

Insulin Pumps



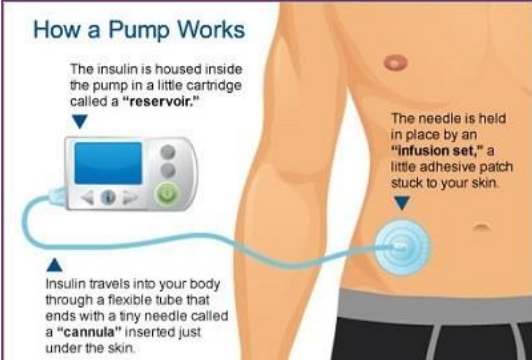
Beaumont Hospital Diabetes Clinic

Summary Information Sheet – Introduction to Insulin Pumps
Last updated June 2020

What is an insulin pump?

How a Pump Works

The insulin is housed inside the pump in a little cartridge called a "reservoir."



The needle is held in place by an "infusion set," a little adhesive patch stuck to your skin.

Insulin travels into your body through a flexible tube that ends with a tiny needle called a "cannula" inserted just under the skin.

- An insulin pump is a box-like battery operated portable device that delivers insulin through a plastic tubing with a tiny flexible cannula/plastic needle at one end which is positioned just under your skin.
- The tubing and cannula (plastic needle) is called an *infusion set*. It can usually be left in place for 2-3 days after which time you must insert a new infusion set.
- You are advised to rotate the position of your infusion set sites just as you would with injections.

Advantages of insulin pumps	Disadvantages of insulin pumps
Blood sugar levels more often in your target range. Most people often have fewer highs and lows.	You'll need to have your pump attached to you all the time. Only take it off for small breaks, like when you're swimming or showering.
You won't have to inject as often.	The infusion set can sometimes get blocked, so you might need to change it at short notice.
You can tailor your insulin more easily before, during and after exercise. You can also make temporary adjustments to insulin doses for issues such as sickness or stress.	You'll need to take a lot of time to learn about your pump, especially when you first get it.
You'll have more flexibility in what, when and how much you eat.	There's always a small risk of infection from the cannula.
Better accuracy when you're bringing down high sugar levels.	You'll still need to inject sometimes.

So what happens to my basal and bolus insulin when switching to an insulin pump?

The insulin pump delivers rapid-acting insulin only but in two ways:

- The first is the **basal** rate which is delivered continuously throughout the day and night (also known as 'background insulin'). The basal rate replaces long-acting insulin and is pre-programmed and happens automatically. Its job is to help maintain target glucose levels overnight and in between meals. It can be changed depending on things like the time of day and how active you're being. Your healthcare team will help you set your basal rates based on your individual needs.

- The second delivery is called **bolus** insulin delivered by the pump to cover meals and snacks and to correct a high glucose and bring it back to target. Most pumps have bolus calculators to help you figure out the right amount of insulin you'll need.

Please note:

There are currently three insulin pumps available in Ireland at the moment funded through the HSE **if you meet the qualifying criteria**. It's important to emphasise that not everyone qualifies for funding for insulin pump therapy and there can often be a long waitlist involved also for those who do. Which type of insulin pump you may be able to access should be discussed through consultation with your diabetes team and will be informed by your clinical needs. Please speak to a member of your diabetes team (eg: diabetes nurse or consultant) for queries related to insulin pump types and to discuss whether or not you meet the qualifying criteria.



Important to Remember:

- Each pump device comes with different features and different software packages that you will have to upload your information to before you attend your clinic.
- Insulin pumps do not automatically provide the right amount of insulin; you need to figure out the amount needed and tell the pump to administer. While pumps can do math to assist in calculating the dose needed, the final decision is still made by the person wearing the pump.
- It is also worth remembering that an insulin pump does not work for everyone!

