

Diabetes Glossary A to Z

A1C - A blood test that measures average blood glucose over the past 2 to 3 months and is the best way to measure overall glucose control. It should be measured 2 to 4 times a year and the goal is less than 7%.

Acanthosis nigricans - a thickening and darkening of the skin in patchy areas in the skin folds of the armpits, neck, or groin, ranging from tan to dark brown. This is usually a sign of insulin resistance.

ACE inhibitor (angiotensin-converting enzyme) - a type of medication used to lower blood pressure and help treat kidney problems related to diabetes.

Adult stem cell - a cell found in the different tissues of the body - such as blood, skin or muscle - that can renew itself and produce the specialized cells needed by that tissue (known as multipotency).

Antibodies - proteins that the body makes to protect itself from foreign substances such as bacteria and viruses.

ARBs (angiotensin receptor blocker) - a type of oral medication used to lower blood pressure.

Atherosclerosis - a process that involves thickening of the blood vessel walls thought to be related to inflammation of the vessel wall, which then leads to formation of plaques, causing partial blockages. If these plaques rupture, clots form on that rupture site, causing a more acute, total blockage. If the blood vessel is providing blood to the heart, the result would be a heart attack.

Autoimmune disease - disorder of the body's immune system in which the immune system mistakenly attacks and destroys body tissue considered foreign.

Basal insulin - the insulin that controls blood glucose levels between meals and overnight. It controls glucose in the fasting state.

Beta cells - cells that produce insulin. They are located within the islets of Langerhans in the pancreas.

Blood glucose (or glucose) - a type of sugar that is created when the carbohydrate that one eats is broken down in the body. During digestion, glucose passes through the wall of the intestine into the bloodstream to the liver and eventually into the general circulation. From there glucose can then enter individual cells or tissues throughout the body to be used for fuel and provide energy.

Bluetooth - Bluetooth is a telecommunications industry specification that describes how mobile phones, computers, and personal digital assistants (PDAs) can be easily interconnected using a short-range wireless connection.

Blood pressure - the pressure against the walls of your blood vessels. High blood pressure is more common in persons with diabetes and increases the risk of stroke, heart attack, kidney and eye diseases. It should be measured at every doctor visit, or at least once a year, with a goal of 130/80 mm Hg or lower.

Body mass index (BMI) - a method of determining by the relationship between height and weight whether or not a person is obese, overweight, underweight or of normal weight.

Bolus insulin - the insulin that is released when food is eaten. A bolus is a burst of insulin that is delivered by injection or by the insulin pump to "cover" a meal or snack or to correct for a high blood glucose level.

Carbohydrate counting - a meal planning method commonly used by people with diabetes to plan their food and meal choices. Carbohydrate counting helps one achieve a balance between the amount of carbohydrate foods eaten and the available insulin.

Carbohydrate - the main source of fuel for the body. Carbohydrate includes starches and sugars and are found in bread, pasta, fruits, vegetables, milk, and sweets. Carbs are broken down into a sugar called glucose.

Cardiologist - a doctor who specializes in the heart and vascular system.

Cardiovascular system - the heart and blood vessels. It is the means by which blood is pumped from the heart and circulated throughout the body. As it circulates, the blood carries nourishment and oxygen to all of the body's tissues. It also removes waste products.

CGM (also known as Continuous Glucose Monitor) Glucose monitoring device that helps people with diabetes manage the disease and avoid its associated problems. A person can use the results of glucose monitoring to make decisions about food, physical activity, and medications. The most common way to check glucose levels involves pricking a fingertip with an automatic lancing device to obtain a blood sample and then using a glucose meter to measure the blood sample's glucose level.

Charcot foot - a condition in which the small bones of the foot become misaligned, leading to foot deformity. It is a problem that can evolve as a result of nerve damage.

Cholesterol - a type of fat that is manufactured in the liver or intestines, but is also found in some of the foods we eat. (Only animal foods, such as eggs, milk, cheese, liver, meat and poultry contain cholesterol).

