

# NEW-LIFESTYLES STEPS TO A HEALTHIER YOU<sup>SM</sup> TYPE 2 DIABETES FACTS

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Type 2 diabetes used to strictly be a disease encountered in adulthood. Now due to the obesity epidemic, its prevalence in both adults and for the first time, children, has skyrocketed. Research has now shown that excess weight contributes to insulin resistance, which is a key factor used to diagnose Type 2 diabetes.

## What is Type 2 diabetes?

When a person without diabetes eats, blood sugar rises normally. Sensing the rise of glucose in the body, the pancreas produces insulin to open the doors of the muscle and fat cells so that body can use the glucose for energy.

With Type 2 diabetes, three health scenarios are possible that would require treatment—insulin resistance, insulin deficiency or a liver that releases too much glucose.

In the first scenario, the pancreas may still release the proper amount of insulin to help the cells to use the glucose, but the cells have become resistant to the insulin. Insulin resistance means the cells can't sense the insulin and, as a result, don't take in the glucose, leaving high levels of glucose in the bloodstream. The extra glucose in the blood causes the pancreas to, in turn, produce more insulin. Over years of this happening, the pancreas may decide that it simply

cannot keep up with the constant abnormally high demand for insulin and may slow down or stop producing insulin, causing an insulin deficiency.

The liver works in partnership with the pancreas to manage blood glucose levels by storing extra glucose in a form called glycogen to be used by the body when it needs it at a later time. For example, at times overnight when a person hasn't eaten, the liver senses the lack of insulin and responds by releasing stored glucose to keep blood sugar levels from dropping too low. When someone has Type 2 diabetes, the liver may fail to recognize insulin levels and may erroneously produce more glucose than required.

## What are the risk factors for Type 2 diabetes?

Because of its link to overweight and obese, risk factors for Type 2 diabetes include high-fat/low-fiber diets, sedentary lifestyles, extra weight particularly in the abdominal area, high blood pressure, and high cholesterol and triglyceride levels. Most people develop "pre-diabetes" before they develop and are diagnosed with Type 2 diabetes.

"Pre-diabetes" is when blood glucose levels are higher than normal but not yet high enough to be full-blown diabetes. With an estimated 41 million people in the U.S., ages 40-74, with "pre-diabetes," it is more important than ever for individuals at risk for Type 2 diabetes to have their blood sugar checked regularly.



## One thing is for certain — the more support individuals with diabetes have to help them manage their disease and subsequent new lifestyle, the better.

If a doctor determines that someone has "pre-diabetes," there are healthy lifestyle changes (like eating a healthy diet, increasing physical activity, and quitting smoking) that person can make to avoid having Type 2 diabetes.

### Why is it important for people with diabetes to manage their blood glucose levels?

Too much glucose in the blood for a long time can cause diabetes complications. High blood glucose can damage many parts of the body, such as the heart, blood vessels, eyes, kidneys and nerves. This can lead to many problems, including heart attack, stroke, blindness, kidney failure and amputation of the lower limbs.

### What is the treatment plan for someone with Type 2 diabetes?

Having diabetes requires a person to make substantial lifestyle changes in order to control blood-sugar levels and ward off diabetes complications. Giving up old habits for new ones that help control blood sugar can be anything but easy. One thing is for certain—the more support people with diabetes have to help them manage their disease and subsequent new lifestyle, the better.

It is very important for people with diabetes to learn to listen to their body. Keeping an organized schedule of healthy eating, taking diabetes medication or insulin, getting regular physical activity, and testing blood glucose must all become a way of life.

A healthy diet for someone with Type 2 diabetes might require monitoring (and in some cases, reducing) carbohydrate intake, since carbohydrate is the type of nutrient that has the greatest effect on blood glucose levels. The American Diabetes Association recommends a diet which balances carbohydrate "exchanges" throughout the day. For anyone with diabetes, it is important to meet with a dietitian in order to be educated about "carbohy-

drate counting" and ways to choose a diet that will help to manage blood glucose levels.

In addition to helping manage their weight, exercise helps people with Type 2 diabetes by making muscles more sensitive to insulin and thus lowering insulin resistance. Thus, regular physical activity is an important component of a successful diabetes management plan.

Along with insulin, which can be necessary in some people with Type 2 diabetes, there are a number of oral diabetes medications available to help manage blood glucose levels. Some of the drugs are designed to stimulate the pancreas to make and release more insulin. Others work by decreasing the amount of glucose released by the liver and by causing the liver and muscle cells to be more sensitive to the effects of insulin. Specially trained to treat people with diabetes, an endocrinologist (or medical doctor specialized in treating diabetes and other metabolic disorders) will work with a patient to see which plan of diet, exercise and medication works best for them.

### What is A1C?

A1C is a diagnostic blood test taken every 3 months to sum up diabetes control over that time period. An A1C test measures how much glucose has been sticking to red blood cells. Since each red blood cell is replaced by a new one every 4 months, this test can tell how high the glucose levels have been during the life of the cells. A normal non-diabetic A1C result is 6.0%. People with diabetes who are working to carefully keep their blood-sugar under control will have a target A1C of 7.0% or less.

### How does someone test blood glucose levels?

Blood glucose levels are tested with the use of a glucometer, sometimes called a blood glucose meter, which is a small digital device that uses special test strips and lancets. To use the glucometer, a person pricks his or her finger with the lancet (a small needle) and places the drop of blood on the testing strip. The glucometer analyzes the blood on the testing strip and provides a read out on its screen of the blood sugar level. Typically, those with Type 2 diabetes have to check their blood sugar level several times a day using this device. They work out a schedule with their doctor in order to be reassured that they are maintaining good diabetes control.

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