



# Injection Techniques

## PRACTIAL GUIDELINES

# Proper injection techniques – We Care™

Dear User,

Thank you for trusting and choosing the Droplet brand. For your safety and convenience, we have prepared a **short guide** that will **help you improve insulin delivery techniques** and make your daily life with diabetes easier.

We are aware that success of a company depends on the condition of the surroundings in which it operates, thus we aspire to maintain balance with regard to three goals: business, community, and the environment.

We are HTL-STREFA.

We are here for your safety and comfort.

We are here for you. We Care™.



# Injection technique

The proper **injection technique** helps people with diabetes to achieve the **best possible health outcomes** by ensuring that the **correct dose** of medication is delivered to the **correct injection site**, using the **correct needle size**<sup>1</sup>.

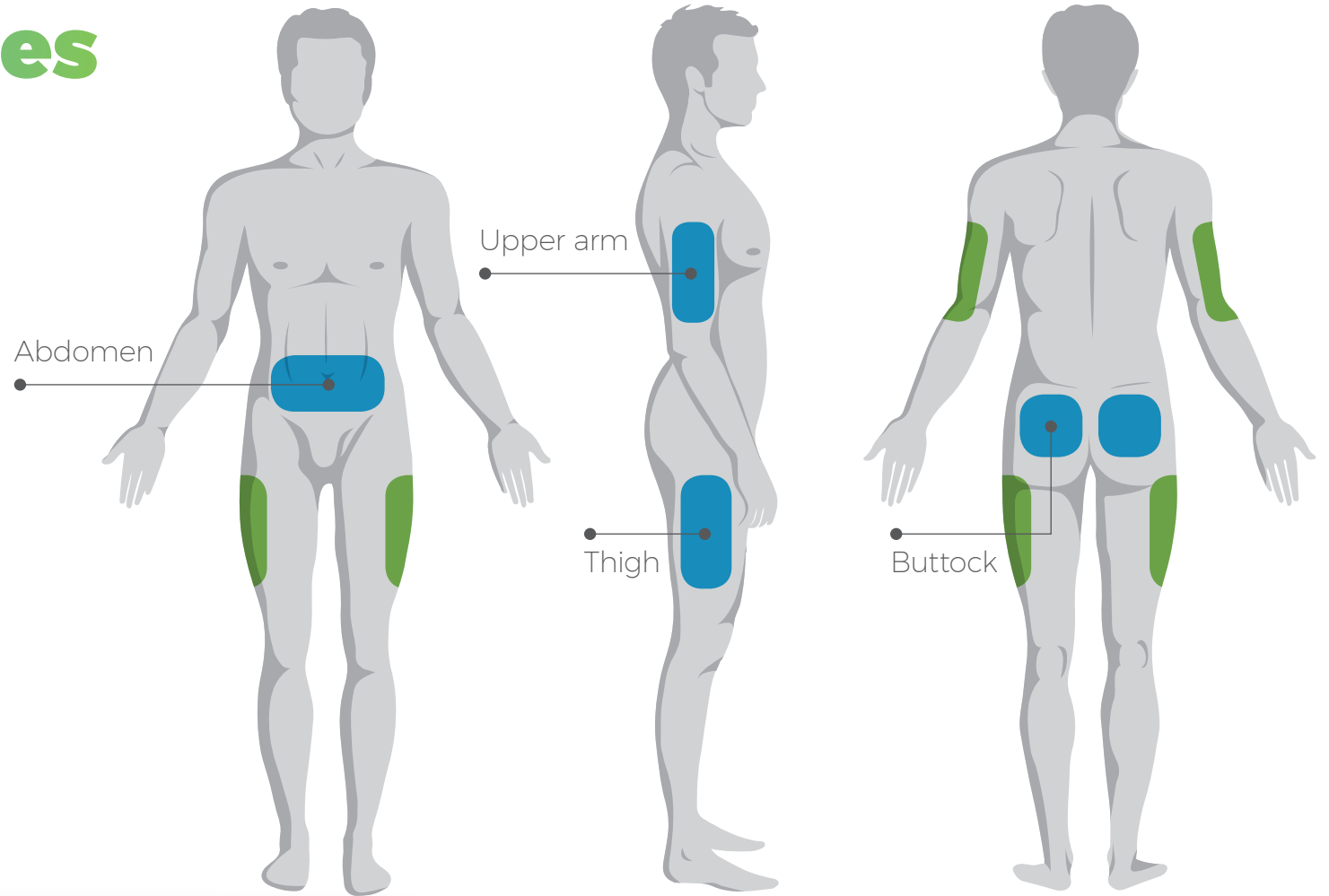
**The proper injection technique includes**<sup>2,3</sup>:

- injection site
- lifting a skinfold
- angle of injection
- site rotation
- needle length
- needle gauge