Clinical trials - carefully controlled studies that are conducted to test the effectiveness and safety of new drugs, medical products or techniques. All drugs in the U.S. undergo three phases of clinical trials before being approved for general use.

Cloning - a process for creating a genetically identical copy of a cell or an organism.

Conventional insulin therapy - an insulin therapy in which the insulin regimen is decided first and the person with diabetes has to eat and engage in physical activity according to the time actions of the injected insulins.

Creatinine - a waste product derived from the activity of the muscles. Normally, kidneys can remove this substance from the blood. A build-up of creatinine in the blood signals that the kidneys are losing their ability to function normally.

Dawn phenomenon - a rise in blood glucose levels that occurs in the early morning hours.

Dead in Bed Syndrome - (DIB) is a term used to describe the sudden unexplained deaths of young people with type 1 diabetes. The syndrome is characterised as when someone with insulin dependent diabetes has gone to bed seemingly perfectly fine and has been found dead in an undisturbed bed.

Diabetes educator - a healthcare person who has the skill and knowledge to teach a person with diabetes how to manage the condition. Diabetes educators may be doctors, nurses, dietitians, mental health or fitness clinicians. Some also have the credential CDE (Certified Diabetes Educator).

Diabetic ketoacidosis (also called ketoacidosis or DKA) - a condition that results from a lack of sufficient insulin in the body, leading to high blood glucose levels and ketone formation. It is an extremely serious and life-threatening condition that may lead to coma and death. The symptoms of ketoacidosis are nausea, stomach pain, vomiting, chest pain, rapid shallow breathing, and difficulty staying awake.

Diabetic macular oedema - a condition that can occur in either stage of diabetic retinopathy (non proliferative retinopathy, and a more serious stage called proliferative retinopathy) in which fluid collects in the central part of the retina resulting in blurred vision. Macular oedema can be treated with laser surgery when central vision is threatened.

Differentiation - the process by which an unspecialized cell changes into a more organized or complex cell that performs a certain function, such as an insulin-producing beta cell.

Embryonic stem cell - an unspecialized cell in an embryo that can divide indefinitely (self-renew) and produce any cell in the body needed after birth (known as pluripotency).

Endocrinologist - a doctor who specializes in diseases of the endocrine system such as diabetes.

Epidemiology - the study of disease patterns in human populations.

Fasting blood glucose test - a blood test in which a sample of your blood is drawn after an overnight fast to measure the amount of glucose in your blood.

Fructosamine test - a blood test that can detect overall changes in blood glucose control over a shorter time-span than the A1C test. Fructosamine levels indicate the level of blood glucose control over the past two or three weeks. Thus, when rapid changes are being made in your diabetes treatment plan, this test quickly tells you how the changes are working and whether other changes should be considered.

Gastroparesis - a condition in which neuropathy affects the nerves controlling the digestive tract and causes difficulty processing or disposing of food. It can cause nausea, vomiting, bloating or diarrhoea.

Gestational diabetes - diabetes that develops during pregnancy. During this time, some women will have only a minimal insulin deficiency and will be able to adequately control their blood glucose with a meal plan. Other women may have a more severe insulin deficiency and require insulin along with nutrition therapy to control their blood glucose. This type of diabetes usually lasts only through the pregnancy, but women who have it may be at greater risk of developing type 2 diabetes later on.

Ghrelin - a hormone that relays messages between the digestive system and the brain. It works to stimulate appetite, slow metabolism, and decrease your body's ability to burn fat.

Glucose - a simple form of sugar that is created when the body's digestive processes break down the food we eat. Glucose is the body's main source of energy.

Glucose meter - a device that measures one's blood glucose levels.

Glucose tolerance test - blood test done every hour or at the 2-hour point after drinking a sugar-filled liquid. This is one test used to diagnose diabetes. If at 2 hours, your blood glucose rises to over 200 mg/dl you have diabetes. This test is not as common as a fasting glucose test.

