

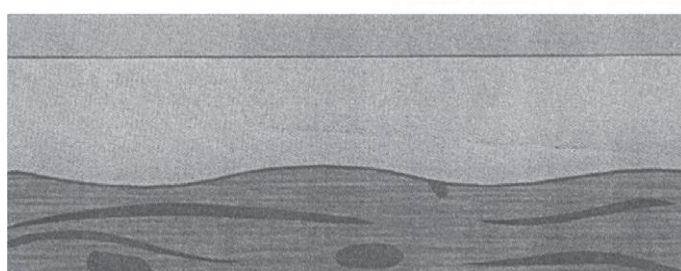
## Patient information

### Getting Started with Insulin Injections

#### Diabetes and Endocrinology

#### Insulin injections

To ensure the reliable absorption of insulin, injections must be given into the subcutaneous (fatty) tissue and not into the muscle or dermis (skin).



- ← Dermis
- ← Subcutaneous tissue
- ← Muscle

The depth of the subcutaneous tissue varies considerably between individuals and from one body region to another. An appropriate injection technique combined with the selection of the correct needle length is the best way to ensure a subcutaneous injection rather than an intra-muscular injection.

It is important to inject according to the recommendations given to you by your nurse or doctor. Do not hesitate to ask questions and have your injection technique checked on a regular basis.

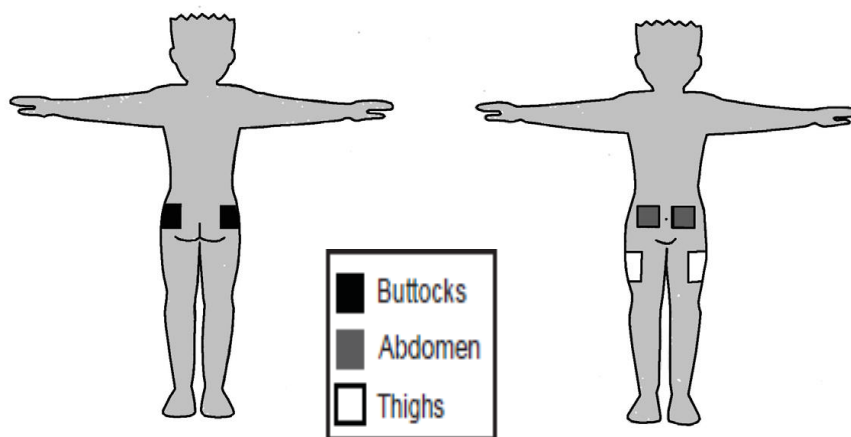
When injecting insulin remember to relax as tensing will make it more uncomfortable. Inject at a 90° angle and after the injection count to ten before removing the needle from your skin.

#### Injection sites

Knowing where to give your injection and how to rotate your injection sites will make your injections safer, more comfortable and more effective.

Your injection sites have to be easy to reach when you perform an injection and should take into account your own lifestyle. Discuss the most suitable injection sites and site rotation regime with your diabetes specialist nurse, doctor or practice nurse.

The main injection sites are:



### Rotating between injection sites

Each injection site has a different absorption pattern and in order to reliably predict the effect of a dose of insulin, you should try to keep a consistent site for each time of the day. For example if you decide to use your abdomen for your morning injection, you should try not to give the morning injection in the thigh or elsewhere, but rotate around the abdomen.

### Rotating within injection sites

Change sides alternating from the right side to the left side (for example right thigh to left thigh and vice versa).

Rotate within sites moving by about a fingers breadth from the last injection point. Repeated insulin injections at the same place have been shown to be one of the causes of a fatty tissue disorder known as “lipo hypertrophy”. Not only are these “lipo’s” disfiguring, they are also responsible for erratic and unpredictable absorption of insulin.

### Needle length

Your nurse or doctor will recommend a specific needle length most appropriate for you.

