

Managing Chronic Health Conditions

48

What You'll Learn

1. Distinguish between the different types of diabetes. (p. 523)
2. Identify the risk factors for diabetes and how to manage having diabetes. (p. 524)
3. Discuss ways to reduce the risk of diabetes. (p. 524)
4. Identify chronic health conditions and their treatments. (p. 526)
5. Identify adjustments to make for different chronic health conditions. (p. 526)

Why It's Important

Chronic health conditions can cause great suffering and, in some cases, death. People who have chronic health conditions have to cope with changes in their health status over long periods of time. This lesson will provide many important facts about these conditions.

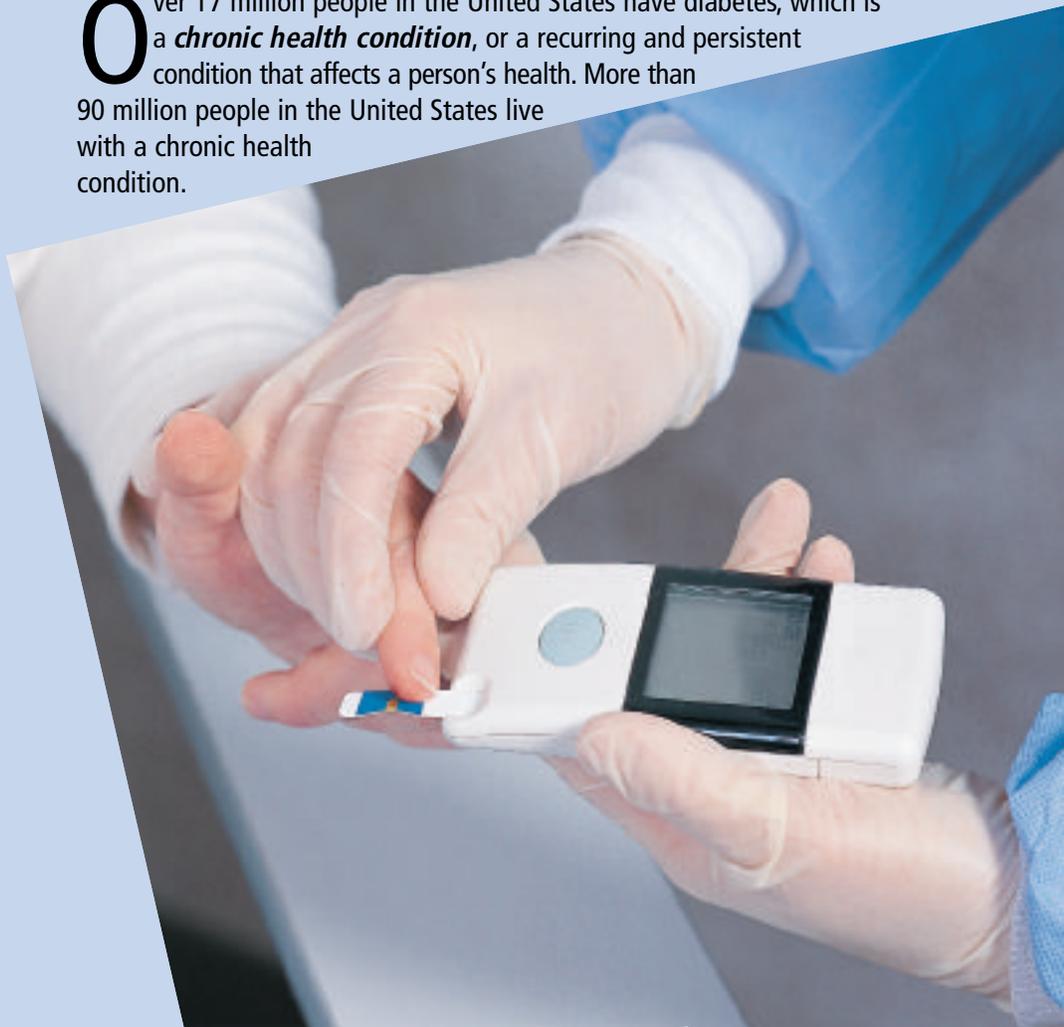
Key Terms

- chronic health condition
- insulin
- glucose
- autoimmune disease
- osteoarthritis
- cystic fibrosis
- hemophilia
- multiple sclerosis (MS)
- narcolepsy
- sickle-cell anemia

HEALTH GOALS

- I will choose behaviors to reduce my risk of diabetes.
- I will recognize ways to manage chronic health conditions.

