

## Caring for the Person with Diabetes

(2 credits)

After completing this section you should be able to:

1. Describe diabetes and identify its signs and complications
  2. Describe insulin shock and diabetic coma, and list signs and symptoms of each
  3. Describe dietary requirements for people with diabetes
  4. List care guidelines for the person with diabetes
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1. Describe diabetes and identify its signs and complications

Diabetes mellitus, commonly called **diabetes**, is a condition in which the pancreas does not produce enough insulin. Insulin is needed to convert **glucose**, or natural sugar, into energy for the body. Without insulin to process glucose, these sugars collect in the blood. This causes problems with circulation and can damage vital organs. Diabetes commonly occurs in people with a family history of the illness, in the elderly, and among people who are obese.

Currently there are approximately 18.2 million people in the United States who have diabetes. While millions have been diagnosed, there are many people who are unaware that they have the disease.

Two major types of diabetes have been identified:

1. Type 1 diabetes is usually diagnosed in children and young adults. It was previously known as juvenile diabetes because it most often appears before age twenty. In type 1 diabetes, the body does not produce insulin. The condition will continue

throughout a person's life. However, a person can develop type 1 diabetes up to age 40. Type 1 diabetes is treated with insulin and a special diet.

2. Type 2 diabetes is the most common form of diabetes. In type 2 diabetes, either the body does not produce enough insulin or the body fails to properly use insulin, known as "insulin resistance." It can usually be controlled with diet and/or oral medications. This type is also called adult-onset diabetes. Type 2 diabetes usually develops slowly. It is the milder form of diabetes mellitus. It typically develops after age 35, and the risk of getting it increases with age. However, the number of children with type 2 diabetes is increasing rapidly. Type 2 diabetes often occurs in obese individuals or those with a family history of type 2.

**Pre-diabetes** is a condition that occurs when a person's blood glucose levels are higher than normal but not high enough for a diagnosis of type 2 diabetes. It is estimated that at least 20.1 million Americans have pre-diabetes in addition to the 18.2 million with diabetes.

People with diabetes mellitus may have the following signs and symptoms (Fig. 3-1):

- excessive thirst
- extreme hunger
- weight loss
- elevated levels of blood sugar
- presence of sugar in the urine
- frequent urination
- sudden vision changes
- tingling or numbness in hands or feet
- feeling very tired much of the time
- very dry skin
- sores that are slow to heal
- more infections than usual

Diabetes can lead to the following problems:

- Changes in the circulatory system can cause heart attack and stroke, reduced circulation to the arms and legs, poor wound healing, and kidney and nerve damage.
- Damage to the eyes can cause impaired vision and blindness.
- Poor circulation and impaired wound healing may result in leg and foot ulcers, infected wounds, and gangrene. Gangrene can lead to amputation.
- Insulin shock and diabetic coma can be life-threatening. See the next learning objective for more information on insulin shock and diabetic coma.

If you observe any of the following signs and symptoms, report them to your supervisor:

- skin breakdown
- change in appetite (person overeating or not eating enough)
- weight changes
- changes in mental status
- increase or decrease in urine output
- visual changes

