Safe and Gentle Injection of Insulin\textsuperscript{1,2,3}

Guide for correct injection technique
Insulin injection basics

1 Insulin has to be injected into the subcutaneous fat layer
- Injection into the fat layer contributes to good insulin absorption and good glycaemic control.
- Injections into the muscle must be avoided. It is painful and will lead to glycaemic variations and potentially to hypoglycaemia.4
- Different BMI (Body Mass Index) or physiques have no influence on skin thickness.5

2 Injection sites
- Abdomen and thighs are the most common injection sites.
- Regarding human insulin, the insulin absorption rate depends on the injection sites.
  
  **Abdomen = rapid absorption of insulin**
  - recommended for insulins that are supposed to act rapidly (for example, before meals).
  
  **Thighs = slower absorption of insulin**
  - recommended for insulins that are supposed to act over a longer period of time (for example, overnight).
- Human insulin can be short or long acting and will be absorbed at different rates depending where on the body you inject.
- The injection site has less influence with analogue insulin.

Note: please follow the recommendations of your diabetes team!

3 Rotate the injection site after each injection!
- Right side ↔ Left side – switch at weekly intervals.
- 1 cm distance between the new injection spot and the previous one. We recommend the use of injection site rotation grid as an aid.

4 Right needle length
- Short pen needle of 4 and 5 mm are recommended for a gentle and safe1,2 injection in the fat layer, including obese people.6
- Choose the appropriate needle length to avoid injections in muscles.

Note: please follow the recommendations of your diabetes team!

5 Correct injection technique
- The pen should be at 90 degrees to the skin surface.
- If 4 or 5 mm pen needles are used, it is normally not necessary to use lifted skin fold for adults.
- The skin fold technique can reduce the risk of intramuscular injection for slim patients, kids and teenagers or if long needles (≥ 6 mm) are used.
- The skin fold technique should take up skin and subcutaneous tissue only, by using the thumb, index finger and middle finger and leaving muscle behind.
Insulin injection technique

A Preparing
- Wash hands with water and soap.
- If a reusable pen is used, insert the insulin cartridge (see pen manufacturer’s instructions).

B Stirring up NPH insulin or mixed insulin
Note: don’t do this step if a clear insulin solution is used!
- NPH insulins or mixed insulins can be recognized by the white precipitate in the insulin cartridge!
- Roll between palms of hands 20 times first, then gently invert 20 times to fully mix it!

C Screwing the pen needle onto the insulin pen

Use a new pen needle for each injection!
- Completely remove the paper seal from the outer needle shield.
- Screw the needle onto the pen directly before performing the injection.
- Fit the needle with the outer needle shield onto the thread, aligning it straight, and screw it on.
- Dispose the inner needle shield. Keep the outer needle shield for later disposal (see F).

D Test dose with the pen
- Set the dial to 2 units and with the needle tip pointing up press the dose button.
- You should see a bead of insulin appear at the needle tip. Repeat if no insulin appears.

E Insulin injection
- Set your dose.
- Push the needle straight through the skin into the injection site.
- Push down the dose button gently with your thumb.
- Hold the needle in the injection site for a full 10 seconds after you have finished pushing the dose button.
- Then gently remove the needle from the skin.

Note: the skin fold should be held until after the pen needle is removed from the skin.

F Finishing the injection
- Remove the used pen needle by covering it with the outer shield and unscrewing it.

Note: be cautious with the used pen needle and the risk of needle stick injuries.
- Place the needle in sharps box ready for safe disposal.

OR: You can use BD Safe-Clip™ (PZN 07111748; PhC: 1612076) for a safe disposal of used needles.

NEW! BD Micro-Fine Ultra™ becomes BD Ultra-Fine™
- Reliable BD premium quality
- Compatible with all usual pens for diabetes therapy
- 105 instead of 100 pen needles
- Exclusive access code to educational platform BD and Me™

With EasyFlow™ technology* (extra thin cannula wall)
For a quicker injection and less effort on pressing the pen’s injection button

With PentaPoint™ technology**
Five-bevel needle tip for a more comfortable injection experience

Five additional cuttings
Conventional three-bevel tip

Two additional cuttings

0,23 mm (32G) x 4 mm
Pack with 105 needles
PZN 14046738 · PhC: 7321405

0,25 mm (31G) x 6 mm
Pack with 105 needles
PZN 14046744 · PhC: 7321380

0,25 mm (31G) x 8 mm
Pack with 105 needles
PZN 14046767 · PhC: 7321397

0,25 mm (31G) x 5 mm
Pack with 105 needles
PZN 14046750 · PhC: 7321374

* only for 4 and 5 mm length     ** not for 6 mm length

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Innovative and user-friendly design

- New design for better ease of use and gentle injection
  - More reliable 4 mm injection depth even with varying levels of injection forces
  - Broader, contoured needle base for a better injection force allocation
  - Reduces the risk of intramuscular injection by up to 8 times
  - Easier to grip outer cover for simple removal
  - With EasyFlow™ technology for a faster flow of insulin and less effort on pressing the pen’s dosage button
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Prevention of lipos:
- Use of a new injection site for each injection.
- Use of a new needle for each injection.
- Examine your injection sites regularly and consult your diabetes team if you notice any abnormalities!

Do not inject through clothing

Reasons why:
- General hygiene.
- The site should always be inspected prior to the injection (bleeding or insulin reflux).
- The cloth can alter the needle lubrication film, and/or damage or bent the needle tip. The injection becomes painful.
- It is difficult to correctly lift and hold a skin fold and the needle may not reach the subcutaneous tissue.

Insulin storage

Note: always observe the manufacturer’s recommendations!
- Avoid temperatures below 2°C (danger of freezing) and over 30° C.
- Store unopened insulin cartridges in the refrigerator at 2 – 8° C.
- Do not expose insulin to direct sunlight.
- Warm up cold insulin to room temperature prior to injection. Injecting cold insulin may be painful (burning sensation).
- Insulin will normally last around 30 days at room temperature (please consult instructions for use for your specific insulin).

NEW! BD Ultra-Fine™ PRO 4 mm Pen needle

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Innovative and user-friendly design

Reliable 4 mm injection depth thanks improved needle base

Easier to screw thanks an easier to grip outer cover

Easier to remove inner shield

Quick and comfortable injection with 4 mm needle
NEW! BD and Me™ educational platform

Helps to emphasise at home what is taught

- Short training modules with animations to learn a correct injection technique
- Demonstrates the positive effects of correct injection technique on the control of diabetes\(^\text{12}\)
- The access code to BD and Me™ is exclusively included in BD Ultra-Fine™ pen needle packages with 105 needles

www.bd.com/bdandme

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7. As at February 2019.