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## Diabetes Mellitus

Patient name: \_\_\_\_\_ Admission: \_\_\_\_\_

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- I. **The client/caregiver can define diabetes mellitus.**
  - A. It is a disease in which the body does not produce or properly use insulin.
  - B. Insulin is a hormone produced in the pancreas and is necessary for the body to turn sugar and other foods into energy.
  - C. A lack of insulin leads sugars to build up to unsafe levels in the blood.
  
- II. **The client/caregiver can explain current diabetes definitions.**
  - A. Diabetes mellitus is defined as a fasting blood sugar level of 126 mg/dl or more.
  - B. "Prediabetes" is when blood glucose (sugars) are higher than normal, but not yet diabetic.
    1. Prediabetics have an increased risk for developing type 2 diabetes, heart disease, and stroke.
    2. They have impaired fasting glucose levels (100 to 125 mg/dl).
    3. They have impaired glucose tolerance (fasting glucose less than 126 mg/dl and a glucose level between 140 and 199 mg/dl 2 hours after taking an oral glucose tolerance test).
  
- III. **The client/caregiver can list the three major types of diabetes.**
  - A. Types of diabetes:
    1. Type 1 diabetes is usually diagnosed in childhood. Daily injections of insulin are required to sustain life.
    2. Type 2 diabetes usually occurs in adulthood. The pancreas does not make enough insulin to keep blood glucose (sugar) levels normal. Many people do not know they have this type. This type is becoming more common because of age, obesity, and a lack of exercise.
    3. Gestational diabetes is high blood glucose levels that develop at any time

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- during pregnancy in a person who does not have diabetes.
- IV. **The client/caregiver can list risk factors for diabetes.**
    - A. A parent, brother, or sister with diabetes
    - B. Obesity
    - C. Age greater than 45 years
    - D. Member of some ethnic groups (particularly African American and Hispanics)
    - E. Gestational diabetes or delivering a baby weighing more than 9 pounds
    - F. High blood pressure
    - G. High triglyceride or cholesterol levels

The American Diabetes Association recommends that all adults be screened for diabetes at least every 3 years. A person at high risk should be screened more often.
  
  - V. **The client/caregiver can recognize signs and symptoms.**
    - A. Symptoms of type 1 diabetes
      - Increased thirst
      - Increased urination
      - Weight loss in spite of increased appetite
      - Fatigue
      - Nausea
      - Vomiting
    - B. Symptoms of type 2 diabetes
      - Increased thirst
      - Increased urination
      - Increased appetite
      - Fatigue
      - Blurred vision
      - Slow-healing infections
      - Impotence in men
  
  - VI. **The client/caregiver can list ways the diabetic can test glucose levels.**
    - A. Urine analysis to check for glucose and ketones
    - B. Fasting blood glucose level
    - C. Random (nonfasting) blood glucose level

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- D. Oral glucose tolerance test
- E. Hemoglobin A1c to measure the average blood glucose during the previous 2 to 3 months. A nondiabetic person has a value of 5%. The diabetic client should try to keep it below 7%.

**VII. The client/caregiver can list necessary skills to deal with diabetes.**

- A. Know when and what to eat
- B. Know how to test and record blood glucose
- C. Know how to test urine for ketones (type 1 diabetics)
- D. Know how to recognize and treat low blood sugar (hypoglycemia) and high blood sugar (hyperglycemia)
- E. Know how to take insulin and/or oral medication
- F. Know how to adjust insulin and/or food intake when changing exercise and eating habits

**VIII. The client/caregiver can list measures important in management of diabetes mellitus.**

- A. Achieve and maintain ideal weight. Some people with type 2 diabetes find that they no longer need oral medication if they lose weight and increase daily activity.
- B. The diet should be
  - 1. Consistent in carbohydrates during three meals and three snacks daily (check consistent carbohydrate therapeutic diets—Chapter 25).
  - 2. A registered dietician can help in learning glycemic index of foods.
  - 3. MyPyramid is a great source for information.
- C. Exercise
  - 1. Do daily.
  - 2. Perform at the level appropriate for current fitness level.
  - 3. Monitor blood glucose levels before and after exercise.
  - 4. Drink extra fluids (without sugar) before, during, and after exercise.
  - 5. Carry a diabetic identification card.
  - 6. Carry cell phone in case of emergency.
  - 7. Carry food that contains a fast-acting carbohydrate in case you experience hypoglycemic reaction.

