

Diabetes

WHAT IS DIABETES?

Diabetes is a disease in which the body is unable to properly use glucose (blood sugar). Glucose is the principal source of energy for the body. Insulin (a hormone produced by the pancreas) normally facilitates the conversion of glucose into energy for use by the body. When either no insulin or an insufficient amount is produced, there is an excess build-up of glucose in the bloodstream, thus “high blood sugar.”

WHO IS AT RISK FOR DIABETES?

- Individuals who have family members with diabetes
- Individuals who are overweight
- Individuals who do not exercise much
- Individuals who have high blood pressure and low good cholesterol/ high triglycerides
- Women who have had babies weighing more than 9 pounds or had gestational diabetes
- Individuals who have any of the above risk factors and are 45 years old or older

CAN I PREVENT TYPE 2 DIABETES?

You can lower your chances of getting diabetes by eating right and staying active. In a study of over 3,000 people at risk of getting diabetes, researchers found that a healthy diet and physical activity can keep you free of diabetes longer. Change the risk factors that you can so you can lower your chances of getting diabetes!

SYMPTOMS OF DIABETES

Often diabetes goes undiagnosed because many of its symptoms seem so harmless. Recent studies indicate that the early detection of diabetes symptoms and treatment can decrease the chance of developing complications of diabetes.

Some diabetes symptoms include:

- Frequent urination
- Excessive thirst
- Extreme hunger
- Unusual weight loss
- Increased fatigue
- Irritability
- Blurry vision
- Tingling or numbness in legs, feet or fingers

- Frequent skin infections or itchy skin
- Slow healing of cuts and bruises
- Impotence in men
- Vaginal yeast infections in women
- Breath that smells fruity or like nail polish remover
- Weakness

TYPES OF DIABETES

- **Type 1** diabetes was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes. Type 1 diabetes develops when the body's immune system destroys pancreatic beta cells, the only cells in the body that make the hormone insulin that regulates blood glucose. Type 1 diabetes is less common than type 2—about 5–10 percent of people with diabetes have Type 1.
- **Type 2** diabetes was previously called non-insulin-dependent diabetes mellitus or adult-onset diabetes. Type 2 diabetes may account for about 90–95 percent of all diagnosed cases of diabetes. It usually begins as insulin resistance, a disorder in which the cells do not use insulin properly. As the need for insulin rises, the pancreas gradually loses its ability to produce insulin. Type 2 diabetes is increasingly being diagnosed in children and adolescents.

TREATING DIABETES

To survive, people with Type 1 diabetes must have insulin delivered by injections or a pump. Many people with Type 2 diabetes can control their blood glucose by following a careful diet and exercise program, losing weight, and taking oral medications. Many people need to take medication to control their cholesterol and blood pressure. Among the people diagnosed with diabetes, 12 percent take both insulin and oral medications, 19 percent take insulin only, 53 percent take oral medications only, and 15 percent do not take either insulin or oral medications. (Statistics are constantly changing.)



TESTING BLOOD GLUCOSE

Testing blood glucose levels pre- and post-meal can help the person with diabetes make better food choices, based on how their bodies are responding to specific foods. The blood glucose values should be recorded with date and time and any associated signs and symptoms that were experienced at the time the specimen was obtained.



Daily periodic testing



Continual testing

A glycosylated hemoglobin (HbA1c) test, that shows the amount of sugar that attaches to the protein in the red blood cell should be drawn on a regular basis (usually twice a year). The test shows the average blood sugar during the last three months. The high blood sugar over a long period of time causes damage to the large and small blood vessels, therefore increasing the risk of complications from diabetes.

COMPLICATIONS OF DIABETES

Diabetes can affect many parts of the body and can lead to serious complications such as:

- Cerebrovascular incident/stroke
- Coronary heart disease
- Peripheral vascular disease/lower limb amputations
- Kidney disease/renal failure
- Diabetic retinopathy/blindness
- Oral lesions/gum disease

ADDITIONAL HEALTH EDUCATION NEEDS

- Weight control
- Importance of smoking cessation
- Cholesterol and lipid management
- Blood pressure monitoring and control
- Dealing with depression and stress

- Skin and foot care
- Dental care

Diet and Diabetes

HOW FOOD AFFECTS YOUR BLOOD SUGAR?

Whether you have Type 1 or Type 2 diabetes, what you eat affects your glucose level. Blood glucose is the main sugar found in the blood and the body's main source of energy. Keeping the blood glucose at a healthy level will prevent or slow down diabetes problems. Each person needs to find out the healthy blood glucose level for him/her.

WHAT SHOULD GLUCOSE LEVELS BE?

For most people, the target blood glucose levels are:

- Before meals: 90–130
- 1–2 hours after start of a meal: Less than 180

HOW CAN A PERSON KEEP HIS/HER BLOOD GLUCOSE AT A HEALTHY LEVEL?

- Eat the same amount of food each day.
- Eat meals and snacks at about the same time each day.
- Do not skip meals or snacks.
- Take medications at the same times each day.
- Exercise at about the same time each day.

WHAT ARE THE SIGNS OF LOW BLOOD SUGAR (HYPOGLYCEMIA)?

