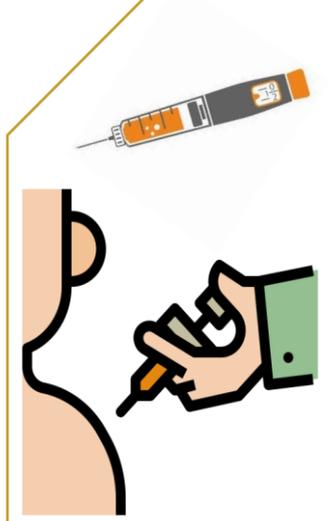




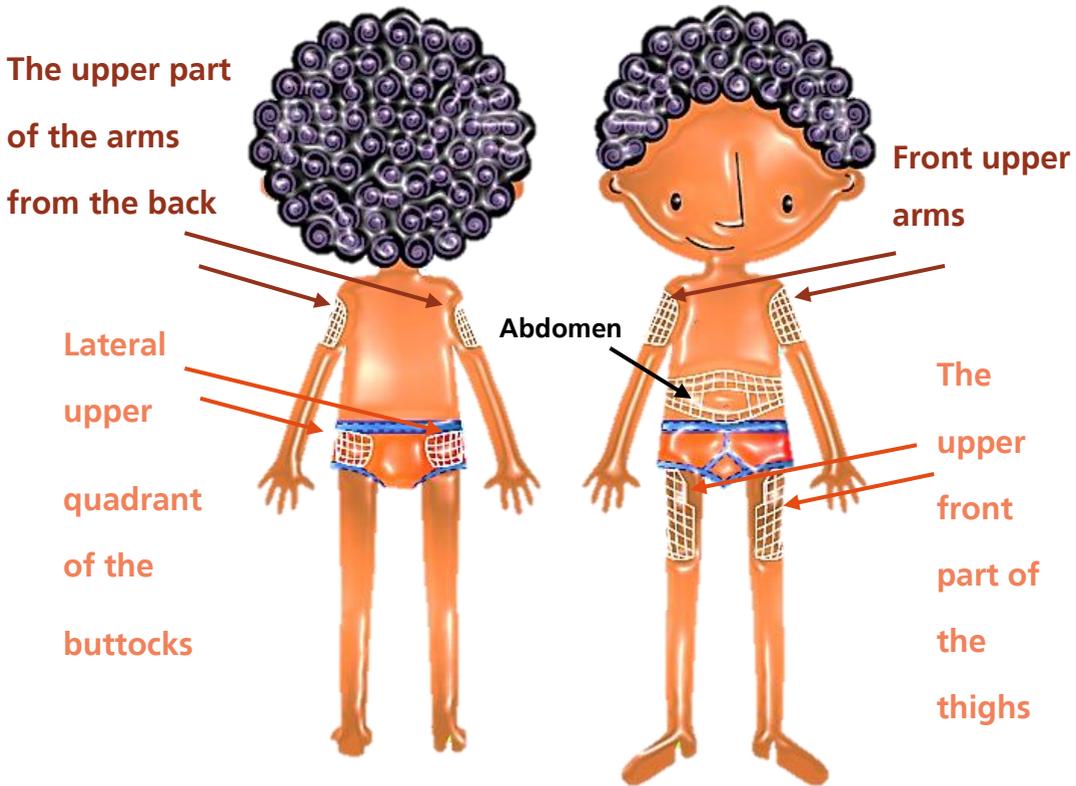
جامعة الإمام عبد الرحمن بن فيصل  
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## Injection sites



## Insulin injection sites:



On the upper arm, move 4 fingers from the shoulder joint and 4 fingers from the elbow joint.

On the abdomen, it is preferable to move two fingers from all directions around the navel to the sides and below the navel.

The front of the thigh and the hip.

## Insulin injection problems:



- **Insulin sensitivity:**

Hypersensitivity to insulin is an uncommon problem, and very rare, it includes severe pain, redness and itching. When these symptoms occur, you should see a doctor immediately

- **Severe pain during injection:**

This problem is common in children, check the angle and length of the needle, also make sure that you do not inject directly into the muscle, but in the places that contain fat

- **Lipohypertrophy:**

Swellings occur under the skin as a result of repeated injections in the same area, so the injection sites must be diversified and not rely on one or two areas.

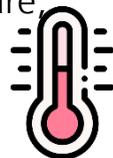
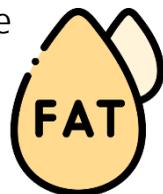
- **Lipoatrophy**

It is atrophy that occurs in the subcutaneous fatty tissue, and when this occurs, the injections must be stopped in the same area and diversified into other injection areas in the body.

## Insulin absorption:

The rate of insulin absorption varies from person to person for several factors, including:

- **Fat mass:** The presence of a large fat mass or the presence of fatty bulges under the skin causes a slowdown in the absorption of insulin.
- **Insulin dose:** The higher the dose, the slower it is absorbed, and vice versa
- **Injection site:** The abdomen absorbs insulin faster than the thigh
- **Exercise :** There are areas affected by exercises, which speed up the insulin absorption process, such as the thigh, but the abdomen is not affected by any exercises
- **Body temperature:** The higher the body temperature, the greater the absorption



**Table shows injection sites and speed of absorption**

Absorption speed	The time required to absorb	the injection site
quick	<b>15 min</b>	Abdomen
intermediate	<b>20 min</b>	Lateral aspect of arm
slow	<b>30 min</b>	Front of thigh/lateral thigh
slow	<b>30 min</b>	Lateral upper quadrant of the buttocks



## Tips:

Never take an insulin injection and then take a shower or sit in a hot tub, as the blood rushing to the surface of the skin may cause the insulin to be absorbed quickly, which leads to a violent reaction to the insulin.

- It is preferable to inject basal insulin into the buttocks, as opposed to the abdomen, which is preferably injected when needed for faster absorption (No difference was observed in the effectiveness of insulin glargine when injected into these areas)
- The injection sites must be changed frequently in order to avoid the appearance of lumps under the skin or the skin being resistant to insulin.

### Sources and References:

ISPAD Clinical Practice Consensus Guidelines 2018: Insulin  
treatment in children and adolescents with diabetes

### Review and audit:

The content of this booklet has been reviewed by pediatric endocrinology  
and diabetes consultants at King Fahad University Hospital

## Health Awareness Unit

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