

# GLOSSARY OF DIABETES TERMS

## A

**ACESULFAME-K:** An artificial sweetener used in place of sugar; it contains no carbohydrates or sugar; therefore, it has no effect on blood sugar levels. This sweetener is often used in conjunction with other artificial sweeteners in processed low-calorie foods. It is also used as a tabletop sweetener under the brand names Sunette, Sweet One, and Swiss Sweet.

**ACETONE:** A chemical formed in the blood when the body breaks down fat instead of sugar for energy; if acetone forms, it usually means the cells are starved. Commonly, the body's production of acetone is known as "ketosis." It occurs when there is an absolute or relative deficiency in insulin so sugars cannot get into cells for energy. The body then tries to use other energy sources like proteins from muscle and fat from fat cells. Acetone passes through the body into the urine.

**ACIDOSIS:** Too much acid in the body, usually from the production of ketones like acetone, when cells are starved; for a person with diabetes, the most common type of acidosis is called "ketoacidosis."

**ACUTE:** Abrupt onset that is usually severe; happens for a limited period of time.

**ADRENAL GLANDS:** Two endocrine glands that sit on top of the kidneys and make and release stress hormones, such as epinephrine (adrenaline), which stimulates carbohydrate metabolism; norepinephrine, which raises heart rate and blood pressure; and corticosteroid hormones, which control how the body utilizes fat, protein, carbohydrates, and minerals, and helps reduce inflammation. They also produce sex hormones like testosterone and can produce DHEA and progesterone.

**ADULT-ONSET DIABETES:** A term for type 2 diabetes that is no longer used, because this type of diabetes is now commonly seen in children; "non-insulin dependent diabetes" is also considered an incorrect phrase in describing type 2 diabetes, because patients with this type of diabetes may at some point require insulin.

**ADVANTAME:** An FDA-approved sugar substitute similar to Aspartame; it can be used as both a tabletop sweetener and as an ingredient in cooking. Advantame

can also be used in baked goods, soft drinks and other non-alcoholic beverages, chewing gum, candies, frostings, frozen desserts, gelatins and puddings, jams and jellies, processed fruits and fruit juices, toppings and syrups.

**ADVERSE EFFECT:** Harmful effect.

**AEROBIC EXERCISE:** Any rhythmic physical activity that uses large muscle groups and causes the heart and lungs to work harder than when your body is at rest. Also called cardio exercise, it's been proven to lower blood sugar levels.

**ALBUMINURIA:** When kidneys become damaged, they start to leak protein in the urine. Albumin is a small, abundant protein in the blood that passes through the kidney filter into the urine easier than other proteins. Albuminuria occurs in about 30%-45% of people who have had type 1 diabetes for at least 10 years. In people newly diagnosed with type 2 diabetes, the kidneys may already show signs of small amounts of protein spillage, called "microalbuminuria." This may be from the result of diabetes or from other diseases seen in conjunction with diabetes, like high blood pressure. Protein in the urine increases the risk of developing end-stage kidney disease. It also means that the person is at a particularly high risk for the development of cardiovascular disease.

**ALPHA CELL:** A type of cell in an area of the pancreas called the islets of Langerhans; alpha cells make and release a hormone called "glucagon." Glucagon functions in direct opposition to insulin -- it increases the amount of glucose in the blood by releasing stored sugar from the liver.

**ANOMALY:** Birth defects; deviation from the norm or average.

**ANTIBODIES:** Proteins that the body produces to protect itself from foreign substances, such as bacteria or viruses.

**ANTIDIABETIC AGENT:** A substance that helps people with diabetes control the level of sugar in their blood (see insulin, oral diabetes medication).

**ANTIGENS:** Substances that cause an immune response in the body, identifying substances or markers on cells; the body produces antibodies to fight anti-

gens, or harmful substances, and tries to eliminate them.

**ARTERY:** A blood vessel that carries blood from the heart to other parts of the body; arteries are thicker than veins and have stronger, more elastic walls. Arteries sometimes develop plaque within their walls in a process known as “atherosclerosis.” These plaques can become fragile and rupture, leading to complications associated with diabetes, such as heart attacks and strokes.

**ARTIFICIAL PANCREAS:** A glucose sensor attached to an insulin delivery device; both are connected together by what is known as a “closed loop system.” In other words, it is a system that not only can determine the body glucose level, but also takes that information and releases the appropriate amounts of insulin for the particular sugar it just measured. The artificial pancreas can regulate the amount of insulin released, so low sugars would cause the device to decrease insulin delivery. Trials using an artificial pancreas are currently under way, and the hope is that this system will be commercially available within 5 years. Studies are also being conducted to develop a version of this system that can be implanted.