Over 17 million people in the United States have diabetes, which is a **chronic health condition**, or a recurring and persistent condition that affects a person's health. More than 90 million people in the United States live with a chronic health condition.



What Would You Do?

Writing About Managing Diabetes Suppose your friend is always hungry yet is losing weight. He or she is unusually thirsty and frequently uses the restroom. Your friend is often tired. He or she also sometimes complains of blurred vision. After reading the information on the warning signs of diabetes on page 523, write an entry in your health journal about what you would encourage your friend to do.



Health TEKS covered by Lesson 48: 1B, 1C, 1I, 2D, 5D, 6B, 15A, 16A, 17A, 17B, 17C

Diabetes

Many people who have diabetes are not being treated. In this part of the lesson, you will learn how people who have diabetes manage their condition, and how you can reduce your risk of diabetes.

What to Know About Diabetes

A person develops diabetes when the pancreas fails to produce enough insulin. **Insulin** is a hormone that regulates the blood sugar level. Diabetes disrupts metabolism, the rate at which food is converted into energy in body cells. **Glucose** is a simple sugar that is the main source of energy for the body. If there is not enough insulin, or if the body does not use the insulin, glucose levels build up in the blood. The excess glucose overflows into urine and passes out of the body. Because glucose is the main source of energy, the body loses its source of fuel even though the blood contains large amounts of glucose.

There are three types of diabetes: insulin-dependent, non-insulin dependent, and gestational diabetes.

Insulin-dependent diabetes mellitus (IDDM) Diabetes in which the body produces little or no insulin is **insulin-dependent diabetes mellitus (IDDM)**, or type I diabetes. It is considered to be an autoimmune disease. An **autoimmune disease** is a disease that results when the immune system produces antibodies that turn against the body's own cells. In IDDM, the immune system attacks and destroys cells that produce insulin. IDDM occurs most often in children, appears suddenly, and progresses quickly.

Symptoms of IDDM include increased thirst, frequent urination, constant hunger, weight loss, blurred vision, and extreme tiredness. These symptoms are caused by the buildup of sugar in the blood and the loss of sugar in the urine. People with IDDM may need daily injections of insulin and a special diet.

Non-insulin-dependent diabetes mellitus (NIDDM) A type of diabetes in which the body cells do not respond normally to insulin that is produced is called **non-insulin-dependent diabetes mellitus (NIDDM)**, or type II diabetes. NIDDM appears most often in adults over age 40.

Symptoms include feeling tired, frequent urination, unusual thirst, weight loss, blurred vision, frequent infections, and slow healing of sores. NIDDM often can be treated through weight loss, diet, physical activity, and oral medications.

Gestational diabetes Diabetes that occurs in some females during pregnancy is **gestational diabetes**. As in NIDDM, insulin is produced, but the body does not respond normally to it. Gestational diabetes usually is treated with diet and usually disappears after the birth of the baby.

Make the TEXAS Connection

Diabetes For more information on diabetes, see page TX10 in the Texas Student Handbook.



Mini-Review

1. What is diabetes?
2. What is the difference between IDDM and NIDDM?

Activity: Using Life Skills

Being a Health Advocate: Reducing the Risk of Diabetes

Diabetes is not a contagious disease. You cannot catch it from someone else who has it, and you cannot get it from eating too much sugar. People who are most at risk for diabetes are females who are over 40, overweight, and have a family history of the disease. If you are trying to convince a friend or family member to reduce his or her risk of diabetes, 1) select a health-related concern, 2) gather reliable information, 3) identify your purpose and target audience, 4) develop a convincing and appropriate message. Anyone can lower his or her risk for

diabetes by following two simple rules: eat nutritiously and exercise.

1 To eat nutritiously, students need to follow the Food Guide Pyramid. If you are not a healthy eater, start making simple changes in your diet today to become healthier. Cut down on the amount of soda you drink and drink more water instead. Eat a banana instead of a bag of potato chips the next time you're hungry. Eat a salad with your meal.

2 Portion size can be a big factor in obesity. When you are eating out, realize that restaurant portions usually include enough food for two or three meals. Share or take your leftovers home. Paying attention to how much you consume each day will help keep you from overeating.

