



A guide to...

Insulin pump therapy

Patient information

If you need this leaflet in another language, large print, Braille or audio version, please call **01923 217 187** or email westherts.pals@whht.nhs.uk



Language



Large
Print



Braille



Audio

Author	Abigail Mitchell
Department	Paediatrics
Review Date	Nov 2022 / Nov 2025
ID Number	40/2064/V2



What is insulin pump therapy?

An insulin pump is a small device, a little larger than a blood glucose testing meter that is worn outside the body, often on a belt or in a pocket. It delivers fast-acting insulin into the body via an infusion set - a thin plastic tube ending in a small, flexible plastic cannula or a very thin needle. You insert the cannula beneath the skin at the infusion site, usually in your abdomen or upper buttocks. You keep the infusion set in place for two to three days and then move it to a new location.

All insulin is delivered through the infusion set. The insulin pump is not an artificial pancreas, it is a device that delivers fast-acting insulin in precise amounts at pre-programmed times.

A pump is worn ALL the time and only taken off for bathing, swimming and contact sports (unless it is a waterproof pump).

You have to be able to program the pump and make decisions about how much insulin you need. Wearing an insulin pump requires you to do lots of work. You need to learn how to use the pump to deliver the extra insulin you require when you eat, check your blood glucose levels at least five times and be able to adjust all the pump settings in response to your intake, activity and blood glucose levels.



Who can have an insulin pump?

The criteria for insulin pump are set out by the National Institute for Health and Clinical Excellence (NICE). (<https://www.nice.org.uk/guidance/ta151/resources/insulin-pump-therapy-for-diabetes-pdf-374892589>)

Children under the age of 12 years are eligible for insulin pump therapy in agreement with the diabetes team.

Children over the age of 12 years, using multiple injections are eligible for insulin pump therapy if they are unable to maintain HbA1c below 8.5% (69mmol/mol) or have problems with severe hypoglycaemia.

As well as meeting the above criteria, the Diabetes team requests that you are able to demonstrate the following management skills

- Carbohydrate counting and insulin adjustment
- Use of correction doses to lower blood glucose levels
- Be able to adjust insulin doses according to blood glucose levels and activity patterns
- Regular blood glucose monitoring at least five different times a day
- Share your diabetes data (insulin doses, pump settings and glucose levels) with the diabetes team.

Before considering an insulin pump we suggest you speak to other families about life on an insulin pump.

Consider a saline trial (wearing a pump without insulin in) so you can experience what pump therapy is like.

To ensure that children and young people get the most from insulin pump therapy, we agree criteria with the children and young people and their families who would like to commence pump therapy.

In order to start insulin pump therapy, we agree criteria to ensure the child or young person with diabetes can measure the success of the treatment in relation to:

- Reduction of HbA1c
- Reduction in the frequency and severity of hypoglycaemia or the impact of hypoglycaemia on the lives of the children and young people.

These criteria are reassessed regularly at diabetes clinic to ensure continuing success of insulin pump therapy for the child or young person.

Occasionally, we negotiate with the children and young people, and their families, about stopping insulin pump therapy, if by not adhering to diabetes treatment advice, puts them at risk of becoming unwell. Children and young people, and their families, agree a treatment plan with the team, but if they cannot follow the treatment plan, the pump is withdrawn, in the interest of the safety of the child or young person

Are you pump ready?

The answer to this question is yes if:

- You are managing your diabetes using the management skills listed
- You and your parents are willing to use the pump
- You are working towards using all injection sites
- You are able to attend all the education sessions and check blood glucose levels regularly (at least nine times through the day and night in the first few weeks)
- You will be able to support school and other family members with pump use
- You are able to carbohydrate count and are happy to weigh foods regularly
- You are able to carry out fasting basal rate glucose profiles.

Please see table below for pumps that the diabetes team support and pump features.

Make and model	Medtronic 640G	Medtronic 670G (minimum age 7 years)	Medtronic 780G (minimum age 7 years)	OmniPod Dash (children over 25kg or over 8 years of age)	Tandem T: Slim x2	Cam APS FX & Dana Pump (Ages 1year & over)
Pump type:	With tubing	With tubing	With tubing	Patch	With tubing	With tubing
Pump weight (excl handset):	102g	102g	102g	25g	112g	86g (with battery)
CGM						
Linked CGM system?	Yes – Enlite or Guardian sensors	Yes- Enlite or Guardian sensors	Yes- Guardian Sensor 3 and Transmitter / Guardian 4 Sensor and Transmitter	No	Yes – Basal IQ with Dexcom G6	Yes – Dexcom G6
Does the pump respond to the linked CGM?	Yes - predictive low glucose suspend	Yes – integrated hybrid loop with auto basal adjustment and low suspend	Yes – Hybrid Closed Loop System with basal adjustment and auto correction boluses	Not applicable	Yes - predictive low glucose suspend	Yes – Hybrid Closed Loop System with basal adjustment and auto correction boluses
Cannulae						
Type:	Choice: angled Teflon, 90 degree Teflon, 90 degree steel	Choice: angled teflon, 90 degree teflon, 90 degree steel	Choice: angled Teflon, 90 degree Teflon, 90 degree steel	Choice: 45 degree soft cannula	Choice: angled soft 45 degree, soft 90 degree, steel	Choice: Soft release O 90 degree Teflon cannula, Easy release 90 degree steel cannula
Manual / automatic insertion:	Choice of both	Choice of both	Angled Teflon and 90 degree Teflon choice of both 90 degree steel manual only	Automatic	Choice of both	Choice of both
Disconnect and reconnect?	Yes	Yes	Yes	No - needs replacing if disconnected	Yes	Yes
Remote control / handset:	Yes - boluses can be delivered via the pump or handheld wireless BG meter	Yes - boluses can be delivered via the pump or handheld wireless BG meter. Note that boluses cannot be sent via the meter while in auto mode.	No	Yes - the only way to give boluses and commands	No	Yes - boluses can be delivered via the pump or via the Cam APS app on mobile phone.

Make and model	Medtronic 640G	Medtronic 670G (minimum age 7 years)	Medtronic 780G (minimum age 7 years)	OmniPod Dash (children over 25kg or over 8 years of age)	Tandem T: Slim x2	Cam APS FX & Dana Pump (Ages 1year & over)
Bolus calculator?	Yes	Yes	Yes	Yes	Yes	Yes
Linked blood glucose meter?	Yes – wireless linked BG meter (Ascensia™ Contour Link meter)	Yes – wireless linked BG meter (Ascensia™ Contour Link meter)	Yes – wireless linked BG meter (AccuChek™ Guide Link meter)	Yes	No	No

How to contact us

Children and Young People's Diabetes (CYPD) Team

West Hertfordshire Hospitals NHS Trust

Monday - Friday 8 am - 5 pm Tel: 01442 287442

Out of hours Tel: 01438 285000

Talk to the team about your expectations of an insulin pump.

You can contact the team on **01442 287 442** or email us:

westherts.paediatricdiabetes@nhs.net

Further information

For more information on different brands see table above or you can visit the following websites:

www.medtronic-diabetes.co.uk/minimed-system/minimed-640g-insulin-pump

www.myomnipod.com

<https://www.tandemdiabetes.com/en-gb/home>

<https://www.medtrum.com/A6.html>