



Official reprint from UpToDate®
www.uptodate.com
©2013 UpToDate®

Patient information: Type 2 diabetes mellitus and diet (Beyond the Basics)

Authors

Linda M Delahanty, MS, RD
David K McCulloch, MD

Section Editor

David M Nathan, MD

Deputy Editor

Jean E Mulder, MD

TYPE 2 DIABETES OVERVIEW

Diet and physical activity are critically important in the management of the ABCs (**A**1c, **B**lood pressure and **C**holesterol) of type 2 diabetes.

To effectively manage A1C (hemoglobin A1C) and blood sugar levels, it is important to understand how to balance food intake, physical activity, and medication. Making healthy food choices every day has both immediate and long-term effects. With education, practice, and assistance from a dietitian and/or a diabetes educator, it is possible to eat well and control diabetes.

This article discusses diet in the management of type 2 diabetes. The role of diet and activity in managing blood pressure and cholesterol are reviewed separately. (See "[Patient information: High blood pressure, diet, and weight \(Beyond the Basics\)](#)" and "[Patient information: High cholesterol and lipids \(hyperlipidemia\) \(Beyond the Basics\)](#)".)

Articles that discuss other aspects of type 2 diabetes are also available. (See "[Patient information: Diabetes mellitus type 2: Overview \(Beyond the Basics\)](#)" and "[Patient information: Diabetes mellitus type 2: Insulin treatment \(Beyond the Basics\)](#)" and "[Patient information: Self-blood glucose monitoring in diabetes mellitus \(Beyond the Basics\)](#)" and "[Patient information: Hypoglycemia \(low blood sugar\) in diabetes mellitus \(Beyond the Basics\)](#)" and "[Patient information: Diabetes mellitus type 2: Alcohol, exercise, and medical care \(Beyond the Basics\)](#)" and "[Patient information: Preventing complications in diabetes mellitus \(Beyond the Basics\)](#)".)

WHY IS DIET IMPORTANT?

Many factors affect how well diabetes is controlled. Many of these factors are controlled by the person with diabetes, including how much and what is eaten, how frequently the blood sugar is monitored, physical activity levels, and accuracy and consistency of medication dosing. Even small changes can affect blood sugar control.

Eating a consistent amount of food every day and taking medications as directed can greatly improve blood sugar control and decrease the risk of diabetes-related complications, such as coronary artery disease, kidney disease, and nerve damage. In addition, these measures impact weight control. A dietitian can help to create a food plan that is tailored to a person's medical needs, lifestyle, and personal preferences.

TYPE 2 DIABETES AND MEAL TIMING

Consistently eating at the same times every day is important for some people, especially those who take long-acting insulin (eg, NPH) and oral medications that decrease blood sugar levels (sulfonylureas or meglitinides). If a meal is skipped or delayed while on these regimens, you are at risk for developing low blood glucose.

People who use intensive insulin therapy (those on multiple daily injections) and people who take other types of oral diabetes medications (eg, insulin sensitizers such as metformin) have more flexibility around meal timing. With these regimens, skipping or delaying a meal does not usually increase the risk of low blood sugar.

Foods or meals that are high in fat (eg, pizza) may be eaten occasionally, although blood sugar levels should be monitored more closely. High-fat meals are broken down more slowly than low-fat meals. When using rapid acting insulin before a meal, the blood sugar level may become low shortly after eating a high fat meal and then rise hours later.

Weight loss — Many people with type 2 diabetes are overweight. Losing even a small amount of weight (5 to 10 percent of total body weight) can help the body to produce and use insulin more efficiently. In fact, eating fewer calories can reduce blood sugar levels even before the first pound is lost.

There are several strategies that can aid in weight loss, including eating fewer calories, exercise, weight loss medications, and weight loss surgery. These treatments are discussed in detail in separately. (See ["Patient information: Weight loss treatments \(Beyond the Basics\)"](#).)

Recommended calorie intake — The number of calories needed to maintain weight depends upon your age, sex, height, weight, and activity level. In general:

- Men, active women - 15 cal/lb
- Most women, sedentary men, and adults over 55 years - 13 cal/lb
- Sedentary women, obese adults - 10 cal/lb
- Pregnant, lactating women - 15 to 17 cal/lb

To lose 1 to 2 pounds per week (a safe rate of weight loss), subtract 500 to 1000 calories from the total number of calories needed to maintain weight.

As an example, an overweight man who weighs 250 lbs would need to eat 2500 calories per day to maintain his weight. To lose 1 to 2 pounds per week, he should eat 1500 to 2000 calories per day. As weight is lost, the recommended calorie intake should be recalculated.

TYPE 2 DIABETES, DIET, AND WEIGHT

Your weight is a direct reflection of how much you eat and how active you are. Eating a consistent number of calories every day can help to control blood glucose levels and maintain body weight. In people who are overweight or obese, losing weight by eating fewer calories or increasing activity levels can improve blood sugar control, and lower blood pressure and cholesterol levels.

Avoiding weight gain — Weight gain is a potential side effect of intensive insulin therapy in type 2 diabetes. Weight gain is also a side effect of some oral medications used for people with type 2 diabetes. To avoid weight gain, the following tips are recommended.

