

LEARNING ABOUT DIABETES

DISEASE MANAGEMENT BROCHURE Vol. 6, No. 2, 2008

ACCESS NURSING SERVICES



What is Diabetes ?

Diabetes is a disorder of metabolism—the way our bodies use digested food for growth and energy. Most of the food we eat is broken down into glucose, the form of sugar in the blood. Glucose is the main source of fuel for the body.

After digestion, glucose passes into the bloodstream, where it is used by cells for growth and energy. For glucose to get into cells, insulin must be present. Insulin is a hormone produced by the pancreas, a large gland behind the stomach.

When we eat, the pancreas automatically produces the right amount of insulin to move glucose from blood into our cells. In people with diabetes, however, the pancreas either produces little or no insulin, or



the cells do not respond appropriately to the insulin that is produced. Glucose builds up in the blood, overflows into the urine, and passes out of the body in the urine. Thus, the body loses its main source of fuel even though the blood contains large amounts of glucose.

What are the Types of Diabetes?

Type 1 Diabetes

Type 1 diabetes is an autoimmune disease. An autoimmune disease results when the body's system for fighting infection (the immune system) turns against a part of the body.

In diabetes, the immune system attacks and destroys the insulin-producing beta cells in the pancreas. The pancreas then produces little or no insulin. A person who has type 1 diabetes must take insulin daily to live. It develops most often in children and young adults.

Type 2 Diabetes

When type 2 diabetes is diagnosed, the pancreas is usually producing enough insulin, but for unknown reasons the body cannot use the insulin effectively. After several years, insulin production decreases.

This form of diabetes is most often associated with older age, obesity, family history of diabetes, previous history of gestational diabetes, physical inactivity, and certain ethnicities.

Gestational Diabetes

Some women develop gestational diabetes late in pregnancy. Although this form of diabetes usually disappears after the birth of the baby, women who have had gestational diabetes have a 20 to 50 percent chance of developing type 2 diabetes within 5 to 10 years.

Symptoms

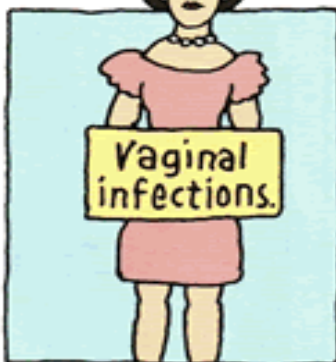
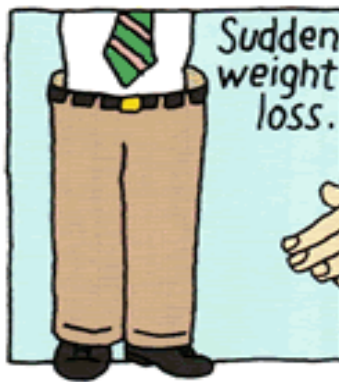
Increased urination, thirst, hunger, recurring vaginal or urinary tract infections, and weakness.

**The most common form of diabetes is type 2 diabetes.
About 90 to 95 percent of people with diabetes have type 2.**





Know the Symptoms of Diabetes



How is Diabetes Diagnosed?

The diagnosis of diabetes can be made based on any of the following test results, confirmed by re-testing on a different day:

- Fasting blood glucose test: A blood glucose level of 126 milligrams per deciliter (mg/dL) or more after an 8-hour fast.
- Oral glucose tolerance test (OGTT): A blood glucose level of 200 mg/dL or more 2 hours after drinking a beverage containing 75 grams of glucose dissolved in water.
- A random (taken at any time of day) blood glucose level of 200 mg/dL or more, along with the presence of diabetes symptoms.



Hyperglycemia (High Blood Sugar) in Diabetes

Early and prolonged signs of hyperglycemia in diabetes include:

- Increased thirst
- Headaches
- Difficulty concentrating
- Blurred vision
- Frequent urination
- Fatigue (weak, tired feeling)
- Weight loss
- Blood glucose more than 180 mg/dL
- Vaginal and skin infections
- Slow-healing cuts and sores
- Decreased vision
- Painful cold or insensitive feet, loss of hair on the lower extremities, and/or erectile dysfunction
- Chronic constipation or diarrhea

How is hyperglycemia treated?