Glycaemic index (GI) - a system of ranking foods containing equal amounts of carbohydrate according to how much they raise blood glucose levels. For instance, the carbohydrate in a slice of 100% stone-ground whole wheat bread (a low glycaemic index food) may have less impact on blood glucose than a slice of processed white bread (a high glycaemic index food). The GI is an additional meal-planning tool to help one understand how carbohydrate foods can differ in their effects on blood glucose.

Glycaemic load (GL) - a system of ranking carbohydrate foods based on how much they raise blood glucose levels that combines the GI value and the carbohydrate content of an average serving of a food, of a meal, or of a day's worth of food.

Glycogen - glucose that is stored in muscles and liver.

HDL (high-density lipoprotein—also called “good” cholesterol) - a type of blood cholesterol that sweeps excess cholesterol from the blood back to the liver where it is reprocessed or eliminated.

Health services - services performed by health care professionals or by others under their direction for the purpose of promoting, maintaining, or restoring health.

Hormones - chemical messengers made in one part of the body to transfer “information” through the bloodstream to cells in another part of the body. Insulin is a hormone.

Hyperglycaemia - high blood glucose levels. Blood glucose is generally considered “high” when it is 160 mg/dl or above your individual blood glucose target.

Hyperosmolar hyperglycaemic state (HHS) - a serious condition resulting from extremely high levels of blood glucose, causing excessive urination and severe dehydration, but without ketones. It is not very common.

Hypertension - high blood pressure (blood flows through the blood vessels with a greater than normal force) which is defined as blood pressure equal to or greater than 140/90 mm Hg and affects the majority of adults with diabetes. It increases one’s risk of heart attack, stroke and kidney problems.

Hypoglycaemia - a blood glucose below 80 mg/dl with or without symptoms or below 90 mg/dl with symptoms.

Hypoglycaemia unawareness - a condition in which one no longer recognizes the symptoms of low blood glucose.

Impaired fasting glucose (IFG) - a fasting glucose level between 100 mg/dl and 125 mg/dl. Fasting blood test results between these levels mean that you have pre-diabetes.

Impaired glucose tolerance (IGT) - a blood glucose level after a 2-hour glucose tolerance test between 140 and 199 mg/dl. This means you have pre-diabetes.

Infusion set - plastic tubing used with an insulin pump.

Insulin - a hormone made in the pancreas that helps glucose pass into the cells where it is used to create energy for the body.

Insulin pen - an insulin delivery method that looks like a writing pen.

Insulin reaction (Hypoglycaemia) - low blood glucose resulting from either too much insulin, too much activity or too little food.

Insulin resistance - a condition that makes it harder for the cells to properly use insulin.

Insulin pump - an insulin delivery system; a small mechanical device, typically the size of a beeper or small cell phone, that releases insulin into the tissues of the body by way of tubing and a needle.

Insulin sensitivity factor (also called the correction factor or supplemental factor) - the amount of blood glucose measured in mg/dl that is lowered by 1 unit of rapid-acting or regular insulin. The insulin sensitivity factor is used to calculate the amount of insulin you need to return blood glucose to within your target blood glucose range.

Insulin-to-carbohydrate ratio - a method of determining how much rapid-acting insulin is needed to cover the carbohydrate eaten at a meal or snack. This is used as part of a more advanced level of carbohydrate counting.

Islet cells - cells that make insulin and are found within the pancreas; also called pancreatic beta cells.

Islet cell transplantation - transplanting islet beta cells that produce insulin from a donor pancreas into a person whose pancreas no longer produces insulin.

Islets of Langerhans - cells found in the pancreas, the most important of which are beta cells- the tiny factories that make insulin.

Intermediate-acting insulin - a type of insulin that begins to work to lower blood glucose within 1 to 4 hours and works hardest 4 to 15 hours after injection. The intermediate-acting insulins are NPH and lente.

Ketones - acids produced due to lack of enough insulin to use the glucose in your bloodstream. Your body turns to its fat stores for energy. When this occurs, ketones are produced, which accumulate in the blood and spill into the urine. These ketones are made when fat is metabolized as a source of energy. The excessive formation of ketones in the blood is called ketosis, and the presence of ketones in the urine is called ketonuria. Allowed to go untreated, the combination of high blood glucose and ketones can lead to ketoacidosis (also called DKA).

