

Understanding Diabetes

Wellness Education Unit

Objectives:

After completion, the reader will:

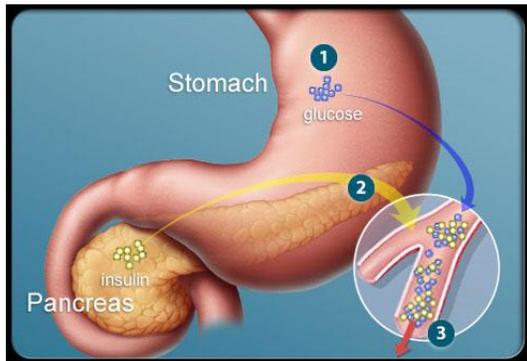
- Understand the difference between Type 1 and Type 2 Diabetes
- Be introduced to the importance of self-management of diabetes.
- Understand how to prevent complications associated with diabetes.
- Complete a self risk assessment for diabetes

What is Diabetes?

Diabetes Mellitus is a group of chronic diseases in which the body cannot make and/or use insulin. Insulin is a hormone that is essential in turning the food you eat into energy your body can use.

Understanding normal metabolism

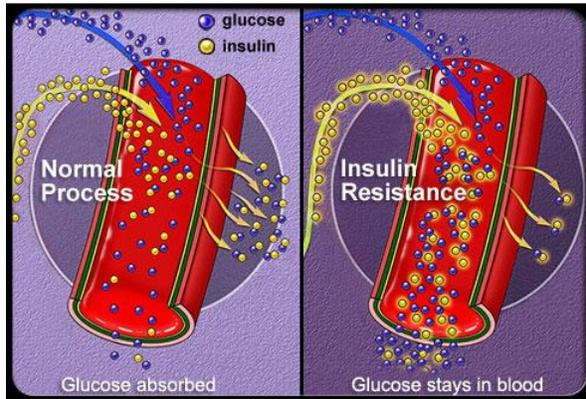
The stomach breaks down carbohydrates from food into sugars, including glucose. Glucose then enters the bloodstream, which stimulates the pancreas to release insulin in just the right amount. Insulin, a hormone, allows glucose to enter cells throughout the body, where it is used as fuel. Extra glucose is stored in the liver.



Type 1 diabetes (formerly called juvenile onset or insulin dependent diabetes) is an auto-immune disease in which the body attacks the cells of the pancreas that make insulin. Since people with Type 1 diabetes cannot make insulin, they require multiple daily injections of insulin to control their blood sugars. Type 1 diabetes can be diagnosed at any age but most commonly occurs between infancy and the late 30s.

In Type 2 diabetes (formerly called adult onset or non-insulin dependent diabetes), the cells cannot absorb glucose properly. That means glucose levels in the blood become elevated. If you've developed a condition called insulin resistance, the body makes excess insulin, but the muscle, liver, and fat cells do not use or respond properly to the insulin. With long-standing uncontrolled type 2 diabetes, the pancreas will reduce the amount of insulin it produces. Type 2

diabetes typically develops after age 40, but can appear earlier and has recently begun to appear more frequently in children.



Symptoms of Diabetes

Diabetes often goes undiagnosed because many of its symptoms can be associated with other problems or seem harmless and are often ignored. Some people with Type 2 diabetes report having no symptoms.

Symptoms of Type 1

- Increased thirst
- Increased hunger
- Frequent urination
- Unexplained weight loss
- Extreme fatigue and irritability

Symptoms of Type 2

- Any symptoms for Type 1
- Slow healing sores
- Frequent infections
- Blurred vision
- Tingling or numbness in hands or feet

If you experience any of these symptoms, call your doctor right away. Complications can result from untreated or poorly controlled diabetes

Who's at risk?

The causes of Type 1 diabetes aren't entirely understood but scientists believe genetic and environmental factors are involved. Its onset cannot be prevented and currently there is no cure.

The causes of Type 2 diabetes, on the other hand, are more understood and are greatly influenced by genetics and lifestyle. Risk factors for developing Type 2 diabetes include:

- Physical inactivity
- Family history
- Ethnicity
 - African American
 - Latino

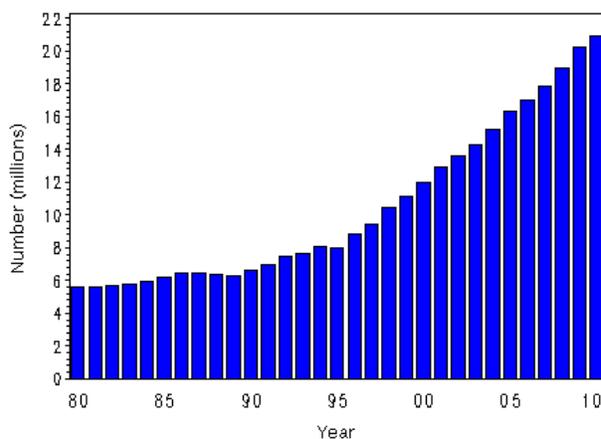
- Native American
 - Asian American
 - Pacific Islander
- Women with a history of gestational diabetes
 - High blood pressure ($\geq 140/90$ mmHg)
 - Low HDL “good” cholesterol (<40 mg/dL for men or <50 mg/dL for women)
 - High triglycerides (>150 mg/dL)
 - History of heart disease
 - History of PCOS (Polycystic Ovarian Syndrome)
 - History of prediabetes

How is diabetes diagnosed?

Simple blood tests can diagnose diabetes.

- A1C test
 - Gives a blood sugar average over the past 2-3 months
 - A result greater or equal to 6.5% is diagnosed as diabetes
- Fasting blood sugar
 - A normal fasting blood sugar levels is less than 100 mg/dL
 - A fasting blood sugar greater or equal to 126 mg/dL is diagnosed as diabetes
- Oral Glucose Tolerance Test
 - A normal result is less than 140 mg/dL
 - A result 200 mg/dL or higher is diagnosed as diabetes

How common is diabetes?



It is estimated that 25.8 million Americans (8.3% of population) have diabetes.

- 18.8 million diagnosed cases
- 7 million undiagnosed cases

This chart shows the number of cases of diabetes since 1980.

Diabetes Complications

High blood sugar levels are damaging to all cells in the body. Over time, this damage can lead to many complications including:

- Cardiovascular Disease
 - Atherosclerosis
 - Coronary Disease
 - Heart Failure
 - Peripheral Artery Disease
- Kidney Disease
- Eye Disease
- High or low blood sugar
- Nerve Damage
- Periodontal Disease
- Foot Problems
- Skin Problems
- Infections
- Ketoacidosis
- Stroke

The good news is that diabetes complications can be prevented through keeping your blood sugar levels well controlled which can be done by:

- Checking your blood sugar regularly
- Taking medications as prescribed
- Being physically active each day
- Reducing risks by keeping scheduled doctor appointments
- Eating a healthy well-balanced diet
- Managing stress

Resources

American Diabetes Association www.diabetes.org

National Diabetes Education Program www.ndep.nih.gov

National Diabetes Information Clearinghouse <http://diabetes.niddk.nih.gov/>