

ARE YOU READY FOR A MINIMED™ 670G INSULIN PUMP?

WHAT IS A 670G INSULIN PUMP?

The MiniMed™ 670G insulin pump can be used in 3 ways: as a stand-alone pump, as a pump with integrated CGM, or in Auto Mode which will adjust basal insulin every 5 minutes using SmartGuard™ technology.

The insulin pump is not automatic, and it is not considered an "artificial pancreas". It is a "hybrid" pump, as there are still actions that need to be taken. With the MiniMed™ 670G system it is possible to keep blood sugars in a tighter range. Blood sugars must be checked at least 6 times a day and whenever the system asks you to confirm with a blood sugar for this system to be safe and effective. **The insulin pump does not monitor blood sugar!** Real-time continuous glucose monitoring (CGM) is available and can adjust the basal rates based on data it receives from the Guardian™ Link (3) transmitter and Guardian™ 3 sensor, inserted separately from the pump site. CGM measures sugar found under the skin (in the "interstitial fluid"), not blood sugar. The sensor must be worn at least 85% of the time in order to receive the full benefits of this system.

HOW DOES IT WORK?

An insulin pump tries to imitate what normally happens in the body. The insulin is delivered in 2 ways:

- **Basal:** a small amount of background insulin delivered continuously 24 hours a day. The basal rate keeps the glucose levels in the target range when no food is eaten (between meals and overnight). The pump can be programmed to deliver different basal rates throughout the 24-hour period, based on individual needs. The MiniMed™ 670G in SmartGuard™ Auto Mode adjusts the basal rate every 5 minutes based on the sensor glucose reading. A temporary target sensor glucose reading can be used for activity, illness, menstrual cycle, or other temporary changes in routines. The SmartGuard™ system requires 3-4 calibrations per day
- **Bolus:** a larger amount of insulin delivered over a short period of time. A bolus can be given anytime, but **cannot** be pre-programmed. A **pre-meal** bolus is given based on the grams of carbohydrate to be eaten. Accuracy while carb counting is very important. A **correction** bolus is an extra amount of insulin given when the blood sugar is high.

Starting basal rates, bolus doses, insulin-to-carbohydrate ratios and correction formulas are set with the diabetes team according to each person's unique needs.

To maximize the benefits of the system, you will require up to 3 separate training appointments (the first to start using the pump, the second to start using the sensor, and the third to turn on Auto Mode). The pump and sensor analyze what your body has needed for insulin over the past 6 days. It requires at least that amount of time to gather enough information to be able to operate in Auto Mode successfully. Our clinic recommendation will be a minimum of 1 month on the pump alone and at least 2 weeks on the Guardian™ 3 sensor before switching over to Auto Mode.

The optimal goal if the MiniMed™ 670G insulin pump is to have at least 85% sensor wear, 80% or more in SmartGuard™ Auto Mode, and at least 70% time in range (TIR).

WHAT ARE THE BENEFITS OF MINIMED™ 670G INSULIN PUMP THERAPY?

1. **Precise dosing.** Insulin delivery is exact and matched to each person's unique needs. This makes it possible to keep blood sugars close to normal most of the time.
2. **Fewer and less severe lows** because of more precise basal insulin delivery.
3. **Improved management of diabetes.** If the MiniMed™ 670G insulin pump with SmartGuard™ technology is used properly pump users can have more time in target.

WHAT ARE THE CHALLENGES OF MINIMED™ 670G INSULIN PUMP THERAPY?

1. **Risk of ketoacidosis (DKA).** The pump only uses rapid-acting insulin. There is no deposit of long-acting insulin in the body. An interruption to the insulin delivery will cause blood sugars to rise quickly. Ketones can start developing in a few hours without insulin. Extra care needs to be taken to prevent and manage high blood sugars. Pump users must carry an insulin pen with rapid-acting insulin and be prepared to use it if they have 2 unexplained high blood sugars in a row. They also need to check for ketones when the blood sugar is over 15 mmol/L and/or with any nausea or vomiting.
2. **Steep learning curve.** Education is crucial for pump therapy to be successful. There is a lot of preparation and required reading while learning how to use an insulin pump. Once started, the pump information needs to be uploaded and reviewed independently at least every 2 weeks and adjustments made based on the data.

COST?

Currently, [BC Fair PharmaCare](#) has not approved the MiniMed™ 670G insulin pump. Cost is approximately \$7500.

MINIMED™ 670G INSULIN PUMP MANUFACTURER:

- **Medtronic Diabetes:** www.medtronicdiabetes.ca or Canada toll-free number 1-800-284-4416. MiniMed™ 670G insulin pump with SmartGuard™ technology.
Contact: Brenda Heaney (brenda.heaney@medtronic.com), phone 604-312-7101
Online product training courses: www.medtronicdiabetes.ca/mylearning

ADDITIONAL QUESTIONS?

If you have additional questions, you can e-mail our insulin pump educators at dcnurse@cw.bc.ca, or you can leave a message at the Diabetes Clinic at 604-875-2868.

READINESS CHECKLIST FOR A MINIMED® 670G PUMP?

In order to optimize the use of the MiniMed™ 670G system, the following things need to be in place prior to healthcare team initiation of the required Pharmacare paperwork.

- You and your family have mastered the basics of diabetes care, and you have demonstrated an understanding of how to match insulin to food and exercise. Your family life has adjusted to the diagnosis of diabetes. For most families, this takes a few months
- You are currently using basal-bolus insulin therapy (MDI)
- You have been checking blood sugars **at least** 4 times a day **and** recording the results in a logbook or uploading the results weekly **OR** you are using a CGM and checking with meter when appropriate
- You can already count carbohydrates accurately
- You are giving all your boluses (ideally before meals)
- You and your parents **analyze** your blood sugars **regularly** (minimum every 2 weeks) and can independently make insulin adjustments when needed
- You must have a computer/laptop and have set up a CareLink™ account
- You are over 7 years of age and require at least **8** units of insulin per day (for Auto Mode)
- You are willing to do extra blood sugar checks as the system requests
- You are willing to respond to alerts and prompts as directed
- Both you **and** your parents are interested in this pump
- You and your family have realistic expectations about what an insulin pump can and cannot do and the time commitment involved in getting started
- Understand the 4 C's: calibrate, carb counting, correcting BG, CareLink™
- You and your family are prepared to attend 2-3 pump education sessions and do all of the required home reading/preparation and follow-up
- Training will be as clinic time permits
- For teens, you allow your parents to be involved and participate in your diabetes care
- For younger children, parents need to know that school and daycare personnel may not be able to operate this system

If you feel you meet the above criteria, please discuss with your diabetes team.

Insulin Pump Therapy #2: You've Decided on a Pump — Now What?