**ARTIFICIAL SWEETENERS:** Also called non-nutritive sweeteners, these include low-calorie or non-caloric sweeteners or sugar substitutes. They add a sweet flavor with fewer calories than table sugar, corn syrup, or fruit juice concentrates. Examples are aspartame (NutraSweet and Equal), sucralose (Splenda), acesulfame potassium, neotame, and saccharin (Sweet’N Low).

**ASPARTAME:** An artificial sweetener used in place of sugar, because it has few calories; sold as “Equal” and “NutraSweet.”

**ASYMPTOMATIC:** No symptoms; no clear sign that disease is present.

**ATHEROSCLEROSIS:** A disease of the arteries caused by deposits of cholesterol in the walls of arteries; these plaques can build up and cause narrowing of the arteries or they can become fragile and break off, forming blood clots that cause heart attacks and stroke. The arteries that supply blood to the heart can become severely narrowed, decreasing the supply of oxygen-rich blood to the heart, especially during times of increased

activity.

**AUTOANTIBODY TEST:** This blood test, called the zinc transporter 8 autoantibody (ZnT8Ab) test, is used along with other information and test results to determine if a person has type 1 diabetes and not another type of diabetes.

**AUTOIMMUNE DISEASE:** A disorder of the body’s immune system in which the immune system mistakenly attacks itself; examples of these diseases include type 1 diabetes, hyperthyroidism caused by Graves’ disease, and hypothyroidism caused by Hashimoto’s disease.

**AUTONOMIC NEUROPATHY:** Nerve damage to the part of the nervous system that we cannot consciously control; these nerves control our digestive system, blood vessels, urinary system, skin, and sex organs. Autonomic nerves are not under a person’s control and function on their own.

## B

**BACKGROUND RETINOPATHY:** This is the mildest form of eye disease caused by diabetes; it can be associated with normal vision. With a longer duration of diabetes or with uncontrolled blood sugars, eye damage can progress to more serious forms.

**BASAL RATE:** The amount of insulin required to manage normal daily blood glucose fluctuations; most people constantly produce insulin to manage the glucose fluctuations that occur during the day. In a person with diabetes, giving a constant low level amount of insulin via insulin pump mimics this normal phenomenon.

**BETA CELL:** A type of cell in an area of the pancreas called the islets of Langerhans; beta cells make and release insulin, which helps control the glucose level in the blood.

**BIOSYNTHETIC INSULIN:** Genetically engineered human insulin; this insulin has a much lower risk of inducing an allergic reaction in people who use it, unlike cow (bovine) or pork (porcine) insulins. The manufacturers of synthetic insulin make it in a short-acting form, which works to cover mealtime increases in sugars; they also produce longer-acting insulins, which cover

sugars between meals and when fasting, such as during the night.

**BLOOD GLUCOSE:** See glucose.

**BLOOD GLUCOSE MONITORING OR TESTING:** A method of testing how much sugar is in your blood; home blood-glucose monitoring involves pricking your finger with a lancing device, putting a drop of blood on a test strip and inserting the test strip into a blood-glucose-testing meter that displays your blood glucose level. Blood-sugar testing can also be done in the laboratory. Blood-glucose monitoring is recommended three or four times a day for people with insulin-dependent diabetes. Depending on the situation, glucose checks before meals, two hours after meals, at bedtime, in the middle of the night, and before and after exercise, may be recommended.

**BLOOD PRESSURE:** The measurement of the pressure or force of blood against the blood vessels (arteries); blood pressure is written as two numbers. The first number or top number is called the systolic pressure and is the measure of pressure in the arteries when the heart beats and pushes more blood into the arteries. The second number, called the diastolic pressure, is the pressure in the arteries when the heart rests between beats. The ideal blood pressure for non-pregnant people with diabetes is 130/80 or less.

**BLOOD SUGAR:** Also called blood glucose, this is the sugar that's in your bloodstream. People with type 2 diabetes have too much blood sugar because insulin levels or actions aren't working well.

**BLOOD UREA NITROGEN (BUN):** A product of metabolism that is excreted in the urine; it is measured in the blood as an indirect measure of how well the kidney is functioning. Increased BUN levels in the blood may indicate early kidney damage, meaning the kidneys aren't effectively excreting BUN.

**BODY MASS INDEX (BMI):** A calculation based on your height and weight to categorize you as underweight, at a healthy weight, overweight, or obese. BMI gives an idea of what your risks of health problems are based on your weight. You can calculate yours here.

**BRITTLE DIABETES:** When a person's blood sugar level often shifts very quickly from high to low and from low

to high.

