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## Diabetes and Nutrition

### What is diabetes?

Diabetes is a disease that occurs when a person's body doesn't make enough of the hormone insulin or can't use insulin properly. There are 2 types of diabetes. Type 1 diabetes occurs when your body's pancreas doesn't produce any insulin. Type 2 diabetes occurs when the pancreas either doesn't produce enough insulin or your body's cells ignore the insulin. Between 90% and 95% of people who are diagnosed with diabetes have type 2 diabetes.

When you digest food, your body changes most of the food you eat into glucose (a form of sugar). Insulin allows this glucose to enter all the cells of your body and be used as energy. When you have diabetes, your body doesn't make enough insulin or can't use it properly, so the glucose builds up in your blood instead of moving into the cells. Too much glucose in the blood can lead to serious health problems.

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### Why does it matter what I eat?

What you eat is closely connected to the amount of sugar in your blood. The right food choices will help you control your blood sugar level.

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### Do I have to follow a special diet?

There isn't one specific "diabetes diet." Your doctor will probably suggest that you work with a registered dietitian to design a meal plan. A meal plan is a guide that tells you what kinds of food to eat at meals and for snacks. The plan also tells you how much food to have. For most people who have diabetes (and those without, too), a healthy diet consists of 40% to 60% of calories from carbohydrates, 20% from protein and 30% or less from fat. It should be low in cholesterol, low in salt and low in added sugar.

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### Can I eat any sugar?

Yes. In recent years, doctors have learned that eating some sugar doesn't usually cause problems for most people who have diabetes--as long as it is part of a balanced diet. Just be careful about how much sugar you eat and try not to add sugar to foods.

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## What kinds of foods can I eat?

In general, at each meal you may have 2 to 5 choices (or up to 60 grams) of carbohydrates, 1 choice of protein and a certain amount of fat. Talk to your doctor or dietitian for specific advice.

**Carbohydrates.** Carbohydrates are found in fruits, vegetables, beans, dairy foods and starchy foods such as breads. Try to have fresh fruits rather than canned fruits, fruit juices or dried fruit. You may eat fresh vegetables and frozen or canned vegetables. Condiments such as nonfat mayonnaise, ketchup and mustard are also carbohydrates.

**Protein.** Protein is found in meat, poultry, fish, dairy products, beans and some vegetables. Try to eat poultry and fish more often than red meat. Don't eat poultry skin, and trim extra fat from all meat. Choose nonfat or reduced-fat options when you eat dairy, such as cheeses and yogurts.

**Fat.** Butter, margarine, lard and oils add fat to food. Fat is also in many dairy and meat products. Try to avoid fried foods, mayonnaise-based dishes (unless they are made with fat-free mayo), egg yolks, bacon and high-fat dairy products. Your doctor or dietitian will tell you how many grams of fat you may eat each day. When eating fat-free versions of foods (such as mayonnaise and butter), check the label to see how many grams of carbohydrates they contain. Keep in mind that these products often have added sugar.

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## What is the exchange list?

The exchange list (see the sample below) is a tool to help you plan healthy meals and snacks. To add variety to your diet, you can substitute certain foods for other foods in the same group. Some examples are listed at the right.

### Sample Exchange List

Food group	You can have.....	Or exchange it for...
Fruit (each serving contains about 15 grams carbohydrates)	1 small or medium piece of fresh fruit	1/2 cup fruit juice, or canned or chopped fruit
Vegetable (each serving contains about 5 grams carbohydrates)	1 cup raw vegetables	1/2 cup cooked vegetables or vegetable juice
Starch (each serving contains about 15 grams carbohydrates)	1 slice or ounce bread	1/2 cup pasta, cereal, starchy vegetable
Sugar, honey, molasses	1 teaspoon	4 grams carbohydrates
Milk (does not include cream, yogurt or cheese)	1 cup milk	12 grams carbohydrates and 8 grams protein
Meat	1 ounce meat, fish, poultry, cheese or yogurt	1/2 cup dried beans
Fat (includes nuts, seeds and small amounts of bacon and peanut butter)	1 teaspoon oil, butter or margarine	5 grams fat

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## What if my blood sugar is too low?

People who have diabetes may have times when their blood sugar level is too low. Low blood sugar is called hypoglycemia. Signs of hypoglycemia include the following:

- Feeling very tired
- Frequent yawning
- Being unable to speak or think clearly
- Loss of muscle coordination
- Sweating
- Twitching
- Seizures
- Suddenly feeling like you're going to pass out
- Becoming very pale
- Loss of consciousness

People who have diabetes should carry at least 15 grams of a fast-acting carbohydrate with them at all times in case of hypoglycemia. The following are examples of quick sources of energy that can relieve the symptoms:

- Nondiet soda-  $\frac{1}{2}$  to  $\frac{3}{4}$  cup
- Fruit juice-  $\frac{1}{2}$  cup
- Fruit- 2 tablespoons of raisins
- Milk- 1 cup
- Candy- 5 Lifesavers
- Glucose tablets- 3 tablets (5 grams each)

If you don't feel better 15 minutes after having a fast-acting carbohydrate, or if monitoring shows that your blood sugar level is still too low, have another 15 grams of a fast-acting carbohydrate.

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## How will I know if my blood sugar is too high?

High blood sugar (also called hyperglycemia) can occur even if you are eating properly and taking your insulin correctly. Eating too much food at a meal, illness, hormonal changes and stress can affect your blood sugar.

Symptoms of hyperglycemia include:

- Frequent urination
- Extreme thirst
- Blurry vision
- Feeling very tired

If your blood sugar level goes higher than it should, you may need to take an extra dose of rapid-acting insulin to return your blood sugar to the normal range. Your doctor can tell you how much insulin you need to take to lower your blood sugar level.

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## Other Organizations

- [American Dietetic Association](http://www.eatright.org)  
http://www.eatright.org
- [American Diabetes Association](http://www.diabetes.org)  
http://www.diabetes.org

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## Source

[Written by familydoctor.org editorial staff.](#)

*This handout was developed by the American Academy of Family Physicians in cooperation with the American Diabetes Association.*

Reviewed/Updated: 10/10  
Created: 03/99

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