

What are the health benefits of insulin pump therapy?

How can insulin pump therapy improve my life?

Insulin pump therapy helps to improve your health today and tomorrow. A landmark study—the Diabetes Control and Complications Trial (DCCT)—proved that people with diabetes who keep their glucose at near-normal levels significantly reduce their risk of long-term complications.¹ A follow-up study showed that greater control can help you not only live healthier, but also live longer.²



- The American Association of Clinical Endocrinologists recommends that you keep your HbA1c level at 6.5% or lower to greatly reduce your risk of long-term complications such as blindness, nerve disease, kidney disease, and heart disease.³
- Each 1% reduction in HbA1c reduces your risk of complications by 15% to 30%.^{1,2}

Insulin pump therapy helps to achieve better control, reducing the risk of long-term complications



Eye damage (retinopathy) may be reduced up to **76%**¹



Nerve damage (neuropathy) may be reduced up to **60%**¹



Kidney damage may be reduced up to **56%**¹

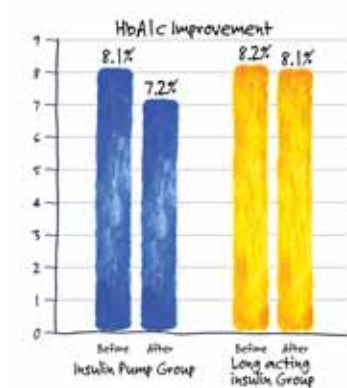


Cardiovascular damage may be reduced up to **42%**⁴

Now you can meet your target HbA1c

Research shows that people on insulin pump therapy are 6 times more likely to achieve the target HbA1c level than people on multiple daily injections with long acting insulin.⁵

Insulin pumps improve control significantly over long acting insulin⁵



Imagine having more freedom. The freedom to eat when you want. The freedom to exercise when you want. The freedom to live life the way you want, with more peace of mind. With insulin pump therapy, now you can—because you'll see major improvements in your blood glucose control, with fewer low and high blood glucose levels.⁶ That means greater flexibility in your life, with less worry about balancing food, insulin, and your daily activities. Plus, you don't have to keep to a strict schedule like you do with multiple daily injections.⁷

"With a pump, you can count on your blood sugar being more constant and more precise."

Scott D.
World Class Surfer
Kamuela, Hawaii

Now you can achieve your goals

When you choose insulin pump therapy you can finally achieve your diabetes management goals.⁸

- Prevent or delay dangerous health complications by lowering your HbA1c levels to the recommended target of 6.5% or lower³
- Minimise your risk of severe hypoglycaemia
- Maintain a healthy weight
- Improve your quality of life

Insulin pump vs. multiple daily injections: cases of severe hyperglycaemia per 100 patients³



Now you can improve your quality of life

Compared with multiple daily injections, an insulin pump gives you more convenience, more control, more flexibility, and more freedom to live life your way. When insulin pump users were asked to rate the quality of their lives, they reported high levels of satisfaction and fewer worries about their diabetes.⁷ It's no wonder 98% of people who start on insulin pump therapy stay with it.⁷

Insulin pump users report higher quality-of-life scores than multiple daily injection patients.⁹



How can insulin pump therapy fit into my life?

A MiniMed Paradigm® insulin pump is really easy to fit into your lifestyle. It's comfortable, small, and discreet—about the size and weight of a mobile phone—so you can wear it wherever you want. You can attach it to your belt, hide it in a pocket, or just put it under your clothing.

"A year and a half ago, I made the switch. In the first 3 hours after switching, I couldn't wipe the smile from my face. I wondered why I hadn't made the switch sooner!"

Adele M.
Singer, songwriter
Wasilla, Alaska

Here's how an insulin pump changed Sarah's life

Because an insulin pump can make managing your diabetes easier, it also can make your life easier. To understand the difference, follow the events of Sarah's day off from university.



- 11:00 a.m. Slept in late and then tested herself. Blood glucose normal.
- 12:00 p.m. Had a big bowl of cereal and gave herself a dose of insulin to make up for it. Just pressed a few buttons instead of getting out a needle and syringe.
- 2:30 p.m. Tested and then lowered her insulin level to go on an unplanned 3-hour hike with her flatmate, Pam. Didn't have to snack to get her blood glucose up.
- 6:00 p.m. Sarah wasn't hungry. Rather than having to eat to keep her blood glucose up, she simply pressed a few buttons to adjust her insulin and skipped dinner.
- 8:00 p.m. Cute guys next door invited Pam and Sarah over for pizza and movies. Because Sarah's insulin is always with her in the insulin pump, she doesn't have to bring a syringe and needle with her just in case.
- 9:00 p.m. Tested, took more insulin without the guys even noticing, then had a second slice of pizza.
- 12:00 a.m. Broke out a care package with biscuits from home. Again, Sarah just pressed a few buttons for more insulin rather than stopping for an injection.
- 2:30 a.m. Tested again and fell asleep. Sarah's blood glucose was fine.