**BUNION:** Bump or bulge on the first joint of the big toe caused by the swelling of a sac of fluid under the skin and abnormalities in the joint; women are usually affected because of tight fitting or pointed shoes or high heels that put pressure on the toes, forcing the outward movement of the joint. People with flat feet or low arches are also prone to bunions. Shoes that fit well and are padded can prevent bunions from forming. Bunions may lead to other problems, such as serious infection from the big toe putting pressure on other toes.

## C

**CALLUS:** A small area of skin, usually on the foot, that has become thick and hard from rubbing or pressure; calluses may lead to other problems, such as serious infection. Shoes that fit well can prevent calluses from forming.

**CALORIE:** Energy that comes from food; some foods have more calories than others. Fats have more calories than proteins and carbohydrate. Most vegetables have few.

**CARBOHYDRATE:** One of the three main classes of foods and a source of energy; carbohydrates are mainly sugars and starches that the body breaks down into glucose (a simple sugar that the body can use to feed its cells).

**CARBOHYDRATE COUNTING:** A meal-planning technique that involves tracking the grams of carbs in food to make sure that you don't eat more than a certain amount at a given meal. You can count each serving of carbohydrates, since each serving of carbs is 15 grams. If you choose this strategy, your doctor or diabetes educator will tell you how many total carbs to aim for in each meal or the total daily amount.

**CARDIOLOGIST:** A doctor who takes care of people with heart disease; a heart specialist.

**CARDIOVASCULAR:** Relating to the heart and blood vessels (arteries, veins, and capillaries).

**CERTIFIED DIABETES EDUCATOR (CDE):** A health care professional who is certified by the American Association of Diabetes Educators (AADE) to teach people with diabetes how to manage their condition.

**CHOLESTEROL:** A waxy, odorless substance made by the liver that is an essential part of cell walls and nerves; cholesterol plays an important role in body functions such as digestion and hormone production. In addition to being produced by the body, cholesterol comes from animal foods that we eat. Too much cholesterol in the blood causes an increase in particles called LDL ("bad" cholesterol), which increases the buildup of plaque in the artery walls and leads to atherosclerosis.

**CLAUDICATION:** See intermittent claudication.

**COMA:** An emergency in which a person is not conscious; may occur in people with diabetes because their blood sugar is too high or too low.

## D

**DAWN PHENOMENON:** A rise in blood sugar levels in the early morning hours.

**DEHYDRATION:** Large loss of body water; if a person with diabetes has a very high blood sugar level, it causes increased water loss through increased urination and therefore, extreme thirst.

**DIABETES:** See type 1 diabetes and type 2 diabetes.

**DIABETES-FRIENDLY FOOD:** Any food that is healthy for someone with diabetes to have. Because there are no special foods that a person with diabetes must eat, pretty much any healthy food can qualify. Warning: Some packaged foods that aren't especially healthy may be labeled "diabetes-friendly," so always check nutrition labels.

**DIABETIC KETOACIDOSIS (DKA):** A severe, life-threatening condition that results from hyperglycemia (high blood sugar), dehydration, and acid buildup that needs emergency fluid and insulin treatment; DKA happens when there is not enough insulin and cells become starved for sugars. An alternative source of energy

called ketones becomes activated. The system creates a buildup of acids. Ketoacidosis can lead to coma and even death. **Dietitian:** An expert in nutrition who helps people plan the type and amount of foods to eat for special health needs; a registered dietitian (RD) has special qualifications.

**DIETITIAN:** Also called a nutritionist, this is an expert who is trained in the science of nutrition and advises others about healthy eating. Some nutritionists are registered dietitians (RD or RDN); this credential means that someone has completed a higher level of training and passed a registration exam.

## E

**EMERGENCY MEDICAL IDENTIFICATION:** Cards, bracelets, or necklaces with a written message, used by people with diabetes or other medical problems to alert others in case of a medical emergency, such as coma.

**ENDOCRINOLOGIST:** A doctor who treats people with hormone problems.

**EXCHANGE LISTS:** A way of grouping foods together to help people on special diets stay on the diet; each group lists food in a serving size. A person can exchange, trade, or substitute a food serving in one group for another food serving in the same group. The lists put foods into six groups: starch/bread, meat, vegetables, fruit, milk, and fats. Within a food group, one serving of each food item in that group has about the same amount of carbohydrate, protein, fat, and calories.