# Injection sites

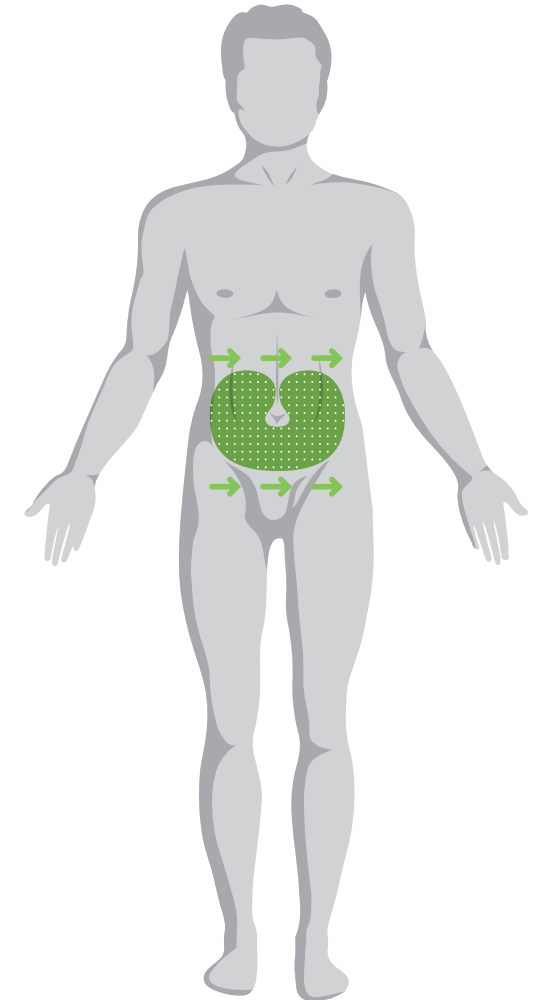
## The recommended injection sites are:

- Abdomen
- Thigh
- Buttock
- Upper arm<sup>2</sup>



# Site rotation

- **Regular rotation** of the injection site helps to maintain healthy tissue and avoid from damage called lipohypertrophy (LH).
- Further injections should be **spaced at least 1 cm** from previous injection.
- Injections in the **belly should** be approximately **4 cm away from the navel**. The tissue close to the belly button is tougher, so the insulin absorption will be incorrect<sup>3</sup>.



# Lifting a skinfold

Lifting a skinfold **IS REQUIRED:**



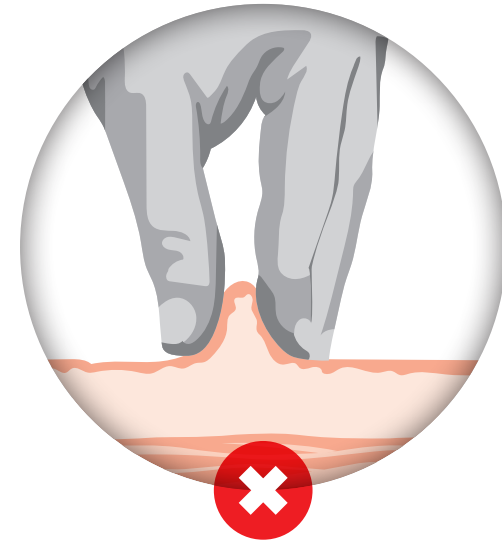
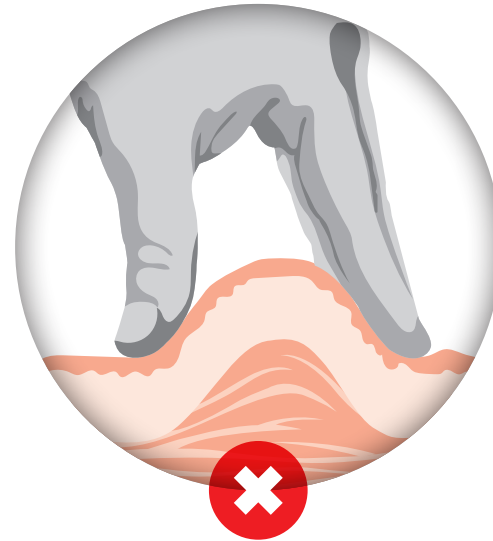
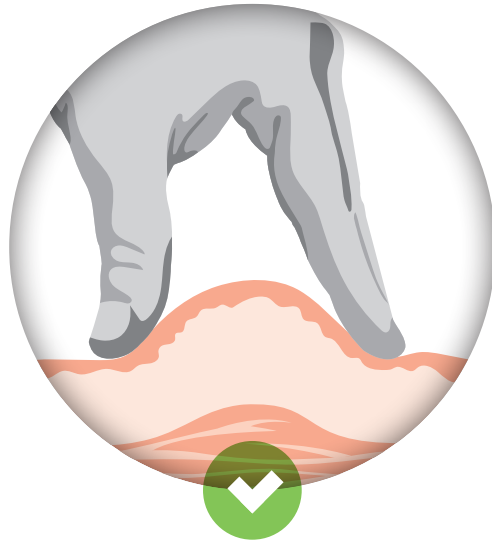
- **In children** who are **slim**, when injecting into the **limbs or abdomen**, especially when using **a 5 mm or 6 mm needle**.