Ketonuria - the presence of ketones in the urine.

Ketosis - the excessive formation of ketones in the blood.

Lancet - a small needle used to get a drop of blood from your finger, arm, or other site. The blood is placed on a special strip, which is put into the meter. The meter “reads” the strip and gives a blood glucose reading.

Lifestyle changes - changes made to one’s eating habits and physical activity in order to control blood glucose.

Long-acting peaking - a type of insulin that doesn’t begin to work to lower blood glucose until 4 to 6 hours after injection. It works hardest from 8 to 30 hours after injection and continues to work for up to 24 to 36 hours. The long-acting peaking insulin is ultralente.

Long-acting peakless - a type of basal insulin that begins to work to lower blood glucose within one to two hours after injection and works for 24 hours. The long-acting peakless insulin is glargine.

Lymphocytes - immune system cells that identify and destroy foreign agents such as viruses, bacteria and parasites.

LDL (low-density lipoprotein) - a type of blood cholesterol that is considered “bad” because it can be deposited in the arteries, increasing the risk of heart attack or stroke.

Medical nutrition therapy - a method of controlling blood glucose by working with a dietitian to assess one’s food and nutrition needs and then developing and following an individualised meal plan.

Mediterranean-type diet - a type of eating plan that is low in saturated fat and cholesterol, high in fruits, vegetables, nuts and grains and that also emphasizes controlling portion sizes to help in reducing overall calories.

Metabolic syndrome - a cluster of conditions that increase the risk of developing vascular disease (heart disease, strokes, and peripheral vascular disease). The most recognizable components of this syndrome are abdominal obesity, high blood pressure (hypertension), high triglycerides (part of the lipid profile), low HDL (the “good” cholesterol) and glucose intolerance.

Metabolism - the process by which the cells of the body change food so that it can be used for energy or so that it can be used to build or maintain cells and tissues.

Microalbumin test - a urine test that measures the presence of small amounts of a protein called albumin.

Microalbuminuria - the presence of small amounts of albumin, a protein, in the urine. Microalbuminuria is an early sign of kidney damage.

Mixed dose - an injection that contains two or more types of insulin given in the same syringe at the same time.

Necrobiosis lipoidica diabetorum (NLD) - a skin condition believed to result from inflammation of the skin in which the skin thins out, becoming discoloured and dimpled. This is the most specific skin problem among people with diabetes. It can be quite disfiguring.

Nephrologist - a doctor who specializes in conditions of the kidney.

Nephropathy - serious kidney disease that can occur in people who have had diabetes for a long time, particularly if their diabetes has been poorly controlled.

Neurologist - a doctor who specializes in conditions of the nervous system.

Neuropathy - damage to the nerves. It is a condition that can be very debilitating and painful. There are two main types of neuropathy, depending on which nerve cells are damaged. One type is called sensory neuropathy, which affects feelings in the legs or hands and is referred to as peripheral neuropathy. The other type is autonomic neuropathy, which affects nerves that control various organs, such as the stomach or urinary tract.

Nightscout (CGM in the Cloud) is an open source, DIY project that allows real time access to a CGM data via personal website, smartwatch viewers, or apps and widgets available for smartphones.

Nocturnal Hypoglycaemia - low blood glucose that occurs in the middle of the night.

Noncaloric or non-nutritive sweeteners - sweeteners that contribute few, if any calories and have no effect on blood glucose levels.

Nonproliferative retinopathy - the initial stage in diabetic retinopathy. High levels of blood glucose cause damage to the blood vessels in the retina. The blood vessels leak fluid, which can collect and cause the retina to swell.

Nutritive or caloric sweeteners - sweeteners that contribute calories and can affect blood glucose levels.

Ophthalmologist - a doctor specializing in conditions of the eyes.

Oral glucose-lowering medications (also referred to as oral antidiabetes medications) - “diabetes pills,” which are used in combination with a meal plan and physical activity as well as in combination with each other and sometimes with insulin to control blood glucose levels.

