

# How can we emphasise the importance of good injection technique?



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With almost £390 million being spent on injectable therapies for diabetes in 2012/13 (Health and Social Care Information, 2013), one would hope that such expenditure would guarantee good glycaemic control for people with diabetes. Evidence that improving glycaemic control reduces the risk of developing long-term complications is well established (UKPDS [UK Prospective Diabetes Study], 1998); however, the latest figures from the National Diabetes Audit (Health and Social Care Information Centre, 2013) reveal that only 27% of adults with type 1 diabetes are achieving the NICE (2011) HbA<sub>1c</sub> treatment target of  $\leq 58$ mmol/mol for glucose control. Although this figure is better for those with type 2 diabetes (at approximately 66%), RCN guidance (2012) shows that given the progressive nature of type 2 diabetes, people are living with it for a long period of time and are more likely to need injectable therapies to achieve adequate glycaemic control. With this in mind, unless best practice injection technique is properly conveyed to all people with diabetes using injectable therapies, type 2 glucose control levels can be expected to drop to a similarly poor percentage.

## Injection technique

There are many reasons why a person using injectable therapies may fail to achieve blood glucose target levels, but I believe an important factor that is not fully appreciated in practice is the impact of injection technique. Correct injection technique is essential if injectable therapies are to achieve optimal effect (Birkebaek et al, 2008). Poor injection technique, including the use of inappropriate needle length, failure to rotate injection sites correctly, and the re-use of needles, can all undermine the effectiveness of therapy and adversely affect outcomes. Incorrect technique can lead to injectable therapies being absorbed in an unpredictable manner, causing immediate problems,

such as hypoglycaemia, hyperglycaemia (Polak et al, 1996; Birkebaek et al, 2008), and possibly even ketoacidosis in those with type 1 diabetes. In the longer term, poor glycaemic control increases the risk of complications such as kidney failure, blindness, and limb amputation (UKPDS, 1998). All of these have a devastating impact on the individual, but they also have huge cost implications for the NHS.

There is potential to make more cost-effective use of scarce NHS resources, as well as improve the quality of life for people with diabetes by raising awareness of best practice injection technique and ensuring it becomes embedded in everyday clinical practice. With some simple adjustments to injection technique, good glycaemic control can be more easily achieved. For example, the use of a shorter needle can help to prevent immediate problems, such as hypoglycaemia (Gibney et al, 2010). For reliable absorption, insulin should be injected into the subcutaneous layer; however, its thickness varies from site to site (Lo Presti et al, 2012). Studies by Frid et al (2010) and Gibney et al (2010) have found that 4 mm pen needles are appropriate for use by everyone, including obese people with diabetes. Furthermore, a site rotation system will help to prevent lipohypertrophy, and ensuring that needles are only used once will ensure correct insulin doses are given every time.

## Regular reviews of injection technique

Giving good advice at the initiation of an injectable therapy is key, but it is often at a later stage that problems related to poor injection technique arise. It is, therefore, important to re-visit injection technique and examine injection sites as part of routine, on-going management. With the potential impact of poor injection technique, I believe that healthcare professionals should be encouraged to consider injection technique in the same way as they consider inhaler technique when monitoring

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people with asthma or chronic obstructive pulmonary disease (COPD) with regular reviews of how people with diabetes are injecting. The importance of inhaler technique is reflected in the British Thoracic Society/SIGN Clinical Guideline (2011), which emphasises the importance of assessing a person’s ability to use inhalers before prescribing them. It also emphasises a need to regularly review inhaler technique, especially if control is inadequate. This is reflected within the Quality & Outcomes Framework (QOF) scheme, which recommends that inhaler technique is addressed as part of the annual asthma review (NHS Employers, 2013). Similarly, the QOF states that those with COPD who have been prescribed inhaled therapy must have their technique assessed at review for practices to qualify for points within the scheme (NHS Employers, 2013).

Regular assessment of injection technique should be an integral part of the diabetes review for every person using injectable therapy, yet nowhere within past or present QOF guidance has this been acknowledged. A review of injection technique should be included as part of the medication review for every person prescribed injectable diabetes therapies, but in my view, the most effective way to raise awareness and promote best practice injection technique, especially

within primary care, would be to include it within the QOF. I believe that more could be done through official guidance and incentive schemes to raise awareness about injection technique.

### **Further information**

Initiatives, such as the Forum for Injection Technique (FIT; [www.fit4diabetes.com](http://www.fit4diabetes.com)) are striving to promote optimal glycaemic control through best practice injection technique and to provide resources that can support both healthcare workers and people with diabetes. ■

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