

Glossary of Terms

A1C a test (also known as glycated hemoglobin or HbA1c) that provides an estimate of average blood glucose control for the past three months.

Beta cells that make insulin. These cells are found in the Islets of Langerhans in the pancreas.

Blood glucose meter a hand-held machine that tests blood glucose (sugar) levels. A drop of blood (obtained by pricking a finger) is placed on a small strip that is inserted in the meter. The meter calculates and displays the blood glucose level.

Calories units representing the amount of energy provided by food. Carbohydrate, protein, and fat are the primary sources of calories in the diet, but alcohol also provides calories. If all calories consumed aren't used as energy, they may be stored as fat.

Carbohydrate one of the major sources of calories in the diet. Carbohydrate comes primarily from sugar (simple carbohydrate) and starch (complex carbohydrate, found in bread, pasta, beans). Carbohydrate is broken down into glucose during digestion and is the main nutrient that raises blood glucose levels.

Cholesterol a waxy, fat-like substance used by the body to build cell walls and make certain vitamins and hormones. The liver produces enough cholesterol for the body, but we also get cholesterol when we eat animal products. Eating too much cholesterol and saturated fat can cause the blood cholesterol to rise and collect along the inside walls of blood vessels. This is a risk factor for heart attack and stroke.

Counterregulatory (stress) hormones hormones released during stressful situations. These hormones include glucagons, epinephrine (adrenaline), norepinephrine, cortisol, and growth hormone. They cause the liver to release glucose and the cells to release fatty acids for extra energy. If there's not enough insulin present in the body, these extra fuels can lead to hyperglycemia and ketoacidosis.

Diabetes a disease in which the body cannot produce enough insulin or cannot use insulin to its full potential. It is characterized by high blood glucose levels.

Exchanges food groups used in the American Diabetes Association, American Dietetic Association, Exchange Lists for Meal Planning. Foods are divided into three basic groups: Carbohydrates, Meat and Meat Substitutes, and Fats. Each serving of food has about the same amount of carbohydrate, protein, fat, and calories as other foods on that list and be "exchanged" or traded for any other food on the same list.

Fats the most concentrated source of calories in the diet. Saturated fats are found primarily in animal products. Unsaturated fats mainly come from plants and can be monounsaturated (olive or canola oil) or polyunsaturated (corn and other oils). Excess intake of fat, especially saturated fats and trans-fatty acids, can cause elevated blood cholesterol, increasing the risk of heart disease and stroke.

Fiber the parts of the plant that the body can't digest, such as fruits and vegetables skins. Fiber aids in the normal functioning of the digestive system, specifically the intestinal tract.

Gestational diabetes diabetes that develops during pregnancy. The mother's blood glucose rises due to hormones secreted during pregnancy, and the mother cannot produce enough insulin to handle the higher blood glucose levels. Although gestational diabetes ceases after pregnancy, about 60 percent of women who've had gestational diabetes eventually develop type 2 diabetes.

Glucagon a hormone produced by the pancreas that raises blood glucose levels. An injectable preparation is available by prescription for use in treating severe low blood glucose (hypoglycemia).

Glucose a simple form of sugar that acts as the body's fuel. It is produced when foods are broken down in the digestive system. Glucose is carried by the blood to the cells. The amount of glucose in the blood is known as the blood glucose level.

Hyperglycemia a condition in which blood glucose levels are too high. Symptoms include frequent urination, increased thirst, and weight loss.

Hypoglycemia (or insulin reaction) a condition in which blood glucose levels drop too low (generally, below 70 mg/dl). Symptoms include moodiness, numbness in the arms and hands, confusion, and shakiness or dizziness. When left untreated, this condition can become severe and lead to unconsciousness.

Immunosuppression suppression of the immune system. People who receive kidney, pancreas, or islet cell transplants take immunosuppressive drugs to prevent their immune systems from attacking the new organ.

Insulin a hormone produced by the pancreas that helps the body use glucose. It is the "key" that unlocks the "doors" to cells and allows glucose to enter. Once inside, glucose then fuels the cells.

