

# Basic Diabetes Dictionary\*

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<b>01</b>	<b>A1C</b>	A1C also known as HbA1C refers to the attachment of glucose to hemoglobin (in Red Blood Cells, RBC). A1C is a reflection of blood glucose for the preceding 3 months. Therefore, it should be measured every 3 months to determine whether the person meets the target range of glycemia control. HbA1C levels in diabetes patients should be below 6.5% or 7% upon physician prescription.
<b>02</b>	<b>Alcohol</b>	Ethyl alcohol, or ethanol, commonly known as alcohol is an ingredient found in beer, liquors, wine, whiskey, etc. Alcohol is produced by the fermentation of yeast, sugars, and starches and is considered as intoxicating to various organs of the body. Alcohol can cause hypoglycemia if taken on an empty stomach. Some types of alcohol contain high amounts of sugar, especially cocktails. If you decide to drink a glass of alcoholic beverage make sure to eat well and check your glycemia before drinking. Always consult your doctor and dietitian if you want to include alcohol in your weekly regimen and avoid sugary cocktails.
<b>03</b>	<b>Alternative Medicine</b>	Complementary and alternative medicine such as dietary supplements and herbal products are commonly used by people with diabetes even more than the general population. Some of these therapies may contain antioxidants and other nutrients that might be helpful in preventing some complications. However, these products may have serious side effects and interact with the medications you take. So, it is important to keep following your physician prescription and always consult your healthcare team before starting any new supplement or herb.
<b>04</b>	<b>Anemia</b>	Anemia is a condition in which the body does not have enough healthy red blood cells. It is a common concern in patients with diabetes and occurs in about 25% of cases, especially with poorly controlled diabetes. In case of kidney problems (diabetic nephropathy) an important hormone in the production of red blood cell, erythropoietin, is lacked which leads to development of anemia. Also some medications commonly used to manage diabetes and hypertension have been linked to the development of anemia.
<b>05</b>	<b>Antioxidants</b>	Antioxidants such as vitamin E, C, Selenium and others are the body's defense against free-radical damage. Antioxidant intake is closely correlated to a decreased risk for cardiovascular and other diseases. You can find antioxidants in berries, fruits and vegetables. Try to have a variety of vegetables of various colors with each meal.
<b>06</b>	<b>Artificial Sweeteners</b>	Artificial sweeteners or sugar substitutes are substances used instead of table sugar to sweeten meals, candies and drinks. So far, the Food and Drug Administration (FDA) has approved (in moderate amounts) the use of 5 sweeteners: acesulfame potassium (also called acesulfame K), aspartame, saccharin, sucralose, neotame, along with the plant based sweetener stevia. For people with diabetes, non-nutritive sweeteners are an option, within moderation.

07	<b>Blood Glucose – Glycemia</b>	Glycemia refers to the concentration of blood glucose (BG) measured in milligrams/deciliters (mg/dL). For people with diabetes, fasting glycemia measured in the morning and before having any food should be maintained below 130 mg/dl. Postprandial glycemia should be measured two hours after meals and should be targeted below 180 mg/dl. If you are testing your blood glucose in mmol/l, then the numbers are: below 7.2 for fasting BG, and less than 10 as postprandial BG.
08	<b>Blood Pressure</b>	At every heartbeat, blood is pumped in order to provide the body with energy and oxygen. The pumping action pushes the blood against the sides of the blood vessels leading to what is called blood pressure. If you have diabetes, you should be aware that high blood pressure and poorly controlled diabetes are correlated. It is recommended to target blood pressure less than 140/80 mmHg, to maintain general health.
09	<b>Carbohydrate</b>	Carbohydrates are one of three macronutrients found in food, along with fat and protein. Carbohydrates are considered a major source of energy for the body and the main nutrients affecting blood glucose. There are three main categories of carbohydrates depending on the number of carbons: monosaccharide (glucose, fructose, galactose), disaccharides (lactose, maltose) and oligosaccharides and polysaccharides. Carbohydrates are commonly found in bread, rice, pasta, milk, yogurt, fruits, and vegetables and other food sources. *1 g of carbohydrate provides 4 Calories.
10	<b>Carbohydrate Counting</b>	Carbohydrate Counting (CC) is a meal planning method for people with diabetes. It involves «counting» the carbohydrate quantity in your meals and snacks in order to achieve better blood glucose control. CC allows for a flexible insulin regimen, depending on the carbohydrate content of each meal and is recommended for anyone with diabetes. CC is an individualized approach that should be discussed with the healthcare team.
11	<b>Complications</b>	<p>Poorly controlled diabetes mellitus can lead to serious complications. These complications can be divided into two main categories:</p> <p><b>Short term or main acute complications</b> from a severe increase in blood glucose include Diabetic Ketoacidosis (DKA), and Hyperosmolar non-Ketotic Coma (HNC). Hypoglycemia can in turn result from a decrease in blood glucose.</p> <p><b>Long run complications</b> which include heart and blood vessel problems (cardiovascular disease), nerve damage (neuropathy), kidney damage (nephropathy), among others. Most complications can be prevented or delayed with proper diabetes management through proper nutrition, physical activity and regular consultations with your physician.</p>