Getting the most out of your Insulin Pump:

In order to get the most out of your insulin pump, it will be important that you work with your diabetes team in order to be able to:

- Check your blood glucose at least 4 times daily (and/or wear a CGM)
- Understand and use carb counting
- Know how to adjust insulin doses for various situations, such as high blood glucose, exercise and sick days
- Engage in active problem solving for issues/challenges faced with your diabetes self-management
- Practice ketone monitoring
- Use your pump device as instructed
- Know your back-up plan



If you are interested in finding out more about insulin pumps, please see:

- <https://thriveabetes.ie/insulin-pumps>
- <https://www.diabetes.org.uk/guide-to-diabetes/managing-your-diabetes/treating-your-diabetes/insulin-pumps>
- <https://www.ioslin.org/patient-care/diabetes-education/diabetes-learning-center/insulin-pumps>

Insulin Pumps Currently Available in Ireland



Accu-Chek Combo by Roche

The Accu-Chek Combo insulin pump has been around for a number of years and is called the Combo System because the system combines an insulin pump with a smart handset that is both a blood test meter and a bolus calculator.

Key Features:

- Combines an insulin pump with a smart handset that is both a blood test meter and a bolus calculator
- Colour screen handset doubles as blood glucose meter
- The handset offers extra discretion so you can operate the pump without no-one needing to know you are wearing one.
- Includes a built-in bolus calculator which offers suggestions how much insulin should be in your bolus
- Large 315 unit reservoir
- Bluetooth integration between the handset/meter and the pump, so you don't have to manually entering your test result before using the bolus calculator
- Not directly integrated with a CGM system in Ireland



MiniMed 640G by Medtronic

This pump is currently the only pump available that is a sensor augmented pump (SAP) meaning the Continuous Glucose Monitoring (CGM) capability is combined into the pump system. It can be used as a pump only or as a pump/CGM combo.

Key Features (Pump Only):

- Integrated with Contour NEXT Link blood glucose meter (wirelessly connects to your pump, allowing you to send BG meter readings to your pump)
- Colour screen –with light adjusting display
- Designed for easy use by both left-handed and right-handed people
- Includes a built-in bolus calculator which offers suggestions how much insulin should be in your bolus
- Downloads to CareLink™

Additional Features if CGM included:

- Integrated with Enlite II or III CGM sensors and has SmartGuard Technology
- SmartGuard - can predict and prevent hypos
- SmartGuard® can predict when approaching low glucose levels 30 minutes in advance and automatically stop insulin delivery.
- When blood glucose levels recover, SmartGuard automatically resumes basal insulin delivery



Key Features:

- Small insulin pump with a touchscreen
- Pre-filled insulin cartridges – for a quick and convenient cartridge change from Novo Nordisk or Self-filled mylife YpsoPump Reservoir – for the insulin of choice
- mylife App – comprehensive data at your fingertips
- mylife Software – Bluetooth sync between pump, MyLife Unio BG meter and Smartphone App
Links to mylife App for bolus calculations and data sharing / review

YpsoPump by Ypsomed

The YpsoPump is not very well known but it has a compact design and is quite new to the market in Ireland.

Support Contact Information:

Accu-Chek Combo by Roche Customer Care (Ireland): 1800 882 351

- Technical Support & Emergency Calls available 24/7, 365 days.
- Online queries can be submitted on: <https://www.accu-chek.co.uk/contact-accu-chek-uk-and-roi>

Medtronic Customer Care (Ireland): 015111444

- This is a 24hr technical helpline for Emergency pump assistance.
- FAQs available at: <https://www.medtronic-diabetes.ie/customer-support/insulin-pumps>

Ypsomed (UK): 00443448567820

- See also: <https://www.mylife-diabetescare.com/en/services/customer-care-contact.html>
- Email: info@ypsomed.co.uk

Beaumont Diabetes Clinic – Diabetes Day Centre:

- Telephone: (01) 809 2744 / 2745
- Opening hours: Monday to Friday, 8.00am to 4.00pm.

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