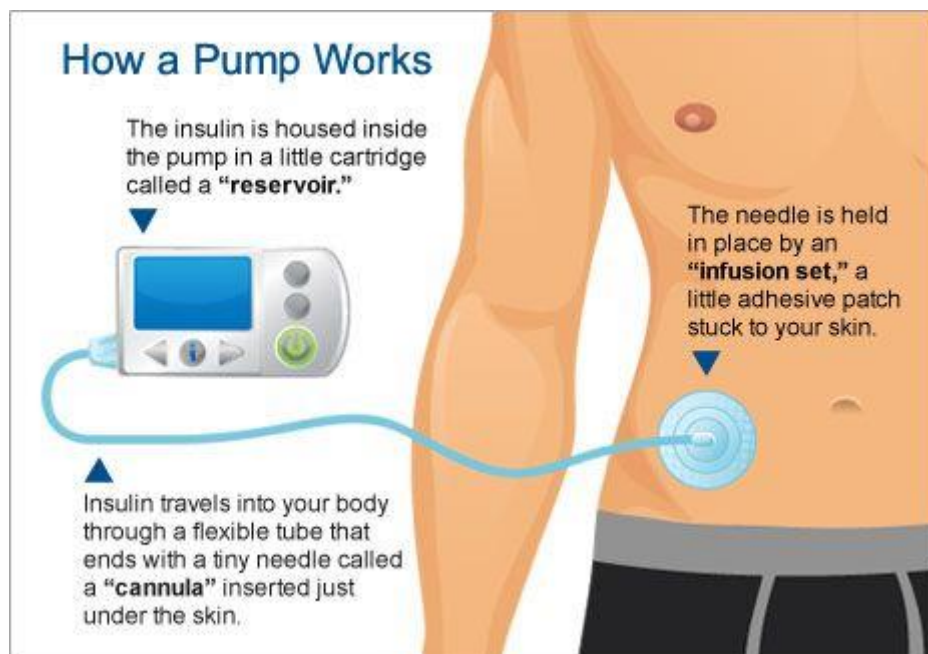


Insulin Pump Therapy

What is an insulin pump?

An insulin pump is a small battery operated device programmed to deliver rapid acting insulin (Novorapid or Humalog) continuously through an infusion set. The infusion set is inserted under the skin (abdomen/hips) and is changed every 2-3 days. The insulin pump is worn 24 hours a day but can be disconnected for up to 1.5 hour for activities such as water and contact sports. Insulin pumps can be linked to continuous glucose monitoring systems and can be uploaded from home to review your settings with your health care team.



How is it delivered?

The insulin pump delivers insulin in two ways.

1. **Basal** (background insulin). Continuous insulin delivery that aims to keep the BGL's within the target range when your child is not eating. Programmed rates might vary throughout the day. The basal insulin replaces the need for long-acting insulin like Optisulin or Levemir.
2. **Bolus** is an amount of insulin delivered when your child eats carbohydrates, **or** to lower high BGL's due to a high blood glucose reading. A bolus dose given for a meal or a snack is called a meal bolus. A bolus dose given to correct a high BGL is called a correction bolus.

Information for patients, families and carers

What are the advantages of an insulin pump?

- Improved blood glucose control with fewer fluctuations.
- Easy to correct high blood glucose levels.
- Reduced episodes of hypoglycaemia.
- More flexibility in daily activities.
- More flexibility with meals for example quantity and timing.
- No daily injections.
- Improved quality of life
- It provides an accurate and predictable form of insulin delivery that can be adapted to fit the individual and their changing needs as they grow.

What are the disadvantages of insulin pump therapy?

- Higher risk of Diabetic Ketoacidosis (DKA) as the insulin pump only delivers fast acting insulin. In a situation where insulin is interrupted, BGL's can rise and ketones can start to develop.
- Skin infections and irritations due to the adhesive tape.
- Constant attachment, 24 hours per day.
- Increased monitoring of glucose levels, 6-8 tests per day.
- Cost and ongoing consumables
- Steep learning curve with the ability to carbohydrate count and several sessions with the diabetes team for education.

