

Insulin Pumps

Have you heard much about insulin pumps? Have you ever seen one? Do you know how they work? Do you know what they cost?

Insulin Pump Therapy

Insulin pump therapy is simply another way to receive insulin. Instead of taking injections of insulin (sometimes up to 4 or 5 each day), insulin can be given by a small electronic device called a 'pump'. The pump is filled with insulin and is connected to the body by a thin plastic tube (infusion line) connected to a needle (or cannula). The needle or cannula is changed every two to three days.

How Pumps Work

The pump delivers 'quick acting' insulin into the body according to the pump settings. This means that it usually delivers a small dose of insulin all the time (called a 'basal' rate, which is preset) and then it delivers a bigger dose or 'bolus' to match each serve of carbohydrate that is eaten throughout the day. The user can enter information into the pump, such as how much carbohydrate they are eating or drinking as well as their blood glucose levels (BGL's). Some pumps can then work out how much insulin is needed to cover the meal or snack. The user then sets the pump to administer the insulin. Pumps are powered by batteries, which are replaced regularly by the pump user.

It is especially important to do regular blood glucose measurements when using an insulin pump.

What Pumps Look Like

An insulin pump looks a bit like a mobile phone or a doctor's beeper. They come in all sorts of colors, and most are not waterproof. Most people wear them on their belt or in a pocket. Some girls wear them in their bra or strapped to their leg and use a remote control device to give a bolus of insulin. You can disconnect the pump at the cannula site to have a shower, swim or play contact sports like football, but you shouldn't disconnect your pump for longer than **2 hours at a time**.

How much do Pumps Cost?

An insulin pump usually costs between \$6000 and \$9500. Most private health companies will cover the full purchase price of the insulin pump. However, you should check with your health insurance company for details, including the time you need to be a member before claiming the cost of a pump. The pump insulin reservoirs, infusion lines and cannulas are covered under the National Diabetes Services Scheme (NDSS).

Sensors for continuous glucose monitors now being used with pumps are not covered by NDSS or health funds. Sensors cost \$75 - \$90 for 1 week

Advantages of Pump Therapy

Using an insulin pump means:

- no more multiple daily injections
- delivering smaller doses of insulin more accurately
- improving HbA1C levels
- fewer swings in blood glucose levels
- diabetes management is easier – if your glucose level is high or you feel like eating extra 'carbs', figure out how much insulin you need and push the button on the pump to deliver more insulin
- more flexibility around when and what you eat
- improving your quality of life
- reducing severe 'hypo's'
- reducing unpredictable effects of medium or long-acting insulin
- reducing the need to eat large amounts of carbohydrate when exercising
- the pump can be downloaded i.e. it can show you every blood glucose, bolus etc given

Disadvantages of Pump Therapy

Although there are many good reasons to use an insulin pump, there are also some disadvantages:

- Can cause weight gain. Due to eating more and giving more insulin
- Can cause Diabetic Ketoacidosis (DKA) if your catheter (tube) blocks or comes out and you don't get insulin for hours
- Can be a constant reminder that you have diabetes
- Can be expensive
- Can be bothersome since you are attached to the pump most of the time
- Can depending on your health fund require a hospital stay or maybe a full day in the outpatient center to be trained

Even though using an insulin pump has disadvantages, most pump users agree the advantages outweigh the disadvantages.

For more information talk to your diabetes doctor or educator or have a look at the following websites:

<http://www.medtronicdiabetes.com/treatment-and-products/insulin-pump-therapy>

<http://www.amsl.com.au>

http://www.accu-chek.com.au/webapp/wcs/stores/servlet/Content_303_303_-1_Diabetes_InsulinPumpTherapy