example, asbestos or ionizing radiation), machinery, power tools, farm equipment, and other possibly dangerous objects

oped by and for each person. Specific goals depend heavily on a person's risk profile, that is, the person's risk of developing a disease based on such factors as age, sex, genetic background, lifestyle, and physical and social environment. Factors that increase risk are called risk factors.

Some risk factors are beyond a person's control, such as age, sex, and family history. Other risk factors, such as a person's lifestyle and physical and social environment, can be altered, potentially decreasing risk of developing disorders.

In addition, risk can be reduced through good medical care.

Most of the medical care that infants (see page 1682), older children (see page 1744), and adolescents (see page 1754) receive (specifically well-child care) is aimed at recognizing and preventing problems. For example, examination focuses on detecting early signs of developing problems. Most vaccinations are given during childhood. Health care practitioners counsel parents about preventing accidents and injuries for children and adolescents.

Tools of Prevention

Prevention includes four major tools. One tool is establishing a healthful lifestyle, which includes habits such as wearing a seat belt, eating a healthy diet, getting enough physical exercise, wearing sunscreen, and not smoking. Another tool is getting vaccinated to prevent infectious diseases such as influenza, pneumococcal pneumonia, and childhood infections. A third tool is participating in screening efforts so that diseases such as high blood pressure and cancer are detected early. The fourth tool is taking drug therapy recommended to prevent disorders from developing or worsening (preventive drug therapy, also known as chemoprevention) for people at high risk. Examples of chemoprevention include cholesterol-lowering drugs to prevent atherosclerosis, aspirin to prevent heart attacks or strokes, tamoxifen to prevent breast cancer, and antihypertensive drugs to reduce blood pressure and prevent strokes.



Did You Know...

Improving diet and exercise habits and stopping smoking help prevent all three leading causes of death in the United States (heart disease, cancer, and stroke).

Healthful Lifestyle

Lifestyle and disease are clearly linked. Particular lifestyle changes can help prevent particular disorders. Also, some lifestyle changes improve fitness and quality of life and decrease risks of many different disorders. For example, the three leading causes of death in the United States—heart disease, cancer, and stroke—are more likely to occur in people who make poor lifestyle choices, especially eating a diet high in calories, saturated fats, trans fatty acids, and cholesterol (such a diet increases the risk of having high cholesterol levels in the blood); not exercising regularly; and smoking. By having informative discussions with doctors and other health care practitioners, people can make good decisions and establish healthful habits. Establishing and maintaining a healthful lifestyle can be done only by the person. Consistently eating a healthy diet and getting enough exercise are difficult for many people. However, doing so can prove to be exciting, rewarding, and affordable. Some important parts of maintaining a healthful lifestyle follow.

Healthful eating habits can help people prevent or control diseases such as high blood pressure, heart disease, diabetes, osteoporosis, and certain cancers. A diet that includes plenty of vegetables, fruits, and whole-grain cereals and breads is recommended, in

part because such a diet is high in fiber (see page 907). Cutting down on harmful types of fat (saturated fats and trans fatty acids—see page 905) and instead eating fish, skinless poultry, and very lean meat and choosing low-fat dairy foods are recommended as well. Calories are best limited to maintain a recommended body weight. Limiting salt and getting adequate amounts of calcium and vitamin D are also recommended.

Physical activity and exercise can help prevent obesity, high blood pressure, heart disease, stroke, diabetes, some types of cancer, constipation, falls, and other health problems. The best routine includes moderate physical activity for 60 minutes or more on all or most days of the week. However, getting even a little bit of exercise is much better than none at all. For example, people who can devote only 10 minutes at a time to physical activity may still reap important benefits, particularly if the exercise is vigorous or if they repeat the activity throughout the day (see page 38). Walking is one simple, effective exercise that many people enjoy. Certain types of exercise can also target specific problems. For example, stretching improves flexibility, which can help prevent falls. Aerobic exercise may decrease the risk of heart attacks and angina.

Quitting smoking is important to a healthful lifestyle. A doctor can offer encouragement and advice on ways to successfully quit smoking, including information and recommendations on the use of nicotine replacement products, bupropion and varenicline (drugs that help reduce cravings), and other tools (see page 2096).

Safe sex practices remain important. Key safe sex practices are avoiding risky sex partners and remaining mutually monogamous. People who have more than one sex partner can greatly reduce their risk of contracting a sexually transmitted disease by using a latex condom properly every time they have sex (see box on page 1265). People who are allergic to latex can use other kinds of condoms.

