

# Living Fit: Diabetes Mellitus

With approximately 210,000 Americans dying annually of this disease, diabetes mellitus has become one of the leading causes of death in this country. And with almost 21 million Americans suffering from diabetes, chances are you know someone with this debilitating disease. We do. It's our stepson, Jeff. He was diagnosed on his 21st birthday (not much of a present) and has just turned 30. Jeff faces a life of insulin dependency and the constant awareness of the potential and serious health consequences associated with diabetes.

## Causes and Types

Our bodies need energy to operate and that energy comes from the glucose (sugar) contained in the food we eat. When our body works properly, it breaks down the food and takes the glucose through the blood stream to the cells of our body. In order for the glucose to get into those cells, our pancreas produces and secretes a hormone called insulin, which unlocks the cells to allow the glucose to enter.

When there is a failure in either the production of the insulin or the cells' acceptance of the glucose, Type I diabetes is the result. Type I diabetes accounts for about 10 percent of all diabetes and while it can occur in adults, it usually occurs in children and young adults. At one time Type I diabetes was referred to as "juvenile diabetes." When the pancreas does produce insulin, but the body fails to use the insulin properly (insulin resistance), this results in Type II diabetes. It is the most prevalent form of diabetes, accounting for 90 percent of all cases.

There is another type of diabetes called gestational diabetes that affects about four percent of all pregnant women. While the cause is not yet known, it is speculated that it has something to do with a blockage of the proper functioning of the mother's insulin by the growth of the embryo's hormones. This form of diabetes can affect both the mother and her baby, but can be effectively controlled with early detection and treatment.

## Symptoms

Since some of the symptoms initially appear to be harmless, the disease often goes undetected. With early detection being so vitally important to the control of diabetes, knowing those symptoms can literally "save your life." Those symptoms include: frequent urination, excessive thirst, extreme hunger, unusual weight loss, increased fatigue, irritability and

blurry vision. If you have one or more of these symptoms, you should contact your health care provider immediately.

## Complications

The lack of insulin or the ineffective use of insulin robs the body's cells of energy and generates excess sugar in the blood stream. The resulting complications can be severe and sometimes deadly. While they are too numerous to mention in this article, here are a few:

- Hyperglycemia, which is high blood sugar.
- Hypoglycemia, which is low blood sugar due in some cases from excess insulin medication.
- Heart disease, with two out of every three diabetes-related deaths being caused by heart attacks or strokes.
- Kidney disease.
- Eye complications, including glaucoma, cataracts, retinal disorders, possible blindness.
- Nerve damage.
- Depression.

## Pre-Diabetes

In addition to the 21 million Americans who suffer from diabetes, there are another 54 million with "pre-diabetes," which is diagnosed when the blood glucose level is not high enough to be classified as Type II diabetes. While the key to diabetes is early detection, it is especially critical for those with these elevated blood glucose levels since immediate treatment can delay and sometimes even prevent Type II diabetes.

## Risk Factors

Type II diabetes is more prevalent in people who fall into one of the following categories:

- Sixty five years of age and older.
- Suffer from obesity.
- American Indian; African American; Hispanic/Latino; Asian American; or Pacific Islander.
- Do not exercise properly.
- Have a family history of diabetes.

While it is a poor substitute for medical testing, there is a simple (but not conclusive) test that you can take to assess your risk of diabetes. It can be found at the American Diabetes Association's website at [www.diabetes.org](http://www.diabetes.org).

## Detection

Diabetes can be detected by two different tests which measure your body's level of blood glucose and your metabolism: the fasting plasma glucose test is a simple blood test that is

typically performed when your blood is drawn during a visit to your health care provider; and the oral glucose tolerance test, which is administered after you drink a beverage containing 75 grams of glucose dissolved in water.

## Treatment

While insulin is not a cure for diabetes, it is the primary treatment of this disease. But there are other steps a diabetic can take to ease and control the disease. These include healthy nutrition and proper exercise. The insulin, food intake and physical activity must be carefully balanced and the body's blood glucose must be monitored closely with a combination of self-testing and a periodic lab test. Since 65 percent of diabetics die of heart disease, weight-bearing strength training that offers the following benefits is recognized as one of the best forms of exercise for the treatment of diabetes and its resulting complications:

- Improves insulin sensitivity and glucose control.
- Improves blood cholesterol levels.
- Decreases blood pressure.
- Improves muscle and bone strength. This is important since one of the primary areas of deficiency in the delivery of glucose is to skeletal muscle cells.

## The Future

With the research that is currently being conducted by both governmental agencies and private institutions, there is reason to be hopeful. The research is paying off with more efficient ways to administer insulin, new blood glucose testing procedures, new treatment drugs, improved methods of treating some of the complications of diabetes (eyes, kidneys), and the implant of insulin-producing cells.

So what can you do help avoid and treat this difficult disease? You can eat right, get your proper exercise, be mindful of the symptoms of diabetes and listen to what your body tells you (it is an incredible creation), and have your blood checked regularly. Here's to your good health and here's to you too Jeff!

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