- Feeling weak
- Dizziness
- Sudden change in heartbeat
- Feeling hungry

WHAT TO DO IF HYPOGLYCEMIA OCCURS?

If blood sugar is 70 or less, eat one of the following immediately:

- 2–3 glucose tablets
- ½ cup (4 ounces) of any fruit juice
- ½ cup (4 ounces) of a regular soft drink (not diet)
- 1 cup (8 ounces) of milk

- 5–6 pieces of hard candy
- 1–2 teaspoons of sugar or honey

WHAT TYPES AND AMOUNTS OF FOOD SHOULD BE EATEN DAILY?

People with diabetes need to maintain a healthy diet consisting of multiple servings of fruit, vegetables, whole grains, low fat dairy products, fish, lean meats, and poultry. The physician or diabetes teacher will develop the correct meal plan. This plan is based on the individual’s appetite, preferred foods, usual schedule of food intake, activities, and cultural preferences. Determination of caloric needs varies considerably among individuals and is based on present weight and current level of energy. Emphasis should be placed on maintaining a consistent day-to-day carbohydrate intake at meals and snacks. It is the carbohydrates (found in starches and grains) that have the greatest impact on glycemia.

THE FOOD PYRAMID



HOW MUCH SHOULD BE EATEN EACH DAY?

Eat a variety of food to get the vitamins and minerals needed.

Have about **1,200–1,600 calories a day** if you are:

- A small woman who exercises
- A small or medium woman who wants to lose weight
- A medium woman who does not exercise much

Choose these many servings from these food groups to have 1,200–1,600 calories per day:

- 6 starches/grains
- 3 vegetables
- 2 fruits
- 2 milk or yogurt
- 2 meat or meat substitutes
- Up to 3 fats

Have about **1,600–2,000 calories a day** if you are:

- A large woman who wants to lose weight
- A small man at a healthy weight
- A medium man who does not exercise much
- A medium to large man who wants to lose weight

Choose these many servings from these food groups to have 1,600–2,000 calories per day:

- 8 starches/grains
- 4 vegetables
- 3 fruits
- 2 milk or yogurt
- 2 meat or meat substitutes
- Up to 4 fats

Have about **2,000–2,400 calories a day** if you are:

- A medium to large man who does a lot of exercise or has a physically active job
- A large man at a healthy weight
- A large woman who exercises a lot or has a physically active job

Choose these many servings from these food groups to have 2,000–2,400 calories per day:

- 11 starches/grains
- 4 vegetables
- 3 fruits
- 2 milk or yogurt
- 2 meat or meat substitutes
- Up to 5 fats

MEASURING FOOD

To measure food servings, make sure to have measuring cups, measuring spoons, and a food scale available. Also, the Nutrition Facts label on food packages tells how much of that food is in one serving. Portion size is critical to maintaining the proper menu plan.

These tips will help you choose the right serving sizes:

- Measure a serving size of dry or hot cereal, pasta, or rice and pour it into a bowl or plate. The next time you eat that food, use the same bowl or plate and fill it to the same level.
- For one serving of milk, measure one cup and pour it into a glass. Observe how high it fills the glass. Always drink milk out of that size glass.
- Meat weighs more before it is cooked. For example, four ounces of raw meat will weigh about three ounces after cooking. For meat with a bone, like a pork chop or chicken leg, cook five ounces raw to get three ounces cooked.
- One serving of meat or meat substitute is about the size and thickness of the palm of your hand or a deck of cards.
- A small fist is equal to about ½ cup of fruit, vegetables, or starch like rice.
- A small fist is equal to a small piece of fresh fruit.
- A thumb is equal to about one ounce of meat or cheese.
- The tip of a thumb is equal to about one teaspoon.

STARCHES/GRAINS

Examples of Starches/Grains and Serving Size:

- Bread – 1 slice
- Potatoes – 1 small
- Tortillas – 1 small
- Pasta – ½ cup
- Rice – 1/3 cup
- Beans – ½ cup
- Corn – 1 small ear
- Yams – ½ cup
- Crackers – varies with type

What Are Healthy Ways to Eat Starches/Grains?

Remember it is the carbohydrates that have the biggest impact on glycemia (blood sugar).

- Buy whole grain bread and cereals.
- Eat fewer fried and high-fat starches such as regular tortilla chips and potato chips, French fries, pastries, or biscuits. Try pretzels, fat-free popcorn, baked tortilla or potato chips, baked potatoes, or low-fat muffins.
- Use low-fat or fat-free yogurt or fat-free sour cream instead of regular sour cream on a baked potato.
- Use mustard instead of mayonnaise on a sandwich.
- Eat cereal with fat-free or low-fat one percent milk.

MEATS AND MEAT SUBSTITUTES

Examples of Meats and Meat Substitutes and Serving Size:

- Lean meat – 2–3 ounces
- Egg – 1
- Chicken (skinless) – 2–3 ounces
- Tofu 4 ounces – (½ cup)
- Fish – 2–3 ounces
- Peanut Butter – 2 tablespoons
- Cheese – varies with type

What Are Healthy Ways to Eat Meat or Meat Substitutes?

