

## Body Conditions: DIABETES (TYPE 2)

**Type 2 Diabetes:** Glucose is a type of sugar. It comes from food, and is also created in the liver. Glucose travels through the body in the blood. It moves from the blood to cells with the help of a hormone called insulin. Once glucose is in those cells, it can be used for energy.

Diabetes is a condition that makes it difficult for the body to use glucose. This causes a buildup of glucose in the blood. It also means the body is not getting enough energy. Type 2 diabetes is the most common type of diabetes.

Medication, lifestyle changes, and monitoring can help control blood glucose levels.

### Causes

Type 2 diabetes is often caused by a combination of factors. One factor is that your body begins to make less insulin. A second factor is that your body becomes resistant to insulin. This means there is insulin in your body, but your body cannot use it effectively. Insulin resistance is often related to excess body fat.

### Risk Factors

Type 2 diabetes is more common in people who are aged 45 years and older. It is also common in younger people who are obese and belong to at-risk ethnic groups. Other factors that increase your chance for type 2 diabetes include:

- Prediabetes—impaired glucose tolerance and impaired fasting glucose
- Metabolic syndrome—a condition marked by elevated cholesterol, blood glucose, blood pressure, and central obesity (a high concentration of body fat around the upper body and abdomen)
- Excess weight or obesity, especially central obesity
- Lack of exercise
- Poor diet—high intake of processed meats, fats, sugar-sweetened foods and beverages
- Family history of type 2 diabetes
- High blood pressure
- History of cardiovascular disease
- Depression
- History of gestational diabetes, or having a baby weighing over nine pounds at birth
- Endocrine disorders, such as Cushing's syndrome, hyperthyroidism, acromegaly, polycystic ovary syndrome, pheochromocytoma, or glucagonoma
- Conditions associated with insulin resistance, such as acanthosis nigricans
- Certain medications, such as glucocorticoids or thiazides
- Certain ethnic groups, such as African American, Hispanic, Native American, Hispanic American, Asian American, or Pacific Islander

### Symptoms

You may have diabetes for years before you have symptoms. Symptoms caused by high blood sugar or include:

- Increased urination
- Extreme thirst
- Hunger
- Fatigue
- Blurry vision
- Irritability
- Frequent or recurring infections
- Poor wound healing
- Numbness or tingling in the hands or feet
- Problems with gums
- Itching
- Problems having an erection

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### Diagnosis

The doctor will ask about your symptoms and medical history. You will also be asked about your family history. A physical exam will be done. Diagnosis is based on the results of blood testing. American Diabetes Association (ADA) recommends a diagnosis be made if you have one of the following:

- Symptoms of diabetes and a random blood test with a blood sugar level greater than or equal to 200 mg/dL (11.1 mmol/L)
  - Fasting blood sugar test is done after you have not eaten for eight or more hours—showing blood sugar levels greater than or equal to 126 mg/dL (7 mmol/L) on two different days
  - Glucose tolerance test measures blood sugar two hours after you eat glucose—showing glucose levels greater than or equal to 200 mg/dL (11.1 mmol/L)
  - HbA1c level of 6.5% or higher—indicates poor blood sugar control over the past 2-4 months
- mg/dL = milligrams per deciliter of blood; mmol/L = millimole per liter of blood

### Treatment

Treatment aims to:

- Maintain blood sugar at levels as close to normal as possible
- Maintain a healthy weight
- Prevent or delay complications
- Control other conditions that you may have, like high blood pressure and high cholesterol

After an initial evaluation your physical therapist will be able to create a rehabilitation program that takes into account both your goals as well as your physicians in regards to weight loss and exercise. A physical therapist can also help with certain complications of diabetes such as diabetic neuropathy. Your physical therapy program may include:

- Aerobic exercises & resistance training: Both types of exercise help to improve long-term glucose control. Regular exercise can also help reduce your risk of heart disease.
- Patient education & information on exercise precautions

### Prevention

To reduce your chances of developing type 2 diabetes:

- Participate in regular physical activity
- Maintain a healthy weight
- Drink alcohol in moderation (*two drinks per day for a man, and one drink per day for a woman*)
- Eat a well-balanced diet:
  - Get enough fiber
  - Avoid fatty foods
  - Limit sugar intake
  - Eat more green, leafy vegetables
  - Eat whole fruits, especially apples, grapes, and blueberries