InDependent Diabetes Trust

Glossary of Terms

Registered Company Number 3148360
Registered Charity No 1058284

A

Acetone: One of the chemicals called ketones. These are produced when there is too little insulin present and the body uses fat for energy. Acetone can be smelt on the breath when the level of ketones is raised. Acetone in the urine usually means that more insulin is needed.

Ace-inhibitors: Drugs that inhibit an enzyme (angiotensin converting enzyme) in the kidneys that increases the blood pressure.

Acidosis: Shifting of the pH in the blood towards being acidic.

Adrenal Gland: Small organ situated above the kidneys that produces a number of different hormones, including adrenaline and cortisol.

Adrenergic symptoms: Bodily symptoms of hypoglycemia caused mainly by adrenaline.

Albumin: a protein that is in most animal tissues. The presence of albumin in the urine may be a sign of kidney or bladder infection or early kidney damage.

Aldose reductace inhibitors: Drugs that can affect nerve damage caused by diabetes.

All Party Parliamentary Group for Diabetes: To study the condition of diabetes and its clinical and legal complexities.

Alpha cells: Cells in the Islets of Langerhans of the pancreas that produce the hormone glucagon.

Analogue insulin: insulin made by genetically engineering already genetically engineered human insulin.

Antibodies: Produced by the immune defense system to destroy viruses and bacteria.

Arteriosclerosis: Hardening, narrowing and eventually blocking of the blood vessels.

Aspartame: A low-calorie sweetener. This has some quiet dramatic side effects in some people.

Autonomic Neuropathy: Damage to the system of nerves which regulate many autonomic functions of the body such as stomach emptying, sexual function and blood pressure control.

Autonomic nervous system: The 'independent' part of the nervous system that is operated without having to give it a thought, including things like breathing and the movement of the intestines.

Autoimmune system: Sometimes things go wrong and the cells of the body are attacked eg an infection and the autoimmune system is the body's defence mechanism for fighting off the attack.

B

Basal insulin: A low level of insulin that covers the body's need for insulin between meals and during the night. The insulin is given as intermediate or long-acting insulin.

Basal rate: With an insulin pump, a low dose of basal insulin is infused every hour of the day and night.

Beef insulin: insulin extracted from the pancreas of cattle, also referred to as bovine insulin.

Beta cells: Cells in the Islets of Langerhans of the pancreas that produce the hormone insulin.

Biguanides: drugs used to treat Type 2 diabetes.

Blood Glucose Monitoring: A system of measuring blood glucose levels at home using special strips and a meter.

Brittle Diabetes: A term used to describe diabetes which is extremely unstable where blood glucose levels swing from very low to very high.

C

Capillary Blood: The capillaries are the very fine blood vessels between arteries and veins to allow the blood deliveries of oxygen to the tissues. Blood tests from fingers contain capillary blood.

Carbohydrate: A class of food which comprises of starches and sugar which are most easily available by the body for energy. Found in mainly plant foods eg rice, bread, potatoes, pasta and dried beans.

Coeliac disease: Illness where the person cannot tolerate gluten, a substance found in wheat, oats, barley and rye.

Coma: Unconsciousness. Can occur in people with diabetes when the blood glucose is very low (insulin coma) or very high (diabetes coma).

Control: Usually refers to blood glucose control.

C-peptide: 'Connecting peptide' a hormone produced together with insulin in the beta cells. By measuring C-peptide, the residual insulin

production of the pancreas can be estimated.

Cortisol: Stress hormone that is produced in the adrenal gland.

Counter regulation: The body's defense against low levels of blood glucose. The excretion of the counter regulating hormones (glucagon, adrenaline, growth hormone and cortisol) increase when the blood glucose level falls too low.
CSII: Continuous subcutaneous insulin infusion, treatment with an insulin pump.

Cystitis: Inflammation of the bladder causing frequent passing of urine and a burning sensation when passing urine. This should not be confused with frequent passing of urine due to high blood sugars.

