



Christian
In better control with his pump since 2012

WHAT CAN I DO TO REDUCE MY RISK OF DEVELOPING THE COMPLICATIONS OF TYPE 1 DIABETES?



MiniMed® Veo™



Many people with Type 1 diabetes worry about **potential long-term complications**. Some start thinking about it right after diagnosis and for others it starts when they experience their first symptoms or are diagnosed with early signs of complications.

High glucose levels over time are associated with many different types of complications. **Achieving good glucose levels** and an in target HbA1c are the keys to helping reduce risk, delay or avoid developing (long-term) complications*.

Read the real-life stories of other people with Type 1 diabetes and discover how they **have found their way to better control**.

“Being diagnosed with diabetes was a very sad moment for me. At 20 years old I felt all my dreams melting away. Then, as I started to learn more about my condition, the more I started to dread the possibility of long-term complications caused by poor glucose control (at that time, I wasn’t managing my diabetes well at all on multiple daily injections). But now, I can better control my blood glucose levels. I live a healthy, active life and I have no signs of any long-term complications. I am so grateful for that.”
Christian, Germany



Reducing the complications from Type 1 diabetes

Many people with Type 1 diabetes wonder how it will affect their lives both immediately and in the future.

Potential long-term complications may occur after having diabetes for some time, especially when **blood glucose levels have been consistently too high** (hyperglycaemia). This can affect areas of the body such as the eyes, heart, liver, kidneys, nerves and feet.

Hyperglycaemia can be caused by factors such as:

- Not taking enough insulin to match food intake
- Trying to avoid hypoglycaemia and deliberately keeping glucose levels high
- Inaccurate insulin dosage calculations
- Forgetting to take injections or boluses
- Not performing enough self-monitoring blood glucose tests

To minimise the risk of complications caused by hyperglycaemia, it is important to stay within the target range as much as possible.

*“Before using the insulin pump, long term complications were a big fear of mine. My HbA1c has been within an acceptable range. When it was in the low range, it had frequent hypos. With the insulin pump, I have kept my HbA1c in a good range without severe hypoglycemia.” **Christian, Germany***

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What are the main complications of diabetes?

The chronic complications of diabetes are generally related to the circulatory system. Both small (micro vascular) and large (macro vascular) blood vessels can be affected by extended periods of high blood glucose.

Micro vascular: too much glucose in the small blood vessels over time will damage them, causing impaired vision, kidney disease, nerve damage or challenges with circulation.

Macro vascular: too much glucose in the large blood vessels over time can lead to coronary artery disease (heart attacks), peripheral vascular disease or strokes.



Paola
In better control with her pump since 2001

Reduce HbA1c, reduce complications

HbA1c: An **important measure** of how effectively diabetes is being managed using a measure of the amount of glucose that has attached itself to each red blood cell over the preceding 2-3 months to assess the level of diabetes control.

Normal glucose values vary between 4.0 and 7.8 mmol/L, and you may want to consider trying to achieve these targets in daily life with self-monitoring of blood glucose (SMBG) levels using a personal glucose meter.*

Hypoglycaemia (“hypos”) refers to when the blood glucose levels go **below 3.5mmol/L**, but can vary depending on the individual. Hypoglycaemia can be mild, where its symptoms are felt and action can be taken by eating or drinking something with carbohydrates. Severe hypoglycaemia requires assistance from another person and may need treatment at a hospital.

Hyperglycaemia (“hypers”) refers to when the blood glucose **levels are above 11.1 mmol/L**, but can vary depending on the individual. Glucose levels above 15 mmol/L need to be treated quickly to help avoid acute complications.

It can be a challenge to reach and maintain the HbA1C goal whilst minimising the risk of hypoglycaemia. **Insulin pump therapy enables adjustment of the insulin requirements to the body’s needs.**

Careful control of blood glucose levels can significantly decrease the risk of developing complications. A 1% drop in HbA1c can result in a risk reduction of up to:*

- Retinopathy (eye damage) by 38%
- Nephropathy (kidney damage) by 28%
- Neuropathy (nerve damage) by 28%
- Cardiovascular (heart attack or stroke) event by 57%

So, for someone with Type 1 diabetes who has concerns about complications, what can be done now to help reduce the risks?

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For many, an insulin pump offers an ideal solution

To deal with the challenges of **keeping blood glucose levels under better control**, many people with Type 1 diabetes **rely on insulin pumps**.

An insulin pump is a **small device**, about the size of a mobile phone that can be **easily carried** on a **belt**, inside a **pocket**, or even attached to a **bra**.

An insulin pump can help you and your healthcare team to more closely **mimic the way a healthy pancreas delivers the basal insulin to the body** by providing small amounts of rapid acting insulin during the day and night.

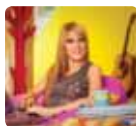
It **can help to better manage the need for insulin dose adjustment**, particularly after meals and overnight and can thus **help to achieve better glucose control**.

Instead of frequent injections, all that is needed on pump therapy is a **change of infusion set every few days**.



Christian's real size pump

"Diabetes is part of my life. I need to learn how to better manage it because it will have an impact on my future." Ruta, Lithuania



How does the MiniMed® Veo™ help control glucose levels?