Frequently Asked Questions

➤ What does it cost to buy an insulin Pump?

The cost of an insulin pump can vary between \$8,500 - \$9,500.

➤ Private Health Insurance

In the majority of cases, private health insurance (Hospital cover) will cover the full cost of the insulin pump as long as you have served the 12 month initial waiting period. At Monash Children's Hospital your child is admitted to the Department of Paediatric Diabetes and Endocrinology for the day while you have your pump training and are discharged in the afternoon following education.

Please Note * It is advisable that you check with your health insurer about your level of cover and what rebate is provided. The pump is covered under the prosthesis list of private cover.

➤ What is I have no private health cover or cannot afford private health cover?

Under 18 with no private health insurance: JDRF Type 1 Diabetes Insulin Pump Grant Program: The program offers a subsidy of up to 100% towards the cost of an insulin pump. The grant is means tested based on gross family income. For more information on the program or to apply for the grant go to <https://www.idrf.org.au/type-1-diabetes/insulin-pump-program>

➤ How much does it cost each month to have an insulin pump?

Approximately \$40-50 a month for NDSS subsidized pump consumables (reservoirs and sets, insulin and batteries).

Information for patients, families and carers

➤ Is there a suitable age for an insulin pump?

Having an insulin pump requires commitment by the whole family. BGL's need to be tested at least 6- 8 times a day and all carbohydrates eaten need to be counted. Insulin pump therapy can be successful in very young children to adults if the support networks are in place.

➤ How do you wear an insulin pump?

It is up to the individual where they wear their insulin pump.

Some examples are:

- On a belt using a clip or case.
- On a waist band using a clip or case.
- In a pocket.
- Some females wear the pump in their bra.
- There are special belts with pump cases that can be used for younger children.
- Numerous websites have different pump accessories for different ages that make wearing a pump more practical.

➤ Are there safety features with an insulin pump?

Insulin pumps have varied features to ensure safety. There are block out features that are designed so the younger child cannot accidentally give themselves extra insulin or change rates. There is an audio and vibrate alarm on the pumps that lets the wearer know the pump needs attention (e.g. low battery, low reservoir). Safety features will be different depending on the type of pump you purchase.

➤ If I wanted to commence insulin pump therapy, what would be the next step?

Insulin pump therapy is not for everyone and involves a commitment from the whole team. The first step is to discuss this with your endocrinologist at your next clinic appointment to clarify if an insulin pump is suitable for you. Following this your child is placed on a waiting list and assessed by the diabetes educator and social worker to review your suitability for insulin pump therapy.

The following are considered by the diabetes team when assessing the suitability of an insulin pump for any individual:

- Does the person with diabetes test their BGL 4-6 times per day?
- Does the family attend regular diabetes clinic appointments and engages with the team?
- Does the family and person with diabetes have appropriate expectations of insulin pump therapy?
- Does the family and person with diabetes understand the wait time for insulin pump therapy and process for appointments and pump start?
- Does the family and person with diabetes understand the advantages and disadvantages of insulin pump therapy.
- Does the family and person with diabetes have appropriate health cover or has explored health cover/JDRF program.

If you and the diabetes team decide that an insulin pump will suit your management, you will then be allocated several appointments in preparation for the insulin pump, commencement of pump therapy, and follow-up.

The Main Insulin Pumps Used by our Service include:

- **Tandem T: Slim – Australian Medical and Scientific Ltd (AMSL)**

Website: <https://amsldiabetes.com.au/products/tslim-x2-insulin-pump/>

- **Medtronic**

Website: <https://www.medtronic-diabetes.com.au/>

- **YpsoPump – Ypsomed Delivery Systems**

Website: <https://www.mylife-diabetescare.com/en-AU/>

- **Roche Diagnostics: Accu-chek**

Website: <https://www.accu-chek.com.au/>

Please remember to do your own research so that you have an understanding of the insulin pumps capabilities. You can also speak with the diabetes educators if you have any further questions.