Pen needles – Does size matter?

Jayne Lehmann RN CDE

People with diabetes depend on their health professionals to provide customised education and individualised product recommendations when educating and supporting them to self-administer diabetes injectable medications.

If people with diabetes are not using the right needle length/gauge they are likely to:

- Deliver their medication inconsistently into the sub-cutaneous layer
- Have unstable blood glucose levels
- Experience pain at the site of injection
- Develop lumps and bumps at the site of injections.

Guidelines

There have been two important documents launched in 2015 providing evidence based information and recommendations on subcutaneous injection technique:

- Clinical Guiding Principles for Subcutaneous Injection Technique\(^1\) by the Australian Diabetes Educators Association
- Diabetes Care in the UK FIT Forum for Injection Technique guidelines\(^2\).

These documents provide practical recommendations that demystify the individualisation of subcutaneous injection equipment by explaining the theory behind the practice and matching the available research with each recommendation.

Does needle size matter?

Using these guidelines as a reference, insulin and the injectable incretin (GLP1) medications are best administered in a manner that maintains a predictable and consistent absorption profile and limits discomfort.

Health professionals are required to individualise recommendations on the length and gauge of needle choice based on their assessment of the individual.

1. **The length** of a needle is the depth that the needle will deliver the medication under the skin (4mm – 12mm available in Australia). Insulin and incretins are designed to be administered into the subcutaneous layer, requiring a shorter needle (4-6mm). Longer needles are to be avoided because of their likelihood of injecting into the intra-muscular layer which changes the absorption and therefore profile of the medications.
2. **The gauge** of a needle is the thickness, size or capacity of the needle. This influences the perception of pain on injection as well as the flow of the fluid when injected. A larger gauge needle will deliver the medication with less pressure and faster.

The education provided by diabetes health professionals will be more effective if the equipment recommended is of a high standard and customised to the needs of the individual. Consistent delivery of medication into the subcutaneous layer helps to maintain the predictability of the action profile of medications. This in turn prevents high and low blood glucose readings from a poor injection technique. Needle size does matter for high quality results.

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The PiC Insupen range includes a 4mm, 33 gauge needles, and the thinnest on the Australian market, which delivers medication into the subcutaneous layer through a needle diameter of 0.20mm. These needles have the EXTR3ME needle bevel which is longer than its competitors and includes only three cutting edges to enter the skin with less resistance. This reduces the perception of discomfort on injection.

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1. Australian Diabetes Educators Association  Clinical Guiding Principles for Subcutaneous Injection Technique  Canberra, 2015.