The MiniMed® Veo™ allows for **better glucose** control due to the ability to adjust insulin delivery, reducing the risks of hypers and hypos. With insulin pump therapy users can benefit from:

- **Easier dosing:** calculating insulin requirement can be a complex task with many different aspects to be considered. In the MiniMed Veo, the built-in **Bolus Wizard®** feature helps to ensure **accurate dosing** by taking into account the insulin already in the system, the current glucose levels, carbohydrate intake and personal insulin settings to determine the right dose
- **Fewer injections:** **precise** amounts of rapid acting insulin are delivered throughout the day by the infusion set which is easily removed and replaced every 2 to 3 days
- **Greater flexibility:** the MiniMed Veo can be **instantly adjusted** to allow for exercise, during illness or to deliver small boluses to cover snacks. This can be easily done with a **touch of a button**, rather than with an injection. There is even a **temporary basal rate** option to proportionally reduce or increase the basal insulin rate, an option that can be used during exercise or illness, for example
- More **convenience:** the MiniMed Veo offers the additional convenience of a **wirelessly connected blood glucose meter**. This meter automatically sends blood glucose values to the pump, allowing **more accurate** Bolus Wizard **calculations**. It also **stores this information in a digital diary** along with your insulin doses

Clinical studies confirm that many Type 1 patients of all ages who switch from MDI to insulin pump therapy report improvements in their quality of life and increased satisfaction with their treatment.*

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Reduced HbA1c can help reduce complications

The DCCT (Diabetes Control and Complications Trial) study confirmed that **lowering HbA1c by just 1%** can decrease the risk of developing microvascular complications by up to 40%.* HbA1c should be monitored 3 to 4 times a year with **the goal of keeping it below 7% (53mmol/mol)** or at the target set by your physician.*

"I was initially reluctant to use a pump. Today I smile when I remember those first thoughts." Paola, Italy



Guido
In better control with his pump since 2005

How the MiniMed® Veo™ can help in day-to-day life

The MiniMed® Veo™ can **help maintain target levels** and reduce hypoglycaemia*. Easily managing your insulin needs can allow a more **flexible lifestyle**.

MiniMed® Veo™ and food

Food plays a central role in diabetes management. If you are using frequent injections, it can be more difficult to manage delayed meals, skipped meals or diverse diets. With the MiniMed Veo **food management can be easier**, for example the different bolusing options can be used to **match the needs of the situation**.

MiniMed® Veo™ and Exercise

Regular exercise is important for body and mind and is recommended by most physicians. Exercise may also lower blood glucose levels. The MiniMed Veo offers the **ability to adjust the basal rate** of insulin as needed for the activity; from a competitive match to a gentle hike, and helps reduce the risk of post exercise hypoglycaemia. **Many athletes** with Type 1 diabetes use an insulin pump to gain better glucose control.

MiniMed® Veo™ and Night Hypos

Basal needs may change over the course of 24 hours. With Multiple Daily Injections (MDI) long acting insulin doses are usually matched to the average need and typically do not cover for these fluctuations. With the MiniMed Veo, **different basal rates matched to hourly personal requirements can be set**, helping to minimise hypoglycaemia, especially overnight when sleeping.



“I was worried about long-term complications and concentrated on keeping a very low blood glucose level to avoid excessive high values. The result was, of course, hypos.” Lydia, Germany

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Is an insulin pump right for me?

Many people with Type 1 diabetes may **benefit** from an insulin pump without even knowing it. In general if they experience any of the following, they could get better control with an insulin pump:

- Concerns about long-term complications
- The first symptoms of long term complications
- Fear of needles
- Difficulty in managing highs and lows
- Fear of hypoglycaemia, especially at night
- HbA1c outside target range
- Reduced hypoglycaemia awareness
- Seeking more flexibility in everyday life

The best way to stay within a healthy glucose range is to test blood glucose levels (SMBG) at least 4 times per day and make adjustments to the therapy as needed. The MiniMed® Veo™ with the use of the Bolus Wizard® can make these calculations and adjustments to **help improve glucose control**.

“Since I began using the pump my A1c has dropped significantly: from 15 to an average of 7. As I gradually became more confident and expert in using the pump I began to get the real advantages from all the pump’s functionalities. With the pump and sensor, for continuous glucose monitoring, I reached an optimal level of control.” Paola, Italy

Talk to your physician about the insulin pump therapy and whether it may be right for you.



Additional options available with the MiniMed® Veo™

The MiniMed® Veo™ is also available with **the additional integrated** function of Continuous Glucose Monitoring (CGM) and CareLink® Therapy Management Software.

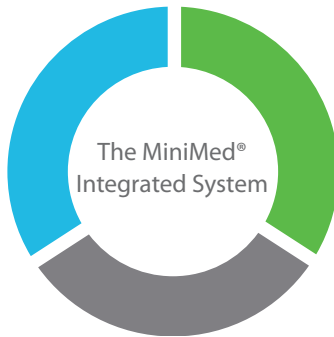
The MiniMed Veo when coupled with CGM is the only insulin pump with a feature which can **help reduce the impact of hypoglycaemia***. If the glucose levels fall too low, the MiniMed Veo can turn off insulin delivery for up to 2 hours. **It can also indicate if glucose levels are rising or dropping quickly by sounding an alert.** This can be a big advantage compared to SMBG alone as the MiniMed® Integrated System will also alert when crossing pre-set threshold limits and shows current glucose trends.

To learn more about these additional options and how they can improve diabetes therapy, please visit our website www.medtronic-diabetes.co.uk, or speak to your healthcare team.

The MiniMed® Integrated System




The MiniMed® Veo™




Enlite® Glucose Sensor

CareLink® Therapy Management Software

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I HAVE JUST BEEN DIAGNOSED WITH TYPE 1 DIABETES




MiniMed® Veo





MY CHILD HAS TYPE 1 DIABETES




MiniMed® Veo

I WISH THERE WAS ANOTHER WAY TO MANAGE HYPOGLYCAEMIA



MiniMed® Veo




WHAT CAN I DO TO HAVE A HEALTHY PREGNANCY WITH TYPE 1 DIABETES?



MiniMed® Veo



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