

University Health Services

We heal. We educate. We care.

DIABETES AND DIET

General Information

Diabetes mellitus is a chronic disorder characterized by high blood glucose and either insufficient or ineffective insulin. Glucose is a simple sugar derived from the carbohydrates in foods. Insulin is a hormone needed to move glucose from the blood into cells. Without insulin, glucose collects in the blood and the metabolism of energy-yielding nutrients changes. This is the reason people with diabetes are said to have "high blood sugar."

Types of Diabetes

There are different types of diabetes. In Type 1 diabetes, the less common type of diabetes, the pancreas cannot synthesize the hormone insulin. Thus, the person must obtain insulin to assist the cells in taking up the needed fuels from the blood; for this reason, Type I is sometimes called insulin-dependent diabetes mellitus (IDDM). The insulin must be injected; it cannot be taken orally.

In Type 2 diabetes, the more common type of diabetes, the pancreas does produce insulin but the cells respond less sensitively to it; that is, they become insulin resistant. This type of diabetes is also called noninsulin-dependent diabetes mellitus (NIDDM) or adult-onset diabetes because it develops most often in people over 40 years old. However, insulin therapy may be necessary for some individuals in order to prevent complications from uncontrolled blood sugar. Although the exact cause remains unknown, Type 2 diabetes is associated with obesity; about 90 percent of U.S. adults with type 2 diabetes are obese.

Diabetes mellitus ranks seventh among the leading causes of death. In addition, diabetes contributes to, a variety of other major diseases, including heart disease and stroke. In fact, people with diabetes are twice as likely to develop these cardiovascular problems as those without diabetes.

The Role of Diet in Managing Diabetes

Diet is a very vital part of the therapy for diabetes. While many diabetics must receive daily injections of insulin to make up for the insulin their bodies produce, their diet must still be carefully controlled. Dietary management is essential in order to reduce or eliminate the complications associated with the disease.

In order to maintain near normal blood glucose levels and maximize the effectiveness of insulin or oral agents, the diabetic diet is designed to deliver a consistent carbohydrate intake, spaced evenly throughout the day. Eating too much carbohydrate at one time can raise blood sugar levels too high, while eating too little carbohydrate can lead to hypoglycemia (too little glucose in the blood), especially for people taking insulin or oral drugs. The amount of carbohydrate, not its source, affects glucose levels the most.

Diabetic Diets

Several approaches can be used to plan diabetic diets. Most people with diabetes learn to count carbohydrates using the exchange system, which sorts foods into three main groups by their proportion of carbohydrate, protein and fat. These three groups- the carbohydrate group, the fat group, and the meat and meat substitutes group (protein) - organize foods into several exchange lists. The portion sizes within each exchange group have been adjusted so that a portion of any food on a given list provides roughly the same amount of carbohydrate, protein, fat and total calories. A registered dietitian can help an individual with diabetes work out a meal plan. Such diets are usually tailored to fit a person's lifestyle.

If you have further questions about diabetes, contact your doctor or check out the [American Diabetes Association](#) website.

Test Results and Advice Nurse

Please call the nurse for test results and advice: 863-4463

Appointments

Appointments can be made in person or by phone. If you are unable to keep your appointment, please call and cancel. Otherwise you will be charged for the visit.

To schedule or cancel appointments, call: 863-0774

For more information about health care issues, visit the UHS Web site at www.sa.psu.edu/uhs
This publication is available in alternative media on request.

Endocrin_DietDiab_022305

Approved by Patient Education Committee: 02/23/05

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