

Other Noninfectious Diseases

Some noninfectious diseases can seem to strike without warning. Others tend to “build” in the body over time, eventually leading to poor health. Regardless of the manner in which a disease presents itself, having information about these diseases is a first step toward prevention and recognition of their signs and symptoms.

HEALTH TERMS

diabetes

insulin

impaired glucose tolerance (IGT)

arthritis

rheumatoid arthritis

osteoarthritis

HEALTH CONCEPTS

- Knowing the differences between type 1 and type 2 diabetes is essential to treatment of the diseases.
- Arthritis can affect people of any age.
- Treatment programs to ease the discomfort of arthritis are available.

Diabetic's insulin kit



Diabetes

Diabetes is a chronic disease that affects the way body cells convert food into energy. It is the seventh leading cause of death by disease in the United States, affecting 16 million Americans. Each day approximately 2,200 new cases are diagnosed.

Diabetes can lead to a host of other major illnesses and health conditions, including blindness, kidney disease, nerve disease and amputations, and heart disease and stroke.

What Causes Diabetes

In the normal digestive process, carbohydrates are changed to the sugar **glucose**, then absorbed into the blood and delivered to body



hot link

glucose For more information on glucose and its role in nutrition, see Chapter 5, page 102.

cells. **Insulin**, a hormone that is produced in the pancreas and that helps the body convert glucose to energy, is an essential link in this process. In the case of diabetes, sufficient insulin is not produced or is not used efficiently. When glucose is unable to enter the cells, it accumulates in the blood until the kidneys filter out some of the surplus, which is passed off in urine. High sugar content in urine and in the blood is one of the surest signs that a person has diabetes.

In Case of a Diabetic Emergency

TYPE I	TYPE II
<p>SOURCE</p> <ul style="list-style-type: none"> ■ Low blood sugar (Insulin reaction/<i>hypoglycemia</i> (high-poh-gly-see-mee-uh), an abnormal decrease of sugar in the blood) 	<p>SOURCE</p> <ul style="list-style-type: none"> ■ High blood sugar
<p>TIME SPAN</p> <ul style="list-style-type: none"> ■ Sudden onset (minutes to hours) 	<p>TIME SPAN</p> <ul style="list-style-type: none"> ■ Gradual onset (hours to days)
<p>SIGNS</p> <ul style="list-style-type: none"> ■ Staggering, poor coordination ■ Irritability, belligerence, hostility ■ Pale color ■ Sweating ■ Eventual stupor or unconsciousness 	<p>SIGNS</p> <ul style="list-style-type: none"> ■ Thirst ■ Very frequent urination ■ Flushed skin ■ Vomiting ■ Fruity or winelike odor or breath ■ Eventual stupor or unconsciousness
<p>CAUSES</p> <ul style="list-style-type: none"> ■ Delayed or missed meals ■ Too much insulin, by overdose or error ■ Extreme exercise 	<p>CAUSES</p> <ul style="list-style-type: none"> ■ Undiagnosed diabetes ■ Insulin forgotten or omitted ■ Stress, such as illness or injury ■ Overindulgence in food or drink
<p>TREATMENT</p> <ul style="list-style-type: none"> ■ Provide sugar. ■ If the person can swallow without choking, offer <i>any</i> food or drink containing sugar, such as soft drinks, fruit juice, candy. ■ Do not use diet drinks! ■ If the person does not respond in 10 to 15 minutes, take him or her to a hospital. ■ Look for a diabetic identification bracelet or necklace. ■ The diabetic may carry candy or special quick-sugar commercial preparations in plastic, soft-tipped containers. Squeeze the contents into the person's mouth. 	<p>TREATMENT</p> <ul style="list-style-type: none"> ■ Get the person to a hospital. ■ If you are uncertain whether the person has high blood sugar or low blood sugar, give some food or drink containing sugar. If the person does not respond in 10 to 15 minutes, he or she needs a physician's help. ■ Do not give food or drink if the person is unable to swallow. Take the person to a hospital if he or she has no response to treatments.

Types of Diabetes and Risk Factors

There are two main classifications of diabetes: type 1, or immune-mediated (formerly known as *insulin-dependent*) diabetes, and type 2 (formerly known as *non-insulin-dependent*) diabetes. Type 1 usually occurs during childhood or adolescence. Type 2, the most common form of the disease, usually occurs after age 40.

