

OUTLINE

- DEFFINITON
- DIAGNOSIS
- TYPES: GESTATIONAL, I, AND 2
- COMPLICATIONS OF DIABETES MELLITUS

Definition

- **Diabetes mellitus** (IPA: /ˌdaɪəˈbiːtiːz/ or /ˌdaɪəˈbiːtəs/, /məˈlaɪtəs/ or /ˈmɛlətəs/), often referred to simply as **diabetes** (Ancient Greek: διαβαίνειν "to pass through"), is a syndrome of disordered metabolism, usually due to a combination of hereditary and environmental causes, resulting in abnormally high blood sugar levels (hyperglycemia).^[2] Blood glucose levels are controlled by a complex interaction of multiple chemicals and hormones in the body, including the hormone insulin made in the beta cells of the pancreas. Diabetes mellitus refers to the group of diseases that lead to high blood glucose levels due to defects in either insulin secretion or insulin action in the body.^[3]

Diabetes is a disease that means your blood glucose (blood sugar) is too high. Glucose comes from the food you eat and is also made in your liver and muscles. Your body carries glucose to all the cells of your body with the help of insulin (a hormone made in the pancreas).

Sign and Symptoms

- The classical triad of diabetes symptoms is polyuria, polydipsia and polyphagia, which are, respectively, frequent urination, increased thirst and consequent increased fluid intake, and increased appetite.
- weight loss, lethargy.

DIAGNOSIS DEFINITION AND NORMALS

- FBS
- GTT
- A1C

Fasting blood sugar

- A blood glucose test measures the amount of a type of sugar, called glucose, in your blood. Glucose comes from carbohydrate foods. It is the main source of energy used by the body.



Fasting Blood Sugar

(Without food for 4 to 5 hours)

- < 100 normal
- 100-125 Pre diabetes
- > 126 diabetes

Glucose Tolerance Test

- A **glucose tolerance test** in medical practice is the administration of glucose to determine how quickly it is cleared from the blood. The test is usually used to test for diabetes, insulin resistance, and sometimes reactive hypoglycemia. The glucose is most often given orally so the common test is technically an oral glucose tolerance test (OGTT).

GTT

Oral Glucose Tolerance Test (OGTT) [except pregnancy] (2 hours after a 75-gram glucose drink)	
Less than 140 mg/dL (7.8 mmol/L)	Normal glucose tolerance
From 140 to 200 mg/dL (7.8 to 11.1 mmol/L)	Impaired glucose tolerance (pre-diabetes)
Over 200 mg/dL (11.1 mmol/L) on more than one testing occasion	Diabetes

Hemoglobin A 1 c

- This test measures the level of hemoglobin A1c in the blood determining the average blood sugar concentrations for the preceding two to three months.
- A stable glycoprotein is formed when glucose binds to hemoglobin A in the blood.

Hemoglobin A1c

Blood sugar (mg/dl)	hA1c
60	4%
90	5%
120	6%
150	7%
180	8%
210	9%
240	10%
270	11%
300	12%
330	13%

- Normal <6
- Controlled for a diabetic <7

TYPES

- GESTATIONAL
- TYPE 1
- TYPE 2

Gestational

- Pregnant women who have never had diabetes before but who have high blood sugar (glucose) levels during pregnancy are said to have gestational diabetes. Gestational diabetes affects about 4% of all pregnant women - about 135,000 cases of gestational diabetes in the United States each year.



Type 1

- In type 1 diabetes, the body does not produce insulin. Insulin is a hormone that is needed to convert sugar (glucose), starches and other food into energy needed for daily life.
- Type 1 diabetes is usually diagnosed in children and young adults, and was previously known as juvenile diabetes.