D

Dawn phenomenon: The growth hormone level rises during the night, causing the blood glucose level to rise early in the morning.

Depot effect: Part of the insulin that is injected is stored in the fat tissue as a depot (a spare tank of insulin) – the longer the action of insulin, the larger the depot.

Dextrose: Pure glucose.

Diabetes/Diabetic Coma: Unconsciousness [coma] that occurs as a result of very high blood glucose levels [hyperglycemia] and is usually accompanied by ketoacidosis. Also see 'insulin coma'.

Diabetes Ketones: Ketones that are produced when the cells in the body are starved of insulin and therefore the blood glucose level is high.

Diabetes mellitus: the full name for 'diabetes', a disorder of the pancreas.

Diabetic amyotrophy: a rare condition causing pain and/or weakness of the legs as a result of nerve damage.

Dialysis: The process of extracting harmful substances from the blood when the kidneys no longer can.

E

Exchanges: Portions of carbohydrate foods in the diabetic diet that can be exchanged for others. One exchange is usually equal to 10gms of carbohydrate.

F

Fatty Acid: Substances produced when fat is broken down in the body.

Free Food: Foods that contain very little carbohydrate and so can be eaten in liberal amounts by people with diabetes without counting them in their diet. e.g. most vegetables, most salad ingredients, tea, coffee, meat and cheese. Note: meat and cheese are carbohydrate free but contain fats.

Fructose: A type of sugar found naturally in fruit and honey. It does not require insulin for its metabolism and so is often used as a sweetener in food for people with diabetes.

G

Gastroparesis: Slow stomach emptying, a complication of diabetes caused by neuropathy.

Galactose: Sugar molecule. Lactose consists of galactose and glucose.

Gestational diabetes: Diabetes occurring during pregnancy. The symptoms disappear after childbirth but the woman has an increased risk of acquiring type 2 diabetes later in life.

Gluconeogenesis: Production of sugar in the liver.

Glucagon: A hormone produced by the pancreas which causes a rise in blood glucose by freeing glycogen from the liver. It is available as an injection to treat a severe hypo when food or drink cannot be administered.

Glucose: A form of sugar made by digestion of carbohydrates. Absorbed into the bloodstream where it circulates and is used for energy.

Glucose tolerance test: Test to diagnose early stages of diabetes. Tells how much the blood glucose level rises after orally ingested or intravenously given glucose.

Gluten: Compound that makes dough sticky. Found in wheat, oats, rye and barley.

Glycaemic index: A method of classifying carbohydrates and foods according to how they affect the body glucose level. Abbreviates to GI.

Glycated haemoglobin [HbA1c]: the part of the haemoglobin that has glucose attached to it. The measurement of HbA1c gives the average glucose level over the last 6 to 8 weeks.

Glycogen: The form in which carbohydrate is stored in the liver. It is often known as animal starch.

Glycogenolysis: The breakdown of the glycogen store in liver or muscles.

Glycosuria: Presence of glucose in the urine.

Goitre: Enlarged thyroid gland

Growth hormone: Hormone that is produced in the pituitary gland. Increased growth is the most important effect. It increases the blood glucose level.

H

HbA1c: Blood test that measures how much glucose binds to red blood cells over a 6 to 8 week period.

Haemoglobin A1: The part of the haemoglobin of the red blood cell to which glucose attaches. It is a test of ‘diabetes control’ as it measures the amount of haemoglobin A1 attached to the red cells so giving the average blood glucose levels over the 6 to 8 weeks.

Honeymoon Period: usually only a short time after diagnosis and the start of insulin treatment - the dose of insulin drops due to partial recovery of insulin secretion by the pancreas.

Hormone: Substance generated in a gland or organ which is carried by the blood to another part of the body to stimulate another organ into activity. Insulin is a hormone.

Human insulin: insulin made by genetic engineering.