Limiting alcohol use is important. Although small amounts of alcohol, particularly red wine, may have some health benefits, drinking more than moderate amounts (for example, 1 to 2 drinks per day, possibly less for women) is often harmful (see page 2083). Each drink is about 12 ounces of beer, 5 ounces of wine, or 1.5 ounces of more concentrated liquor, such as whiskey.

Injury prevention plays a major role in maintaining a healthful lifestyle. For example, people can lower their risk of injury by taking certain precautions.

Adequate sleep is also an important part of a healthful lifestyle, particularly affecting mood and mental state. Insufficient sleep is a risk factor for injuries.

Vaccination

Vaccines have been enormously successful. Dangerous and sometimes fatal infectious diseases such as diphtheria, pertussis, tetanus, mumps, measles, rubella, and polio have decreased by more than 99% from their peak number of cases, thanks to the availability of effective and safe vaccines and their widespread use. Furthermore, vaccinations save about \$14 in health care costs for every \$1 spent.

Many side effects have been attributed to vaccines. Actual side effects that occur depend on the vaccine, but common side effects are usually minor, such as swelling, soreness, allergic reactions at the injection site, and sometimes fever or chills. More serious side effects can occur, such as autoimmune reactions (for example, Guillain-Barré syndrome, which causes temporary weakness or paralysis). However, serious side effects are very rare if vaccines are given properly. Through systematic and extensive research, vaccines have not been linked to other serious side effects such as autism. Reports that vaccines cause side effects such as AIDS and sterility are “urban legends” that have no factual basis in developed countries. (If contaminated needles are improperly reused, however, infectious diseases can be spread, but this infection is not caused by a vaccine.) People who refuse vaccination to avoid complications place their health at much greater risk from the infection that the vaccine is designed to prevent.



Did You Know...

Vaccinations can benefit people other than those receiving the vaccine.

Children and adolescents, older adults, and people whose immune system is impaired are often the most vulnerable to developing vaccine-preventable infections. They are also often the most vulnerable to developing serious symptoms from those infections. For example, whooping cough (pertussis) can develop in people of any age but may be mistaken for a cold in otherwise healthy people because the symptoms are so mild. Although it is most important to vaccinate the most vulnerable people, vaccinating other people is also important. Doing so prevents illness in the vaccinated person and also decreases the number of people in the community who could develop and thus transmit infection to more vulnerable people. Thus, deaths and serious complications in the community are reduced by vaccinating as many people as possible. This effect is called herd immunity. See page 1144 for an in-depth discussion on vaccination.

Screening

Screening is testing of people who are at risk of a disorder but do not have any symptoms. Screening can allow for early treatment, sometimes keeping disorders from turning deadly. For example, abnormalities of the cervix or colon can be diagnosed and cured before they turn cancerous. Screening programs have greatly reduced the number of deaths associated with some disorders. For example, deaths due to cervical cancer, once the most common cause of cancer death among American women, have decreased 75% since 1955. Screening can also diagnose disorders that are not curable but that can be treated before they cause too much damage (for example, high blood pressure).



Did You Know...

It is often helpful to avoid tests designed to diagnose disorders before symptoms occur (screening tests).

People might think that any test capable of diagnosing a serious disorder should be performed. However, this is not true. Although screening can offer great benefits, it can also create problems. Some screening tests have a small risk of causing harm (for example, a colonoscopy can perforate or tear the colon). If such a test is performed on a large number of people who do not have any disease, then the small number of people who have the complication can outweigh the even smaller number who benefit by having the disease diagnosed. Similarly, because test results are sometimes positive in people who do not have disease, a certain number of people undergo unnecessary (and expensive and possibly painful or dangerous) tests or treatment in follow-up. Also, sometimes screening reveals abnormalities that cannot or need not be treated. For example, prostate cancer often grows so slowly that in older men the cancer is unlikely to affect their health before they die from another cause. In such cases, the treatment can be worse than the disease. Whole-body computed tomography scans are not recommended because they do not have benefits (such as saving lives) that exceed the risks (such as disorders caused by the radiation exposure, including cancer). In addition, when people are told they could have a serious disorder, they can become anxious, which can affect health. Because of these issues, screening is recommended only when

- The person has some real risk of the disorder.
- The screening test is accurate.
- The disorder can be more effectively treated when diagnosed before symptoms develop.