Like CVDs, some risk factors for diabetes are related to lifestyle, principally obesity and physical inactivity, while others are genetic. For reasons not entirely understood, whites are more likely than other groups to develop type 1 diabetes, while African Americans, Hispanics, and Native Americans are more likely to develop type 2. Yet another major risk factor for type 2 diabetes is **impaired glucose tolerance (IGT)**, *a condition in which blood sugar levels are higher than normal but not high enough to be classified as diabetes.*

Type 1 Diabetes

Type 1 diabetes, which accounts for about 10 percent of all cases of the disease, appears abruptly and progresses rapidly. Most often, type 1 diabetes results from a malfunction of the **immune system**—the system that defends the body against invading pathogens. In an individual with type 1 diabetes, the immune system mistakenly attacks and destroys the insulin-producing cells of the pancreas. The body's cells become “starved” for insulin.

Symptoms of type 1 diabetes include frequent urination, abnormal thirst, unusual hunger, weight loss, weakness, fatigue, irritability, and nausea. Because the pancreas is unable to produce insulin,



▲ **People with diabetes must pay close attention to the foods they eat and monitor the amount of sugar in their blood to avoid diabetic emergencies.**

ACTIVITY Find out what you would need to do for a friend with diabetes in case of emergency.

patients must take daily doses of insulin either through injection or by means of a special pump that is attached to the body via tubing or surgically implanted. Today, because of advanced methods of treatment, many persons with diabetes live near-normal lives.

Emergencies can arise for people with diabetes that necessitate immediate medical attention. It is, therefore, important for a person with diabetes to wear an identification device, such as a bracelet or necklace, advising of this medical condition so that passersby can act quickly and get help that can be the difference between life and death.

Type 2 Diabetes

Type 2 diabetes is a metabolic disorder resulting from the body's inability to make enough, or properly use, insulin. In type 2 diabetes, the pancreas produces some insulin, but because of a cell receptor defect, the cells cannot use the insulin effectively. Symptoms of type 2 diabetes include excess weight, drowsiness, blurred vision, tingling or numbness in the hands and feet, slower than normal healing of cuts and bruises, itching, and recurring skin, gum, or bladder infections.

About 80 percent of all type 2 patients are overweight at the time of diagnosis. Type 2 diabetes can usually be controlled by eating patterns, exercise, and—when necessary—by losing excess weight. In some cases, oral medications or injections of insulin are also required. Problems related to circulation are common in this type of diabetes. Because the onset of type 2 diabetes is gradual, the disease often goes undetected for years. In fact, of the estimated 15.3 million Americans currently afflicted with the disease, roughly half are unaware they have it.

Arthritis

Arthritis covers at least 100 different conditions that cause aching, pain, and swelling in joints and connective tissue throughout the body. The term *arthritis* itself means "inflammation of a joint." Arthritis can and does occur at all ages, from infancy on. The National Center for Health Statistics estimates that over 40 million people have arthritis severe enough to require medical care.

The two most common types of arthritis are rheumatoid (ROOM-uh-toyd) arthritis and osteoarthritis. Like type 1 diabetes, these are *autoimmune diseases*, conditions in which the body's immune system turns on itself. Why this occurs is still a mystery.

Rheumatoid Arthritis

The most serious type of arthritis, **rheumatoid arthritis** is mainly *a destructive and disabling inflammation of the joints*. It affects primarily the joints of the hands and arms, the hips, and the feet and legs. Rheumatoid inflammation also attacks connective tissue, causing symptoms such as fever, fatigue, and swollen lymph glands. Rheumatoid arthritis causes the joints to stiffen, then swell and become tender. The inflammation can do progressive damage inside the joint if it is not diagnosed and properly treated.

Scientists do not know the cause of rheumatoid arthritis, and at present there is no cure. A full treatment program for rheumatoid arthritis depends on the physician and may include anti-inflammatory medicines such as aspirin and ibuprofen, rest, exercise, weight control, splints, walking aids, heat, surgery, and rehabilitation.

Osteoarthritis

Osteoarthritis is *a disease that affects primarily the weight-bearing joints of the knees and hips, causing aches and soreness especially when moving*. It is the most common type of arthritis, affecting about 16 million people. Osteoarthritis results from wear and tear in the mechanical parts of a joint. Inflammation is rarely a problem.

In osteoarthritis, the cartilage becomes pitted and frayed and, in time, may wear away completely. Bone ends then become thicker and bony spurs may develop. As a result, surrounding ligaments and membranes become thickened, changing the whole structure and shape of the joint. There is no cure for arthritis, but early detection and diagnosis is essential to managing the disease. The treatment program includes exercise, weight control, eating a balanced assortment of foods, and pain medications.