## F

**FASTING PLASMA GLUCOSE TEST (FPG):** The preferred method of screening for diabetes; the FPG measures a person's blood sugar level after fasting or not eating anything for at least 8 hours. Normal fasting blood glucose is less than 100 milligrams per deciliter or mg/dL. A fasting plasma glucose greater than 100 mg/dL and less than 126 mg/dL implies that the person has an impaired fasting glucose level but may not have diabetes. A diagnosis of diabetes is made when the

fasting blood glucose is greater than 126 mg/dL and when blood tests confirm abnormal results. These tests can be repeated on a subsequent day or by measuring glucose 2 hours after a meal. The results should show an elevated blood glucose of more than 200 mg/dL.

**FATS:** Substances that help the body use some vitamins and keep the skin healthy; they are also the main way the body stores energy. In food, there are many types of fats -- saturated, unsaturated, polyunsaturated, monounsaturated, and trans fats. To maintain your blood cholesterol and triglyceride (lipid) levels as near the normal ranges as possible, the American Diabetes Association recommends limiting the amount of saturated fats and cholesterol in our diets. Saturated fats contribute to blood levels of LDL ("bad") cholesterol. The amount of saturated fats should be limited to less than 10% of total caloric intake, and the amount of dietary cholesterol should be limited to 300 mg/day.

**FIBER:** A type of carbohydrate that the body can't digest. It can't be broken down into sugar. You'll find it in fruits, vegetables, beans, whole grains, and nuts. High-fiber foods tend to be bulky and require extra chewing, so they may boost your weight loss efforts by helping you feel fuller for longer. Fiber plays an important role in the digestive process, and getting enough may also help improve your blood sugar levels.

**FOOD JOURNALING (MEAL TRACKING):** The process of writing down or otherwise recording what you eat. Research has shown that keeping track of your food intake can help you lose weight.

**FRUCTOSE:** A type of sugar found in many fruits and vegetables and in honey; fructose is used to sweeten some diet foods, but this type of sweetener is typically not recommended for people with diabetes, because it could have a negative effect on blood sugar.

## G

**GANGRENE:** The death of body tissues, usually due to a lack of blood supply, especially in the legs and feet.

**GASTROPARESIS:** A form of nerve damage that affects the stomach and intestines; with this condition, food is not digested properly and does not move through the stomach and intestinal tract normally. It can result in

nausea and vomiting, because the transit time of food is slowed by nerve damage. This type of nerve damage can also cause a significant problem with low and erratic blood sugars.

**GESTATIONAL DIABETES:** A high blood sugar level that starts or is first recognized during pregnancy; hormone changes during pregnancy affect the action of insulin, resulting in high blood sugar levels. Usually, blood sugar levels return to normal after childbirth. However, women who have had gestational diabetes are at increased risk of developing type 2 diabetes later in life. Gestational diabetes can increase complications during labor and delivery and increase the rates of fetal complications related to the increased size of the baby.

**Glaucoma:** An eye disease associated with increased pressure within the eye; glaucoma can damage the optic nerve and cause impaired vision and blindness.

**GLUCAGON:** A hormone that raises the level of glucose in the blood by releasing stored glucose from the liver; glucagon is sometimes injected when a person has lost consciousness (passed out) from low blood sugar levels. The injected glucagon helps raise the level of glucose in the blood.

**GLUCOSE:** A simple sugar found in the blood; it is the body's main source of energy; also known as "dextrose."

**GLUCOSE TABLETS:** Chewable sugar that people with diabetes use to raise their blood sugar quickly when it drops dangerously low (hypoglycemia). These products come in a variety of flavors and forms such as gels, liquids, and powders. If you take a medication that makes you prone to this problem, your doctor may tell you to carry glucose tablets with you, especially during exercise.

**GLUCOSE TOLERANCE TEST:** A test to determine if a person has diabetes; the test is done in a lab or doctor's office in the morning before the person has eaten. A period of at least 8 hours without any food is recommended prior to doing the test. First, a sample of blood is taken in the fasting state. Then the person drinks a liquid that has sugar in it. Two hours later, a second blood test is done. A fasting blood sugar equal to or greater than 126 mg/dl is considered diabetes. A fasting blood sugar between 100 mg/dl and 125 mg/dl

is classified as impaired fasting glucose. If the two-hour test result shows a blood sugar equal to or greater than 200 mg/dl, the person is considered to have diabetes. A two-hour blood glucose between 140 mg/dl and 199 mg/dl is classified as impaired glucose tolerance.

**GLYCATED HEMOGLOBIN TEST (HBA1C):** This is an important blood test to determine how well you are managing your diabetes; hemoglobin is a substance in red blood cells that carries oxygen to tissues. It can also attach to sugar in the blood, forming a substance called glycated hemoglobin or a Hemoglobin A1C. The test provides an average blood sugar measurement over a 6- to 12-week period and is used in conjunction with home glucose monitoring to make treatment adjustments. The ideal range for people with diabetes is generally less than 7%. This test can also be used to diagnose diabetes when the HbA1c level is equal to or greater than 6.5%.

