HMM
health management media

Diabetes

Patient Booklet

What Is Diabetes?

Diabetes (Diabetes Mellitus) is a severe, life-threatening condition in which the body loses its ability to turn glucose (sugar) from food into usable energy. It is sometimes, mistakenly, called "Sugar" Diabetes.

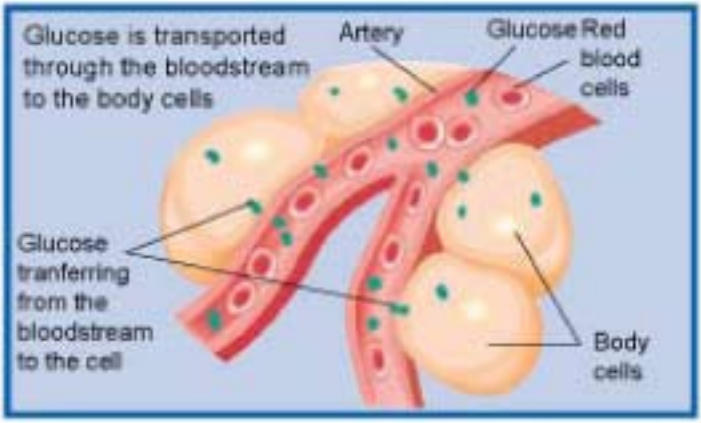
Muscle cells and other tissues in the body require specific levels of glucose and carbohydrates to maintain their function. The amount of glucose absorbed into the bloodstream, and the method by which glucose enters the body's cells is regulated by a hormone called insulin. This is produced in the pancreas, a gland located just behind the stomach.

People with Diabetes either produce too little insulin, or their cells do not respond to its action, resulting in abnormally high levels of blood sugar. When sugar levels are above the normal range (80-126 mg/dL), the condition is called hyperglycemia.

Diabetes that usually starts in childhood is sometimes called 'Juvenile Diabetes' or 'Insulin Dependent Diabetes Mellitus' (IDDM) - but it is more commonly known as TYPE 1 DIABETES.

Diabetes that develops later in life (ie, after 45 years of age) used to be known as 'Adult Onset Diabetes' or 'Noninsulin Dependent Diabetes Mellitus' (NIDDM) is known as TYPE 2 DIABETES.

GESTATIONAL DIABETES develops during pregnancy. This type of Diabetes usually disappears when the pregnancy is over, but women who have had this condition are at a greater risk of developing Diabetes later in life.



What Causes Diabetes?

TYPE 1 DIABETES

People with Type 1 Diabetes have little or no ability to produce insulin and are entirely dependent on injections of insulin for survival.

The cause of Type 1 Diabetes is unknown, although childhood infections and a genetic tendency are two possibilities. The pancreas undergoes a change and cells that normally produce insulin are destroyed. This may be a result of the body's own immune system believing the pancreas to be a foreign organ.

This form of Diabetes often appears at times of physical stress and during illness when the body produces additional glucose.

TYPE 2 DIABETES

In Type 2 Diabetes, the pancreas retains its ability to produce insulin, but either the quantity is inadequate for the body's needs, or insulin cannot be used to its full extent by the tissues. Most people who have this condition suffer from being overweight and require treatment, together with a strict weight-reducing diet and exercise program.

95% of people with Diabetes have TYPE 2.

Diagnosing Diabetes

Testing a blood sample for glucose levels in the fasting state (no food for 8 hours before the test) will help diagnose Diabetes, however, confirming a diagnosis usually requires repeated measurements. In addition to blood glucose testing, a test which measures glycated hemoglobin (molecules in red blood cells which have been modified by glucose) can provide information on the glucose levels in the blood over the previous 2-3 months. This is often used to monitor therapy.

Glucose tolerance tests may be necessary in certain cases.

Diabetes may lead to other serious conditions, therefore, early detection is important.

Taking a blood sample

Recognizing the Symptoms

TYPE 1 DIABETES The symptoms may vary, but can include:

- Frequent urination
- Unusual thirst
- Acetone breath
- Blurred vision
- Unexplained weight loss
- Irritability
- Cuts or bruises (that are slow to heal)
- Frequent infections
- Tingling or numbness in the hands and feet
- Itchy skin
- Recurring skin, gum, or bladder infections
- Changes in appetite
- Recurring vaginal infections (females)
- Abdominal cramps

TYPE 2 DIABETES

- People over the age of 45 may need to be screened with a fasting blood glucose test because of the absence of symptoms. Screening may start earlier in those who have known risk factors or who are pregnant.

Treatment

(a full list of medications is shown on page 7)

The aim of treatment is to keep blood glucose levels as close to normal without causing low blood sugars (a level below 60 mg/dL). These low blood sugar levels (also called hypoglycemia), may come about as the result of a change in the content or timing of meals, or from increased physical activity or over-treatment.

A change in the amount of medication currently being taken may help if this becomes a regular problem.

People with Diabetes have to take responsibility for their day-to-day care with careful monitoring of their condition.

Type 1 Diabetes:

Daily injections of insulin, together with dietary control and regular blood glucose testing, form the basis of an effective treatment program. Insulin mimics the body's own production of the natural hormone. Delivery by injection and careful storage conditions are required.

Type 2 Diabetes:

Dietary control is often sufficient in treating this condition. Weight reduction, an exercise program, and regular blood glucose testing, combined with oral medications, may be required to lower sugar levels. In some cases, insulin may be necessary to assist with this problem.