4 Being active doesn't have to be a chore. Think of all the fun you had playing with your friends when you were younger. Even though you're a teenager now, you can still have fun and exercise at the same time: try in-line skating, dancing, or riding your bike. Talk to your best friend while the two of you go on a walk. You will set the foundation for a lifetime of good health.

3 Exercise decreases blood glucose levels and helps your body respond to insulin better. The Centers for Disease Control and Prevention (CDC) says that you can walk 30 minutes a day, five times a week to make a big difference in your health. For some students, that simply means walking to school instead of driving.



▲ A bowl of fresh fruit is a healthy snack.

Managing Diabetes

People who have diabetes must manage their disease by controlling their blood glucose levels with diet, exercise, and/or medication.

Monitoring blood glucose levels

Blood testing kits are available that allow diabetics to test their own blood glucose levels. People who have diabetes may test their glucose level several times a day. In this way, they can see how their body responds to meals, exercise, and insulin shots or oral medication. Research shows that people

who manage their blood sugar levels have a reduced risk of developing complications from diabetes.

Methods of treatment People who have IDDM need daily injections of insulin to keep their blood glucose levels safe. Insulin injections must be balanced with meals and daily activities. Many people who have NIDDM are able to control their diabetes with diet and exercise exclusively. Some people who have NIDDM may need oral medication or insulin injections to lower blood glucose levels. People who have diabetes should have a physician monitor the disease and check for complications. Diabetes can lead to blindness, heart disease, stroke, kidney failure, nerve damage, and premature death.



SPEAKING OUT

Teens Talk About Health

Brandon Walker
Living With Diabetes

“There is nothing I can’t do now that I could do before I was diagnosed. . . I’m the same person I always was.”

Considering his grandmother had just been diagnosed with diabetes, Brandon Walker’s own diagnosis took his family by surprise. “Diabetes runs in families,” Brandon said. “But the first couple of times I got sick, the doctors thought it was either the flu or a stomach virus.”

Football practice Brandon’s discovery that he had diabetes is fairly typical. “I probably had it for a while,” he explained, “but because I was playing football, the symptoms weren’t there. When you’re really active, you can keep your blood sugar levels down to normal. It was when I stopped playing football for a year that the symptoms began to show up. I was still pretty active—using a treadmill and stuff like that—but that’s just not the same level of physical activity as two-a-day football practices in August!”

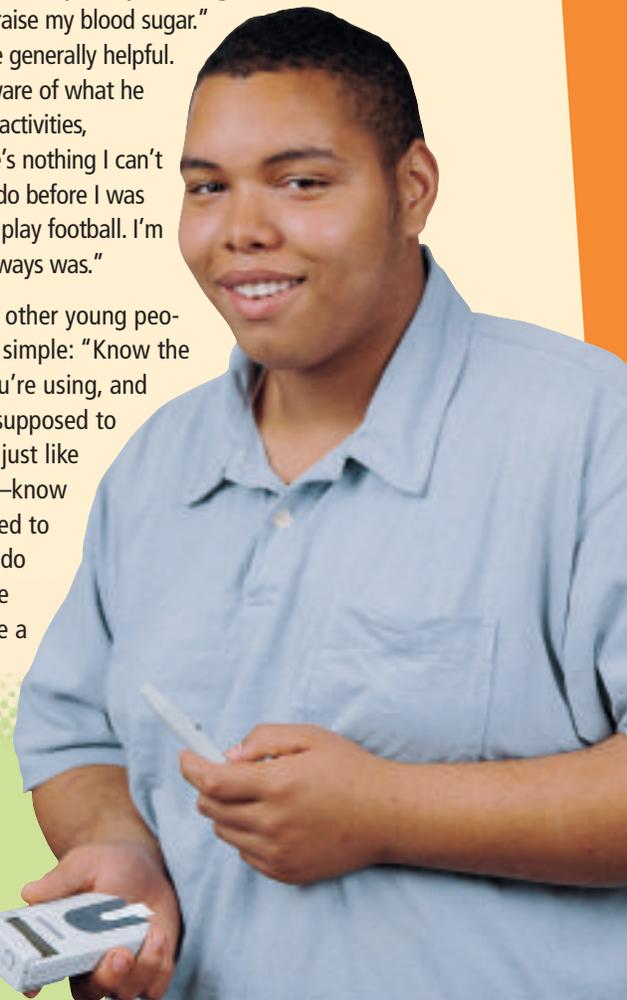
Learning the truth While working one day at his job, Brandon felt sick. He had a stomachache and a headache. “I just didn’t feel right,” he said. “I went to the hospital, and that’s when I found out I was a diabetic. I was really thirsty and dehydrated. I just couldn’t drink enough. My breath smelled like nail polish, a sure sign of diabetes.”