- **In adults** who use **8 mm pen needle** and / or inject at **45 angle** in order to avoid injecting into muscle<sup>5</sup>.

# Lifting a skinfold

**A correct fold is made by lifting the skin with the thumb and index finger**  
(possibly adding the middle finger)<sup>2,4</sup>.



# Lifting a skinfold

**THE OPTIMAL SEQUENCE** when injecting into a skinfold is as follows<sup>2</sup>:

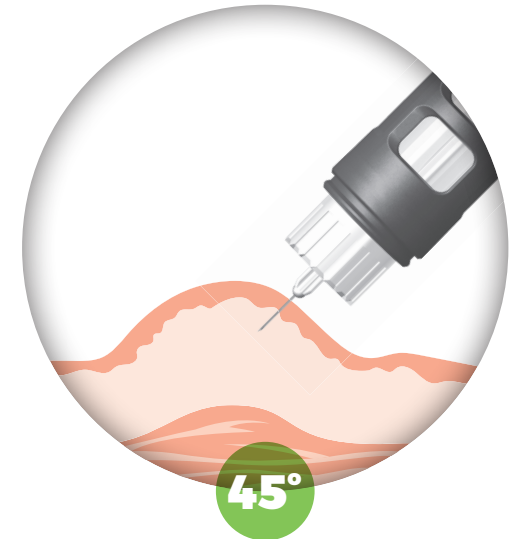
- 1** Gently **lift a skinfold**.
- 2** **Inject the insulin slowly at a 90 angle** to the surface of the skinfold.
- 3** Do not aspirate the needle.
- 4** Let the needle remain in the skin for a **count of 10 after the plunger** is depressed.
- 5** **Withdraw the needle** from the skin at the same angle it was inserted.
- 6** Release the skinfold.
- 7** **Do not massage** the injection site.
- 8** Dispose of the used needle safely.



# Angle of injection

## WITH SKIN FOLD:

- **Creating a skin fold is highly recommended for slim individuals and children<sup>6</sup>.**
- Alternatively, insertion at a 45-degree angle is sensible. Both techniques can be combined.
- The use of a lifted skin fold or injection at a 45-degree angle is suggested whenever a pen needle longer than 6 mm is used<sup>2,11</sup>.



2 Frid AH, Kreugel G, Grassi G, Halimi S, Hicks D, Hirsch LJ, et al. New Insulin Delivery Recommendations. Mayo Clin Proc. 2016 Sep;91(9):1231-55.

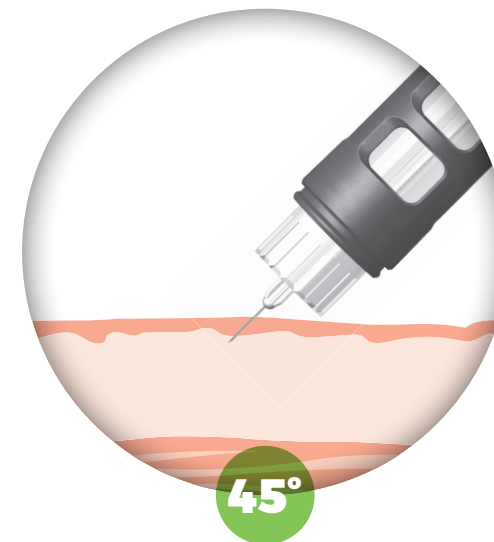
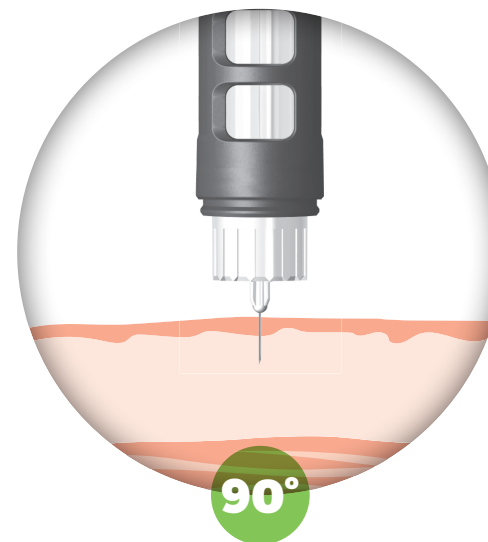
6 Danne T, Bangstad HJ, Deeb L, Jarosz-Chobot P, Mungaie L, Saboo B, Urakami T, Battelino T, Hanas R; International Society for Pediatric and Adolescent Diabetes. ISPAD Clinical Practice Consensus Guidelines 2014. Insulin treatment in children and adolescents with diabetes. Pediatr Diabetes. 2014 Sep;15 Suppl 21:115-34.