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- D. Oral medications (see Medication Classifications—Chapter 27)
  - 1. Oral medications that perform an increase in insulin production by the pancreas, increase sensitivity to insulin, or delay absorption of glucose.
  - 2. Different types of oral medications may be combined.
- E. Foot care
  - 1. Check feet daily. Report any sores or changes with signs of infection.
  - 2. Wash feet daily with lukewarm water and mild soap. Dry completely.
  - 3. Soften dry skin with lotion or prescribed creams.
  - 4. Exercise daily to promote good circulation.
  - 5. Wear comfortable, well-fitting shoes.
  - 6. See a podiatrist for foot problems, such as corns or calluses.
  - 7. Remind health care provider to examine feet without shoes and socks during your routine visits.
  - 8. Stop smoking.
  - 9. Avoid going without shoes.
  - 10. Clip nails straight across, and gently file with an emery board.
- F. Eye care
  - 1. Have a complete dilated eye examination every year.
  - 2. Have a comprehensive eye exam that includes visual acuity testing that measures how well you see at various distances and a dilated eye exam that can reveal any damage to retina or optic nerve. Tonometry uses an instrument to measure pressure inside the eye.
- G. Skin care
  - 1. Bathe every day with mild soap and lukewarm water. Use lotion as needed.
  - 2. Avoid scratches or bruises. Wash cuts and scrapes with soap and water, and cover with bandage.
  - 3. Wear gloves when you work.
  - 4. Use sunscreen.
  - 5. Dress appropriate to weather.
  - 6. Call physician if skin injury does not heal.

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- H. Dental care
1. Brush and floss every day.
  2. Visit the dentist every 6 months.

**IX. The client/caregiver can recognize signs, symptoms, and possible causes of hyperglycemia (high blood sugar).**

- A. Signs and symptoms
- Polyuria (frequent or excessive urination)
  - Polydipsia (extreme thirst)
  - Polyphagia (excessive hunger)
- B. Possible causes of hyperglycemia
- One of the first signs of diabetes
  - Excess food
  - Insufficient insulin production
  - Lack of exercise
  - Infection
  - Obesity

**X. The client/caregiver can recognize signs, symptoms, and possible causes of hypoglycemia (low blood sugar). This usually occurs when the blood sugar is below 50 mg/dl.**

- A. Signs and symptoms include the following:
- Sweating
  - Tremors
  - Anxiety
  - Hunger
  - Dizziness
  - Headache
  - Cloudy vision
  - Confusion
  - Abnormal behavior
  - Convulsions
  - Loss of consciousness
- B. Possible causes of hypoglycemia (low blood sugar) include the following:
- An excessive amount of insulin
  - Inadequate amount of food
  - Excessive exercise

**XI. The client/caregiver will know what to do if symptoms of high or low blood sugar occurs.**

- A. High blood sugar
1. Go to the emergency room.
- B. Low blood sugar
1. Eat some form of simple carbohydrate as soon as possible.

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2. Sources of concentrated simple carbohydrates are sweetened fruit juice, candy, cake frosting, or glucose tablets.
3. The following on the list each contain about 15 grams of carbohydrate:
  - Three glucose tablets
  - One-half cup of fruit juice or regular soda
  - Six or seven hard candies (not sugar free)
  - One tablespoon of honey or sugar
4. Go to the emergency room if symptoms persist.

**XII. The client/caregiver can state management of diabetes during illnesses.**

- A. Take your insulin or oral medications.
- B. Test your blood sugar before each meal and at bedtime.
- C. Follow your meal plan, if you can eat. If you are not eating, take in at least 4 ounces of sugar-containing beverage every hour. Encourage fluids to maintain hydration.
- D. Contact your physician if
1. You are unable to keep down food, liquids or medications.
  2. Your illness lasts more than 24 hours.
  3. You have blood sugars higher than 240 mg/ml for more than 1 day.

**XIII. The client/caregiver is aware of possible emergency complications.**

- A. Diabetic hyperglycemic hyperosmolar coma
1. It is caused by complications of type 2 diabetes and extremely high blood glucose (sugar) levels without presence of ketones.
  2. The symptoms are decreased consciousness, extreme dehydration, and very high blood glucose (sugar) levels (600 to 2400 mg/dl).
  3. It can be triggered by infection or increased fluid loss.
  4. Symptoms are elevated pulse, low blood pressure, speech impairment, confusion, convulsions, and coma.

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- B. Diabetic ketoacidosis results from extremely high blood sugar levels causing metabolic acidosis. Symptoms are as follows:
- Increased thirst and urination
  - Nausea
  - Deep and rapid breathing
  - Abdominal pain
  - Sweet-smelling breath
  - Loss of consciousness
- C. Hypoglycemic coma or severe insulin reaction. Symptoms are as follows:
- Weakness and drowsiness
  - Headache
  - Confusion
  - Dizziness
  - Double vision
  - Lack of coordination
  - Convulsions
  - Unconsciousness

**XIV. The client/caregiver is aware of possible long-term complications.**

- Diabetic retinopathy—damage to retina possibly leading to blindness
- Diabetic nephropathy—kidney damage
- Diabetic neuropathy—loss of sensation in extremities, loss of bladder control, and impotence
- Hyperlipidemia
- Hypertension—strokes
- Coronary artery disease, peripheral vascular disease, atherosclerosis
- Amputation of extremities

## RESOURCES

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

Diabetes Risk Test  
[www.diabetes.org/risk-test](http://www.diabetes.org/risk-test)

Community support group

Dietician or nutritionist

MyPyramid from the United States Department of Agriculture  
[www.mypyramid.gov/](http://www.mypyramid.gov/)

National Institute of Diabetes and Digestive and Kidney Diseases  
[www2.niddk.nih.gov/](http://www2.niddk.nih.gov/)

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