Note: Insulin requirements can vary during illness, physical exercise, and pregnancy.

Injection Sites

Living With Diabetes

Learn to recognize the early signs of hypoglycemia. These include sweating, rapid heartbeat, headache, confusion, and dizziness.

Under such circumstances, the immediate consumption of quick-acting carbohydrates, such as a piece of hard candy, can help. Adjustments in medication may also be needed if hypoglycemia occurs frequently, so always keep your healthcare provider updated regarding the regularity of these events.

Do not drive after an episode.

Keep your feet clean, and watch closely for any signs of infection. Visit the foot doctor every year.

Have regular eye tests and a full eye examination every year.

Smoking may contribute to the development of many complications and should be stopped.

Avoid, or limit, your alcohol intake.

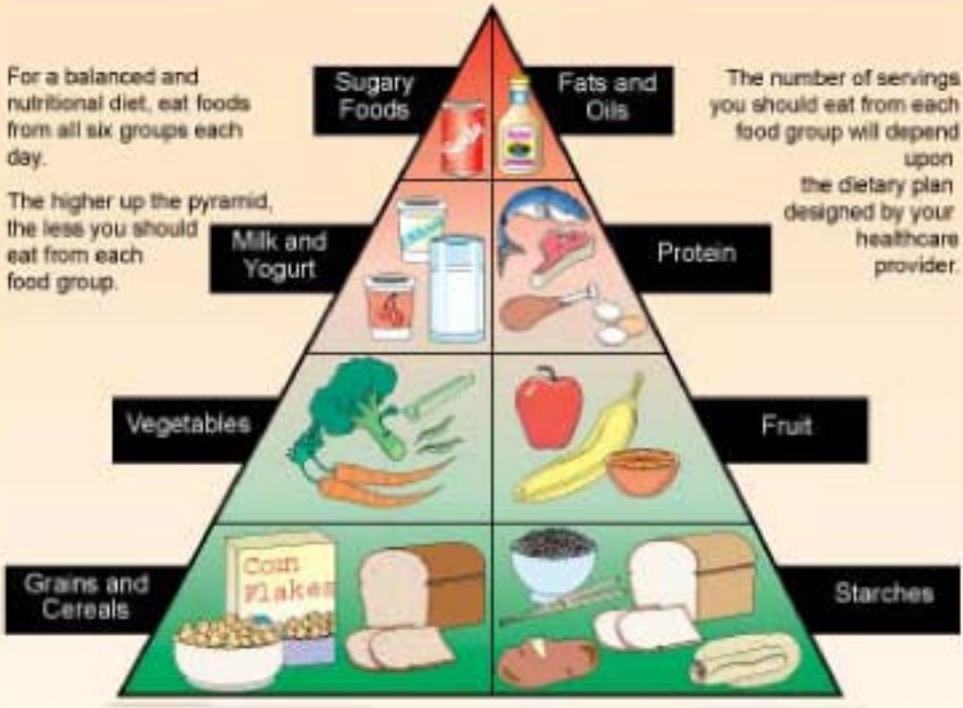
It is always helpful to carry details of your diabetic status, with contact telephone numbers, in case of an emergency.

A sock chain, or identity bracelet, can help to alert others to your condition.

The Diabetes Food Pyramid

For a balanced and nutritional diet, eat foods from all six groups each day.

The higher up the pyramid, the less you should eat from each food group.



The number of servings you should eat from each food group will depend upon the dietary plan designed by your healthcare provider.

Note: This information is provided as a guide only, always speak with your healthcare provider before changing your existing diet.

Examples of One Serving From Each Food Group

Sugary foods	Fats	Milk	Protein	Vegetables	Fruit	Grains and Cereals	Starch
Cake Soda Chocolate	Bacon Salad dressing Butter	Milk Yogurt Cream	Meat Cheese Eggs	Carrots Salad Broccoli	Apple Banana Orange juice	Cornflakes Granola bar Oats	White bread Rice Potato
One Donut	One strip of Bacon	One cup of Skim Milk	Two ounces of Cheese	One cup of Salad	One small Apple	3/4 cup of Cornflakes	Two slices of bread

Medication

All drugs can be grouped together by how they work (ie, their specific mode of action). The list below includes all the different types of drugs approved for use in the treatment of this condition at the time of publication. (Updated information is also available online at: www.diseases-explained.com.)

Always consult your healthcare provider if you have any questions or concerns about the medication you have been prescribed.

TYPE 1 DIABETES

Insulins

Drug Type	Effects
Rapid-Acting	Starts working in 15-30 minutes and may last up to 6-12 hours.
Dual-Acting	Usually consists of a combination of a rapid-acting and intermediate-acting insulin. Used to combine speed with duration of action to better manage the stable patient.
Intermediate-Acting	Starts working in 1-4 hours and may last 12-24 hours.
Long-Acting	Starts working in 3-8 hours and lasts up to 36 hours.

TYPE 2 DIABETES

Oral Medications

Drug Type	Effects
Alpha-glucosidase inhibitors	Delay the intestinal absorption of carbohydrates which are eventually converted into glucose.
Biguanide	Increases insulin uptake by all tissues and not just the muscles. Also reduces the output of glucose by the liver.
Sulfonylureas	Stimulate insulin production and improve its action by increasing the number of insulin receptors in the body's cells as well as their sensitivity to insulin.
Thiazolidinediones	Lower blood glucose by improving insulin response in the tissues.

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