Drink more water. Water helps remove the excess sugar from urine and

helps you avoid dehydration.

Exercise more. Exercise will help to lower your blood sugar.

Change your eating habits. You may need to meet with a dietitian to change the amount and types of foods you are eating.

Hypoglycemia (Low Blood Sugar) in Diabetes

The signs of hypoglycemia in diabetes include:

- Nervousness
- Sweating
- Intense hunger
- Trembling
- Weakness
- palpitation
- Trouble speaking

How is hypoglycemia treated?

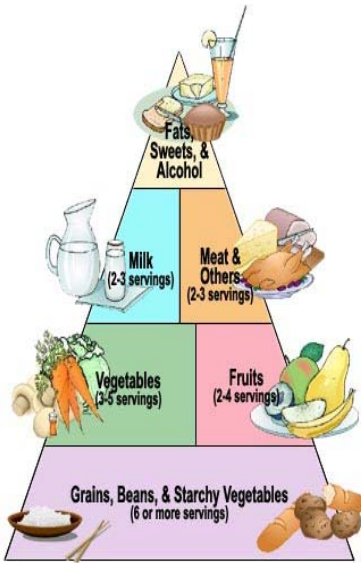
- Regular soda, juice, lifesavers, table sugar, and the like are good options.
- In general, 15 grams of glucose is the dose that is given, followed by an assessment of symptoms and a blood glucose check if possible.

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- If after 10 minutes there is no improvement, another 10-15 grams should be given.
- The equivalency of 10-15 grams of glucose (approximate servings) are:

- Four lifesavers
- 4 teaspoons of sugar
- 1/2 can of regular soda or juice





How is Diabetes Managed?

- **Eat a balanced diet:** the food plan will include foods from each food group in the Food Pyramid.
- **Do not skip meals and try to eat snacks at the same time every day:** this helps blood sugar levels from fluctuating during the day
- **Monitor carbohydrate intake:** carbohydrates have a large effect on blood sugar
- **Choose high fiber foods:** whole grains, vegetables, legumes, fruits
- **Limit sweets**
- **Substitute low-fat or fat-free choices for fatty foods**
- **Avoid saturated fats like butter and meat fat**
- **Avoid “empty-calorie” foods—** diet soda, chips, pastries
- **Discuss alcohol use with health care team** alcohol can cause blood sugar to drop, and, should never be mix with medication
- **Consult with a registered dietitian** who can help you design a healthy meal plan.

Carbohydrate Containing Foods

Control Blood Sugar

Before meal:
80-120 mg/dl
1-2 hours after meals:
100-180mg/dl

- Starches- Rice, Bread (roll, bagels, tortillas, pita bread), Pasta (noodles, spaghetti, macaroni), Cereal (dry, cooked)
- Starchy Vegetables: Potatoes, Corn, Green peas, Squash, Legumes
- Vegetables: Carrots, Beans, Broccoli, Cauliflower, Beets, Greens, Peppers, Celery
- Fruits: Apples, Oranges, Bananas, Plums, Peaches, Grapes, Fruit Juice
- Dairy Products: Milk, Cheese, Yogurt, Ice cream
- Sweets - Sugar, Candy, Baked goods, Syrups, Sweet drinks, Fruit punch

Use the Information of the Food Labels

- People with diabetes should see if the portions they eat matches the serving size of the food label. They should try to eat appropriate serving sizes so that they can properly estimate the amount of nutrients they are consuming.
- Total carbohydrates include dietary fiber, sugar, and starches. Sugar and starches have the greatest impact on blood glucose.
- People with diabetes should count carbohydrates by adding the amount of total carbohydrates they eat at each meal and snack. The total amount of carbohydrates allowed at each meal or snack is determined by the physician or Registered Dietitian diet prescription.
- People with diabetes should limit the grams of saturated fat, which is the most likely form of fat to increase blood lipids (fats).

Nutrition Facts	
Serving Size 1 cup (228g)	
Servings Per Container 2	
Amount Per Serving	
Calories 250	Calories from Fat 110
% Daily Value*	
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Sat Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

- People with diabetes should try to choose foods that are low in saturated fat.



How can Medication Help?

Insulin

- Should be kept in refrigerator.
- People with Type 1 diabetes need to take insulin in order to live.
- Many people with Type 2 diabetes may also need to take insulin.
- Insulin helps the body use the sugar for energy, otherwise the sugar stays in the blood.

