FIT Technique Plus*
Needle Length

*Educational tools based on FIT Canada Recommendations for Injection Technique, updated February 11th, 2020

Meet Doris

70 year old ♀
Type 2 diabetes for 22 years
BMI = 32kg/m2

- Treated with NPH insulin for 10 years and meal time insulin for 7 years.
- Currently using an 8mm syringe.

- HbA1c is 76mmol/mol (9.1%) experiencing nocturnal hypoglycaemia and erratic blood glucose control. Switched to a basal insulin analogue. Instructions on use of a prefilled pen provided by her nurse.
- Continues with 8mm pen needles.

Current Challenges

- Variable blood sugars (2.9-18.0 mmol/L), no discernible pattern.
- Nocturnal hypoglycaemia continues though reduced with basal insulin analogue. Some daytime hypoglycaemia with physical activity.
- Injection Technique Review:
- Site rotation: uses a structured pattern.
- Injection sites: no lipohypertrophy, some bleeding and bruising.
- Site selection: abdomen and thighs (basal), thigh and back of arm (meal time).
- Technique: injects 8mm pen needle at a 90° angle (no skin lift). Finds that if she tries to angle her injections into her arm it is less painful.
- 8mm pen needle increases her risk of intramuscular (IM) injection potentially causing the glycaemic variability and pain.[1]

What does the research say?

Gibney 20101
Average skin thickness ranges from 1.9-2.4mm in adults living with diabetes regardless of age, gender, ethnicity or BMI.

1.9 – 2.4

Hirsch 20102
4mm pen needles are safe and efficacious for adults living with diabetes and preferred compared to 5mm and 8mm pen needles.

4 5 8

Bergenstal 20153
4mm needles provided equivalent glycemic control to 8 mm and 12.7 mm needles in obese patients with diabetes.

5 =

Recommendations for Doris

- Advised to avoid injecting into the back of the arm (difficult to reach with possible risk of IM injection).
- Benefits of shorter pen needles were reviewed (less risk of IM injection, no need for a skin lift, more
- Follow-up HbA1c in 3 months and 6 months showed improved glucose control with infrequent hypoglycaemia, painless injection and reduced bruising using 4mm pen needles.

FIT UK Recommendation:[4]
4, 5 and 6mm pen needles are suitable for all people living with diabetes regardless of BMI.

Supported by embecta

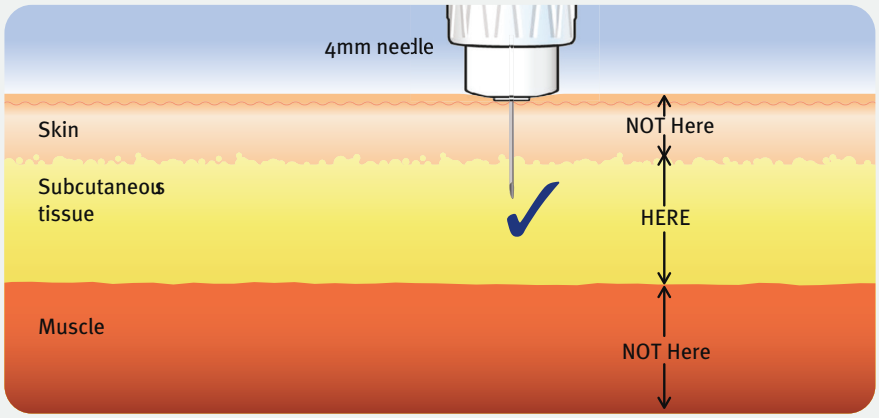
FIT Technique Plus*
Needle Length

*Educational tools based on FIT Canada Recommendations for Injection Technique, updated February 11th, 2020

Did you know?

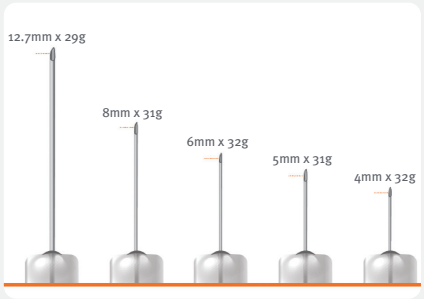
Insulin is best absorbed in the subcutaneous layer

Insulin injected into the muscle will not be absorbed properly. It may be painful and could be the cause of low or high blood sugars.

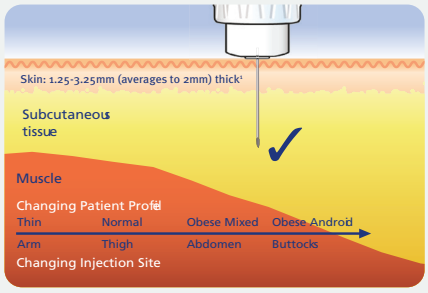


Did you know?

Needles come in **many lengths** from 4mm to 12.7mm long.

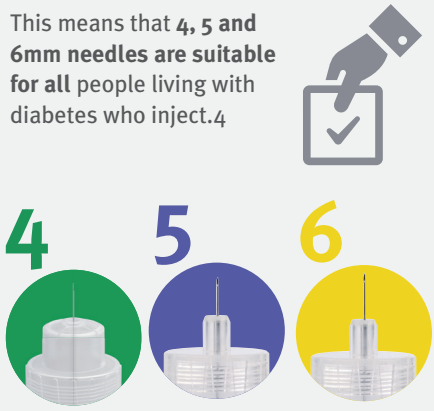


New research of the skin shows that on average the skin is only 1.25 - 3.25mm (average 2mm) **thick in all people** living with diabetes.[1, 5]



*

This means that **4, 5 and 6mm needles are suitable for all** people living with diabetes who inject.4

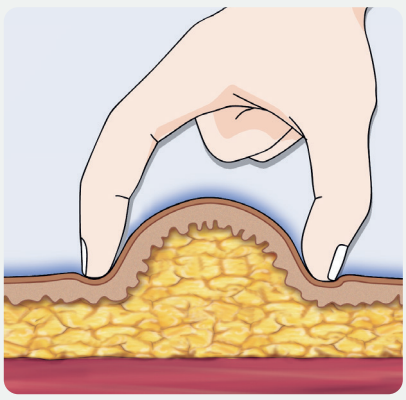


Needles actual size

Did you know?

How you inject your insulin matters

If you choose to use longer pen needles or syringes, or if you are extremely lean, you may need to perform a skin lift in order to avoid injecting into the muscle. Review your injection technique with your doctor or diabetes nurse today.



1. Gibney MA, et al. Skin and subcutaneous adipose layer thickness in adults with diabetes at sites used for insulin injections: implications for needle length recommendations. Curr Med Res Opin. 2010; 26 (6): 1519-1530.
2. Hirsch LJ, et al. Comparative glycemic control, safety and patient ratings for a new 4mm x 32G insulin pen needle in adults with diabetes. Curr Med Res Opin 2010;6:1531-41.
3. Bergenstal RM, Strock ES, Peremislov D, et al. Safety and Efficacy of Insulin Therapy Delivered via a 4mm Pen Needle in Obese Patients With Diabetes Data Previously Presented: Data presented in part at the 2013 American Diabetes Association annual meeting in Chicago, IL.
4. Hicks D, et al. The First UK Injection Technique Recommendations 2nd Edition October 2011.
5. Lo Presti D, et al. Skin and subcutaneous thickness at injecting sites in children with diabetes: ultrasound findings and recommendations for giving injection. Ped Diab 2012;13(7):525-53.

* The needles sizes are for illustrative purposes only and do not reflect the actual size.

Supported by embecta

www.fit4diabetes.com