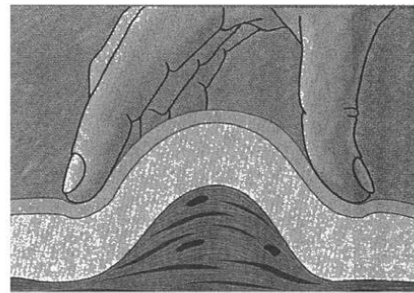
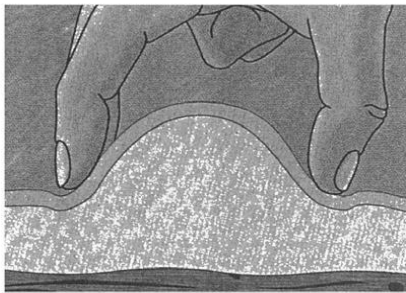
4,5or 6mm <input type="checkbox"/>	8mm <input type="checkbox"/>	10mm <input type="checkbox"/>	12.7mm <input type="checkbox"/>
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The correct sized needle will help ensure that your insulin is injected into the subcutaneous fat rather than under the skin or into the muscle. Using a needle that is too long or too short may affect how your insulin works if injected into the wrong place.

### Lifted skin fold

Performing a lifted skin fold is one of the measures you can take to avoid an accidental intramuscular injection. This may only be needed if you use a needle over 6mm or if you are slim. Please discuss with your diabetes team if you need to use a lifted skin fold when injecting.

A correct skin fold should be performed only with the thumb and index finger/middle finger, taking up the dermis and subcutaneous tissue but leaving the muscle behind.



The grip on the skin fold should be maintained throughout the injection and released once the needle has been removed. Releasing the grip too soon could result in an intramuscular injection.

### **Storing insulin**

The insulin that you are currently using should be kept at room temperature (below 25° - 30° C depending on your insulin – check the insulin box). This will make the injection more comfortable as cold insulin can sting. Your spare insulin, however, must be kept in the fridge (2° - 8° C) in order for it to last until its expiry date.

Insulin can be kept at room temperature for 28 days after which point it must be discarded. Do not freeze your insulin, as this will damage it. If you suspect that it has been frozen it must be discarded.

Always check the expiry date of insulin before using it. The expiry date is only valid if the insulin has been stored correctly in the fridge.

### **General recommendations**

Keeping a pen needle on an insulin pen leaves an open passage to the insulin. Therefore, it is important to remove the needle after each injection. This prevents air entry into the cartridge, insulin leakage out of the cartridge and clogging of the needle.

Whatever the insulin device used, we advise you not to inject through clothes for the following reasons:

- It is difficult to perform a correct lifted skin fold when injecting through clothes.
- Clothing fabric removes the lubricant and can damage the needle tip, which increase pain and discomfort when injecting.
- It is not possible to inspect the injection site for bleeding, insulin leakage or infection when injecting through clothes.

Whatever the insulin device used, needle reuse leads to damage and loss of lubricant.

This will increase pain and discomfort during the injection.

In some cases, excessive reuse may lead to the needle tip being broken off.

Ensure that you use a new needle every time you inject.

**CC** Since June 1998, all medical devices legally available in the United Kingdom and Europe must bear the CE mark. If you are offered insulin syringes or insulin pen needles that do not carry this symbol, you should refuse them.

## **Feedback**

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

## **Further information**

### **The Diabetes Centre**

**Tel: 0151 706 2829**

**Text phone Number: 18001 0151 706 2829**

### **NHS111**

**Tel: 111**

### **The North West Diabetes UK**

**First floor**

**The Boultings,**

**Winwick Street,**

**Warrington,**

**WA2 7JQ.**

**Tel: 01925 653 281**

**e-mail [n.west@diabetes.org.uk](mailto:n.west@diabetes.org.uk)**

### **Diabetes UK**

**10 Parkway**

**London**

**NW1 7AA**

**Website [www.diabetes.org.uk](http://www.diabetes.org.uk)**

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