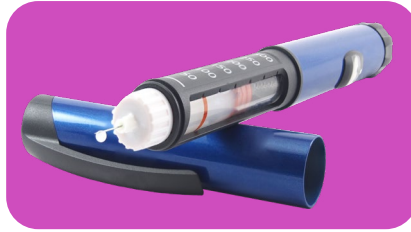
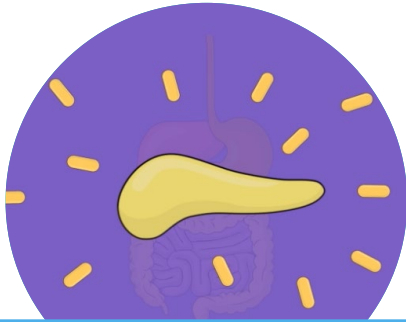


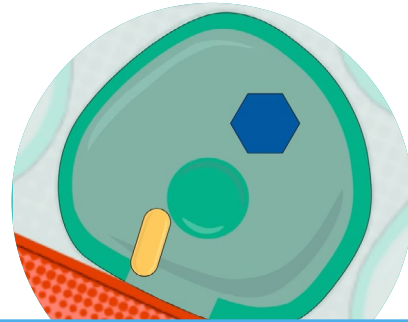
Insulin



How does it work?

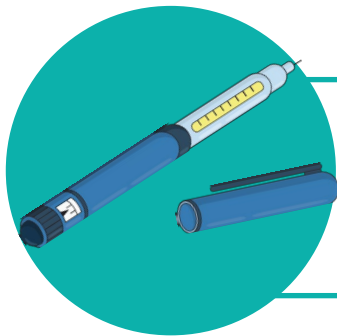


Insulin is a natural hormone made by the pancreas.



It works as the 'key' that lets glucose in the blood enter the body's cells to provide them with energy.

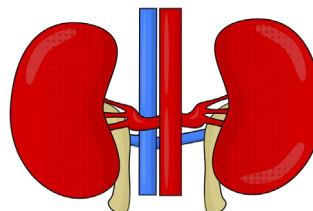
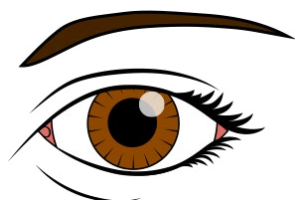
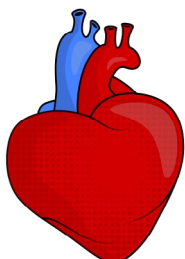
When you are at risk of, or have type 2 diabetes, your body is usually resistant to the effect of your natural insulin, and so the regular amounts of insulin are not enough to keep the blood glucose in range.



Insulin injections work in the same way as the natural insulin, and can help move more glucose into the body cells, keeping your blood glucose in range.

What are the benefits?

Insulin is the most effective medication option for reducing blood glucose and HbA1c to achieve your target. As a result, it can protect you from the long-term complications of high blood glucose.



What form does the medication come in?



Insulin comes in the form of an injection pen.

Your team will recommend the most suitable insulin for you. It is important to know the exact name and brand of your insulin, and always check that the brand you receive from your pharmacy is what you expect.



Types of Insulin

Aside from coming as different brands, insulins also work in different ways. There are two common types used for young people:

Long-acting or Background Insulin (Basal)



This type of insulin is taken once daily, often in the evening. It works throughout the day and night to keep glucose levels in good range.

This is the most common type of insulin you may need if your team recommends starting insulin.

Fast-acting or Mealtime Insulin (Bolus)



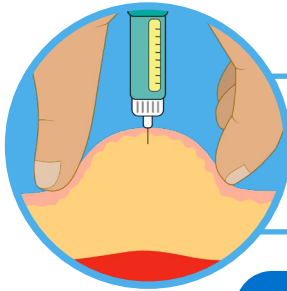
This type of insulin is taken with meals and snacks, and works for a short time to reduce glucose levels after eating carbohydrates.

If your team recommends using this, it will usually be in addition to the daily long-acting insulin.

Doses

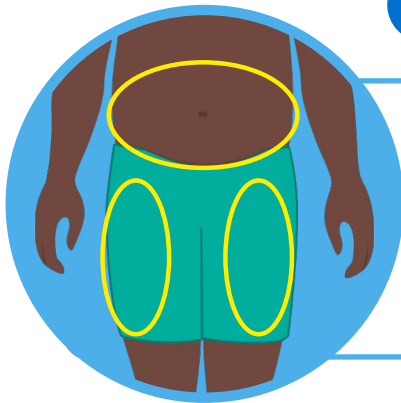
The dose of insulin is measured in 'units', which will be a number you dial on your injection pen. Your healthcare team will talk about doses in detail if you start insulin.