11 Australian Diabetes Educators Association (ADEA). Clinical Guiding Principles for Subcutaneous Injection Technique. Canberra: 2015.

# Angle of injection

## WITHOUT SKIN FOLD:

- For the average adult, the 4 mm pen needles are appropriate and can be injected at a 90-degree angle to the skin surface.
- Although in obese patients longer pen needle can be used.
- Injection of drug to children without a skinfold is not recommended<sup>2,6,11</sup>.



# Needle length / needle gauge<sup>8-11</sup>

Needle length	Children	Slim adults	Normal weight adults	Overweight or obese adults
<b>4 mm</b>	Lifting a skinfold and 90° 25-30G	Lifting a skinfold and 90° 25-30G	90° without lifting a skinfold 25-30G	90° without lifting a skinfold 25-30G
<b>5 mm</b>	Lifting a skinfold and 45° or 90° 25-30G	Lifting a skinfold and 45° or 90° 25-30G	Lifting a skinfold and 90° 25-30G	90° without lifting a skinfold 25-30G
<b>6 mm</b>	Not recommended	Lifting a skinfold and 45° or 90° 25-30G	Lifting a skinfold and 90° 25-30G	90° without lifting a skinfold 25-30G
<b>8 mm</b>	Not recommended	Lifting a skinfold and 45° 25-30G	Lifting a skinfold and 45° 25-30G	Lifting a skinfold and 45° or 90° 25-30G
<b>10 mm</b>	Not recommended	Lifting a skinfold and 45° 25-30G	Lifting a skinfold and 45° 25-30G	Lifting a skinfold and 45° or 90° 25-30G
<b>12 mm</b>	Not recommended	Not recommended	Lifting a skinfold and 45° 25-30G	Lifting a skinfold and 45° or 90° 25-30G

- Always ask your healthcare professional which needle gauge and length is best for you.
- The gauge is the diameter or thickness of the needle. The greater the gauge (G) number, the thinner the needle and the less pain felt<sup>13</sup>.

# Practical information

1 Needle reuse

2 Bubbling

3 Leakage

4 IFU

- **Pen needles** are sterile and for **single use only**.
- **Sterility is guaranteed** if the needle seal is **unbroken**.

## REMEMBER!

**Pen needles** should be **used only once** and disposed of in a sharps container and must **not be shared with other person!**



# Needle reuse

## Risk of needle reuse:

- increase the risk of the **needle breaking off** in the skin,
- cause **lipohypertrophy**,
- **dull or bend the tip**, causing pain, bleeding, bruising, or scarring,
- increase the risk of **infection** because the needle is no longer sterile.<sup>2</sup>



# Bubbling

## How to prevent insulin bubbling?

- If air bubbles are found in the syringe, **tap on the barrel** to bring them to the surface. They may then be removed by pushing the plunger up.
- **Avoid** vigorous **shaking** as it affects accurate dosing.
- Remember to **make a priming** of the drug.
  - Priming entails seeing at least a **drop of insulin** at the tip of the needle. Once free flow is verified, the patient may dial the desired dose and inject.<sup>2</sup>



# Insulin leakage

## How to prevent leakage of insulin<sup>2</sup>?

- Use **thin-wall** or extra-thin-wall pen needle.
- **Count to 10 after the plunger** is fully depressed before removing the needle from the skin. This allows enough time for the injected medication to spread out through the tissue planes and to cause the tissue to expand and stretch.
- **Split larger doses** of drug / insulin.
- **Reduce the volume of drug** injected to a **maximum of 800 µL** at one time.<sup>12</sup>
- **Avoid** injecting a **site** showing signs of **skin damage (lipohypertrophy)**.\*

\* If necessary, contact health care professional

# Instruction for use

## Information for users included in IFU for Droplet pen needle:

- Read and follow **INSTRUCTIONS FOR USE** before using your pen needles and pen injector (IFU video: <https://www.youtube.com/watch?v=gpHhBMLvHDw>)
- Before each injection, check that your **pen injector** contains the **correct type of medication**.
- Ask your **healthcare professional** which **needle gauge** and **length** is best for you.



We hope that this short guideline  
will be useful and will help you  
improve your injection technique.

**GOOD LUCK!**



HTL-STREFA Team