Hyperglycaemia: High blood sugars.

Hypoglycaemia: Low blood sugars

I

IDDM: Insulin dependent diabetes mellitus, former name for type 1 diabetes.

Immune defense: The defense in the body against foreign substances, such as bacteria and virus.

Insulin: A hormone produced by the beta cells of the pancreas which is responsible for the control of glucose in the blood. Insulin can only be given by injection because the digestive juices destroy its action if taken by mouth.

Insulin antibodies: Antibodies in the blood that bind insulin. The insulin that is bound has no function but can be released at a later time when the concentration of insulin in the blood is lower.

Insulin coma: Extreme form of hypoglycaemia associated with unconsciousness and sometimes seizures.

Insulin Dependent Diabetes (IDD): The type of diabetes that has to be treated with insulin because the body's pancreas no longer produces it. Most common in younger people. It is also called type1 diabetes or juvenile-onset diabetes.

Insulin Pen: An injection device for insulin. The injection of insulin is given after dialing the dose and pressing a button.

Insulin Pump: Insulin is infused into the subcutaneous tissue through a thin tubing continuously during day and night.

Insulin Reaction: Another word for low blood sugars or hypoglycaemia, often called a hypo. In some countries it is called 'insulin shock' or 'shock'.

Insulin receptor: Structure on the cell surface to which insulin binds. Initiates the signal that opens the cell membrane for glucose transportation.

Insulin resistance: Decreased insulin sensitivity. A higher level of insulin than normal is needed to obtain the same blood glucose lowering effect.

Intermediate-acting insulin: Insulin that has an effective time action of 8-12 hours, often given twice daily to provide 24 hour insulin cover.

Intradermal: Means 'into the skin'. Usually refers to an injection given into the most superficial layer of skin. Insulin must not be given in this way as it will not be absorbed properly.

Intravenous injection: Injection directly into a vein.

Islet of Langerhans: the cells within the pancreas that produce insulin and glucagon.

J

Juvenile diabetes: Diabetes in childhood and adolescence, another term for type 1 diabetes.

K

Ketoacidosis: A serious condition due lack of insulin which results in body fat being used up to provide energy but dangerous ketones and acids are also formed. It is caused by high blood sugar levels which result in ketones in the urine, vomiting, drowsiness, heavy laboured

breathing and breath smelling of acetone [pear drops].

Ketones: Acid substances formed when body fat is used up to provide energy.

Ketosis: Increase amounts of ketones in the blood.

Ketonuria: The presence of acetone and other ketones in the urine. Detected by testing with a special testing stick or tablets. Ketones in the urine are due to lack of insulin or periods of starvation.

L

Lactose: Milk sugar.

LADA: Latent Autoimmune Diabetes in the Adult. Onset of type 1 diabetes after the age of 35/40, usually with not so dramatic symptoms.

Langerhans: The scientist who discovered the islets of Langerhans in the pancreas in 1869.

Laser Treatment: A process in which laser beams are used to treat a damaged retina.

Lipoathrophy: Loss of fat from the injection sites. More common in the past when insulins were not highly purified.

Lipohypertrophy: Fatty swelling usually caused by repeated injections of insulin into the same place.

Long-acting insulin: Insulin with a prolonged action, up to 24 hrs.

M

Macroangiopathy: Diabetes complications in the large blood vessels.

Metabolism: Process by which the body turns food into energy.

Metabolic syndrome: a group of problems, Type 2 diabetes, high blood pressure, central obesity, high cholesterol; levels and coronary heart disease.

Microalbuminuria: Small amount of protein in the urine. The first sign of kidney damage which can be caused by long term diabetes.

Microaneurysm: Small protuberances on the retinal vessels. The first stage of eye damage which can be caused by long-term diabetes.

Microangiopathy: Diabetes complications in the small blood vessels of the eye, kidney and nerves.

Millimoles: Unit for measuring the concentration of glucose and other substances in the blood. Blood glucose is measured in millimoles per litre (mmol/l).