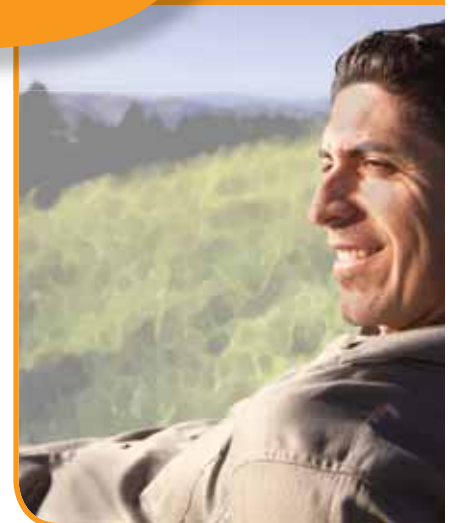
How does an insulin pump work?

Small and compact

An insulin pump has a small vial, called a **reservoir**, which holds up to 3 days supply of insulin. A **computer chip** powered by a **single AAA battery** acts as the insulin pump's brain to deliver insulin according to your instructions.

Simple and comfortable

Instead of using a syringe and needle to deliver insulin to your body, the insulin pump uses an **infusion set** with a tiny, soft plastic tube—thinner than a strand of spaghetti. At the end of the tube is a short **cannula**, an even smaller, softer tube. With the help of an insertion device, you insert the cannula under your skin. You generally wear your infusion set for 2 to 3 days and then replace it with another one. Once the system is in place, insulin is delivered based on instructions you program into it. Whenever you need to give yourself a bolus dose or adjust the basal rate, you just press a few buttons and you're done.



Connects and disconnects quickly

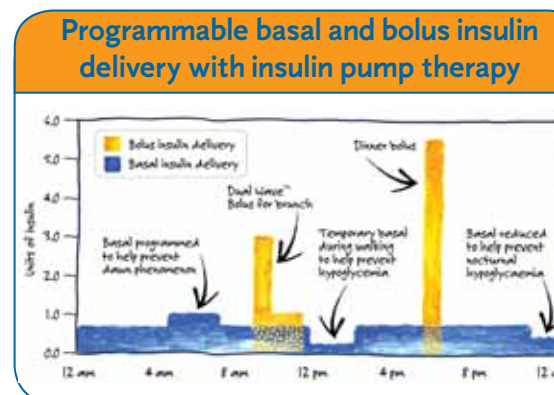
An insulin pump connects and disconnects quickly for activities such as bathing, playing sports, or simply changing your clothes. You can disconnect and reconnect the insulin pump from your body at any time using the quick-release feature on the infusion set.

It works more like a healthy pancreas

Compared with multiple daily injections, insulin pump therapy works much more like a healthy pancreas. A healthy pancreas continuously releases tiny amounts of insulin 24 hours a day to maintain normal blood glucose levels between meals and overnight. You can program an insulin pump to automatically deliver insulin in much the same way—that's called your **basal rate**—to control your blood glucose between meals and while you sleep. In response to food, a healthy pancreas releases more insulin—that's why you give yourself a **bolus dose** of insulin when you eat.

You're in control

With insulin pump therapy, you can adjust your basal rate as needed during the day—every 30 minutes if necessary. You simply can't have this level of control with multiple daily injections.



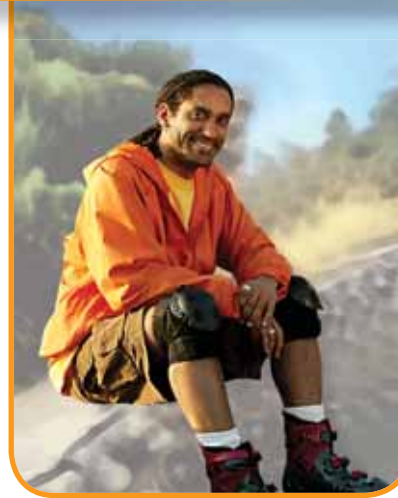
"Being a firefighter was what drove my decision to go on insulin pump therapy. Pump therapy gives me the flexibility and control I need for this kind of work. I just lower my basal rate when we get a call and I'm good to go."

Scott S.
Firefighter
Phoenix, Arizona

Why should I choose insulin pump therapy over multiple daily injections?

You're in the driver's seat

Delivering your insulin with an insulin pump is like driving a sports car. It gives you precise control and the ability to change course at any time. You can step on the accelerator to start and put on the brakes to stop. With an injection, your gas pedal is stuck on "go" and you have no brakes. Once you give yourself an injection, you're locked in—you can't take the insulin back. You're committed to the ride unless you stop for a snack or give yourself another injection. With an insulin pump, you can increase or decrease the insulin—or stop it altogether—simply by pressing a few buttons. You're in the driver's seat, not a helpless passenger.