- change in mobility
- change in sensation

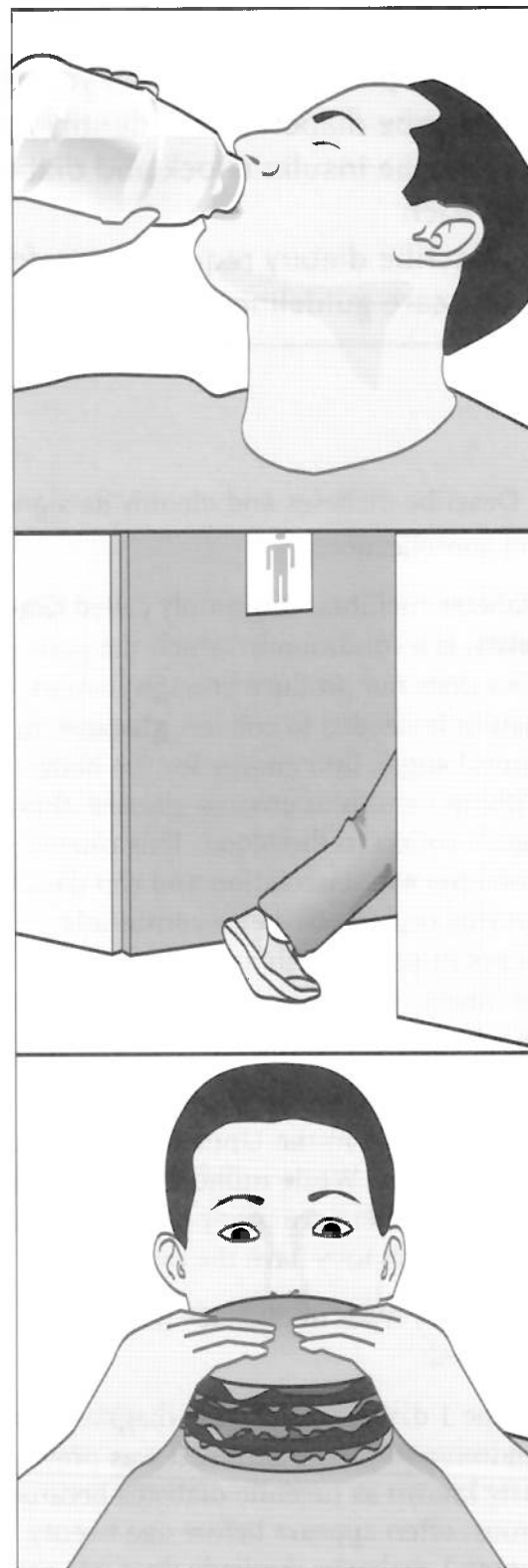


Fig. 3-1. Some common signs of diabetes.

2. Describe insulin shock and diabetic coma, and list signs and symptoms of each

**Insulin shock**, or **hypoglycemia**, can result from either too much insulin or too little food. It occurs when a dose of insulin is administered and the person skips a meal or does not eat all the food required. Even when a regular amount of food is eaten, physical activity may rapidly metabolize the food so that too much insulin is in the body. Vomiting and diarrhea may also lead to insulin shock in people with diabetes.

The first signs of insulin shock include feeling weak or different, nervousness, dizziness, and perspiration (Fig. 3-2). These signal that the person needs food in a form that can be rapidly absorbed. A lump of sugar, a hard candy, or a glass of orange juice should be consumed right away. A diabetic should always have a quick source of sugar handy.

The following are signs and symptoms of insulin shock:

- hunger
- weakness, fatigue
- rapid pulse
- headache
- low blood pressure
- perspiration
- cold, clammy skin
- confusion
- trembling
- nervousness
- dizziness
- irritability
- blurred vision
- numbness of the lips and tongue
- unconsciousness



Fig. 3-2. Perspiration and dizziness are two signs of insulin shock.

**Diabetic coma** is also known as **acidosis** or **hyperglycemia**. It is caused by having too little insulin. It can result from undiagnosed diabetes, going without insulin or not taking enough, eating too much food, not getting enough exercise, or physical or emotional stress.

The signs of diabetic coma include increased thirst or urination, abdominal pain, deep or labored breathing, and breath that smells sweet or fruity. Report to your supervisor immediately if you suspect a person in your care is experiencing diabetic coma or insulin shock.

Other signs and symptoms of diabetic coma include the following:

- hunger
- extreme thirst
- weakness

- rapid, weak pulse
- headache
- low blood pressure
- dry skin
- flushed cheeks
- drowsiness
- blurred vision
- slow, deep, and labored breathing
- nausea and vomiting
- abdominal pain
- sweet, fruity breath odor
- air hunger, or client gasping for air and being unable to catch his breath
- unconsciousness



Fig. 3-3. Drowsiness is a common sign of diabetic coma.

### 3. Describe dietary requirements for people with diabetes

People with diabetes must be very careful about what they eat. To keep their blood glucose levels near normal, they must eat the right amount of the right type of food at the right time. To make it easier to track what they should eat, diabetics often follow meal plans and use exchange lists.

A dietitian and the client will make up a meal plan that includes all the right types and amounts of food for each day. The person uses **exchange lists**, or lists of similar foods that can substitute for one another, to make up a menu. For example, the meal plan might call for one starch and one fruit to be eaten as a snack. Looking at the exchange list, the person may choose which starch and fruit he wants to eat. The equivalent serving size for each food is also given, so the person will get the right amount of carbohydrates, protein, and fat to meet the requirements.

Using meal plans and exchange lists, a person with diabetes can control his diet while still making his own food choices.

**The diet must be followed exactly.** The person must eat everything that is served. If a diabetic refuses to eat what is served, or if you suspect that he or she is not following the diet, report this immediately to your supervisor.

The following are a sample meal plan and a partial exchange list a person with diabetes might use. Keep in mind that this is only an example. A person's diet may also be under other restrictions. The diet will vary according to the person's daily caloric needs. Actual exchange lists contain many more choices than the sample below.

#### **Sample Meal Plan**

- Breakfast (to be eaten between 7:30 and 8:30 a.m.): two starches, one milk, one fruit, one fat
- Snack (to be eaten between 10 and 11 a.m.): one milk
- Lunch (12:30 to 1:30 p.m.): one meat, one milk, two starches, one vegetable, one fruit

- Snack (3:00 to 4:00 p.m.): one vegetable, one milk
- Dinner (5:30 to 6:30 p.m.): three meats, one starch, two vegetables, one milk, two fats
- Snack (7:30 to 8:30 p.m.): one milk, one starch

Following the meal plan for what types of food and how many servings to eat, the person chooses specific foods and determines serving sizes using the exchange lists.