## H

**HIGH BLOOD PRESSURE:** A condition when the blood flows through the blood vessels at a force greater than normal; high blood pressure strains the heart, harms the arteries, and increases the risk of heart attack, stroke, and kidney problems; also called “hypertension.” The goal for blood pressure in people with diabetes is less than 130/80.

**HIGH BLOOD SUGAR:** See hyperglycemia.

**HOME BLOOD GLUCOSE MONITORING:** A way in which a person can test how much sugar is in the blood; also called “self-monitoring of blood glucose.” Home glucose monitoring tests whole blood (plasma and blood cell components); thus, the results can be different from lab values, which test plasma values of glucose. Typically, the lab plasma values can be higher than the glucose checks done at home with a glucose monitor.

**HORMONE:** A chemical released in one organ or part of the body that travels through the blood to another area, where it helps to control certain bodily functions; for instance, insulin is a hormone made by the beta cells in the pancreas and when released, it triggers other cells to use glucose for energy.

**HUMAN INSULIN:** Bio-engineered insulin very similar to insulin made by the body; the DNA code for making human insulin is put into bacteria or yeast cells and the insulin made is purified and sold as human insulin.

**HYPERGLYCEMIA:** High blood sugar; this condition is fairly common in people with diabetes. Many things can cause hyperglycemia. It occurs when the body does not have enough insulin or cannot use the insulin it does have.

**HYPERTENSION:** See high blood pressure.

**HYPOGLYCEMIA:** Low blood sugar; the condition often occurs in people with diabetes. Most cases occur when there is too much insulin and not enough glucose in your body.

## I

**IMPOTENCE:** Also called “erectile dysfunction;” persistent inability of the penis to become erect or stay erect. Some men may become impotent after having diabetes for a long time, because nerves and blood vessels in the penis become damaged. It is estimated that 50% of men diagnosed with type 2 diabetes experience impotence.

**INJECTION SITE ROTATION:** Changing the areas on the body where a person injects insulin; by changing the area of injection, the injections will be easier, safer, and more comfortable. If the same injection site is used over and over again, hardened areas, lumps, or indentations can develop under the skin, which keep the insulin from being used properly. These lumps or indentations are called “lipodystrophies.”

**INJECTION SITES:** Places on the body where people can inject insulin most easily.

**INSULIN:** A hormone produced by the pancreas that helps the body use sugar for energy; the beta cells of the pancreas make insulin.

**INSULIN-DEPENDENT DIABETES:** Former term used for type 1 diabetes.

**INSULIN MIXTURE:** A mixture of insulin that contains

short-, intermediate- or long-acting insulin; you can buy premixed insulin to eliminate the need for mixing insulin from two bottles.

**INSULIN PUMP:** A small, computerized device -- about the size of a small cell phone -- that is worn on a belt or put in a pocket; insulin pumps have a small flexible tube with a fine needle on the end. The needle is inserted under the skin of the abdomen and taped in place. A carefully measured, steady flow of insulin is released into the body.

**INSULIN REACTION:** Another term for hypoglycemia in a person with diabetes; this occurs when a person with diabetes has injected too much insulin, eaten too little food, or has exercised without eating extra food.

**INSULIN RECEPTORS:** Areas on the outer part of a cell that allow insulin in the blood to join or bind with the cell; when the cell and insulin bind together, the cell can take glucose from the blood and use it for energy.

**INSULIN RESISTANCE:** When the effect of insulin on muscle, fat, and liver cells becomes less effective; this effect occurs with both insulin produced in the body and with insulin injections. Therefore, higher levels of insulin are needed to lower the blood sugar.

**INSULIN RESISTANCE SYNDROME OR METABOLIC SYNDROME:** This syndrome is defined by a cluster of medical conditions that raise the risk of developing type 2 diabetes and heart disease. A diagnosis is important, because you can make health improvements that lessen the risk.

Insulin resistance syndrome or metabolic syndrome is diagnosed when a person has 3 or more of the following:

- Blood pressure equal to or higher than 130/85 mmHg
- Fasting blood sugar (glucose) equal to or higher than 100 mg/dL
- Large waist circumference (a waistline of 40 inches or more for men; 35 inches or more for a woman)
- Low HDL cholesterol (under 40mg/dL for men; under 50 mg/dL for women)
- Triglycerides equal to or higher than 150 mg/dL
- Insulin shock: A severe condition that occurs when the level of blood sugar drops quickly.