Injection Sites

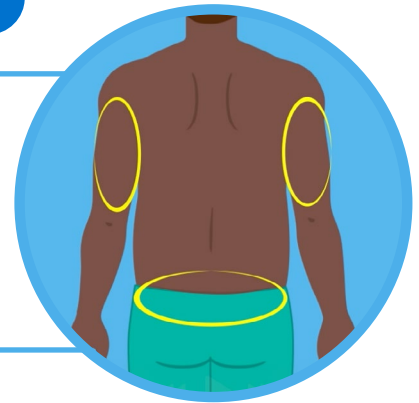


The medication needs to be injected into the layer of fat just under your skin.

The best injection sites are your:



- Tummy (at least 5 cm away from your belly button).
- Thighs (at the side).
- Upper part of the buttocks.
- Backs of upper arms.



Make sure you choose a different place to inject into each time. Do not inject into the same place twice in a row. This is called 'injection site rotation' and ensures your skin remains healthy after each injection.

Storage

Unopened pens or cartridges should be stored in a refrigerator. Once opened, you can keep it at room temperature for up to four weeks. It can be useful to keep the pen by your bedside or in a place that reminds you to give the injection regularly.

How should I dispose of used equipment?



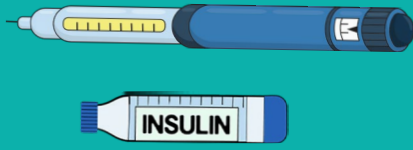
You will receive a regular supply of pens from your GP with each prescription.

You will be given a sharps bin when you start treatment, and replacement bins when needed.



Ask your healthcare team about what to do when your sharps bins are full.

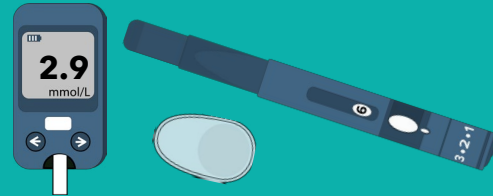
Can they cause hypos (low blood glucose)?



Yes.

One of the common side effects of insulin is causing hypoglycaemia (low blood glucose levels).

This is why it is important to check your blood glucose levels regularly at times agreed with your healthcare team.



If you start insulin, your team will discuss this with you in detail, so it will be easier to recognise hypos, how they happen, and how to reduce the chance of them occurring.

Symptoms of hypoglycaemia can vary from person to person and some people don't experience them at all. You will learn to recognise your own hypo symptoms which can include shaking, sweating, dizziness, hunger, blurry vision, difficulty concentrating and feeling anxious.

How do I treat a hypo?



If you have a hypo, you should treat it immediately.



If you have a hypo, you should treat it immediately with fast acting carbohydrates. Your healthcare team will guide you on how much to take.



**Lucozade
energy
original**



**Pure fruit
juice (not
squash)**



**Glucose or
Dextrose
Tablets**



**Jelly
Babies**



**A glucose
shot drink**



**Original
non diet
coke**

Cookies, chocolate, and crisps are not appropriate hypo treatments as they take too long to raise glucose levels due to their high fat content.

Check your blood glucose again after 10-15 minutes.

Are There Any Risks or Side Effects?

There is a lot of experience with using insulin in young people, and it is a well-tolerated option.

However, as with all medications, there are some potential side effects, including:

Hypoglycaemia (low blood glucose level).

Your team will discuss this with you in detail, including ways to prevent it.



Weight gain

Because insulin works very effectively to push glucose into the cells, it can lead to some weight gain. This side effect can be minimised by making sure you adopt an active lifestyle and healthy eating habits.

Lumpy injection sites (Lipohypertrophy)

Repeated injections in the same place can cause a lump of fatty tissue to build up under your skin. This can be avoided by making sure you rotate the injection sites regularly. If you spot any lumpy sites, you should avoid injecting into them for a few months until they heal.

Sick Day Rules

Aim for blood glucose levels between 4-10mmol/L and ketones below 0.6mmol/L

If you are taking insulin, there are some important steps to managing illness at home :

Never stop insulin. You may need to increase and sometimes decrease the amount you take.

Maintain hydration & glucose levels by drinking plenty of sugar free drinks. If unable to eat, replace meals and snacks with sugary drinks or hypo remedies.

Sick day rules are for when blood glucose is above 14mmol/L and ketones are above 0.6mmol/L.

Check blood glucose and blood ketone levels every 2 hours.

Contact your healthcare team for further advice & support if blood glucose and ketones do not come down.

Seek urgent medical advice if you are worried or if ketones are greater than 3mmol/L or if you are persistently vomiting.

Operations or Procedures When You Need an Anesthetic

If you are having an operation or a general anaesthetic (medicines that are used to send you to sleep during an operation), you should let your healthcare team know in advance so dose adjustments can be made if required.

You should also let the anesthetist know you are on insulin.