



General Authority for Health Services

For the Emirate of Abu Dhabi

Al-Rahba Hospital

Insulin

Definition:

It is a hormone secreted by the pancreas and helps to regulate the blood glucose. If you have diabetes, your body cannot make insulin or it cannot use insulin properly. You therefore have to take insulin injections to supply your body with the needed insulin. Insulin is produced from many sources such as animals or artificially.

It is used for treatment of type 1 diabetes which usually affect children, and is also used for the treatment of some cases of the type 2 diabetes and in treatment of gestational diabetes.

Types of insulin products :

Insulin products differ according to their onset and duration of effect.

Rapid acting insulin: Insulin lispro (HUMALOG) and Aspart (NOVORAPID).

Its action starts very rapidly, 5 to 15 minutes and effect lasts for 3 to 5 hours.

It should be taken directly before meals no need to maintain any period between injection administration and the food.

Short acting insulin: The clear insulin R (HUMULIN) or (ACTRAPID).

Its action starts after 30 minutes and lasts for 5 to 8 hours.

Should be taken 20 to 30 minutes before food.

Intermediate acting insulin: Known as the cloudy insulin (NPH) (INSULTARD) (HUMULIN L) (MONOTARD).

Its action starts after 1 to 3 hours and its effects lasts for 18 – 24 hours.

Can be found also as mixed type:

Which is insulin containing 30% clear insulin (R) & 70% cloudy insulin (N). This is why it is called insulin30/70 or (Mixtard) 30 (HM) and it is usually used for patients who need a 1/3 of their daily dose from the clear insulin and 2/3 of their daily dose from the cloudy insulin ..

Long acting insulin :(Lantus), (HumulinU)

Side effects of insulin:

1. low blood glucose level (in case of overdose)
2. skin irritation at the site of injection because of recurrent injections in the same place.
3. allergy (very rare)

Signs of low blood glucose level:

Shivering, too much sweating, blurred vision and headache.

Factors that affect the insulin absorption after subcutaneous injection:

Factors that enhance the insulin absorption:

- ❖ **Medications:** Some medications enhance the insulin absorption so you need to consult your doctor before taking any medication.
- ❖ **Sports:** It is preferable to inject the insulin in the abdomen before starting the sports activity and avoid the arms and legs injection sites.
- ❖ **Heat:** Don't use insulin injection directly after you have been exposed to any heat source like hot shower or steam bath as the heat increases the insulin absorption.
- ❖ **Deep insulin injection:** Like injecting it into the muscles and not under skin.

Factors that reduce the insulin absorption:

- ❖ **Smoking:** The nicotine causes constriction of the peripheral blood vessels and this will prevent the insulin delivery through the blood to the cells.
- ❖ **Cold:** It causes delay in the insulin absorption if the selected body part for injection is cold, therefore avoid using any cold compresses on the injection place, take the insulin out of the fridge in time to allow it to reach room temperature before injecting it into your body.

Preparation of the insulin dose:

1. Make sure that you know the dose and name of your insulin according to your doctor's advice.



2. Wash your hands and dry them to prevent contamination.



3. Carefully read and check the instructions written on the insulin vial, the expiry date. The vial cover should be intact and not broken.



4. To mix the insulin roll the vial gently between your hands, this step is very important to prepare the cloudy insulin.



5. Clean the rubber vial with alcohol swab, use the swab one time only.



6. Remove the syringe plunger cover first, then the needle by gently unscrewing the orange cap.

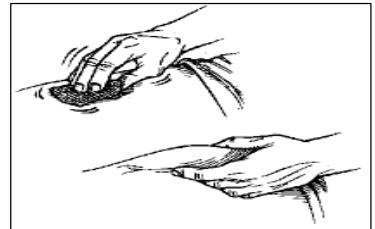


7. Hold the vial in one hand in an upside down direction and the syringe in the other hand (with the syringe down and the vial up). Draw required dose of the insulin from the vial



Injection technique:

1. Disinfect the injection site



2. Hold and pinch the skin between your fingers of one hand and in the other hand hold the syringe (the way you are holding a pin). Then insert the needle into the skin straight at a 90 degree angle.



3. Push the syringe plunger totally downwards in 5 seconds



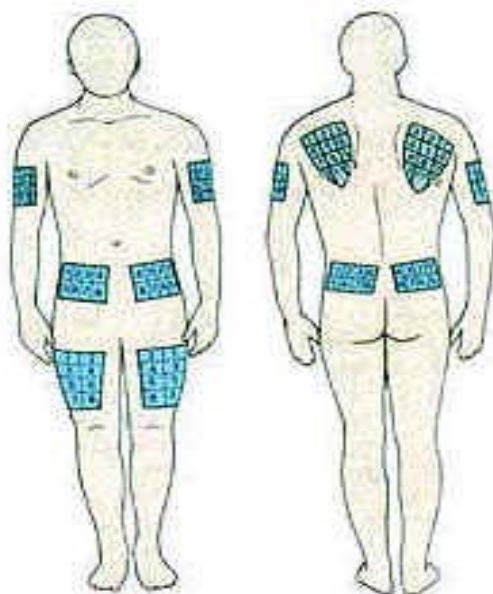
4. Keep a disinfectant swab near the needle and gently pull the needle out of the skin and press with the swab on the injection site for few seconds.



5. Make sure to maintain the syringe sterility by using it one time only. Properly dispose the syringe used in the sharps container which was given to you from your hospital or clinic



Insulin injection sites:



How to store insulin:

- ❖ Store the unopened insulin vials in the fridge, without freezing it.
- ❖ The used vials can be stored outside the fridge in good air-conditioned room for one month, or 2 months in the fridge.
- ❖ Protect the insulin from exposure to heat or direct sunlight, and don't leave it in the car especially in summer time.
- ❖ Don't use the vials if you see any color changes or crystal formation or if it was frozen.
- ❖ Check the expiry date on the vial before using it.
- ❖ Don't use expired insulin even though the vial was not opened yet.
- ❖ Keep out of reach of children.
- ❖ Roll the vial gently between your hands and don't shake it before use.

General information:

- Take the medication on time as prescribed by your doctor.
- Don't change the dosage unless instructed by your doctor.
- Don't use other patients' used syringes to prevent spread of infections and diseases.