Diagnosis and treatment Brandon’s doctors explained that Brandon has characteristics of both type I and type II diabetes. It’s taken a while to get his dosage of insulin at the right levels. He now watches what he eats, and tries to stay as active as he can. “I’ve had a couple of incidents

that really scared me,” he explained. “One time I was at the barber shop and I was shaking from low-blood sugar. I hadn’t even noticed, but the barber did.”

Battling human nature “Now, I’ve gotten a better idea of what I can and can’t eat, so I sometimes go off my diet every now and then,” said Brandon. “I guess it’s human nature, but I still sometimes eat stuff I’m not supposed to have, like a little bit of candy. I only drink regular pop when I have to raise my blood sugar.” Brandon’s friends are generally helpful. Most of them are aware of what he shouldn’t eat. As for activities, Brandon said, “There’s nothing I can’t do now that I could do before I was diagnosed. I can still play football. I’m the same person I always was.”

Brandon’s advice to other young people with diabetes is simple: “Know the type of medicine you’re using, and know when you’re supposed to take your meds. It’s just like with anything else—know what you’re supposed to be doing and try to do it.” There’s one more thing, too: “Don’t be a couch potato.”



Journaling Activity

Brandon says in this interview that, in spite of his diabetes, he’s the same person he always was. Do you think students with illnesses or disabilities sometimes feel “different”? What can students do to make these students feel included? Write an entry in your journal expressing your opinion on this topic.

A Guide to Chronic Health Conditions

This part of the lesson focuses on chronic health conditions. You will learn about the description, characteristics, and ways to manage and treat other chronic health conditions. Having knowledge of these conditions can greatly improve a person's quality of life.

What to Know About Chronic Health Conditions

Make the Connection

The Immune System

For more information on how the immune system functions, see page 214 in Lesson 19.

Arthritis The painful inflammation of the joints is called **arthritis**. Arthritis affects the muscles, tendons, and ligaments that surround joints. **Osteoarthritis** is the wearing down of the moving parts of joints. **Rheumatoid arthritis** is a condition in which joints become deformed and may lose function. Arthritis may be treated with medications, physical therapy and physical activity, or surgery.

Cerebral palsy A disorder of the nervous system that interferes with muscle coordination is **cerebral palsy**. Too much pressure on the head during childbirth, head injury, lead poisoning, accidental injury, and certain illnesses are possible causes. Treatments include physical therapy and physical activity, speech therapy, special devices to assist with motion, medications, or surgery.

Chronic fatigue syndrome A condition in which recurring tiredness makes it difficult for a person to function in normal ways is **chronic fatigue syndrome (CFS)**. Symptoms include

headache, sore throat, low-grade fever, fatigue, and weakness. Treatment for CFS may include a balanced diet, adequate rest and sleep, regular physical activity, stress management, or the use of medications.

Cystic fibrosis A condition in which large amounts of thick mucus are produced, affecting the lungs and pancreas, is **cystic fibrosis**. It is caused by an abnormal gene in the body. Signs and symptoms of cystic fibrosis include coughing, wheezing, difficulty breathing, vomiting, and constipation. Treatments may include physical therapy, dietary changes, vitamins, medications, and the use of oxygen to help with breathing.

Down syndrome A genetic disorder in which a child is born with an extra chromosome in each cell is called **Down syndrome**. Children born with Down syndrome have a mental disability and a slightly flattened face with upward, slanting eyes. Surgery is sometimes used to correct heart defects and other problems.

Mini-Review

1. What is arthritis?
2. What is chronic fatigue syndrome?

Epilepsy A disorder in which abnormal electrical activity in the brain causes a temporary loss of control of the mind and body is **epilepsy**. A person with epilepsy may have a seizure. **Petit mal** is a small seizure in which a person loses consciousness for a few seconds. **Grand mal** is a major seizure in which a person may have convulsions. During a convulsion, the body stiffens and twitching may occur. People who are having major seizures can be helped by removal of objects that may injure them. Do not place anything in the mouth.

Although people of any age can get epilepsy, it primarily affects children, teens, and young adults. Epilepsy can be caused by a head injury, a brain tumor, stroke, poisoning, or an infection. Heredity also plays a role in some cases of epilepsy. Medication is used to control seizures. Adequate rest and sleep are important, along with regular physical activity. Surgery in the treatment for epilepsy is often a last resort.