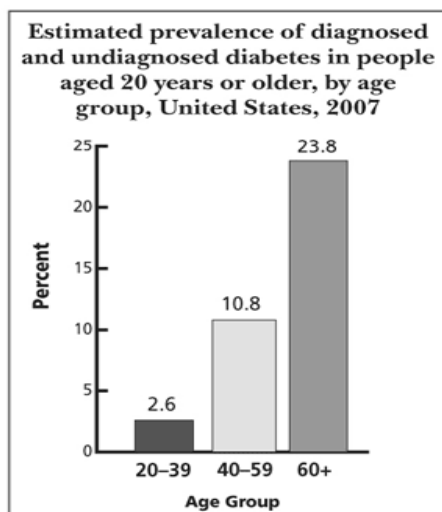
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- Usually < 20 years old
- Symptoms occur suddenly
- 10% of the diabetic population
- Insulin is always required



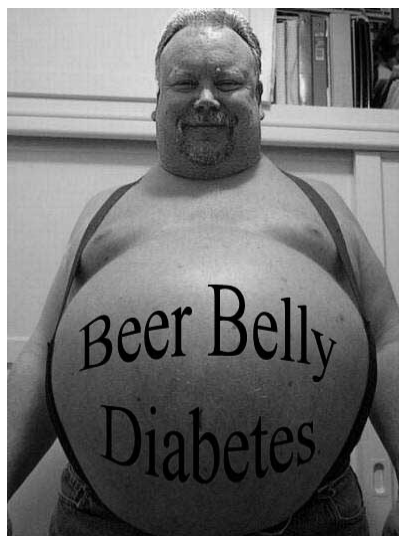
Type 2

- Type 2 diabetes occurs when either the body does not produce enough insulin or the cells ignore the insulin.
- Type 2 diabetes is the most common form of diabetes.



2

- Usually occurs in people over 45 years old
- Have a family history
- Are overweight
- Are inactive
- Belong to high risk ethnic or racial groups



COMPLICATIONS

- REASONS FOR COMPLICATIONS
- LIST OF COMPLICATION
 - KIDNEYS
 - EYES
 - VASCULAR
 - NEUROLOGICAL
 - KETOACIDOSIS

Over time persistent high blood glucose levels can damage the body's organs.

Diabetic complications can be classified broadly as micro vascular or macro vascular disease.

Micro vascular

- Micro vascular complications include neuropathy (nerve damage), nephropathy (kidney disease) and vision disorders (retinopathy, glaucoma, cataract and corneal disease).

