

# Fit Facts

FROM THE AMERICAN COUNCIL ON EXERCISE

## Exercise and Type II Diabetes

Type II diabetes is a disease that affects the body's ability to use sugars, starches, fats and proteins. Your body needs various fuels for energy and this disease disrupts normal energy metabolism both at rest and during physical exercise.

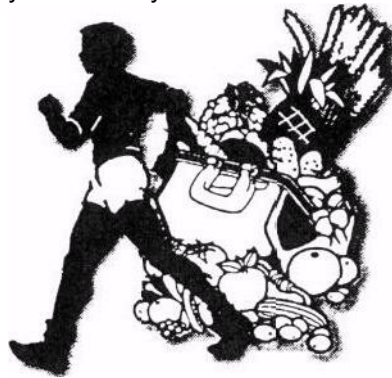
Our bodies normally change sugars and starches into a usable form called glucose. Glucose is carried by the blood to various tissues, such as skeletal muscle. In order for glucose to enter skeletal muscle, insulin (a hormone made by the pancreas) must be present. Once glucose enters the muscle cell, it can be broken down and used for energy or stored for later use.

With type II diabetes, too much insulin is produced and the body does not make effective use of it. This is known as insulin resistance and prohibits glucose from entering the muscle cells. In turn, glucose rises to abnormal levels in the blood. Thus, type II diabetics are non-insulin dependent.

Type II diabetes, unlike type I, which is genetic, is a degenerative illness that invades unhealthy bodies, usually those overweight. Because most people with type II diabetes don't begin to think about their health until the disease is diagnosed, the same techniques used for prevention — a healthy diet and regular exercise — are used to control its advance. Approximately nine out of ten cases of diabetes in the United States are type II and most commonly affect people over the age of 40.

### **GOALS OF THERAPY FOR TYPE II DIABETES**

Type II diabetics must regulate their glucose levels to help reduce the onset of complications from this disease. If unchecked for extended periods, elevated glucose levels lead to heart disease, kidney failure, blindness and nerve dysfunction. Therefore, type II diabetics must modify their nutritional habits, as well as physical activity levels.



### **HOW DOES EXERCISE HELP!**

For type II diabetics, diet and exercise can normalize glucose levels. It is important for type II diabetics to lose weight to improve glucose control and insulin effectiveness. Also, many health-related outcomes of physical activity (e.g., lowering blood pressure, favorable lipid and lipoprotein changes, body weight maintenance) are part of the exercise therapy.

### **WHAT EXERCISE IS RECOMMENDED!**

Type II diabetics should exercise a minimum of five to six times per week. Exercise should be performed at a low intensity for about 40 to 60 minutes. Walking is highly recommended for type II diabetics. Other non-weight-bearing activities should also be encouraged (e.g., water aerobics and cycling).

In addition to aerobic exercise, type II diabetics should engage in strength training and flexibility exercises as well.

### **WHAT ARE THE PRECAUTIONS?**

Type II diabetics should monitor their glucose before and after exercise to understand how they respond to certain types of activities. Also, exercising with a partner and wearing an ID bracelet that indicates one's diabetic condition are important.

Finally, type II diabetics should see their physician prior to beginning a physical activity program and should return regularly to assess the status of diabetic complications. If complications of the eye, kidney or heart are present, it is important that a physician give clear boundaries regarding the intensity of any physical activity.

For more information,  
please call the Massachusetts  
Department of Public Health  
Physical Activity Hotline:  
**1-800-952-6637**

If you are interested in information on other health and fitness topics, contact:

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