12	<b>Counter-regulatory Hormones</b>	<p>Counter-regulatory Hormones refer to a group of hormones opposing the action of insulin in the body, thus increasing glycemia. These hormones mainly include glucagon, adrenaline, cortisol and growth hormone.</p> <p>The effects of glucagon and adrenaline are of rapid onset, whereas those of cortisol and growth hormone are only observed after a lag period of several hours.</p> <p>Persistent elevation of counter-regulatory hormones can lead to increased insulin resistance. When we get sick (cold, flu, infection, inflammation), CRH increase and lead to hyperglycemia, resulting in the need to increase insulin or medication in some cases.</p>
13	<b>Correction Factor</b>	<p>A correction factor (CF) can be used to determine the amounts of insulin units needed to correct a high or low blood glucose level before a meal. A simple calculation performed by your healthcare provider can determine your CF.</p> <p>For example, if your CF is 36, this means that each unit of insulin will decrease blood glucose of approximately 36 mg/dL. CFs can change following changes in your lifestyle (i.e. weight, eating habits, and level of physical activity) and should be recalculated at each visit to your dietitian or doctor.</p>
14	<b>Dawn Phenomenon</b>	<p>Dawn phenomenon refers to a natural increase in morning glycemia. Dawn phenomenon may be the result of the release of counter-regulatory hormones during sleep. The difference between dawn phenomenon and the <i>Somogyi effect</i> is that dawn phenomenon is a natural occurrence, while Somogyi effect is man-made and results from overtaking medication to lower blood glucose.</p> <p>People with diabetes may be requested by their physician to wake up for several days at 2.00 – 3.00 am to test blood glucose and check if they are experiencing hyperglycemia due to Dawn Phenomenon.</p>
15	<b>Dehydration</b>	<p>Dehydration refers to the loss of fluid due to varied multiple causes such as frequent urinating, sweating, diarrhea or vomiting. Diabetic Ketoacidosis, an acute complication of poorly controlled diabetes mellitus, can also lead to dehydration</p>
16	<b>Diabetes Mellitus</b>	<p>Diabetes Mellitus is a group of diseases characterized by high blood glucose. It can be mainly due to either a lack of insulin (type 1 diabetes) or resistance to the action of insulin in the body (type 2 diabetes).</p> <p>It contributes, if not well controlled, to a considerable increase in morbidity and mortality. However, with proper prevention, early diagnosis and treatment, complications from diabetes can be prevented or minimized.</p>
17	<b>Diabetes Self Management Education</b>	<p>Diabetes Self Management Education (DSME) focuses on educating people with diabetes in order to know more about the disease and empower patients to self-manage their diabetes while enhancing their collaboration with the healthcare team. DSME standards support informed decision making and refers to the ongoing process of facilitating the knowledge, skill, and ability necessary for diabetes self-care.</p>