Outcomes - results, impacts or consequences.

Pancreas - a small gland located below and just behind the stomach that makes a specific kind of hormone called insulin.

Pathophysiology - changes that occur within an organ or tissue due to disease.

Physiologic insulin therapy (also called intensive insulin therapy) - an insulin program that attempts to provide insulin in the way that your body would if you didn't have diabetes. Insulin is adjusted to accommodate your food intake and your activity level, and as a result insulin doses change from one day to the next.

Physiology - the study of the physical and chemical processes involved in the functioning of the human body.

Pre-diabetes - a condition in which either your fasting or two-hour post-meal blood glucose levels are higher than normal, but not high enough for a diagnosis of type 2 diabetes. Studies show that most people with pre-diabetes

will develop type 2 diabetes within 10 years if they don't change their lifestyle. They also have a higher risk of developing cardiovascular disease.

Proliferative retinopathy - a more serious stage of diabetic retinopathy in which there is a greater loss of vision or even total blindness. During this stage, abnormal blood vessels grow over the surface of the retina.

Protein - one of the main nutrients from food along with carbohydrate and fat. The body uses protein to build and repair body tissue. Muscles, organs, bones, skin, and many of the hormones in the body are made from protein. As a secondary role, protein can also provide energy for the body if carbohydrate is not available. Food sources of protein include meat, poultry, fish, eggs, dairy products and beans.

Rapid-acting insulin - a type of insulin that begins to work to lower blood glucose within 10 to 30 minutes and works hardest 30 minutes to 3 hours after injection. There are three approved rapid-acting insulins: lispro, aspart and glulisine.

Rebound hyperglycaemia (high blood glucose or the Somogyi phenomenon) - a condition in which, as a result of too low a level of glucose, the counter regulatory or stress hormones cause the liver to release too much glucose.

Regenerative medicine - therapies using stem cells to replace or repair damaged or defective tissue.

Regular - the common form of short-acting insulin.

Relative insulin deficiency - a decline in insulin production, which is usually a problem with or without insulin resistance early on in the course of diabetes.

Retina - the thin, light-sensitive inner lining in the back of your eye.

Retinopathy - damage to the retina, the thin, light-sensitive inner lining in the back of the eye. This damage occurs to small blood vessels in the retina which are easily harmed by high levels of glucose in the blood.

Saturated fat - a type of food fat that is solid at room temperature. Saturated fats raise blood cholesterol levels by interfering with the entry of cholesterol into cells causing cholesterol to remain in the bloodstream longer and to become a part of the plaque that builds up in the blood vessels.

Self-monitoring - managing one's diabetes by checking blood glucose, and being aware of food intake, physical activity and medication and how each of these elements work together in order to keep blood glucose in good control.

SMBG (self-monitoring of blood glucose) - checking your blood glucose with a blood glucose meter.

Short-acting insulin - a type of insulin that begins to work to lower blood glucose within 30 to 60 minutes and works hardest 1 to 5 hours after injection. The common form of short-acting insulin is called regular.

Single dose - an injection that contains one type of insulin.

Sugar alcohols or polyols - sweeteners that replace other sugars in foods causing slightly lower rises in blood glucose.

Trans fats - a type of fat formed from hydrogenation, a chemical process that changes a liquid oil into a solid fat. Trans fats are found in processed foods, such as snack foods, cookies, fast foods, and some stick or solid margarines. They can raise cholesterol levels and should be eaten in as small amounts as possible.

Triglycerides - a type of fat stored in fat cells as body fat and burned for energy. High levels of triglycerides are linked with an increased risk of heart and blood vessel disease.

Unsaturated fat (both polyunsaturated and monounsaturated) - fats that comes primarily from vegetables and are liquid at room temperature. Polyunsaturated fats can help lower cholesterol levels. Monounsaturated fats also help lower blood cholesterol levels and may help to raise HDL cholesterol levels.

Vitreotomy surgery - a process to remove the blood and scar tissue from within the eye that can frequently successfully restore vision.