**INTERMEDIATE-ACTING INSULIN:** Covers insulin needs for about half the day or overnight; this type of insulin is often combined with rapid- or short-acting insulin. Includes NPH and Lente.

**INTERMITTENT CLAUDICATION:** Pain in the muscles of the legs that occurs off and on, usually while walking or exercising; the pain results from atherosclerosis of the blood vessels feeding the muscles of the lower extremities. Claudication usually increases with age and is most common in people in their sixth or seventh decade of life. Risk factors for developing narrowing of the arteries that can cause claudication include smoking cigarettes, high blood pressure, and diabetes. Drugs are available to treat this condition.

## J

**JET INJECTOR:** A device that uses high pressure to push insulin through the skin and into the tissue.

**JUVENILE-ONSET DIABETES:** Former term used for type 1 diabetes.

## K

**KETOACIDOSIS:** See diabetic ketoacidosis (DKA).

**KETONE BODIES:** Often simply called ketones, one of the products of fat burning in the body; when there is not enough insulin, your body is unable to use sugar (glucose) for energy and your body breaks down its own fat and protein. When fat is used, ketone bodies, an acid, appear in your urine and blood. A large amount of ketones in your system can lead to a serious condition called ketoacidosis. Ketones can be detected and monitored in your urine at home using products such as Ketostix, Chemstrips, and Acetest. When your blood sugar is consistently greater than 250 mg/dl, if you are ill or if you are pregnant and have diabetes, ketones should be checked regularly.

**KIDNEY DISEASE (NEPHROPATHY):** In a person with diabetes, nephropathy is any one of several conditions caused by changes in the very small blood vessels in the kidneys. These changes cause scarring of the kidneys, which can eventually lead to kidney failure.

People who have had diabetes for a long time may develop nephropathy. An early sign of nephropathy is when proteins can be detected in the urine.

**KIDNEY THRESHOLD:** See renal threshold.

## L

**LANCET:** A fine, sharp pointed needle for pricking the skin; used in blood sugar monitoring.

**LASER TREATMENT:** The use of a strong beam of light (laser) to heal a damaged area; a person with diabetes might receive laser treatments to heal blood vessels in the eye.

**LATE-ONSET DIABETES:** Former term used for type 2 diabetes.

**LIPID:** Another term for a fat or fat-like substance in the blood; the body stores fat as energy for future use, just like a car that has a reserve fuel tank. When the body needs energy, it can break down lipids into fatty acids and burn them like glucose. Excess amounts of fats in the diet can cause fat buildup in the walls of the arteries -- called "atherosclerosis." Excess amounts of calories from fats or other nutrients can lead to an increase in weight gain.

**LOW BLOOD SUGAR, LOW BLOOD GLUCOSE:** See hypoglycemia.

## M

**MEAL PLAN (MEAL PLANNING):** Any strategy used to map out what you're going to eat. This term may refer to following a specific diet, or it may just indicate the process of thinking through what you plan to eat beforehand.

**METABOLISM:** All of the physical and chemical processes in the body that occur when food is broken down, energy is created and wastes are produced.

**MG/DL (MILLIGRAMS PER DECILITER):** Measurement that indicates the amount of something like glucose in a specific amount of blood.

**MIXED DOSE:** A prescribed dose of insulin in which two types of insulin are combined and injected at once; a mixed dose commonly combines a fast-acting and longer-acting insulin. A mixed dose can come in a pre-mixed syringe or be mixed at the time of injection. A mixed dose may be prescribed to provide better blood sugar control.

## N

**NATURAL NO-CALORIE SWEETENERS:** Similar to artificial sweeteners, except these come from a natural source. Stevia (Truvia, PureVia, etc.) is considered a natural sweetener because it comes from the stevia plant.

**NEPHROPATHY:** Disease of the kidneys caused by damage to the small blood vessels or to the units in the kidneys that clean the blood; people who have had diabetes for a long time may develop nephropathy.

**NEUROLOGIST:** A doctor who treats people who have problems of the nervous system (brain, spinal cord, and nerves).

**NEUROPATHY:** Nerve damage; people who have had diabetes that is not well controlled may develop nerve damage.

**NON-INSULIN DEPENDENT DIABETES:** Former term for type 2 diabetes.

**NUTRITIONIST:** See dietitian.

## O

**OBESITY:** A term used to describe excess body fat; it is defined in terms of a person's weight and height, or their body mass index (BMI). A BMI over 30 is classified as being obese. Obesity makes your body less sensitive to insulin's action. Extra body fat is thought to be a risk factor for diabetes.