<b>18</b>	<b>Exchange System</b>	The exchange system refers to an educational tool that provides uniformity in meal planning and allows for flexibility in meal variety. This system categorizes food into different categories: milk, starch, meat and meat substitutes, vegetables, fruit, and fat. All people with diabetes should be educated on the exchange system by their nutritionist. Using the exchange system in carbohydrate counting: 1 carbohydrate exchange = 15g.
<b>19</b>	<b>Fat</b>	Fat is one of three macronutrients found in food, along with protein and carbohydrates. Fats provide significant amount of calories and can be found in various food items such as oils, butter, processed food, whole milk and dairy products, meats, among others. Fat can be either «good» or «bad» depending on the structure and the quantity eaten. «Good» fats can be found in olive oil, avocado, fish oil and others. «Bad» fat is found in processed food, whole milk, chicken skins, butter etc. Since a person with diabetes is at higher risk of heart and vessel problems, it is advisable to carefully choose fat sources. *1 g of fat provides 9 Calories.
<b>20</b>	<b>Fibers</b>	Fibers, commonly found in legumes, fruits, vegetables and whole grains, are components that pass through the digestive system without being digested while exerting extremely important functions for disease prevention and management. People with diabetes should have a high intake of fibers for better glucose control and in order to prevent long term complications, particularly heart and vessel problems and elevated cholesterol levels.
<b>21</b>	<b>Food Labels</b>	Food labels are nutrition fact labels found on most processed products. They provide information about the content of the product in terms of calories, fat, carbohydrates, fibers and many other nutrients. It is important to properly read food labels in making healthy choices and to count carbohydrate content in grocery products.
<b>22</b>	<b>Gestational Diabetes Mellitus</b>	Gestational Diabetes Mellitus (GDM) is defined as a glucose intolerance that is diagnosed during pregnancy. Risk factors of GDM include obesity, personal history of GDM, or a strong family history of diabetes. Normal glycemia is restored after birth in most cases. However, mothers who experience GDM have a higher risk for developing type 2 diabetes later in life.
<b>23</b>	<b>Glucose Meter</b>	A glucose meter is a medical device which measures the approximate glucose concentration in the blood from a small blood sample taken by pricking a finger. Patients with type 2 diabetes are advised to check their blood glucose at least once a day in the early morning. Those with type 1 should check more frequently before and after meals and when experiencing symptoms of hyper or hypoglycemia.
<b>24</b>	<b>Glycemic Index</b>	The Glycemic Index (GI) measures how quickly carbohydrates contained in food raise blood glucose. The index ranks foods by comparing them to a reference food (Glucose or white bread). The higher the GI index, the faster the spike in blood glucose after consuming the food. Some high GI foods include white bread, mashed potato, watermelon, pumpkin, and waffles.

<b>25</b>	<b>Glycemic Load</b>	The glycemic load of a food is the glycemic index of the carbohydrate divided by 100 and multiplied by its amount of carbohydrate content. It can be a useful tool in nutrition management for those patients at an advanced stage of carbohydrate counting.
<b>26</b>	<b>Honeymoon Phase</b>	The honeymoon phase refers to the period occurring after the initial diagnosis of Type 1 diabetes mellitus, when there may be some recovery of $\beta$ -cell function and a temporary decrease in exogenous insulin requirements. This does not, unfortunately, indicate that diabetes has been cured, and reverses back after some time.
<b>27</b>	<b>Hyperglycemia</b>	Hyperglycemia, or high blood glucose, is the basic manifestation of diabetes mellitus. It occurs either when the body lacks insulin or the body cells resist to the action of insulin. Stress, illness, and poorly controlled diabetes mellitus, along with Somogyi effect and dawn phenomenon are also common causes of hyperglycemia. Symptoms of hyperglycemia include increased thirst, frequent urination, blurred vision and fatigue. Prolonged hyperglycemia can lead to a serious condition called diabetic ketoacidosis (DKA). Hyperglycemia can be managed through adjustment of insulin or oral hypoglycemic agents with your physician and meal plan adjustment with your dietitian.
<b>28</b>	<b>Hypoglycemia</b>	Hypoglycemia, or low blood glucose, is a condition occurring when blood sugar drops below 70 mg/dL (in most cases). This abnormal decrease in glycemia can lead to unconsciousness or coma in extreme cases. Most common causes of hypoglycemia are skipping meals, taking excessive amounts of insulin, unplanned physical activity, and drinking alcohol on an empty stomach.  Typical symptoms of hypoglycemia include: sweating, fast heart palpitations, trembling, blurry vision, headache, and nervousness. However, as these symptoms could be confused with hyperglycemia, the only way to be sure is to test your glycemia with the glucose meter. To correct hypoglycemia, have one of the following options each containing 15g of sugar: 1 tablespoon of honey or 1/2 can of carbonated beverages or 2 small candies. Repeat every 15 minutes if necessary.
<b>29</b>	<b>Illness</b>	Illness such as cold, infection, inflammation can procure many hormonal changes leading to increased glycemia. As such, diabetes patients may need to adjust insulin, medication, and food regimens and increase fluid intake while suffering from another illness.
<b>30</b>	<b>Insulin</b>	Insulin is a hormone normally secreted by the $\beta$ -cells in the pancreas which lowers blood sugar. It helps glucose enter the cells so it can be used as energy. In diabetes, the body either lacks this essential hormone (type 1 diabetes) or resists to its action (type 2 diabetes). Insulin is administered via a subcutaneous injection under the skin.
<b>31</b>	<b>Insulin Pump</b>	An insulin pump is a device about the size of a pager used to deliver insulin through flexible tubing that attaches the pump to the person. Pumps deliver both basal and bolus insulin and are a treatment option for patients with type 1 diabetes.