Hemophilia An inherited condition in which blood does not clot normally is **hemophilia**. A minor injury to a person with hemophilia can lead to uncontrolled bleeding. Spontaneous bleeding also occurs. Hemophilia occurs almost exclusively in males. A defective gene is passed from the father to his offspring. Treatment for a person with hemophilia includes avoiding injuries that can cause bleeding, learning how to manage bleeding when cut or scraped, learning how to recognize emergency situations, and blood transfusions, if necessary.



Migraine headache Severe head pain that is caused by the dilation of blood vessels in the brain is a **migraine headache**. The symptoms may include severe throbbing, blurred vision, nausea, and vomiting.

Treatments for migraines include medications to reduce pain, rest and relaxation, stress management, and management of conditions that may lead to headaches.

Multiple sclerosis A disease in which the protective coverings of nerve fibers in the brain and spinal cord are destroyed is **multiple sclerosis (MS)**. People who have MS experience tingling and numbness in the body and may feel tired and dizzy. There is no cure for MS. MS is more common in young adults. Treatment for MS includes physical therapy to strengthen muscles, medications, avoidance of stress and extreme temperatures, psychological counseling, and support from family and friends.

Muscular dystrophy A genetic disease in which the muscles progressively deteriorate is **muscular dystrophy**. There is no cure. Treatment includes physical therapy and physical activity, weight management, surgery in some cases, and canes and wheelchairs to improve mobility.

▲ Proper treatment of a chronic health condition—in this case, Down syndrome—can improve a person's quality of life.



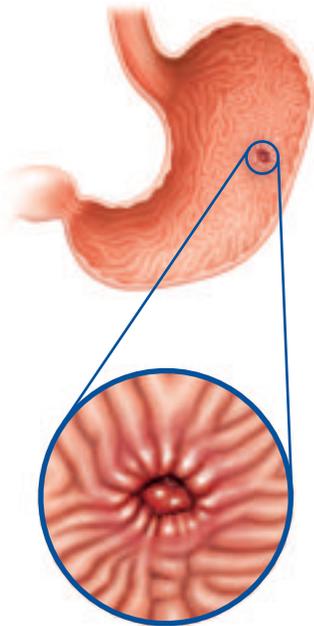
Make the Connection

The Digestive System

For more information on health of the digestive system, see page 220 in Lesson 19.

Narcolepsy A chronic sleep disorder in which people are excessively sleepy, even after adequate nighttime sleep, is called ***narcolepsy***. People who have narcolepsy often become drowsy and fall asleep in inappropriate situations. The cause of narcolepsy is unknown. Although there is no cure, there is treatment. Medication is used to control sleepiness. A person who has narcolepsy needs adequate rest and sleep and the support of family members and friends.

Parkinson's disease A brain disorder that causes muscle tremors, stiffness, and weakness is ***Parkinson's disease***. Signs and symptoms include rigid posture, slow movement, fixed facial expression, and a shuffling walk. The intellect is not affected until late in the disease, although speech is slow. Treatment includes medications, physical therapy, surgery, and the support of family members and friends.



▲ An ulcer in the stomach is also called a gastric ulcer.

Peptic ulcer An open sore on the lining of the esophagus, stomach, or first part of the small intestine is a ***peptic ulcer***. The most common symptom is a burning pain in the abdomen. There may be upset stomach, back pain, and bleeding. A peptic ulcer is caused by a bacterial infection, which is treated with an antibiotic. Bleeding ulcers require emergency treatment. It is recommended

that a person with an ulcer avoid cigarettes, alcohol, aspirin, and caffeinated beverages.

Sickle-cell anemia An inherited blood disease in which the red blood cells carry less oxygen is ***sickle-cell anemia***. Sickle-cell anemia occurs primarily in African-Americans. The red