**OPHTHALMOLOGIST:** A doctor who treats people with eye diseases or eye trauma.

**OPTOMETRIST:** A person professionally trained to test

the eyes and to detect and treat eye problems, as well as some diseases, by prescribing and adapting corrective lenses. Some also get additional clinical training or complete a specialty fellowship after optometry school.

**ORAL DIABETES MEDICATIONS:** Medications that people take to lower the level of sugar in the blood; oral diabetes medications are prescribed for people whose pancreas still produces some insulin. These medications are not used in diabetes during pregnancy.

**OVERWEIGHT:** Refers to someone with a BMI of between 25 and 29.9, who is carrying excess body fat. Someone who is overweight has a higher risk of health problems such as type 2 diabetes.

## P

**PANCREAS:** An organ behind the lower part of the stomach that is about the size of a hand; it makes insulin so the body can use sugar for energy.

**PEAK ACTION:** The time when the effect of something is as strong as it can be, such as when insulin is having the most effect on blood sugar.

**PERIODONTAL DISEASE:** Damage to the gums and tissues around the teeth; people who have diabetes are more likely to have periodontal disease than people who do not have diabetes.

**PERIPHERAL NEUROPATHY:** A type of nerve damage most commonly affecting the feet and legs.

**PERIPHERAL VASCULAR DISEASE (PVD):** An abnormal condition that affects the blood vessels outside the heart, usually the hands and feet; often occurs as a result of decreased blood flow and narrowing of the arteries from atherosclerosis; people who have had diabetes for a long time may develop PVD.

**PODIATRIST:** A health professional who diagnoses and treats foot problems.

**POLYDIPSIA:** Excessive thirst that lasts for long periods of time; may be a sign of diabetes.

**POLYPHAGIA:** Excessive hunger and eating; may be a

sign of diabetes. When insulin levels are decreased or there is insulin resistance, the cells of the body do not get enough sugar, and hunger develops. People with polyphagia often lose weight, even though they are eating more than normal, because the excess calories are lost in the urine as sugar (glucose).

**POLYUNSATURATED FAT:** A type of fat that can be substituted for saturated fats in the diet and can reduce LDL "bad" cholesterol.

**Polyuria:** Increased need to urinate often; a common sign of diabetes.

**PROTEIN:** One of three main classes of food; proteins are made of amino acids, which are called the "building blocks of the cells." Cells need protein to grow and to mend themselves. Protein is found in many foods, like meat, fish, poultry, eggs, legumes, and dairy products.

## R

**RAPID-ACTING INSULIN:** Covers insulin needs for meals eaten at the same time as the injection; this type of insulin is used with longer-acting insulin. Includes Humalog, Novolog, and Apidra.

**REBOUND EFFECT:** See Somogyi effect.

**REGULAR INSULIN:** A type of insulin that is rapid-acting.

**RENAL:** Relating to the kidneys.

**RETINA:** The center part of the back lining of the eye that senses light; it has many small blood vessels that are sometimes harmed when a person has had diabetes for a long time.

**RETINOPATHY:** A disease of the small blood vessels in the retina of the eye.

**RISK FACTOR:** Anything that increases the chance of a person developing a disease or condition.

## S

**SACCHARIN:** An artificial sweetener that is used in place of sugar because it has no calories and does

not increase blood sugar; it is sold as SugarTwin and Sweet'N Low.

**SELF-BLOOD GLUCOSE MONITORING:** See home blood glucose monitoring.

**SHORT-ACTING INSULIN:** Covers insulin needs for meals eaten within 30-60 minutes; includes humulin or novolin, or Velosulin (in an insulin pump).

**SODIUM:** A mineral found in salt. Getting too much -- as most Americans do -- can raise your blood pressure and, in turn, raise your risk of heart attack and stroke. Because these problems are often tied to diabetes, it's important to watch your intake. Processed foods tend to be very high in sodium.

**SOMOGYI EFFECT:** Also called "rebound effect," it occurs when there is an upward swing in blood sugar from an extremely low level of glucose in the blood to a very high level. It usually happens during the night and early morning hours. People who experience high levels of blood sugar in the morning may need to test their blood sugar levels in the middle of the night. If blood sugar levels are repeatedly low, addition of an evening snack or a lowering of insulin doses may be recommended.

**SORBITOL:** A sugar -- produced from fruits -- that the body uses slowly; it is a sweetener used in diet foods and is called a "nutritive sweetener" because it has four calories in every gram, just like table sugar and starch. These compounds are used in many foods labeled as "sugar free" and "no sugar added" and can raise your blood glucose. Because a food is labeled "sugar free," it doesn't necessarily mean carbohydrate-free.

**STARCH:** A type of carbohydrate found in grains, as well as in starchy vegetables such as peas, corn, beans, and potatoes. Just like sugar (another type of carbohydrate), starch can raise your blood sugar, so it's important to pay attention to how much you're eating.

