

# Injection technique: To pinch or not to pinch?



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At Enfield PCT, we have recently developed an insulin care pathway. The reason we did this was to ensure that, regardless of where insulin therapy is initiated, any person with diabetes will receive the same level of care, including choice of regimen, choice of injection device, ongoing support and education. While working on the care pathway, which was a collaboration between our team and the team at North Middlesex University Hospital, we discovered that we had a variation within our collective practice relating to the question of whether to teach people commencing insulin therapy to pinch the skin in preparation for the injection or not.

The ensuing lengthy discussion between teams resulted in the conclusion that “it depends”. It depends on what? you may ask. Well, we did ask: through the journal’s Noticeboard section. The consensus of opinion was that the need to pinch does depend on the size of needle being used, but also the size of the person too: subcutaneous tissue thickness has been shown to be different between men and women, between individuals, and between one body region and another in any given person (Strauss et al, 1999).

## Why pinch and when to recommend it?

The reason for pinching a skinfold prior to injecting is to ensure that the insulin is administered into the subcutaneous layer, as opposed to muscle. It is well known that insulin injected directly into muscle is absorbed more quickly, and can precipitate hypoglycaemia.

The guidance offered by NICE (2004) on the size of needle to be used recommends assessing each individual on a case-by-case basis: use an appropriate length needle based on body fat levels (i.e. longer needles for people with more body fat). Based on my own experiences, as both a person with diabetes and a nurse, I would recommend the following as a starting point:

- Longer needles for overweight and obese adults (BMI >27kg/m<sup>2</sup>) using a pinched skinfold.
- Medium-length needles for normal-weight adults, children and adolescents using a pinched skinfold.
- Shorter needles for children and adolescents (aged 0–18 years) with or without an elevated skinfold, or adults without an elevated skinfold.

Research published recently (Birkebaek et al, 2008), suggests that 4mm needles reduce the risk of intramuscular injections, and can be used without pinching a skinfold; however, there is evidence that in lean young men there is still a risk of an intramuscular injection when insulin is given in the abdomen or thigh using a 5mm needle without an elevated skinfold (Frid, 2006).

## Conclusion

In addition to intramuscular administration, inappropriate injection technique can result in lipohypertrophy, and evidence supporting the notion that good technique is as important as the insulin itself is becoming increasingly apparent (Vardar and Kizilci, 2007). However, there appears to be a lack of evidence-based consensus over needle length and, indeed, whether or not to pinch a skinfold. For the time being, we, as nurses, need not only to teach the appropriate procedure for each individual, but to keep revisiting the technique on a regular basis with those taking insulin. ■

Birkebaek NH, Solvig J, Hansen B et al (2008) A 4-mm needle reduces the risk of intramuscular injections without increasing backflow to skin surface in lean diabetic children and adults. *Diabetes Care* 31: e65

Frid A (2006) Fat thickness and insulin administration, what do we know? *Infusystems International* 5: 17–19

NICE (2004) *Type 1 diabetes: diagnosis and management of type 1 diabetes in children, young people and adults*. NICE, London

Strauss K, Hannel I, McGonigle J et al (1999) Ultra-short (5 mm) insulin needles: Trial results and clinical recommendations. *Practical Diabetes International* 16: 218–22

Vardar B, Kizilci S (2007) Incidence of lipohypertrophy in diabetic patients and a study of influencing factors. *Diabetes Research and Clinical Practice* 77: 231–6

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