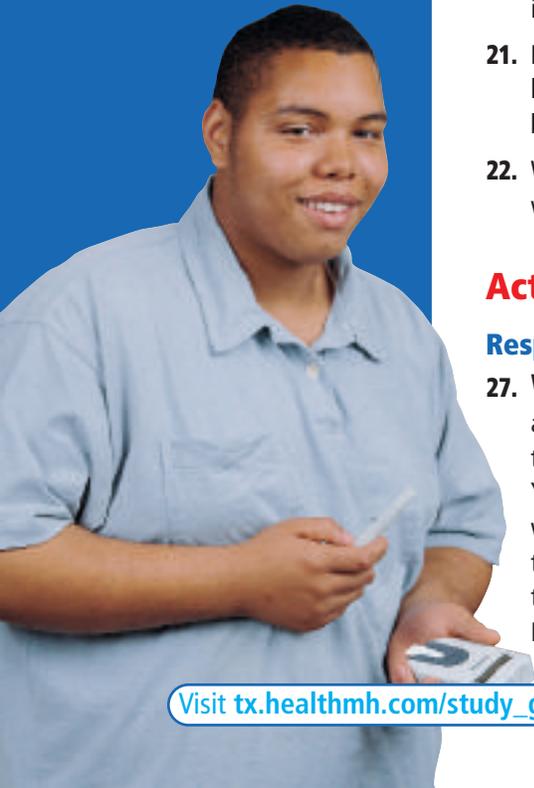
normal red blood cell ▼ ▼ sickle cell



blood cells of people who have sickle-cell anemia are sickle-shaped and are fragile and easily destroyed. The sickle-shaped cells do not easily pass through tiny blood vessels. Symptoms include fatigue, headache, and shortness of breath. Children who have sickle-cell anemia are at increased risk for developing pneumonia and other infections. There is no cure. Treatment includes immunization against communicable diseases, oxygen therapy, antibiotics, medications, and fluids to prevent dehydration during physical activity, sickness, and hot weather.

Systemic lupus erythematosus (SLE) A condition in which connective tissue becomes inflamed is ***systemic lupus erythematosus (SLE)***. SLE affects the skin, kidneys, joints, muscles, and central nervous system. Symptoms include fatigue, fever, loss of appetite, nausea, joint pain, and weight loss. Treatment includes medications to reduce inflammation and fever and to relieve skin rashes.

autoimmune disease
chronic health
condition
cystic fibrosis
epilepsy
glucose
hemophilia
insulin
multiple sclerosis
narcolepsy
osteoarthritis
peptic ulcer
sickle-cell anemia



Key Terms Review

Complete these fill-in-the-blank statements with the lesson Key Terms on the left. Do not write in this book.

1. Thick mucus that forms on the lungs is indicative of _____.
2. An inherited blood disease in which the red blood cells are fragile is called _____.
3. An inherited condition in which blood does not clot normally is _____.
4. A chronic sleep disorder in which people are excessively sleepy although they get enough sleep is _____.
5. The moving parts of joints wear down in a condition called _____.
6. A hormone that regulates blood sugar is _____.
7. The term for a disease in which antibodies in the immune system turn against the body's own cells is _____.
8. A disease in which the protective coverings of nerve fibers are destroyed is _____.
9. A sugar that is the main source of energy in the body is _____.
10. A recurring and persistent condition that affects a person's health is a(n) _____.

Recalling the Facts

11. What is diabetes?
12. What is a chronic health condition?
13. Distinguish between insulin-dependent diabetes and non-insulin dependent diabetes.
14. List two behaviors that can lower a person's risk for diabetes.
15. What body parts surrounding joints are affected by arthritis?
16. Describe physical characteristics of a person with Down syndrome.
17. What is hemophilia?
18. What is sickle-cell anemia?

Critical Thinking

19. Explain why diabetes can be detected in a person's urine.
20. Why should a person know if a close family member has diabetes?
21. Discuss why a person who exercises and has diabetes should monitor his or her blood glucose level.
22. Why is exercise important for a person who has arthritis?

Activities

Responsible Decision Making

27. **Write** Suppose you suffer from sickle-cell anemia. Today you forgot your water bottle. Your team has a big game tomorrow. Your teammates try to convince you that it will be OK to practice without it for just this one day. Write a response to this situation. Refer to the Responsible Decision-Making Model on page 61 for help.

Real-Life Applications

23. If you had chronic fatigue syndrome, how could you protect your health?
24. Why should your basketball coach be informed if you have hemophilia?
25. Why is it important to be aware if you are in a car with a driver who has narcolepsy?
26. Why is it important that you know if your close friend has sickle-cell anemia?

Sharpen Your Life Skills

28. **Use Communication Skills** Design a pamphlet that describes a chronic health condition. Include information about the symptoms of the condition and ways that it can be managed and treated. Obtain permission from your teacher to make copies of the pamphlet to distribute to your classmates.