<b>32</b>	<b>Lipid Profile</b>	Lipid Profile refers to a group of tests used to assess the risk of developing cardiovascular disease. People with diabetes without overt cardiovascular disease should have the following lipid targets (unless otherwise specified by the physician): LDL cholesterol <100 mg/dL, HDL cholesterol >50 mg/dL, and triglycerides <150 mg/dL.
<b>33</b>	<b>Medical Nutrition Therapy</b>	<p>Medical Nutrition Therapy is an essential component of comprehensive health care. It aims to improve health and quality of life for those with various conditions and diseases such as diabetes mellitus.</p> <p>Medical Nutrition Therapy includes: nutrition assessment, nutrition diagnosis, planning and implementing a nutrition intervention and monitoring and evaluating an individual's progress.</p>
<b>34</b>	<b>Metabolic Syndrome</b>	Metabolic Syndrome refers to a cluster of metabolic disorders characterized by insulin resistance, abdominal obesity, hyperglycemia, dyslipidimia and hypertension. Primary management include therapeutical lifestyle changes and physical activity.
<b>35</b>	<b>Omega 3</b>	Omega 3 is a fatty acid commonly found in various types of fish and well known for its anti-inflammatory effects and disease prevention. People with diabetes are recommended to include foods rich in omega 3 in their diets. Omega 3 is found abundantly in fish, seafood and fish oil. But we can also find it in vegetable sources such as canola, walnuts, soybeans and flaxseeds.
<b>36</b>	<b>Oral Diabetes Medications</b>	Oral diabetes medications are indicated mainly for individuals with type 2 diabetes who are unable to achieve glycemic control. Several classes of medications are available and they address various defects in the body related to diabetes pathogenesis. Some pills work to help your body use glucose better, while others force your pancreas to make more insulin.
<b>37</b>	<b>Overweight / Obesity</b>	<p>According to the World Health Organization, overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. A person can know if he is overweight with a simple calculation of body mass index (BMI)</p> <p><math>BMI = \text{weight (Kg)} / \text{height}^2 \text{ (m)}</math>. If the result is &gt;25 Kg/m<sup>2</sup>, then the person is overweight. If the number is &gt;30 then the person is obese.</p> <p>Waist circumference is also an important tool to detect abdominal fat (it should be &lt;80 cm in women and &lt;94 cm in men). Weight management and regular physical activity are important factors in diabetes prevention (type 2) and management (type 1 and 2).</p>
<b>38</b>	<b>Pancreas</b>	The pancreas is a gland located behind the stomach, which is responsible for the secretion of insulin, and other hormones. Insulin is produced by specialized cells called beta cells in the islets of Langerhans in the pancreas. Insulin is a hormone which is responsible for regulating blood glucose. The pancreas also exerts other essential functions necessary for breaking down the three main nutrients carbohydrate, fat and protein and converting them into energy for the body.

