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Handling and application of **insulin** in diabetic patients

What is insulin?

It is a hormone made by the pancreas. It is needed for glucose (sugar) to enter the cells and be used as an energy source. Insulin produced by diabetic patients is not enough or does not work properly, making it necessary to provide it through medicines.



Vigilado Supersalud

Types of insulin

There are many types of insulin and each one of them has a patient-specific indication. This is why it should not be changed or stopped without the instructions of the treating physician. It is absorbed within minutes from the adipose tissue (fat) into the blood.

1. Rapid-acting insulin

“Bolus”

- Is absorbed within minutes from the adipose tissue (fat) into the blood.
- It is used to control and correct high blood sugar levels during meals and snacks. It should usually be applied up to 15 minutes before main meals (breakfast, lunch and dinner) in order to prevent a glucose spike by the food consumed.

2. Long-acting insulin:

“Basal”

- It is slowly absorbed and remains stable in the body for most of the day. Setting a schedule for administration is recommended. It is not related to food.
- It is used to control sugar during fasting periods (at night or between meals).

The treating physician will determine if one of these is needed or a combination of both.

Recommendations:

Insulin in a pen or vial, whether new or unused, should be kept at a temperature between 2 °C and 8 °C. Once the pen is in use or opened, it can be left at a room temperature not exceeding 28 °C, but it should always be

refrigerated if it is kept in a vial. Insulin should be transported in a Styrofoam cooler with gel ice packs. Check the expiration date on the insulin pen. Remember that insulin can be used up to one month after opening the pen.

Application areas:

The recommended areas for insulin application are:

The upper and outer part of the buttocks.

Four fingers above the elbow crease.



Abdomen, leaving 4 fingers around the navel.

The outermost side of the thighs.

Medicine application should be rotated as follows: 8 days in a given area, leaving 1 cm between each injection point. After this period, change the area.

Consult the nursing staff to ensure that you are correctly applying insulin.

Steps for applying insulin with a pen

1. Prepare the necessary supplies:

- Insulin pen.
- Needle for the insulin pen.
- Gauze or cotton with alcohol.
- Hard-walled container.
- Glucometer.

2. Wash your hands.

3. Measure glucose with a glucometer before applying insulin.

4. Place the needle on the rubber seal of the pen and turn to tighten.



5. Remove the needle guards.

6. Turn the dose selector to the insulin units to be injected.



7. You should always purge (remove the air) from the pen the first time it is used, even if it means throwing away the first insulin units.

8. Disinfect the application site with cotton and alcohol or an alcohol wipe. Allow to dry before inserting the needle to avoid burning sensation.

9. Insulin should be applied under the skin, into fatty tissues, by pinching the skin.
10. Count to 10 before removing the needle from the body, to make sure you have applied all of the product.
11. Count to 10 before removing the needle from the body, to make sure you have applied all of the product.
12. Remove the needle from the skin and release the pinch.
13. Detach the needle from the pen and discard it in a hard-walled container.

It is important to teach your caregiver how to apply insulin in case of emergency.

Complications due to poor application technique

Hypertrophic dystrophy and lipodystrophy:

- If the injection site is not properly rotated, “hypertrophy” (i.e., skin and fatty tissue thickening) may appear. It is advisable not to continue using this area for injection, since insulin is not absorbed properly.

Infections:

- These may occur if recommended precautions are not followed. These include: cleaning the area before injecting, washing hands and reusing needles.

Bleeding and bruising:

- It is normal for small bruises to occasionally appear on the skin because the needle may have reached a blood vessel.
- This is a mild complication with no adverse clinical consequences; it is not directly related with insulin absorption or diabetes control.
- If you notice bleeding, you can apply pressure to this site until it disappears.

Please note:

- If you have any concerns, seek specialized personnel advice.
- Do not stop or change your medications unless instructed by your doctor.
- Keep with you some documentation that indicates your disease in case of emergency.
- Insulin treatment is intended to improve your health, if performed with the appropriate technique.



Certificado N° 015

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