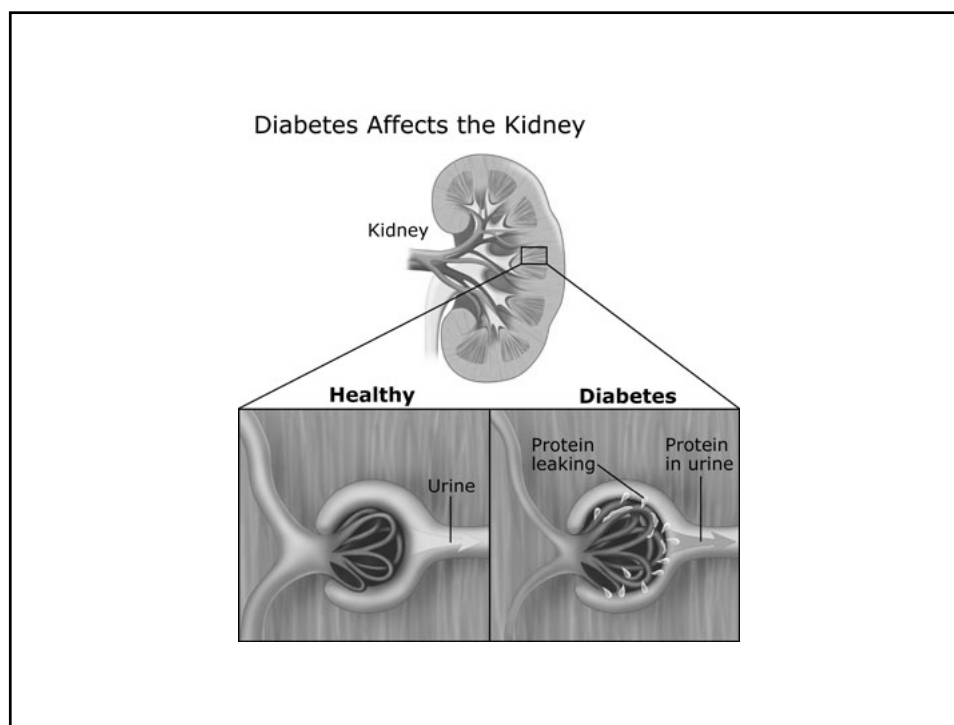
Neuropathy

- Diabetic neuropathy can affect nerves in many different parts of the body. The most common early symptoms of the condition are numbness, tingling, or sharp pains in the feet or lower legs.
- More than 60 percent of non traumatic lower-limb amputations in the U.S. occur among people with diabetes.



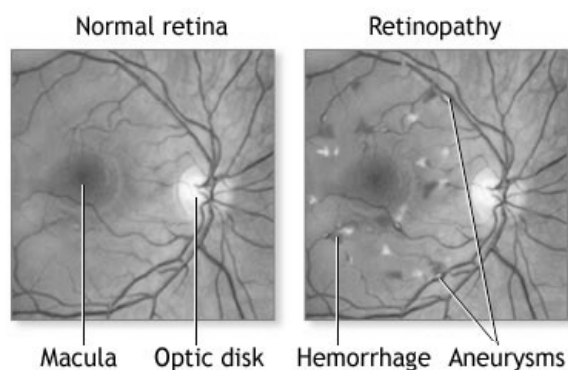
Nephropathy

- Diabetic nephropathy occurs when blood sugar is high, it can cause damage to the blood vessels in the kidneys, leading to kidney disease.
- Diabetes is the leading cause of end-stage renal disease, accounting for about 43 percent of new cases.



Retinopathy

- **Diabetic retinopathy** involves changes in the retina, the light-sensitive layer at the back of the eye.
- Diabetics have a high chance of developing other eye diseases such as cataracts and glaucoma.
- Diabetes is the leading cause of new cases of blindness in people ages 20-74.



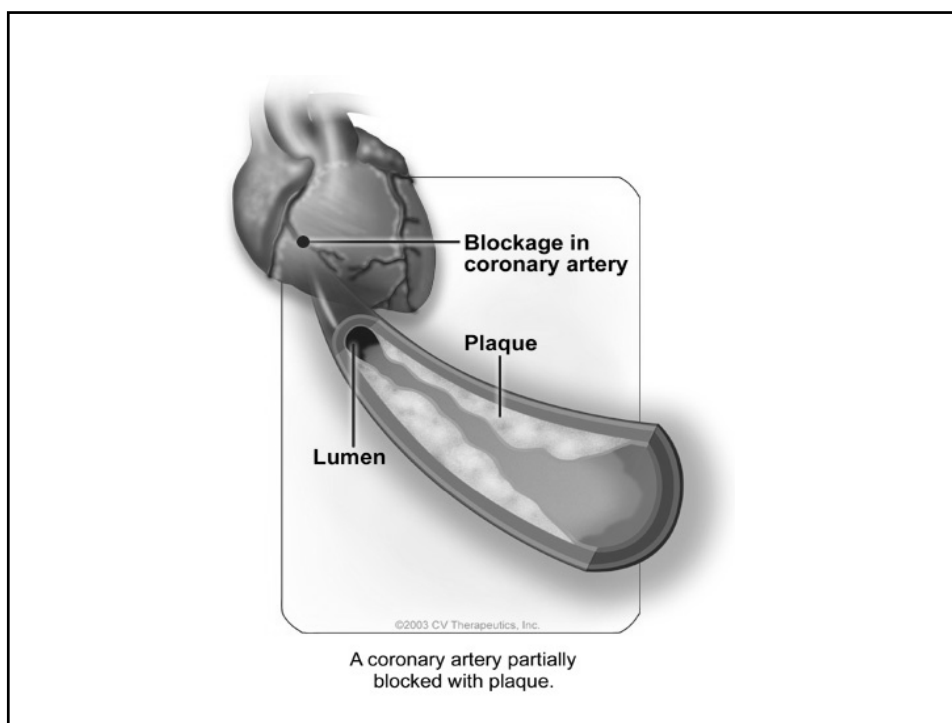
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Macro vascular

- Macro vascular complications include heart disease, peripheral vascular disease (which can lead to ulcers, gangrene and amputation), and stroke.

