

Normal Blood Sugar Rate

For a 70 kg (154 lb) human, approximately four grams of dissolved glucose (also called "blood glucose") is maintained in the blood plasma at all times. Glucose that is not circulating in the blood is stored in skeletal muscle and liver cells in the form of glycogen; in fasting individuals, blood glucose is maintained at a constant level by releasing just enough glucose from these glycogen stores in the liver and skeletal muscle in order to maintain homeostasis. Glucose can be transported from the intestines or liver to other tissues in the body via the bloodstream. Cellular glucose uptake is primarily regulated by insulin, a hormone produced in the pancreas. Once inside the cell, the glucose can now act as an energy source as it undergoes the process of glycolysis. fa484dda55 This theoretical phenomenon was named after Michael Somogyi [suh MOE jee], a Hungarian-born professor of biochemistry at the Washington University and Jewish Hospital of St. Louis, who prepared the first insulin treatment given to a child with diabetes in the US in October 1922. Somogyi showed that excessive insulin makes diabetes unstable and first published his findings in 1938. fa484dda55

Glossary of diabetes state of having high blood sugar. High blood pressure The pressure of blood in the arteries has normal values in a population. Blood pressure in an individual The following is a glossary of diabetes which explains terms connected with diabetes fa484dda55

Hypoglycemia Symptoms can persist after blood-glucose levels are restored to normal. Hypoglycemia may result in headache, tiredness, clumsiness, trouble talking, confusion, fast heart rate, sweating, shakiness, nervousness, hunger, loss of consciousness, seizures, or death. Whipple's Hypoglycemia (American English), also spelled hypoglycaemia or hypoglycæmia (British English), sometimes called low blood sugar, is a fall in blood sugar to levels below normal, typically below 70 mg/dL (3.9 mmol/L). It is defined as blood glucose below 70 mg/dL (3.9 mmol/L). Whipple's triad is used to properly identify hypoglycemic episodes. hypoglycæmia (British English), sometimes called low blood sugar, is a fall in blood sugar to levels below normal, typically below 70 mg/dL (3.9 mmol/L), symptoms associated with hypoglycemia, and resolution of symptoms when blood sugar returns to normal. 9 mmol/L) fa484dda55

Blood sugar level The body tightly The blood sugar level, blood sugar concentration, blood glucose level, or glycemia is the measure of glucose concentrated in the blood. The body tightly regulates blood glucose levels as a part of metabolic homeostasis. The blood sugar level, blood sugar concentration, blood glucose level, or glycemia is the measure of glucose concentrated in the blood fa484dda55

There are several ways to measure glycated hemoglobin, of which HbA1c (or simply A1c) is a standard single test. HbA1c is measured primarily to determine the three-month average blood sugar level and is used as a standard diagnostic test for evaluating the risk of complications of diabetes... fa484dda55 == History == fa484dda55 Hyperglycemia may be asymptomatic. Blood glucose levels can rise above normal and cause pathological and functional changes for significant periods without producing any permanent effects or symptoms. The degree of hyperglycemia can change over time depending on the metabolic cause, for example, impaired glucose tolerance or fasting glucose, and it can depend on treatment. fa484dda55 A. T. B. Jacobson determined in 1913 that carbohydrate ingestion results in blood glucose fluctuations. Hamman and Hirschman first reported improvement of carbohydrate tolerance following repeated glucose administration in 1919. H. Staub in 1921 and K. Traugott in 1922 subsequently confirmed the improved reaction in healthy subjects and the phenomenon was named for them. fa484dda55 Disaccharides are formed from two monosaccharides and can be classified as either reducing or nonreducing. Nonreducing disaccharides like sucrose and trehalose have glycosidic bonds between their anomeric carbons and thus cannot convert to an open-chain form with an aldehyde group; they are stuck in the cyclic form. Reducing disaccharides like lactose and maltose have only one of their two anomeric carbons involved in the glycosidic bond, while the other is free and can convert... fa484dda55 The condition is related to homeostatic systems used by the body to control the blood sugar level. It is described as a sense of tiredness, lethargy, irritation, or hangover, although the effects can be lessened if a lot of physical activity is undertaken in the first few hours after food consumption. fa484dda55 All monosaccharides are reducing sugars, along with some disaccharides, some oligosaccharides, and some polysaccharides. The monosaccharides can be divided into two groups: the aldoses, which have an aldehyde group, and the ketoses, which have a ketone group. Ketoses must first tautomerize to aldoses before they can act as reducing sugars. The common dietary monosaccharides galactose, glucose and fructose are all reducing sugars. fa484dda55

Reducing sugar In an alkaline solution, a reducing sugar forms some aldehyde or ketone, A reducing sugar is any sugar that is capable of acting as a reducing agent. In an alkaline solution, a reducing sugar forms some aldehyde or ketone, which allows it to act as a reducing agent, for example in Benedict's reagent. In such a reaction, the sugar becomes a carboxylic acid. A reducing sugar is any sugar that is capable of acting as a reducing agent fa484dda55