Safety 101

Practicing common-sense safety measures can help prevent injuries. Following simple preventive measures can greatly decrease the risk of injury in various situations. Here are some specific examples.

GENERAL SAFETY

- Learn first aid
- Prepare or purchase a first aid kit
- Learn cardiopulmonary resuscitation (CPR) and other methods to relieve airway obstruction, such as the Heimlich maneuver
- Wear a helmet when riding a bike or motorcycle and additional protective equipment as indicated for the sport, such as wrist guards for roller blading or skate boarding
- Store firearms safely
- Never swim alone
- If repetitive wrist motion (such as typing) is necessary, use a position unlikely to increase risk of carpal tunnel syndrome
- Exercise regularly and safely
- Eliminate or moderate alcohol intake

HOME SAFETY

Childhood Falls

- Install safety locks on basement doors
- Close and lock windows when children are present
- Replace or cover sharp-edged furniture
- Do not use baby walkers
- Install window guards, especially above the first floor
- Use stair gates at the top and bottom of stairs

Poisoning

- Never mix cleaning products
- Keep oven and toilet bowl cleaners, pesticides, alcohol, and antifreeze tightly sealed and out of the reach of children
- Keep all drugs in their original containers, and use child protective pill containers if small children are in or visiting the household
- Carefully dispose of expired drugs and drugs that are no longer necessary in the trash (never flush them down the toilet)—alternatively, some pharmacies accept them for disposal

Fires

- Install operational smoke detectors on every floor in the home, including the basement, and in every bedroom
- Test batteries every month and install new batteries every 6 months

- Plan an escape route and practice it
- Keep a fire extinguisher in or near the kitchen
- Have the electrical system inspected by a professional
- Do not leave lit candles unattended
- Do not smoke in bed

Carbon Monoxide Poisoning

- Ensure adequate ventilation for indoor sources of combustion (such as furnaces, hot-water heaters, wood- or charcoal-burning stoves, and kerosene heaters)
- Clean flues and chimneys regularly and inspect them for leaks
- Use a carbon monoxide detector in the home

Radon

- Have the radon level in the home checked
- Ensure adequate ventilation, especially in the basement

Lead Poisoning

- Consult the local health department and ask how to detect toxic levels of lead in the home's drinking water
- Find out whether the paint in the house is lead-based (present in older houses); if there is any question, test paint chips
- Have children tested for lead levels if recommended by the children's doctor

Other

- Set the maximum hot water heater temperature at 130° F (54.44° C) or less

FOOD SAFETY

- Pay attention to "sell by" dates on packaging
- Refrigerate perishable food immediately
- Do not buy dented canned goods or anything with a loose or bulging lid
- Keep the refrigerator at 40° F (4.44° C) and the freezer at 0° F (-17.78° C)
- Freeze fresh meats (including fish and poultry) that will not be used in 2 days
- Do not let the juices from raw meats drip on other foods
- Wash hands before and after preparing food
- Cook foods thoroughly
- Do not use the same utensils or platters for raw and cooked meats
- Wash all countertops, cutting boards, and utensils in hot soapy water after use

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Safety 101 (Continued)

CAR SAFETY

- Obey speed limits and drive defensively
- Make sure all passengers wear seat belts
- Put children in car seats or other restraints appropriate for their height and weight
- Do not allow a baby or child to sit on someone's lap in a moving vehicle
- Do not drink or use drugs before driving

- The health care benefits of appropriate screening make it relatively cost-effective.

Some screening tests (such as tests for cervical and colon cancers) are recommended for all people of a certain age or sex. For people at increased risk because of other factors, tests may be recommended at an earlier age or at more frequent intervals or additional tests may be recommended. For example, a person with a family history of colorectal cancer or with a disease that increases the chances of

developing colorectal cancer, such as ulcerative colitis, would be advised to undergo a screening colonoscopy more often than is normally recommended for people at average risk. A woman with a strong family history of breast cancer would likely be advised to undergo screening mammography at an earlier age. Some screening measures are recommended for people with certain disorders. For example, people with diabetes should check their feet at least once daily for redness and ulcers, which, if ignored, may potentially result in severe infection and ultimately amputation.

Three Levels of Prevention

The three levels of prevention are primary, secondary, and tertiary.

In **primary prevention**, a disorder is actually prevented from developing. Vaccinations, counseling to change high-risk behaviors, and sometimes chemoprevention are types of primary prevention.