Heart disease

- Persons with diabetes often experience changes in the blood vessels that can lead to cardiovascular disease.
- Heart disease strikes people with diabetes, twice as often as people without diabetes.
- More than 65 percent of deaths in diabetes patients are attributed to heart and vascular disease.



Vascular disease

- Three out of four diabetes-related deaths are caused by heart and blood vessel (cardiovascular) disease.
- Diabetic vascular disease refers to the development of blockages in the arteries, sometimes called “hardening of the arteries”.



Stroke

- Multiple studies have shown that people with diabetes are at greater risk for stroke compared to people without diabetes regardless of the number of health risk factors they have.

Other complications

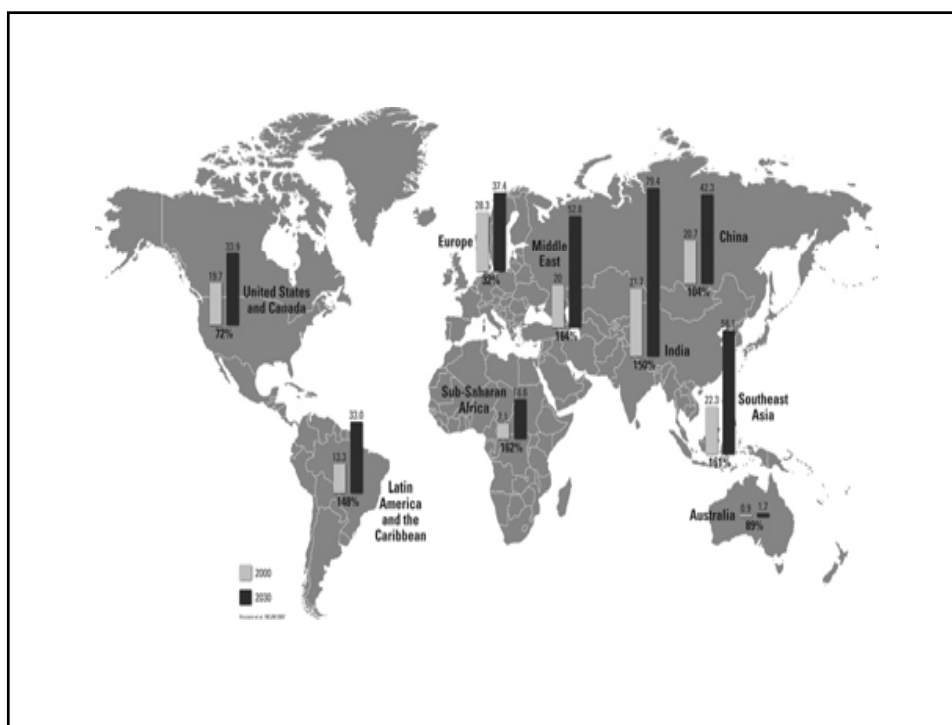
- Other complications of diabetes include infections, metabolic difficulties, impotence, autonomic neuropathy and pregnancy problems.

Ketoacidosis

- Diabetic Ketoacidosis is characterized by deficiency of insulin, high blood sugar, acidosis, and high levels of ketone bodies.
- DKA is life threatening complication and usually occurs in Type 1 diabetics.

Hyperosmolarity

- Hyperosmolar Hyperglycemic Nonketotic Syndrome, or HHNS, is a serious condition most frequently seen in older persons.
- It occurs more often in people with type 2, and usually brought on by something else, such as an illness or infection.



References

- Wikipedia
- American Diabetic Association
- Web MD
- Medicine net
- Mayo Clinic
- Health Institute
- American Heart Association