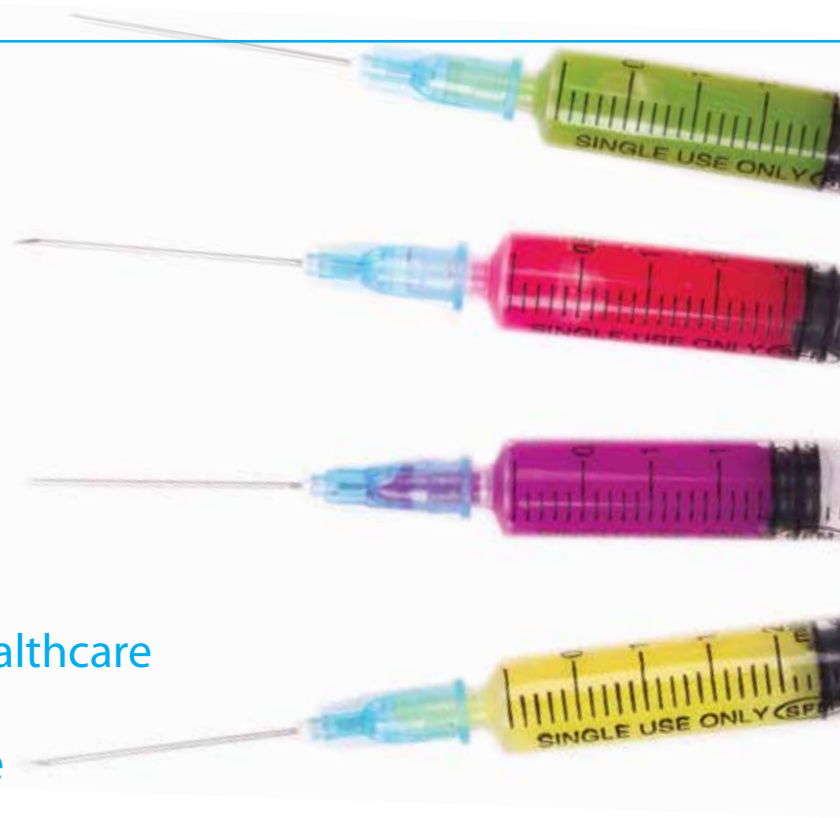
Safety point



FIT Ireland has released new recommendations to inform healthcare workers about best practice for diabetes injection technique

DIABETES is a major chronic illness, with type 2 diabetes affecting one in 20 people in Ireland.[1] It is estimated that 180,000 people of all age groups in Ireland have either type 1 or type 2 diabetes, and this is expected to rise to 233,000 by 2020.[2] The cost of diabetes care is becoming an increasing burden for the HSE, with diabetes treatment and complications making up to 5% of Irish national health expenditure.[3] It is estimated that almost 30% of people with diabetes use injectable therapies[4], which can be calculated as approximately 54,000 Irish people.

Poor injection technique can lead to injectable therapies not being absorbed properly. This may cause immediate problems such as hypoglycaemia and/or hyperglycaemia. Long-term problems can include lipohypertrophy, which may cause variability in the absorption of insulin.

For injectable therapies to work optimally correct injection technique is essential and, therefore, an improvement in technique could potentially contribute to managing the cost of diabetes care.

Forum for Injection Technique

The Forum for Injection Technique (FIT) was developed to establish and promote best practice in injection technique for all involved in diabetes care. FIT is an international endeavour and the founding members are experienced diabetes specialist nurses.

FIT was established following the 2010 publication of the international 'New injection recommendations for patients with diabetes' in the journal *Diabetes & Metabolism*. FIT is an autonomous organisation, which aims to support people with diabetes requiring injectable therapies to achieve the best possible health outcomes, by ensuring that the correct dose is delivered to the correct site, using the correct technique, every time.

FIT is working with the INMO Professional Development Centre to deliver a series of education and training programmes for nurses and midwives on injection technique *(see page 30)*.

FIT recommendations

FIT Ireland has published the 'First Irish Injection Technique Recommendations' for optimising injection technique in diabetes.[5] These were adapted from the First UK Injection Technique Recommendations second edition, published by FIT UK in 2010.[6]

The recommendations include the latest advice on topics such as injection sites and care, the correct use of pen devices, needle length, rotation of injection sites, and the psychological challenges of injections. Each recommendation is followed by both a letter and number. The letter indicates the weight a recommendation should have in daily practice, while the number specifies its degree of support in the medical literature. The recommendations apply to the majority of people with diabetes using injectable therapy, but there are individual exceptions for which these rules must be adjusted.

The key aim of the recommendations is to raise awareness of existing and emerging research relating to injection technique and sharps injuries, and the impact this may have on health outcomes for those with diabetes requiring subcutaneous injection therapy.

Psychological challenges/therapeutic education

The recommendations advise on the psychological challenges of injections for children and adults and suggest how to improve patient experience, for example by the use of distraction, stories, and cognitive behavioural therapies (CBT). Therapeutic education is deemed important and the regular review of a patient's injection therapy and care plan is recommended for healthcare professionals.

Injection sites and process

The FIT recommendations on injection sites and care are particularly important to help educate patients with diabetes on how best to avoid negative injection outcomes such as lipohypertrophy and inflammation, which can occur if there is not regular site rotation. The thighs, abdomen and buttocks are the current recommended injection sites.