In **secondary prevention**, disease is detected and treated early, often before symptoms are present, thereby minimizing serious consequences. Secondary prevention can involve screening programs, such as mammography to detect breast cancer; dual x-ray absorptiometry (DEXA) scanning to detect osteoporosis; and tracking down the sex partners of a person diagnosed with a sexually transmitted disease (contact tracing) to treat these people, if necessary, and to minimize spread of the disease.

In **tertiary prevention**, an existing, usually chronic disease is managed to prevent complications or further damage. For example, tertiary prevention for people with diabetes focuses on tight control of blood sugar, excellent skin care, frequent examination of the feet, and frequent exercise to prevent heart and blood vessel disease. Tertiary prevention for a person who has had a stroke may involve taking aspirin to prevent a second stroke from occurring. Tertiary prevention can involve providing supportive and rehabilitative services to prevent deterioration and maximize quality of life, such as rehabilitation from injuries, heart attack, or stroke. It also includes preventing complications among people with disabilities, such as preventing bed sores in those confined to bed.

Preventive Drug Therapy

Preventive drug therapy (also known as chemoprevention) is the use of drugs to prevent disease. For such therapy to be recommended, the person must be at risk of the disorder being prevented and be at low risk of side effects caused by the drug being considered. Preventive drug therapy is clearly helpful in, for example, prevention of infection in people with certain disorders (such as AIDS), prevention of headache in people with migraines, and many other specific situations. Although preventive drug therapy is effective only in specific situations, some of those situations are common, so the therapy is useful for many people. For example, for adults at risk of coronary artery disease or stroke, aspirin is usually recommended. Newborns routinely receive eye drops to prevent gonococcal infection of the eyes. Women who are at high risk of breast cancer may benefit from preventive drug therapy (for example, with the drug tamoxifen).

Prevention in Pregnant Women

Prenatal care is focused on recognizing and preventing problems that can complicate pregnancy (see page 1622). For example, pregnant women are screened for high blood pressure, diabetes, sexually transmitted diseases, Rh_o(D) blood incompatibility (which can cause hemolytic disease of the newborn), urinary bacteria, genetic variations that could result in birth defects or chromosomal abnormalities in the fetus, toxemia of pregnancy, and usually placental

SELECTED SCREENING SCHEDULE FOR ADULTS*†

CONDITION	TEST	FOR	HOW OFTEN
Abdominal aortic aneurysm	Abdominal ultrasonography	Men age 65 to 75 who smoke or have previously smoked	Once
Alcohol misuse	Questioning	Adults	Once and periodically, such as if circumstances change (for example, when under new stresses or if lifestyle changes)
Amblyopia and strabismus	Vision testing and eye examination	Children age 5 or younger	Once
Breast and ovarian cancers	Genetic counseling and possible genetic testing for <i>BRCA</i> mutation, which indicates increased risk of breast and ovarian cancers	Women with a strong family history of breast cancer (see box on page 1551) or ovarian cancer (see page 1573)	Once
Breast cancer	Mammography and clinical breast examination	Women 40 and older	Every 1 to 2 years
Cervical cancer	Papanicolaou (Pap) smear or liquid cervical cytology test	All women who have ever been sexually active and have not had their cervix removed	Every 1 to 3 years Most women can stop having Pap smears after age 65
Chlamydial infection	Culture or DNA test	Sexually active women age 25 or younger or who have risk factors (such as multiple sex partners or a sexually transmitted disease)	Once and periodically, such as when circumstances change (for example, new sex partners or after becoming pregnant)
Colorectal cancer	Colonoscopy or other testing (such as virtual colonoscopy or computed tomography scan)	Adults age 50 or older	Every 5 to 10 years
Dental problems	Check-up with dentist	All	Every 3 to 12 months for those under age 18 Every 3 to 24 months for age 18 and older
Depression	Questioning	Adults	Once and periodically, such as during stressful circumstances (for example, divorce, job or lifestyle change, or death in the family)
Diabetes	Blood tests to measure blood sugar level	Adults who are overweight or have high blood pressure or high levels of lipids in their blood	At least once
Glaucoma	Eye examination and eye pressure test	Adults age 40 and older	Every 2 to 4 years for adults age 40 to 64 Every 1 to 2 years for those age 65 and older
Gonorrhea	Culture or tests such as DNA testing	Pregnant women and young women who are sexually active	Once and periodically, such as when circumstances change (such as with new sex partners or after becoming pregnant)