#### **Exchange List Sample Items**

- **Starch list:** 1 slice of bread, 1/2 bagel, 1/2 cup cereal, 1/2 cup pasta, 1/2 cup rice, 1 baked potato, 3 cups popcorn, 15-20 fat-free potato chips
- **Milk list:** 1 cup milk (skim, 1%, 2%, or whole, depending on other dietary guidelines), 3/4 cup yogurt
- **Fruit list:** 1/2 cup unsweetened applesauce, 1 small banana, 1/2 cup orange juice, 2 tablespoons raisins, 1 small orange, 1/2 cup canned pears
- **Vegetable list:** 1/2 cup cooked vegetables or vegetable juice, 1 cup raw vegetables (not included are corn, potatoes, and peas, which are on the starch exchange list instead)
- **Meat list:** 1 oz. meat, fish, poultry, or cheese, 1 egg, or 1/2 cup dried beans
- **Fat list:** 1 tsp margarine or butter, 2 tps peanut butter, 2 tbsps sour cream, 1 tsp mayonnaise, 10 peanuts

#### 4. List care guidelines for the person with diabetes

Diabetes must be carefully controlled to prevent complications and severe illness. When working with people with diabetes, follow care plan instructions carefully. In particular, remember the following:

- As discussed in learning objective 3, a person with diabetes must follow diet instructions exactly. The intake of carbohydrates, including breads, potatoes, grains, pasta, and sugars, must be regulated.
- Encourage the right portions of healthy foods. This includes eating foods that have less salt and fat.
- Encourage the person to follow his or her exercise program (Fig. 3-4). A regular exercise program is important. This may include 30 to 60 minutes of activity on most days of the week.

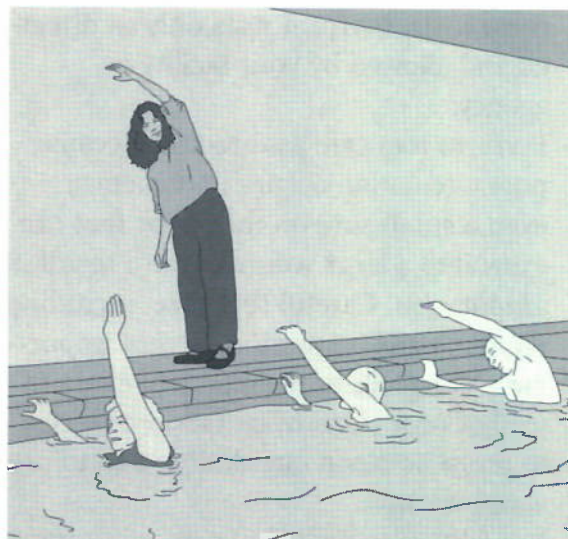


Fig. 3-4. Maintaining a regular exercise routine is important for people with diabetes.

Exercise affects how quickly bodies use the food that is eaten. Exercise also helps improve circulation. Exercise may include walking or other activities. It may also include active range of motion exercises. Assist with exercises as necessary. Try to make it fun. A walk can be a chore or it can be the highlight of the day.

- Observe the person's management of insulin doses. Doses are calculated exactly. They should be administered at the same time each day. Unless you've



had additional special training, you will not be permitted to inject insulin.

However, you may be asked to bring the insulin and supplies to the person, to check the expiration date, to store the insulin (usually in the refrigerator), and/or to keep a record of where on the body the insulin was injected.

- Perform urine and blood tests only as directed (Fig. 3-5). Sometimes the care plan will specify a daily blood or urine test to determine sugar or insulin levels. Not all states allow you to do this. Know your state's rules. Your facility or agency will train you if you need to perform these tests. Perform tests only as directed and allowed by your facility or agency.
- Perform foot care as directed. Because poor circulation occurs in diabetics, even a small sore on the leg or foot can grow into a large wound. It can result in amputation. Careful foot care, including regular, daily inspection, is very important. The goals of diabetic foot care are to check for signs of irritation or sores, to promote blood circulation, and to prevent infection.
- In addition to daily foot care, encourage diabetics to wear comfortable, well-fitting leather shoes that do not hurt their feet. Leather shoes breathe and help to prevent build-up of moisture. To avoid cuts or injuries to the feet, diabetics should never go barefoot. White cotton socks are best because they absorb sweat. You should never trim or clip any person's toenails, but especially not a diabetic's toenails. Only a nurse or doctor should trim a diabetic client's toenails.



Fig. 3-5. Some states allow aides to perform blood tests as directed.