- Insulin lowers blood sugar— if a person skips meals or eats too little.

Oral Medication

- For patients with type 2 diabetes to lower blood sugar, will be selected by physician.
- Physician should be aware if a patient is on birth control or if they drink alcohol since they will change pill work.

Side effects

- Upset stomach, gas, or diarrhea
- Weight loss or weight gain
- Metallic taste in the mouth



Why Is Exercise Important?

Exercise can help:

- Lower blood sugar
- Improve blood fat
- Lower blood pressure
- Keep heart and lungs healthy
- Maintain a healthy weight
- Increase energy
- Reduce stress

Before implementing an exercise program individuals should:

- Consult with a doctor prior to initiating an exercise program
- Stick with low impact exercise such as walking, swimming or bicycling
- Wear proper shoes to protect feet

- Wear a medical ID, bracelet or necklace when exercising
- Check blood sugar before, during, and after exercise
- Do not exercise if blood glucose is above 250mg/dl
- Check blood glucose if signs of low blood sugar develop and treat as soon as possible.

People with diabetes should stop exercising and call the doctor if they experience:

- Chest tightness
- Chest, arm, or jaw pain
- Difficulty breathing
- Dizziness
- Upset stomach (nausea / vomiting)

Complications

Retinopathy

- Nerve damage in the eye
 - symptoms: blurry vision, double vision, dark spots, flashing lights, difficulty reading, pain in the eyes, not seeing from the sides of the eyes
 - Prevention: Regular eye exams, reporting changes in vision, keep-

ing, blood pressure under control

Nephropathy

- Kidney disease
 - Symptoms –Cloudy or bloody urine, pain or burning when urinating, urgent need to urinate often, Fatigue, nausea, yellow skin color, puffy or swollen hands and feet, pain in back or side
 - Prevention: Keeping blood pressure under con-

trol, regular blood pressure testing, Eating a diet low in protein, Visiting a doctor if any symptoms appear

Neuropathy

- Nerve damage
 - Symptoms –Pain, burning, tingling or loss of feeling in the feet, hands or other body parts, abnormal sweating, dizziness or lightheadedness, nausea, vomiting, diarrhea, constipation, dry skin, problems

swallowing, problems keeping food down, problems with urination, problems with sexual function, Weak muscles

- Prevention: wearing shoes that fit, not smoking, have a physical activity plan, getting tests for nerve damage, checking feet for change



POST TEST

Please circle the best choice and then check your answers with educator. **You can submit this paper to your coordinator or send by mail to office.**

1. True or False

Diabetes is a disorder of metabolism base on how the body uses the food to produce energy.

2. True or False

In diabetes Type 1, the body is producing enough insulin, but body effectively cannot use the insulin

3. True or False

Sugar and starches have the greatest impact on blood glucose.

4. True or False

Patients with diabetes can skip meals if they have no appetite.

5. True or False

Its better to keep the insulin on the table so the patient will not forget her medication.

6. True or False

Some diabetics can manage the disease with Exercise, diet and oral medications.

7. True or False

Hyperglycemia is a condition in which blood sugar is higher than normal.

8. Which are symptoms of diabetes?

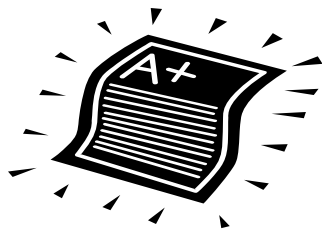
- A. Frequent urination, feeling thirsty
- B. Feeling hungry, Feeling "low energy"
- C. Dry skin, Blurry vision, Poor healing
- D. All of the above

9. Which are Hypoglycemia symptoms:

- A. Thirst, Nausea, Weight loss
- B. Fatigue, Blurry Vision
- C. Sweating, trembling
- D. Problem with sexual function

10. Some complications of diabetes are:

- A. Retinopathy: Nerve damage in eye
- B. Nephropathy: Kidney disease
- C. Neuropathy: Nerve damage
- D. All of the above



INSERVICE CREDIT: **1 HOUR**

SCORE: _____

EMPLOYEE NAME: _____

TITLE: _____

EDUCATOR SIGNATURE: _____

DATE: _____