Insulin resistance a condition in which the body does not respond to insulin properly. This is the most common cause of type 2 diabetes.

Ketoacidosis (or diabetic coma) a severe condition caused by a lack of insulin or an elevation in stress hormones. It is marked by high blood glucose levels and ketones in the urine, and occurs much more frequently in those with type 1 diabetes.

Ketones acids produced when the body breaks down fat for fuel. This occurs when there is not enough insulin to permit glucose to enter the cells and fuel them or when there are too many stress hormones.

Mg/dl milligrams per deciliter. This is the unit of measure used when referring to blood glucose levels.

Nephropathy kidney damage. This condition can be life-threatening. When kidneys fail to function, dialysis (filtering blood through a machine) or kidney transplantation becomes necessary.

Neuropathy damage to the nerves. Neuropathies are often broken down into two categories. Peripheral neuropathies affect the nerves controlling sensation (and less commonly, muscles) in the feet, hands, and joints. Autonomic neuropathies affect the nerve function of various organs, including those of the digestive system and urinary tract.

Obesity an abnormal and excessive amount of body fat. Most obese people are significantly overweight. However, obesity also occurs in people who are not overweight, but have more body fat than muscle. Obesity is considered a chronic illness. It is on the rise and is a risk factor for type 2 diabetes.

Pancreas a comma-shaped gland located just behind the stomach. It produces enzymes for digesting food and hormones that regulate the use of fuels in the body, including insulin and glucagons. In a fully functioning pancreas, insulin is released through beta cells located in clusters called islets of Langerhans.

Pre-diabetes blood glucose levels that are higher than normal but not yet high enough to be considered diabetic. Diagnosed through either a fasting plasma glucose test or an oral glucose tolerance test, people with pre-diabetes are at a heightened risk for type 2 diabetes. Even at this stage, however, a healthy diet, weight loss, and exercise can delay or prevent type 2 diabetes from developing.

Protein one of the three major sources of calories in the diet. Protein provides the body with material for building blood cells, body tissue, hormones, and other important substances. It is found in meats, eggs, milk, and certain vegetables and starches.

Receptors molecules that sit on cell surfaces and play a role in chemical “communication.” For example, insulin cannot usher glucose into our cells unless the receptors on the cells respond properly to it.

Retinopathy damage to small blood vessels in the eye that can lead to vision problems. In background retinopathy, the blood vessels bulge and leak fluids into the retina, which may cause blurred vision. Proliferative retinopathy is more serious and can cause vision loss. In this condition, new blood vessels form in the retina and branch out to other areas of the eye. This can cause blood to leak into the clear fluid inside the eye and can also cause the retina to detach.

Sugar a form of carbohydrate that provides calories and raises blood glucose levels. There are a variety of sugars, such as white, brown, confectioner’s, invert, and raw. Fructose, lactose, sucrose, maltose, dextrose, glucose, honey, corn syrup, molasses, and sorghum are also sugars.

Sugar substitutes sweeteners used in place of sugar. Note that some sugar substitutes have calories and will affect blood glucose levels, such as fructose (a sugar, but often used in “sugar-

free” products) and sugar alcohols like sorbitol and mannitol. Other have very few calories and will not affect blood glucose levels, such as saccharin, acesulfame-K, aspartame (NutraSweet), and sucralose (Splenda).

Type 1 diabetes a form of diabetes that tends to develop before age 30 but may occur at any age. It’s caused by an immune system attack on the insulin-producing beta cells of the pancreas. When the cells are destroyed, the pancreas can no longer produce insulin. People who have type 1 diabetes must take insulin to survive.

Type 2 diabetes This form of diabetes usually occurs in people over 40 years of age but is increasingly being diagnosed in younger people especially among minorities. Most people who develop type 2 diabetes are insulin resistant. However, some simply cannot produce enough insulin to meet their bodies’ needs, and others have a combination of these problems. Some people with type 2 diabetes control the disease through diet and exercise, but most must also take oral medications or insulin.

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