Individuals should be taught to examine their own injection sites, how to detect lipohypertrophy, and advised not to inject areas of lipohypertrophy until abnormal tissue returns to normal. Sites should be inspected and any abnormalities documented by the healthcare professional within the individual's care plan. Each site should be examined at least annually or at every review if lipohypertrophy is known to be present. Preferably children should be inspected at each visit.

The rotation of injection sites is important to decrease the risk of lipohypertrophy. The recommendations note

one scheme with proven effectiveness which involves dividing the injection site into quadrants (or halves when using the thighs or buttocks); using one quadrant per week and moving always in the same direction, either clockwise or anti-clockwise.

Pen devices, syringes and absorption rates

Pen needles should be used only once, as using a new needle each time may reduce the risk of needle breakage in the skin, 'clogging' of the needle and inaccurate dosing. Under no circumstances should any healthcare professional re-sheath pen needles and safety needles should be used. A description of the correct injection process is provided in the recommendations, from the use of a new needle/syringe to the safe disposal of the used needle into a sharps box.

The recommendations inform about absorption rates when using human insulin, premixed insulin and insulin analogues. Massaging the site before or after the injection when using any type of insulin is not recommended as it may speed up the absorption rate. Intramuscular injection should be avoided since rapid absorption and serious hypoglycaemia can result.

Needle length

There is no clinical reason for recommending needles longer than 6mm for children and adolescents. Children and adolescents using a 5mm or 6mm needle are advised to lift a skinfold with each injection. A skinfold is essential for any person using an 8mm needle (as is currently the case with syringe users) to avoid intramuscular injection. No adult need use a needle of greater length than 8mm. Meanwhile, 4-6mm needles are recommended as suitable for all people with diabetes regardless of BMI as dermal skin thickness is on average 2mm thick. They also offer a less intimidating and less painful injection experience[9], while reducing the risk of intramuscular injections. A skinfold may not be required, particularly if using 4mm needles. Correct skin fold technique is thoroughly detailed in the recommendations *(see Figures 3 and 4)*.

Injection safety

Over the last few years, scrutiny has been increasingly focused on the safety and protection of healthcare workers when they are administering treatment to their patients. The EU Directive 2010/32[12] on sharps injury prevention in the hospital and healthcare sector provides a much needed opportunity to establish a mandatory framework for eliminating sharps injuries, and must be incorporated into national law in all EU member states by May 11 2013. This has focused attention on the need to provide greater protection to healthcare workers and others at risk of sharps injury.

The safe disposal of diabetes injecting material is very important. FIT has now extended its remit to include sharps safety as a natural progression and development of its role, and has also published the FIT 4 Safety UK and Ireland Safety of Sharps in Diabetes Recommendations.[13]

The recommendations are set out in a similar way to the FIT recommendations and provide evidence-based best practice information, which encompasses all people at risk of sharps injury and accidental blood exposure. The goal of ensuring that risk assessment and safe practice are the norm will be accomplished through raising awareness, education, training and easily accessible information.

One objective of the FIT 4 Safety Recommendations is to help individuals and organisations identify the risks associated with sharps and accidental blood or body fluid exposure. For example, blood borne pathogens such as HIV and hepatitis. Sharps injuries can be distressing, costly and can affect not just the original user but also other workers (for example: domestic staff).

The recommendations will act as support for individuals and organisations when applying the new EU Directive to clinical practice in their field of care, therefore helping to ensure the safest possible working environment. The recommendations detail the importance of education and training in encouraging a culture of safety in healthcare settings and establishing a policy for what to do in the event of a sharps injury.

When introduced into healthcare settings where a culture of safety has been fostered and appropriate training given, safety-engineered devices are recommended as they can significantly and sustainably decrease the incidence of a sharps injury.[14] Under no circumstances should any healthcare practitioner re-sheath syringes or pen needles, and any healthcare professional who is required to administer an injection or use a lifted skinfold should exhibit caution to avoid sharps injury. Sharps boxes for disposals can be obtained from local health centres and healthcare professionals and carers should familiarise themselves with local regulations as they may vary.

All should be aware of the consequences of the inappropriate disposal of sharps, which can result in sharps injuries to others such as refuse workers. Empty pen devices may be disposed of in the normal household refuse once the needle has been removed, but sharps material should never be disposed of into the public or household rubbish.

The injection technique and safety recommendations produced by FIT are the first of their kind to be produced for Ireland. They provide valuable guidance for healthcare workers and organisations and have been formulated by diabetes nurse specialists. The recommendations are clearly set out and note all the supporting studies drawn upon as evidence.

The aim of the recommendations is to inform and assist, as FIT is committed to supporting the implementation of the recommendations by all those involved in diabetes care. The recommendations will be updated at regular intervals to include new research evidence as it emerges. FIT welcomes comments, suggestions, and active participation in ensuring that the recommendations remain relevant and useful for now and the future.

FIT is supported by medical technology company BD and both are committed to promoting injection technique best practice and healthcare worker safety. For further information, see the FIT website: **http://www.fit4diabetes.com/ireland/**

Produced by the Forum for Injection Technique (FIT) Ireland, which includes: Helen Twamley, clinical nurse manager; Sonya Browne, clinical nurse specialist; Helen Burke, advanced nurse practitioner; Patricia Coady, clinical nurse specialist; and Yvonne Moloney, clinical midwife specialist

References available on request from nursing@medmedia.ie (Quote: Safety Point. WIN 2013;21(2) 44-45)

Upcoming course details

INMO HQ Dublin:
- April 26
- May 31

INMO Cork office:
- May 17
- June 14