- Buy cuts of beef, pork, ham, and lamb that have only a little fat on them. Trim off extra fat.
- Eat chicken or turkey without the skin.
- Cook meat or meat substitutes in low-fat ways: Broil, Roast, Steam, Grill, Stir-fry, or Stew.
- To add flavor, use vinegars, lemon juice, soy or teriyaki sauce, salsa, ketchup, barbecue sauce, herbs, and spices.
- Cook eggs with cooking spray.
- Limit the amounts of nuts, peanut butter, and fried chicken that you eat. They are high in fat.
- Choose low-fat or fat-free cheese.

VEGETABLES

Vegetables give you vitamins, minerals and fiber, with very few calories.

Examples of Vegetables and Serving Size:

- Lettuce – 1 cup
- Green beans – ½ cup
- Broccoli – ½ cup
- Peppers – ½ cup
- Vegetable juice – ½ cup
- Tomato sauce – ½ cup
- Carrots – ½ cup
- Greens – ½ cup

What Are Healthy Ways to Eat Vegetables?

- Eat and cooked vegetables with little or no fat, sauces or dressing.
- Try low-fat or fat-free salad dressing on raw vegetables or salads.

- Steam vegetables using a small amount of water or low-fat broth.
- Mix in some chopped onion or garlic.
- Use a little vinegar or some lemon or lime juice.
- Add a small piece of lean ham or smoked turkey instead of fat to vegetables when cooking.
- Sprinkle with herbs and spices. These flavorings add almost no fat or calories.
- If you do use a small amount of fat, use canola oil, olive oil, or soft margarines (liquid or tub types) instead of fat from meat, butter or shortening.

FRUITS

Examples of Fruit and Serving Size:

- Apple – 1 small
- Banana – 1
- Fruit juice – ½ cup
- Strawberries – 1¼ cups whole berries
- Grapefruit – ½
- Orange – 1 small

What Are Healthy Ways to Eat Fruit?

- Eat fruits raw or cooked, as juice with no sugar added, canned in their own juice, or dried.
- Buy smaller pieces of fruit.
- Eat pieces of fruit rather than drinking fruit juice. Pieces of fruit are more filling.
- Drink fruit juice in small amounts.
- Save high-sugar and high-fat fruit desserts such as peach cobbler or cherry pie for a special occasion.

MILK AND YOGURT

Examples and Serving Size:

- Fat-free or low-fat yogurt – 1 small container
- Skim or 1 percent milk – 1 cup

What are Healthy Ways to Have Milk and Yogurt?

- Drink fat-free or low-fat one percent milk
- Eat low-fat or fat-free fruit yogurt sweetened with a low-calorie sweetener.
- Use low-fat plain yogurt as a substitute for sour cream.

FATS

Limit the amount of fats you eat. They have calories, but not much nutrition. Some contain saturated fats and cholesterol that increase your risk of heart disease. Limiting these foods will help you lose weight and keep your blood glucose and fats under control.

Examples of Fats and Serving Size:

- Bacon – 1 strip
- Light mayonnaise – 1 tablespoon
- Oil – 1 teaspoon
- Soft margarine – 1 teaspoon
- Avocado – ¼
- Regular salad dressing – 1 tablespoon
- Olives – varies with type
- Light salad dressing – 2 tablespoons

What Are Healthy Ways to Have Fats?

- Use canola oil, olive oil instead of oils from meat, butter or shortening.
- Select light or fat-free salad dressings.
- Try turkey bacon.
- Use cooking spray when possible.

SWEETS

Remember, fat-free and low sugar foods still have calories!

Examples of Sweets and Serving Sizes:

- Cookies – 1 3-inch cookie
- Maple syrup – 1 tablespoon
- Doughnut – 1 plain cake
- Ice Cream – ½ cup
- Candy – 4 chocolate kisses

How Can You Satisfy a Sweet Tooth?

- It's okay to have sweets occasionally but not daily.
- Try having sugar-free Popsicles, diet soda, fat-free ice cream, or frozen yogurt.
- Reward yourself with a cup of sugar-free hot cocoa.
- Share desserts in a restaurant.
- Order small or child-size servings of ice cream or frozen yogurt.

- Divide homemade desserts into small servings and wrap each individually. Freeze the extras.
- Don't keep candy dishes in the house or at work.

HOW TO FIND HELP

Diabetes Teachers (nurses, dietitians, pharmacists, and other health professionals)

- To find a diabetes teacher near you, call the American Association of Diabetes Educators toll-free at 1-800-TEAMUP4 (1-800-832-6874) or see www.diabeteseducator.org and click on "Find a Diabetes Educator."

Recognized Diabetes Education Programs (teaching programs approved by the American Diabetes Association)

- To find a program near you, call toll-free 1-800-DIABETES (1-800-342-2383) or see www.diabetes.org/education/edustate2.asp?loc=x.

National Diabetes Information Clearinghouse

- Address: 1 Information Way, Bethesda, MD 20892-3560
- E-mail: ndic@info.niddk.nih.gov

If you have any questions about this topic, please reach out to CompassionLink at info@compassionlink.org. We will be happy to answer your questions.
