

Insulin pump therapy

What is it?

Insulin pump therapy is a way of giving insulin to people with Type 1 diabetes without the need for injections. Fast acting insulin is delivered in the form of an infusion (drip) through a cannula (fine tube) inserted under the skin which is connected to the pump by a plastic tube. The pump is of roughly the same size, shape and weight as a mobile phone. It has to remain attached via the tubing to the cannula on your skin at all times. Therefore, keeping it on your person in a secure place is important to avoid it becoming dislodged or entangled.

Who is it for?

Some people have difficulty achieving good diabetic control despite taking multiple injections every day and checking their blood sugars frequently. They may also suffer from frequent hypoglycaemia (hypos = low blood sugar) when trying to improve their diabetic control. Such people might find switching to insulin pump therapy beneficial.

How does it work?

The pump has been designed to imitate the way your pancreas would have worked to provide insulin. Insulin is delivered by continuous infusion. The rate of infusion can be programmed through the pump. You can set the programmes to run one after the other during a 24 hour period depending on your lifestyle. The programmes can also be changed at any time to suit your insulin requirements at short notice. These programmes are called Basal Rates. You can also deliver insulin in bursts or Boluses when having food. The rates at which boluses are delivered can be altered to match the kind of carbohydrates you have included in your diet.

The pump delivers fast acting insulin only. There is no need to take long acting insulin as well. This means that there is no store of insulin available in your body if the pump fails for any reason. Therefore, understanding the mechanisms of the pump and being able to take care of it are extremely important.

The cannula that you insert under your skin has to be changed every two to three days to avoid development of infection and local changes to the skin.

The pump will not be able to check your blood sugars and adjust the amount of insulin you require automatically. However, research is continuing to produce such a device.

When will pump therapy be useful to you?

- If your sugars keep going too high or too low after adjusting your fast acting insulin dose by even 1 – 2 units.
- If you are trying to keep your diabetic control as good as possible but keep suffering from severe hypoglycaemic episodes requiring someone else's help to recover.
- If your diabetic control is so erratic that you have lost the ability to tell when your blood sugars are dropping too low (loss of hypoglycaemia awareness).
- If you are unable to stand the fact that you have to inject insulin four or more times a day using a pen or syringe.

How will you qualify for pump therapy?

- You will have to demonstrate that you are already practising carbohydrate counting competently when using a four or five times a day insulin regime.
- You will need to provide evidence that you can check your blood sugars yourself without anyone else's help at least 4 times a day every day (ideally 6 – 10 times a day).
- Reassurance that you will not have difficulty coping with the greater level of commitment required to manage the pump successfully.

The pump selection criteria (see NICE TA151) are necessarily strict to ensure that the pump is provided to people who will genuinely benefit from it. Pump therapy requires a higher daily level of commitment than multi-dose insulin regimes in order for the treatment to succeed. People on insulin pump therapy who cannot afford this level of commitment are at risk of being quickly hospitalised with diabetic ketoacidosis which is a major acute life-threatening complication and is to be avoided at all costs.

When you have been referred for consideration of insulin pump therapy you will receive an appointment to be assessed in a clinic run by Dr Diptendra Ghosh, Diabetes Sister Chandra McCulloch and our Chief Dietitian Mrs Heather Duthie. If you meet the criteria for pump therapy you will then be given an appointment to attend the training sessions following which you will be started on pump therapy after signing an agreement. A few weeks after starting pump therapy you will be expected to come to the Pump Clinic and keep regular clinic appointments.

The pump and consumables are provided by the NHS free of cost to you. In return we would expect you to attend all the clinic appointments made for you because regular review is essential to maintain stable diabetic control and address any issues related to the functioning of the pump. If you move out of the area we would expect you to notify us because this would have implications on continuing funding of pump related expenses. Failure to show a noticeable improvement in diabetic control within a year of starting pump therapy and/or repeatedly missing pump clinic appointments may result in pump therapy being withdrawn which means returning to using insulin injections. This is because we receive funding from the Clinical Commissioning Groups to run the pump clinic conditional to achieving measurable outcomes.

Further reading

NICE Guidelines TA 151

www.insulin-pumpers.org.uk

More information

For more information about the Trust, visit our website www.royalberkshire.nhs.uk

This document can be made available in other languages and formats upon request.

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Reviewed: May 2018

Review due: May 2020