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Insulin pump therapy

***Information for
patients and carers***

**Diabetes Centre
David Anderson Building, Foresterhill**

What is an insulin pump?

An insulin pump is a computerised device that can help you manage your diabetes. The pump is about the size of a pack of cards and you can wear it on a belt or keep it in a pocket.

With an insulin pump you can match your insulin requirements to your lifestyle, rather than having an insulin injection and matching your life to how the insulin is working.

How does an insulin pump work?

An insulin pump connects to narrow, flexible plastic tube. There is a needle at the end of the tube that is inserted just under your skin.

You set the pump to give yourself a steady trickle or **basal** amount of insulin continuously throughout the day. Basal insulin keeps your blood glucose levels in range between meals and overnight. Often, you program different amounts of insulin at different times of the day and night.

Pumps release bolus doses of insulin (several units at a time) at meals and at times when blood glucose is too high, based on programming done by you, the user.

Insulin pumps can give you rapid- or short-acting insulin (a type of insulin that starts to lower blood glucose within 30 minutes after injection and has its strongest effect 2 to 5 hours after injection).

When you eat, you use buttons on the insulin pump to give yourself extra insulin called a **bolus**. You take a bolus to cover the carbohydrate content in each meal or snack.

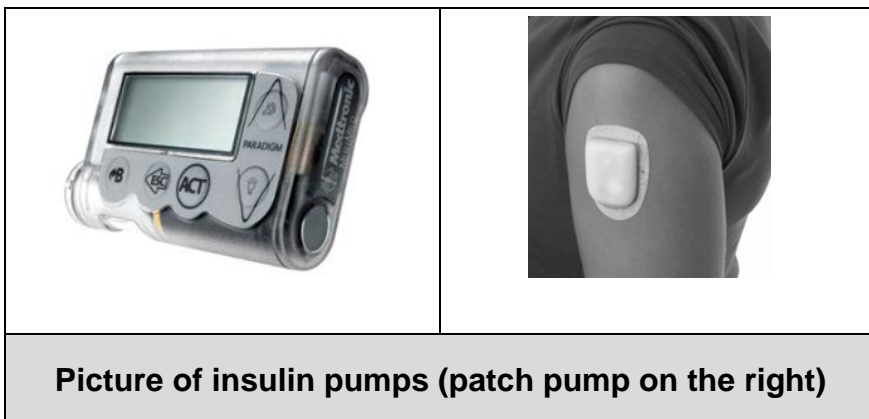
If you eat more than you planned, you can simply program a larger bolus of insulin to cover it.

You also take a bolus to treat high blood glucose levels. If you have high blood glucose levels before you eat, you give a correction or supplemental bolus of insulin to bring it back to your target range.

What are the main parts of an insulin pump?

Pump

A small computerised, battery operated pump, which allows you to control exactly how much insulin you get. Patch pumps have a tubeless system with a pod that is attached to the skin.



Infusion set

A thin plastic tube called an infusion set has a soft cannula at the end inserted just under the skin, usually on your abdomen.



Picture of infusion set attached to pump

Reservoir

The insulin is stored in a pump reservoir which holds 2 to 3 days' supply of insulin



Picture of reservoir

Who benefits from a pump?

People with type 1 diabetes who manage their diabetes using a basal bolus regimen and who completed a course for intensive insulin management (like DAFNE, TIM or DIANE). They must monitor their blood glucose regularly (at least 4 times a day) and be skilled at carbohydrate counting.

What are the benefits of a pump?

An insulin pump allows for a more flexible delivery of your insulin. As basal insulin is delivered continuously you can adjust the rate during periods of physical activity, illness and stress to help reduce high or low blood sugar.

In the long term this may help to reduce variations in your blood glucose and improve overall blood glucose control. Effective pump users have also reported an improved quality of life and wellbeing.

How can I find out more?

Please discuss with your diabetes consultant. If it's felt that a pump might benefit you, the consultant can refer you to the insulin pump service.

The service will review your details and if you're suitable invite you for an awareness session or a clinic review. You can look at the approved insulin pumps and find out more about the practical aspects of insulin pump therapy.

If you still wish to go ahead with insulin pump therapy we'll arrange for an assessment with the Diabetes Specialist Nurse, Dietitian and Psychologist. This will help us to make sure that an insulin pump therapy is right for you.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Reduce severe episodes of hypoglycaemia • Smoother glycaemic control • May reduce HbA1c slightly • Flexibility with lifestyle, exercise • No need to inject daily • Features on the pump to help you when you need less or more insulin to be delivered • Basal rates can be adjusted in 0.025 unit increments • Boluses can be adjusted in 0.1 unit increments • Boluses calculated on blood glucose level, carbohydrate intake, insulin sensitivity and active insulin. 	<ul style="list-style-type: none"> • Infusion set needs changed every 2 to 3 days • Risk of infection at infusion site • Pump may malfunction; infusion set can block • Risk of diabetic ketoacidosis developing sooner than your current insulin regimen • Must check glucose levels minimum 4 to 6 times each day • You need to wear the pump 24 hours a day, every day. Pump can be disconnected, but only for a maximum of 1 hour at any time • Complications such as lipodystrophy (lumpy injection sites) can still occur using the pump

Useful contacts

Insulin Pump Service

Diabetes Specialist Nurse Team

☎ 01224 558016 ☎

Pump Administrator

☎ 01224 558011 ☎

gram.insulinpumpservice@nhs.scot

Pump manufacturers

Medtronic Customer Service

☎ 01923 212213 ☎

www.medtronic-diabetes.co.uk

Omnipod Customer Service

☎ 0800 011 6132 ☎

www.myomnipod.com

Air Liquide homecare/Tandem customer care

☎ 0800 012 1560 ☎

Email: diabetes.info@airliquide.com

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