

# Keeping insulin treatment safe and effective

Information for patients



**The RIGHT insulin, at the RIGHT dose, in the RIGHT way and at the RIGHT time**

## What is this booklet for?

Insulin is very useful in the management of diabetes and helps to lower and control blood glucose. However, errors with doses, different types of insulin and the way people inject can lead to patient harm.

The aim of this booklet is to promote the safe use of insulin by providing you with key information and top tips.

## Why is this important?

Errors can occur, but ensuring that you know the following about your insulin treatment will help to prevent harm:

- The **RIGHT** insulin
  - Name
  - Strength
  - Device
  - Expiry date
- The **RIGHT** dose
- The **RIGHT** way
- The **RIGHT** time



**Always check the name, strength and device of insulin that you have been given before you leave the pharmacy.**

## My Insulin

Write down your current insulin treatment in the table below. Keep this up-to-date and remember to bring this leaflet into hospital and to all appointments so it can be used by healthcare professionals.

Date started	Date stopped	Insulin brand name and strength	Device (e.g. vial, cartridge, prefilled pen)	Signature

## The **RIGHT** insulin

There are over 20 different types of insulin, some of which are short acting, long acting or a mixture of both. Your Healthcare Professional will have discussed with you which insulin may best suit your needs. It is important that you know the brand name, the strength of the insulin as well as the device you have been prescribed to stay safe.

## The NAME

The packaging of some insulins are very similar.

The brand names of some insulins are also similar. This table shows some insulin brand names that are often confused.

Humalog	<i>confused with</i>	Humalog Mix 25 or Humalog Mix 50
Humulin S	<i>confused with</i>	Humulin I or Humulin M3
Humulin I or Humalog	<i>confused with</i>	Humulin S or Humulin M3
NovoRapid	<i>confused with</i>	NovoMix 30
Levemir	<i>confused with</i>	Lantus
Hypurin Porcine	<i>confused with</i>	Hypurin Porcine Neutral 30/70 Mix

**It is important to remember the brand name of your insulin** as some insulins have different brand names for the same insulin.

For example, Insulin Glargine comes as four different brands: Lantus<sup>®</sup>, Abasaglar<sup>®</sup>, Toujeo<sup>®</sup> and Semglee<sup>®</sup>- these are **NOT** interchangeable.



## The STRENGTH

Previously in the United Kingdom the only strength of insulin available was 100 units per ml. However, some insulins are now available in different strengths.

The different strengths of insulin which are now available in the UK are listed below.

100 units per ml	The standard strength of insulin
200 units per ml	2 times the concentration of 100 units per ml
300 units per ml	3 times the concentration of 100 units per ml
500 units per ml	5 times the concentration of 100 units per ml

High strength insulins which are available as pre-filled pens are listed in the table below.

Brand name	Strength	
Humalog®	100units/ml	
	200units/ml	
Tresiba®	100units/ml	
	200units/ml	
Toujeo®	300units/ml	
Humulin R®	500units/ml	

## The DEVICE

There are a number of different devices in which insulin is available. Below is a list of the different types of devices:

### Vials

For use with insulin syringes, or can be used in continuous subcutaneous insulin pumps (CSII).



### 3ml Cartridges

For use in insulin pens. Not all cartridges can be used in all insulin pens. If you use cartridges you need to know which pen is right and safe for you to use.



### Prefilled pens

These contain your prescribed insulin. Once you have used all the insulin these pens are then thrown away.



### 1.6ml Novorapid Pumpcart cartridges

These are for use with the Accucheck® Insight pump or ypsopump.



## The RIGHT dose

Your dose is specific to you and depends on your weight, type of diabetes, the amount of carbohydrate you eat, and many other factors such as activity levels and illness.

Your doctor, nurse or pharmacist will advise you how much to inject. Education programmes are available to teach you how to adjust the dose of insulin appropriately.



Insulin syringes, which are marked in 100units/ml, should only be used to withdraw insulin from vials.



**Never use an insulin syringe to draw up from a cartridge or prefilled pen**

There is a risk of withdrawing the wrong dose if an insulin syringe is used to withdraw insulin from a prefilled pen that is 200units/ml or 300units/ml in strength.

If you record your own insulin doses or someone else does this for you, writing the letter "U" after the dose, instead of writing the word "units" in full, could result in the "U" being mistaken for a "0". This could result in you having an overdose of insulin, for example 40 units instead of 4 units. If someone else gives your insulin always ask to check the dose.

## The RIGHT way

Insulin should be injected at a 90° angle into the fat under the skin. If you are using short needles (e.g. 4mm) a lifted skin fold (or pinch) is not necessary unless you are very slim.



You can use the upper outer thighs, buttocks, abdomen and the fatty area at the back of the upper arm as injection sites.

Vary the places you inject into to avoid the development of fatty lumps (lipohypertrophy) which will delay insulin absorption.

Change your insulin pen needle every time you inject.

## The RIGHT time

Some people need to inject insulin 15 to 30 minutes before food, some with or just after food and some at bedtime. Please make sure you know when to inject your insulin. If you are unsure ask your healthcare professional to explain this.

If you are admitted to hospital, but are well enough, and would like to self manage your diabetes, ask your nurse or doctor about the possibility of keeping your insulin in a locker by your bed and managing your diabetes yourself.

If it is not possible for you to inject your own insulin, don't be afraid to ask the staff for your insulin when you need it.

## Storage and disposal

- Store unopened supplies of insulin in a fridge - it must not freeze.
- Insulin in use can be kept at room temperature but avoid direct sunlight and heat e.g. near radiators, fires or window sills.
- Make sure that you have enough supplies of insulin - especially when you are going on holiday.
- Always dispose of needles into a “sharps” bin - these are available on prescription. Once full these can be returned to certain; GP practices, healthcare providers, pharmacies or if you are housebound, and unable to arrange disposal, Leeds City Council.



Arrangements are different depending on your area so please check before attempting disposal.

## Hypoglycaemia

Hypoglycaemia is the main side effect of insulin treatment. This can happen if your blood glucose level drops below 4mmol/l. Early symptoms of a 'hypo' are:

Sweating heavily	Hunger
Anxiety	Going pale
Trembling and shaking	Palpitations
Tingling of the lips	Dizziness

## How to avoid hypoglycaemia:

- Eat regularly
- Keep to recommended alcohol limits and do not drink on an empty stomach
- Take your insulin at recommended doses and times
- Always carry glucose, snacks and your meter
- You may need to reduce insulin doses before and after exercise.



**If you have a lot of hypo's, ask to see your GP or diabetes team**

## Useful Contacts

Use this space to record the name and number of who monitors your diabetes. This may be your GP, but could also be the hospital. If you are unsure who this is please ask at your next review.

Your diabetes team contact is:

.....

Their contact number is:

.....

For medicine specific issues after you leave hospital please contact the **Leeds Teaching Hospitals Medicines Advice Service:**

**Patient Medicines Helpline: 0113 206 4376.**

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