**STEVIA:** A natural sugar substitute that has no calories; Truvia is the brand name for a sweetener made from the stevia leaf.

**STRENGTH TRAINING:** Physical activity designed to build muscle strength or muscle mass. Some exam-

ples include lifting free weights, working with weight machines, and exercising with resistance bands. Also called resistance exercise, it can help make your body use insulin more effectively.

**SUCROSE:** Table sugar; a form of sugar that the body must break down into a more simple form before the blood can absorb it and take it to the cells.

**SUCRALOSE:** An artificial sweetener that is 600 times sweeter than sugar; can be used in cooking. Splenda is a brand name of sucralose.

**SUGAR:** A class of carbohydrates that tastes sweet; sugar is a quick and easy fuel for the body to use. Some types of sugar are lactose, glucose, fructose, and sucrose.

**SUGAR ALCOHOLS:** A type of low-calorie sweetener that's often used in "diet" and "sugar-free" foods. These usually end in "-ol." Examples include erythritol, sorbitol, and xylitol. Foods containing these sweeteners may still have carbs and can raise blood sugar, so be sure to check the nutrition label. Sugar alcohols may cause stomach upset in some people.

**SULFONYLUREAS:** Pills or capsules that people take to lower the level of sugar in the blood; these oral diabetic medications work to lower your blood sugar by making your pancreas produce more insulin.

## T

**TRIGLYCERIDE:** Fats carried in the blood from the food we eat; most of the fats we eat, including butter, margarines, and oils, are in triglyceride form. Excess triglycerides are stored in fat cells throughout the body. The body needs insulin to remove this type of fat from the blood.

**TYPE 1 DIABETES:** A type of diabetes in which the insulin-producing cells (called beta cells) of the pancreas are damaged; people with type 1 diabetes produce little or no insulin, so glucose cannot get into the body's cells for use as energy. This causes blood sugar to rise. People with type 1 diabetes must use insulin injections to control their blood sugar.

**TYPE 2 DIABETES:** A type of diabetes in which the insulin produced is either not enough or the person's body does not respond normally to the amount present; therefore, glucose in the blood cannot get into the body's cells for use as energy. This results in an increase in the level of glucose (sugar) in the blood.

## U

**U-100:** See unit of insulin.

**ULCER:** A break in the skin; a deep sore. People with diabetes may develop ulcers from minor scrapes on the feet or legs, from cuts that heal slowly, or from the rubbing of shoes that don't fit well. Ulcers can become infected and should be treated promptly.

**ULTRALENTE INSULIN:** A type of insulin that is long-acting; usually, the action of this type of insulin works for 25-36 hours after injection. This type of insulin has an onset of action four to five hours after injecting and works most powerfully at eight to 14 hours after injection. Other types of long-acting insulin include insulin detemir (Levemir) and insulin glargine (Lantus)..

**UNIT OF INSULIN:** The basic measure of insulin; U-100 is the most common concentration of insulin. U-100 means that there are 100 units of insulin per milliliter (ml) of liquid. For the occasional patient who has severe insulin resistance, insulin is available as a U-500 form.

**UNSTABLE DIABETES:** See brittle diabetes.

**URINE TESTING:** Checking urine to see if it contains ketones; if you have type 1 diabetes, are pregnant and have diabetes, or have gestational diabetes, your doctor may ask you to check your urine for ketones. This is an easy test done at home with a dipstick measure.

**UROLOGIST:** A doctor who specializes in treatment of the urinary tract for men and women, as well as treatment of the genital organs for males.

## V

**VAGINITIS:** An inflammation or infection of the vaginal tissues; a woman with this condition may have itching or burning or vaginal discharge. Women who have diabetes may develop vaginitis more often than women who do not have diabetes.

**VASCULAR:** Relating to the body's blood vessels (arteries, veins, and capillaries).

**VEIN:** A blood vessel that carries blood to the heart.

**VITRECTOMY:** A procedure in which the gel from the center of the eyeball is removed because it has blood and scar tissue that blocks vision; an eye surgeon replaces the clouded gel with a clear fluid.

## W

**WHOLE GRAINS:** Grains that have the entire grain kernel, including the nutrient-rich bran and germ. Refined grains (such as white bread), on the other hand, have had the bran and germ removed and contain only the starchy endosperm. Whole grains have more fiber than refined ones, so they're digested more slowly and won't cause your blood sugar to rise as fast.

## X

**XYLITOL:** A nutritive sweetener used in dietary foods; it is a sugar alcohol that the body uses slowly, and contains fewer calories than table sugar.