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SELECTED SCREENING SCHEDULE FOR ADULTS*† (*Continued*)

CONDITION	TEST	FOR	HOW OFTEN
Hearing loss	Hearing tests	Adults age 65 or older	Yearly
Hemolytic disease of the newborn	Rh _o (D) incompatibility screening	Pregnant women	First prenatal visit; for most Rh _o (D)-negative women, test again at 24 to 28 weeks of pregnancy
Hepatitis B	Blood test for infection with the virus	Pregnant women	At first prenatal visit
High blood pressure (hypertension)	Blood pressure measurement	Adults	Every office visit or annually
High levels of lipids (fats) and cholesterol in the blood	Blood tests to measure lipid (including cholesterol) levels	Men age 35 and older and women age 45 and older	Every 5 years; more often if levels are abnormal
Human immunodeficiency virus (HIV) infection, including AIDS	Blood test for infection with the virus	Adolescents and adults at risk of HIV infection and all pregnant women	Once and if new high-risk activity occurs (for example, those with multiple sex partners or injection drug use and in men having sex with men)
Osteoporosis	Dual-energy x-ray absorptiometry (DEXA) scan to measure bone density	Women age 60 and older who are at risk for osteoporotic fractures and all women age 65 and older (see page 546)	At least once
Overweight in adults and children; growth disturbance in children	Measurement of height and weight	All	Weight: every scheduled office visit or annually Height: every scheduled office visit in children and adolescents
Refractive errors (poor vision)	Vision testing (screening examinations do not require an optometrist or ophthalmologist)	All	Once for age 0 to 6 months Once at age 3 Every 2 years for age 6 to 17 Every 2 to 3 years for age 18 to 40 Every 2 years for age 41 to 60 Every year for age 61 and older
Syphilis	Blood test	Adults with risk factors (such as multiple sex partners or a previous sexually transmitted disease), all pregnant women, and those who have other diagnosed sexually transmitted diseases	Once and periodically, such as when circumstances change (such as with new sex partners or after becoming pregnant)
Tobacco use	Questioning	Adolescents and adults	Every office visit

*Based on recommendations by most major authorities in the United States. However, differences do exist among their recommendations.

†Screening measures that can be done at home include regularly measuring weight and, once yearly, checking skin for signs of change and for bleeding skin lesions, perhaps having another person (such as a spouse) look at locations that are difficult to see, such as the back or behind the ears.

SELECTED STRATEGIES FOR PREVENTING SOME MAJOR HEALTH PROBLEMS*

HEALTH PROBLEM	PREVENTIVE MEASURES
Heart disease	<p>Maintain normal lipid and cholesterol levels through diet and drugs (if necessary)</p> <p>Maintain normal blood pressure through diet, exercise, stress reduction, and drugs (if necessary)</p> <p>Consume a balanced diet high in fiber and limited in fat, cholesterol, and calories</p> <p>Avoid smoking</p> <p>Undergo sufficient regular exercise</p> <p>Take aspirin if recommended (most adults at high risk of coronary artery disease)</p>
Cancer	<p>Avoid smoking (lung cancer)</p> <p>Eat a balanced diet high in fiber and limited in fat, cholesterol, and calories (breast cancer, colorectal cancer)</p> <p>Avoid too much sun exposure and use sunscreens with a high sun-protection factor (skin cancer)</p> <p>Take recommended chemoprevention such as tamoxifen (women at high risk of breast cancer and who choose to do this)</p> <p>Get recommended screening tests</p>
Stroke	<p>Avoid smoking</p> <p>Maintain normal blood pressure through diet, exercise, stress reduction, and drugs (if necessary)</p> <p>Maintain normal cholesterol through diet, exercise, and drugs (if necessary)</p> <p>Avoid cocaine</p>
Chronic obstructive pulmonary disease	<p>Avoid smoking</p> <p>Avoid exposure to toxic substances (especially in industrial settings)</p>
Diabetes	<p>Exercise regularly</p> <p>Eat a balanced diet</p> <p>Maintain recommended body weight</p>
Osteoporosis	<p>Consume adequate amounts of calcium and vitamin D</p> <p>Do weight-bearing exercises (for example, walking, jogging, tennis, dancing) every day for at least 30 minutes</p> <p>Take bone-strengthening drugs if prescribed by a doctor</p>
Pneumonia	<p>Receive pneumonia (pneumococcal) vaccine once, repeated once after 5 years for those at high risk, including those over age 65</p>
Influenza	<p>Receive influenza vaccine every year (particularly infants, older adults, and people who have heart, lung, or immune system disorders)</p>
Tooth loss	<p>Brush teeth and use dental floss regularly</p> <p>Avoid frequent sweets</p> <p>Visit a dentist regularly</p> <p>Take supplemental fluoride (preschool children older than 6 months whose water source is fluoride-deficient)</p>
Sexually transmitted diseases	<p>Practice abstinence or limit the number of sex partners</p> <p>Use condoms and follow safe sex practices</p>
Liver disease	<p>Drink alcohol in moderation if at all</p> <p>Receive vaccination against hepatitis A and B (all children and high-risk adults)</p>