Multiple injection treatment: Treatment with injections of short or rapid- acting insulin before meals and intermediate or long acting insulin to cover day and night.

N

Necrobiosis lipoidica diabeticorum: A special type of skin lesion that can be seen in people with diabetes.

Nephropathy: Kidney damage. In the early stages this makes the kidneys leaky so that albumin appears in the urine. At the later stage

it may affect the function of the kidney and in severe cases lead to kidney failure.

Neuroglycopenic symptoms: Symptoms of brain dysfunction caused by a low blood glucose level.

Neuropathy: Damage to the nerves. This may be peripheral or autonomic and is usually caused by long-term diabetes,

NICE: This is the National Institute for Health and Clinical Excellence. NICE is an independent organisation responsible for providing national guidelines for the treatment of various conditions, the use of medicines and on the promotion of good health. www.nice.org.uk

P

Pancreas: A gland lying behind the stomach which secretes digestive fluid and also contains the islets of Langerhans that produce insulin.

Pituitary gland: Small gland situated in the brain where many of the most important hormones in the body are produced.

Pre-meal injection: Injection with short or rapid acting insulin prior to a meal.

Protamine: A protein from salmon that is added to insulin to extend its action time.

Polydipsia: Being excessively thirsty and drinking too much. Also a symptom of untreated diabetes.

Polyuria: The passing of large quantities of urine due to excess glucose in the bloodstream. It is a symptom of untreated diabetes.

Pork insulin: insulin derived from the pancreas of pigs, also referred to as porcine insulin.

Primary Care Trust [PCT]: PCT's cover all parts of England. All PCT's receive budgets directly from the Department of Health. Since April 2002, PCT's have taken control of local health care and decide how the funding is distributed.

Proteinuria: Protein or albumin in the urine.

R

Rapid-acting insulin: A fast-acting insulin analogue used to cover carbohydrate content of meals. It works rapidly and is of short duration.

Receptor: A special structure on the cell surface that fits with a hormone. The hormone must fit into the receptor for it to have its effect on the cell.

Rebound phenomenon: After a hypo episode, the blood glucose may rise to high levels. This is caused both by the secretion of counterregulatory hormones and by eating too much when feeling hypo.

Renal Threshold: The level of glucose in the blood above which it will begin to spill into the urine. The renal threshold for glucose in the blood is about 10 mmol/l but this can vary amongst individuals.

Retinopathy: Damage to the retina, the sensitive area at the back of the eye providing sight.

S

Short-acting insulin: Soluble insulin without additives to prolong its action.

Somogyi phenomenon: A special type of rebound phenomenon after a night hypo resulting in high blood glucose levels in the morning.

Sorbitol: Sugar alcohol, a sweetener that gives energy.

Starch: Complex carbohydrates found in potatoes, corn, rice and wheat.

Subcutaneous Injection: An injection beneath the skin into the layer of fat which lies between the skin and muscle - where insulin should be injected.

Sucrose: Cane or beat sugar, brown sugar, table sugar, powder sugar, and saccharose.

Sulponylureas: drugs used to treat Type 2 diabetes by stimulating the beta cells in the pancreas to more insulin eg tolbutamide, gliclazide.

T

Type 1 Diabetes: Another name for insulin dependent diabetes, the type that is always treated with insulin.

Type 2 Diabetes: Another name for non-insulin dependent diabetes which may be treated with diet only, diet and tablets and/or eventually insulin if the other treatments fail.

Thiazoidinediones: drugs to treat Type 2 diabetes by reducing insulin resistance.

U

U 100: The standard strength of insulin in the UK and many other countries.

Unaware hypo: A hypo without having had warning symptoms associated with decreasing blood sugar.

V

Visual acuity: the measurement of vision by reading letters on a chart.

Visual field: the measurement of the area that can be seen while the eyes are looking straight ahead - important for driving.

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