

Insulin pump therapy

This leaflet explains what insulin pump therapy is, how it works, including the benefits and risks.

What is insulin pump therapy?

It is a way of administering 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 approximately 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. Some insulin pumps are tubeless.

Who is it for?

NICE (National Institute for Health and Care Excellence) recommends the use of insulin pump therapy for appropriate people with Type 1 diabetes. For example, this might be someone who has difficulty achieving good diabetic control despite taking multiple injections every day, or someone who has frequent episodes of hypoglycaemia (hypos = low blood glucose). In those circumstances, insulin pump therapy could be 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 – this means insulin is given directly into your bloodstream, usually over a prolonged period of time. The rate of infusion is programmed through the pump. The infusion programmes could be altered 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 bolus (fast acting) insulin when having food or when you need to lower glucose if they are high (known as a 'correction dose'). The rates at which boluses are delivered can be altered to match the amount of carbohydrates you have included in your diet.

What are the risks of using the pump?

The pump delivers fast acting insulin only. There is no need to take long acting insulin. However, 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 an infection developing and changes to the skin around the area.

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.

What are the benefits of using the pump?

Insulin pump therapy is useful:

- If you are trying to keep good control of your diabetes but keep suffering from severe hypos, 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 glucoses are dropping too low (loss of hypoglycaemia awareness).
- If you struggle to get good diabetes control.

How can I show I am suitable 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 four times a day every day (or ideally, 6-7 times a day).
- You will need to show that you will not have difficulty coping with the greater level of commitment required to manage the pump successfully.

The NICE guidance (see [NICE TA151](#)) on pump selection criteria is very strict to ensure that the pump is only provided to those 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 do not strictly follow the above commitments 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.**

What happens next?

When you have been referred by the Diabetes Team for consideration of insulin pump therapy, you will receive an appointment to be assessed in a clinic run by Consultant Diabetologist Dr Thein Htay, along with a diabetes nurse specialist and a dietitian. If, during this appointment, you meet the criteria for pump therapy, you will then be given a date to attend the training sessions to start on an insulin pump. A few weeks after starting pump therapy, you will be expected to come to the pump clinic and to keep regular clinic appointments.

Important points

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, you must notify us because it 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 the funding we

receive (from the Clinical Commissioning Groups) to run the pump clinic depends on us showing that the insulin pump therapy benefits people's health and wellbeing.

Further reading

[NICE Guidelines TA 151](#)

<https://www.nhs.uk/conditions/type-1-diabetes/insulin-pumps/>

www.insulin-pumpers.org.uk

<https://www.diabetes.org.uk/guide-to-diabetes/managing-your-diabetes/treating-your-diabetes/insulin-pumps>

If you have any questions about this leaflet, please contact:

Diabetes, Endocrine and Metabolism Department

Melrose House, Royal Berkshire NHS Foundation Trust, Reading RG1 5BS

To find out more about our Trust visit www.royalberkshire.nhs.uk

Please ask if you need this information in another language or format.

Dr Thein Htay, Consultant in Diabetes and Endocrinology / Chandra McCulloch, Diabetes Sister, RBFT Centre for Diabetes and Endocrinology, March 2022

Next review due: March 2024

Post-Radioiodine Nurse-led Thyroid Virtual Clinic

Referral to the endocrine nurse following radioiodine.

Please inform the endocrine nurse when you have had the radioiodine treatment (**during the first week**) by calling M.07825 364371.
(This ensures that a scheduled virtual follow-up clinic appointment has been booked for you).

Follow-up after radioiodine takes place up to 6-8 months.
(The thyroid gland mostly likely will become underactive and to minimise the side effects, timely **blood test & virtual follow-up appointments are essential.**)

Blood request form and date for virtual follow-up appointment will be sent to you via post.

- **First blood test must be done at week 4, after radioiodine.**
- **First virtual follow-up will be booked for week 5, after radioiodine.**

The nurse will discuss blood test results, assess your thyroid status and make medication adjustments, if needed.

Further blood tests & virtual follow-up appointments will be scheduled for every 4-6 weeks.

You may or may not require Thyroxine replacement (Levothyroxine) after radioiodine.
The nurse will ensure that your thyroid hormones have stabilised prior to discharging you back to your GP.

Discharge recommendations for GP:

Thyroid blood test at 3 months; if test results stable, then 6 monthly for the first year and then annually thereafter.