*In addition to these preventive measures, people should undergo recommended screening tests (see table on page 34).

and fetal abnormalities (using ultrasonography). Before (if possible) and during pregnancy, women are given folate (folic acid) to prevent birth defects. Often during pregnancy, women also are given iron to prevent anemia. They are counseled to stop using tobacco, alcohol, and recreational drugs before becoming pregnant and during pregnancy.

Prevention in Older Adults

The goals of prevention in an older adult usually depend on the person's health, level of function, and risk profile. For example, a healthy, independent person with no serious disorders may focus mainly on preventing disorders from developing. A person with several mild chronic disorders who remains independent may focus more on preventing or slowing decline in function and avoiding frailty than on preventing new disorders. A frail person with several advanced chronic diseases who has become mostly dependent on others may focus mainly on preventing accidents and complications that could cause further loss of independence or death.

Lifestyle: Exercise, including aerobic exercise, is still important. Weight lifting helps protect against muscle weakness, age-related loss of muscle tissue, and osteoporosis by strengthening muscles and increasing bone density. Aerobic exercise increases endurance and may slightly lower the risk of some heart and blood vessel disorders. In older adults, dancing and tai chi may be enjoyable forms of exercise and may have additional benefits, such as enhancing balance and preventing falls.



Did You Know...

Preventing falls, restricting driving (when necessary), and understanding the side effects of drug therapy can greatly increase good health for certain older adults.

Stopping smoking is helpful even in older adults. It can help improve endurance at any age, decrease symptoms of certain disorders (such as angina and claudication), and may decrease risks of certain disorders developing (such as heart attacks).

Alcohol is metabolized differently in older adults. Older adults who drink alcohol need to be aware that more than one drink per day may increase their risk of injuries and other health problems.

Drugs and Vaccines: Understanding drug therapy is particularly important for older adults because

they are more susceptible to adverse drug effects (see page 1896). Factors that can increase susceptibility include age-related differences in drug metabolism and use of many drugs (which can lead to drug interactions). A primary care doctor and pharmacist can provide information on all prescription and nonprescription drugs. Knowing the brand and generic name of all drugs taken; each drug's purpose; the length of time each drug is to be taken; and what activities, foods, drinks, and other drugs are to be avoided while taking a drug can help older adults avoid problems. Older adults should bring all of their drugs, both prescription and nonprescription, to their doctor appointments so that they can be reviewed with their doctor.

Vaccines for influenza, pneumococcal pneumonia (a bacterial lung infection), and the combination of pertussis and tetanus are important for older adults because of their increased susceptibility to pneumonia and tetanus.

SPOTLIGHT ON AGING



Measures that prevent injuries in younger adults are also important in older adults. So are some additional measures. For example, driving should be avoided in people whose vision, reflexes, or overall function is poor. Driving should also be avoided when taking drugs that cause sedation and at night if night vision is poor.

Falls are a leading cause of serious health problems in older adults. Health risks can be reduced by preventing falls in the following ways:

- Clean up cluttered areas in the home
- Remove or secure throw rugs, edges of carpet, and uncovered phone and electrical cords to the floor
- Maintain adequate lighting
- Add handrails, grab bars, and traction/non-skid surfaces (such as strips or nonslip bathmats) to stairways and bathtubs as needed
- Install handrails near the toilet and in the tub and shower
- Avoid use of slippery bath oils
- Review drugs to eliminate unnecessary ones and reduce others to lowest effective dose
- Preserve or improve balance (for example, by exercise, dance, or tai chi) to decrease the risk of falls