

3

Insulin Teaching Guide

Patient name: _____ Admission: _____

NRS
DATE INITIAL

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I. The client/caregiver can state action of insulin.

- A. Helps to control blood-sugar levels in clients with type 1 diabetes mellitus.
- B. It is administered by insulin subcutaneous injection or insulin pump.
- C. Types of insulin are
 1. Humalog, Novolog (very short acting). The onset of action is 5 to 15 minutes, and the peak effect is after 30 to 60 minutes.
 2. Regular (short acting). The onset of action is 30 minutes. The peak effect is after 2 to 5 hours.
 3. NPH (intermediate acting). The onset of action in 1 to 2.5 hours. The peak effect is after 8 to 14 hours.
 4. Lente (intermediate acting). The onset of action is 1 to 2.5 hours. The peak effect is after 8 to 12 hours.
 5. Ultra Lente (long acting). The onset of action is 4 to 6 hours. The peak effect is after 10 to 18 hours.
 6. Premixed combinations have the onset of action in 30 minutes. The peak effect is after 7 to 12 hours. Examples of combinations are 70/30 (70 intermediate/30 rapid acting), 50/50 (50 intermediate/50 rapid acting), and 75/25 (75 intermediate/25 rapid acting).
 7. Lantus (insulin glargine). It has a constant long duration with no defined peak of action. It is usually given once a day and usually at bedtime.

II. The client/caregiver can list possible adverse reactions to insulin.

- A. Hypoglycemia or low blood sugar
 - Headache
 - Sweating
 - Hunger
 - Nervousness
 - Weakness
 - Restlessness or sweating during sleep

NRS
DATE INITIAL

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B. Hyperglycemia or high blood sugar

- Flushed
- Dry skin
- Nausea
- Fatigue
- Headache
- Dizziness

C. Allergic reaction (seek emergency treatment)**III. The client/caregiver can list precautions when storing, preparing, and administering insulin.**

- A. Keep insulin vials that are currently in use at room temperature. When not needed, store in refrigerator. Never freeze insulin.
- B. Take insulin exactly as prescribed, and never adjust dose without orders from physician.
- C. Do not interchange beef, pork, or human insulins.
- D. Lantus insulin should never be mixed with other insulins.
- E. Never use insulin that has changed color or consistency.
- F. Rotate sites to prevent skin complications using abdomen, upper and outer thighs, upper arms, and buttocks.
- G. Administer insulin promptly (within 5 minutes) after mixing insulins.
- H. Use only insulin syringes to administer insulin.
- I. Press—do not massage injection site after administration of insulin.
- J. Dispose of syringes in an impermeable container.

IV. The client/caregiver can list other precautions when taking insulin.

- A. Limit cigarette smoking because it decreases the amount of insulin absorbed when given subcutaneously.
- B. Avoid alcohol and aspirin, which may increase effect of insulin.
- C. Never omit meals.

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NRS
DATE INITIAL

- D. Carry a snack (source of simple sugar) at all times in case of low blood sugar.
- E. Wear a medical identification bracelet.
- F. Monitor and record blood or urine glucose levels.
- G. Monitor factors that affect amount of insulin required:
 - 1. Follow diet closely as instructed.
 - 2. Exercise daily in constant amounts.
 - 3. Use stress management techniques.
 - 4. Obtain prompt treatment for any infections.
 - 5. Test blood sugar more frequently if a change in diet, activity, stress, illness, or infection occurs, and notify the physician.
- H. Keep follow-up appointments with the physician and laboratory.
- I. Report any signs of hypoglycemia, that is, headache, sweating, hunger, nervousness, and weakness.
- J. Report any signs of hyperglycemia, that is, flushed, dry skin; nausea; fatigue; headache; and dizziness.

V. The client/caregiver can list measures to safely use insulin pump.

- A. The insulin pump is used for continuous (24 hour) insulin delivery.
- B. The insulin pump has a pump reservoir and a computer chip that allows the user to control the exact amount of insulin being delivered and is battery operated.
- C. They are approximately the size of a beeper. It is attached to a thin plastic tube that has a soft cannula or needle at the end to deliver insulin.
- D. The cannula (needle) is inserted under the skin, usually on the abdomen. It needs to be changed every 3 days.
- E. The tubing can be disconnected when showering or swimming.

VI. The client/caregiver can demonstrate syringe preparation.

- A. Wash hands thoroughly.
- B. Assemble equipment: syringe, insulin, alcohol swab.
- C. Check that you are using appropriate type of insulin and that it has not expired.

NRS
DATE INITIAL

- D. Verify that you are using appropriate type of syringe (only insulin syringe).
- E. Roll the insulin bottle gently to mix it.
- F. Cleanse top of bottle with alcohol.
- G. Pull plunger of syringe back the number of units of insulin to be injected, not allowing the needle to touch anything.
- H. Insert the needle into the bottle and inject air.
- I. Invert the bottle and syringe, and slowly withdraw prescribed amount of insulin, being sure that the needle is under the fluid level.
- J. Check the syringe for air bubbles, and remove by tapping the syringe. Draw up more insulin, and discard excess if necessary for accurate amount.

VII. The client/caregiver can demonstrate procedure for insulin injection.

- A. Wash hands. Check previous rotation site and select new site.
- B. Prepare the injection site by swabbing the center of the area with alcohol and moving outward in a circular manner about 2 inches. Allow the area to air dry.
- C. Pinch the skin approximately 2 inches with thumb and forefinger at the injection site, not touching the area that was cleaned.
- D. Inject the needle into the skin using a quick, firm motion at a 45-degree (normal weight) or 90-degree angle (obese patient).
- E. Inject insulin slowly into the tissue. Remove the needle, and hold swab over site briefly.
- F. Place the manufacturer's needle guard to cover needle and dispose syringe/needle in safety container.

VIII. The client/caregiver can list sites of body for insulin injections.

- A. Upper arms
- B. Abdomen
- C. Thighs
- D. Buttocks

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RESOURCES

American Diabetes Association
800-232-3472
www.diabetes.org
Medical supply company
Pharmacist

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