== A == fa484dda55 The alleged mechanism for the feeling of a crash is correlated with an abnormally rapid rise in blood glucose after eating. This normally leads to insulin secretion (known as an insulin spike), which in turn initiates rapid glucose uptake by tissues, either storing it as glycogen or fat, or using it for energy production. The consequent fall in blood glucose is indicated as the reason for the "sugar crash". Another cause might be hysteresis effect of insulin action, i.e., the effect of insulin is still prominent even if both plasma glucose and insulin levels were already low, causing a... fa484dda55 Compare with the dawn phenomenon, which is a morning rise in blood sugar in response to waning insulin and a growth hormone surge (that further antagonizes insulin). fa484dda55 The following symptoms may be associated with acute or chronic hyperglycemia, with the first three composing the classic hyperglycemic triad: fa484dda55 == Background == fa484dda55 The formation of excess sugar-hemoglobin linkages indicates the presence of excessive sugar in the bloodstream and is an indicator of diabetes or other hormone diseases in high concentration (HbA1c > 6.4%). A1c is of particular interest because it is easy to detect. The process by which sugars attach to hemoglobin is called glycation and the reference system is based on HbA1c, defined as beta-N-1-deoxy fructosyl hemoglobin as a component. fa484dda55 Hypernatremia is

typically classified by a person's fluid status into low volume, normal volume, and high volume. Low volume hypernatremia can occur from sweating, vomiting, diarrhea, diuretic medication, or kidney disease. Normal volume hypernatremia can be due to fever, extreme thirst, prolonged increased breath rate, diabetes insipidus, and from lithium among other causes. High volume hypernatremia can be due to hyperaldosteronism, excessive administration of intravenous normal saline or sodium bicarbonate, or rarely from eating too much salt. Low blood protein levels can result in a falsely high sodium measurement. The cause can usually be determined by the history of events. Testing the urine... fa484dda55

Chronic Somogyi rebound When managing the blood glucose level with insulin injections Chronic Somogyi rebound is a contested explanation of phenomena of elevated blood sugars experienced by diabetics in the morning. Also called the Somogyi effect and posthypoglycemic hyperglycemia, it is a rebounding high blood sugar that is a response to low blood sugar. hyperglycemia, it is a rebounding high blood sugar that is a response to low blood sugar. When managing the blood glucose level with insulin injections, this effect is counter-intuitive to people who experience high blood sugar in the morning as a result of an overabundance of insulin at night fa484dda55

== Signs and symptoms == fa484dda55

Hyperglycemia Postprandial hyperglycemia (PPHG) is abnormal blood sugar elevation after eating (postprandial means after a meal). Hyperglycemia may be asymptomatic. blood sugar elevation after eating (postprandial means after a meal). Blood glucose levels can rise above normal and Hyperglycemia is an unusually high amount of glucose in the blood. 9 mmol/L (125 mg/dL) after fasting for 8 hours or 10 mmol/L (180 mg/dL) 2 hours after eating. It is defined as blood glucose level exceeding 6 fa484dda55

Reactive hypoglycemia glucose levels in the blood. In contrast, the hormone glucagon is released by the pancreas as a response to lower than normal blood sugar levels. Glucagon Reactive hypoglycemia, postprandial hypoglycemia, or sugar crash is symptomatic hypoglycemia occurring within four hours after a high-carbohydrate meal in people with and without diabetes. The term is not necessarily a diagnosis since it requires an evaluation to determine the cause of the hypoglycemia fa484dda55

Glycated hemoglobin Most monosaccharides, including glucose, galactose, and fructose, spontaneously (that is, non-enzymatically) bond with hemoglobin when they are present in the bloodstream. However, glucose is only 21% as likely to do so as galactose and 13% as likely to do so as fructose, which may explain why glucose is used as the primary metabolic fuel in humans. test. HbA1c is measured primarily to determine the three-month average blood sugar level and is used as a standard diagnostic test for evaluating the risk Glycated hemoglobin, also called glycohemoglobin, is any form of hemoglobin (Hb) that is chemically linked to a sugar fa484dda55

Staub-Traugott Phenomenon Staub-Traugott Effect) is the premise that a normal subject fed glucose will rapidly return to normal levels of blood glucose after an initial spike, and will The Staub-Traugott Phenomenon (or Staub-Traugott Effect) is the premise that a normal subject fed glucose will rapidly return to normal levels of blood glucose after an initial spike, and will see improved reaction to subsequent glucose feedings fa484dda55

The most common cause of hypoglycemia is medications used to treat diabetes such as insulin, sulfonylureas, and biguanides. Risk is greater in people with diabetes who have eaten less than usual, recently exercised, or consumed alcohol. Other causes of hypoglycemia include severe illness, sepsis, kidney failure, liver disease, hormone deficiency, tumors such as insulinomas or non-B cell tumors, inborn errors of metabolism, and several medications. Low... fa484dda55

Hypernatremia Normal serum sodium levels are 135–145 mmol/L (135–145 mEq/L). Severe symptoms include confusion, muscle twitching, and bleeding in or around the brain. Early symptoms may include a strong feeling of thirst, weakness, nausea, and loss of appetite. Severe symptoms typically only occur when levels are above 160 mmol/L. Hypernatremia is generally defined as a serum sodium level of more than 145 mmol/L. Values above 180 mmol/L are associated with a high mortality rate, particularly Hypernatremia, also spelled hypernatraemia, is a high concentration of sodium in the blood. (normal blood levels are generally about 135–145 mmol/L for adults and elderly) fa484dda55

In humans, properly maintained glucose levels are necessary for normal function in a number of tissues, including the human brain, which consumes approximately 60% of blood glucose in fasting, sedentary individuals... fa484dda55

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