39	<b>Physical Activity</b>	<p>Physical activity is defined as «bodily movement produced by skeletal muscles that requires energy expenditure» and produces overall health benefits. Increased physical activity on most days of the week is advisable for everyone and in particular for people affected with diabetes (150 minutes per week) for better blood glucose control and to prevent/delay long term complications.</p>
40	<b>Plate Method</b>	<p>Plate method is a simple approach aiding people with diabetes plan and select their meals. A healthy plate, whether for breakfast, lunch or dinner is divided in half: one half contains vegetables such as cucumber, salads, tomato, mint etc and one fruit (apple, orange, banana...). The other half contains a source of protein (fish, chicken, meat, cheese) and a source of carbohydrate (bread, pasta, rice etc.). On the side, a cup of milk or yogurt.</p> <p><b>Sample healthy plate for lunch:</b>          Grilled fish filet          Boiled rice with some pepper          Grilled vegetables (broccoli, carrots, zucchini) and one fruit (cherries)          1 cup of low fat yogurt</p>
41	<b>Pre-diabetes</b>	<p>Pre-diabetes is a condition that anticipates overt diabetes and can be reversed through a balanced diet, weight loss and physical activity. Being overweight and leading a sedentary lifestyle are risk factors for pre-diabetes.</p> <p>Prediabetes is characterized by a fasting blood sugar 100mg/dL and above but below 126 mg/dL and post prandial blood glucose 140mg/dL and above but below 200 mg/dL.</p>
42	<b>Prevention</b>	<p>Prevention consists of taking measures to avoid or delay disease onset (such as type 2 diabetes mellitus). Preventing type 2 diabetes involves weight management, healthy eating habits, regular physical activity and regular consultations with the family doctor.</p>
43	<b>Protein</b>	<p>Protein is one of the three macronutrients found in food, along with fat and carbohydrates. Protein is essential for various body functions and should be present in every meal. Protein is found in milk and dairy products, meat, fish, poultry, soy products, and legumes. Protein intake is often correlated to «bad» fat intake especially in whole milk, dairy, meat and chicken skin which implies that careful attention should be given to protein sources.</p> <p>*1 g of protein provides 4 Calories.</p>
44	<b>Risk Factor</b>	<p>Type 2 diabetes involves in its pathology various risk factors affecting the onset and progression of the disease.</p> <p>These factors (among others) are: physical inactivity, first degree relative with diabetes, some high risk race/ethnicity (e.g. African American, Latino, Native American, Asian American, Pacific Islander), women who delivered a baby weighing &gt; 9lb or were diagnosed with GDM, hypertension, HDL-CT level &lt; 35 mg/dL or TG &gt; 250 mg/dL, women with polycystic ovary syndrome, HbA1C &gt; 5.7%, insulin resistance (obesity) and a history of cardiovascular disease.</p>

45	<b>Sodium</b>	Diabetes and hypertension are correlated in many cases, which implies the importance of limiting sodium intake among other lifestyle modifications. Sodium is a mineral found practically in all food. Sources rich in sodium include: canned food, man-oushe, kichick, pickles, croissant, olives etc, and should be consumed in moderation.
46	<b>Somogyi Effect</b>	Somogyi Effect, named after the physician who first described it, involves a pattern of undetected hypoglycemia at night followed by rebound hyperglycemia early in the morning. The main cause is an increased effect of insulin or diabetes medications. Physicians might ask the patient to wake up at 2.00 - 3.00 in the morning to test glycemia. If it is low then it is Somogyi effect, if high then it is dawn phenomenon. If this effect is detected, it can be corrected by adjusting the quantity of medication or reducing carbohydrate intake at dinner time.
47	<b>Screening</b>	Screening is a strategy used to identify undiagnosed diseases such as diabetes mellitus. All people who are overweight and have at least two risk factors (family history, certain ethnicities, age, insulin resistance, etc.) are advised to consult their physician and get screened for type 2 diabetes. Screening for type 1 diabetes mellitus is not recommended as it has low incidence, can happen suddenly at any age and the length of time between onset of symptoms and diagnosis is very short.
48	<b>Secondary Diabetes</b>	Secondary diabetes refers to diabetes induced by certain drugs, infection, endocrine diseases and genetic syndromes.
49	<b>Self-monitoring Blood Glucose</b>	Self-monitoring blood glucose(SMBG) is an important component of diabetes management. It involves detailed information about glycemia at various times of the day in order to achieve consistency in blood glucose. Consult your dietitian to teach you more about SMBG to help adjusting dietary intake and physical activity regimen.
50	<b>Symptoms</b>	Diabetes Mellitus (especially type 1) is manifested by hyperglycemia with typical symptoms of the 3 Ps: polyuria (frequent visits to the restroom), polydypsia (extreme thirst), and polyphagia (excessive eating) with involuntary rapid weight loss. Symptoms in type 2 diabetes are milder and may remain undiagnosed for several months and even years, making screening for type 2 essential.


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