ESTIMATE DETAILS

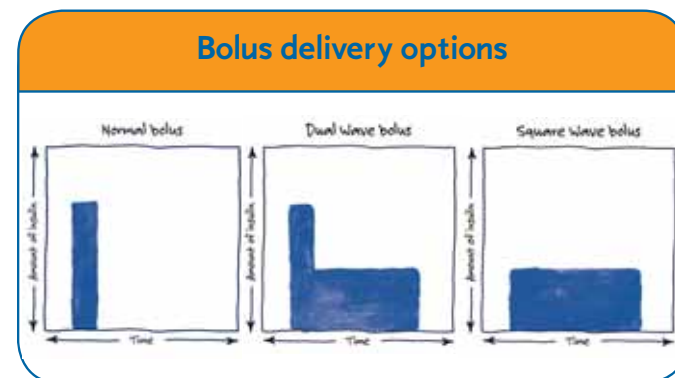
Est Total:	4.0U
Food Intake:	45gr
(Meter) BG:	8.8
Food:	3.0U
Correction:	2.0U
Active Ins:	1.0U
ACT to Proceed	
ESC to Back Up	

We do the calculations

You don't even have to worry about complicated mathematics and calculation errors. The MiniMed Paradigm[®] insulin pump does all the dosing calculations for you. The Bolus Wizard[®] calculator considers your current blood glucose value, your carbohydrate intake entry, the amount of insulin currently left in your body, and other personal settings to automatically suggest a bolus amount for you.

Eat when and what you want

Now you can match insulin delivery to the way you want to eat. The MiniMed Paradigm insulin pump gives you a variety of bolus delivery options: Normal, Square Wave[™], and Dual Wave[™]. Since your body absorbs different foods at different rates, the MiniMed Paradigm insulin pump allows you to set insulin delivery precisely to match every food and every combination of foods you eat. A Square Wave bolus lets you spread insulin delivery over the time period you specify. It's perfect if you're eating pizza. Having pineapple on your pizza? Use the Dual Wave bolus—helpful when you eat both quickly absorbed foods, like pineapple, and slowly absorbed foods, like the rest of the pizza, in combination.

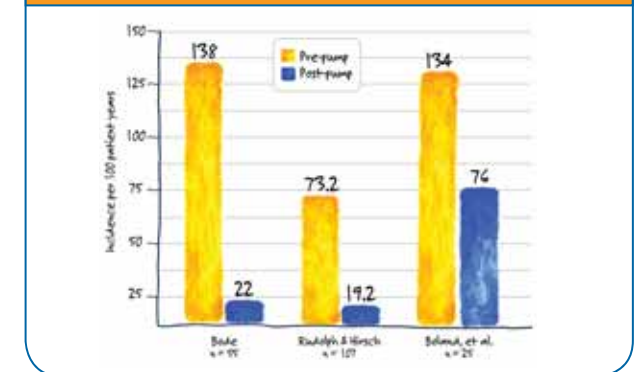


Better protection from hypoglycaemia

It's difficult to control your results with multiple daily injections because they use long- and intermediate-acting insulin. Absorption of long-acting insulin is unpredictable, with up to 32% variability. With commonly used intermediate-acting insulin, variability can be up to 52%.⁹⁻¹⁰ Insulin pump therapy uses only rapid-acting insulin, with only 3% variability in absorption.¹⁰ This high degree of predictability gives you more consistent control of your diabetes. In fact, there can be a higher risk of severe hypoglycaemia when you try to tighten your control using injections.³

Absorption variability with multiple daily injections	Absorption variability with insulin pump therapy
32%-52%	only 3%

Insulin pump therapy is a superior method to help reduce hypoglycaemia and its severe consequences^{3,11-12}



More freedom from insulin pooling

When you inject a large dose of long-acting insulin, you can end up with a pool of insulin under your skin. Absorption into your bloodstream can be unpredictable, depending on where you placed the injection, how active you are, and other factors.⁹⁻¹⁰ This is one reason your blood glucose levels can vary from day to day even if you eat and do the same things at the same times. In contrast, an insulin pump delivers tiny, continuous doses of rapid-acting insulin. Rapid-acting insulin acts more predictably¹⁰ and is far less likely to pool under the skin. You can count on the insulin being absorbed the same way every day. This can give you additional protection from hypoglycaemia and hyperglycaemia.

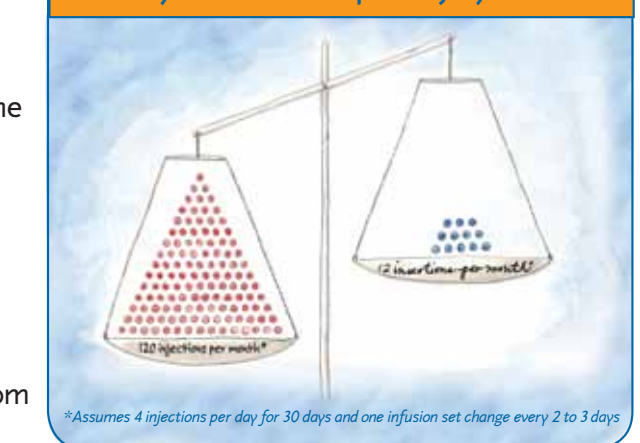
More freedom from injections

With multiple daily injections, you give yourself at least 120 injections every month. With insulin pump therapy, you don't require any insulin injections. You just change your infusion set 12 times per month and control your insulin delivery through the insulin pump. You can deliver your insulin discreetly anytime, anywhere, with the push of a few buttons.

More freedom to live life your way

With multiple daily insulin injections, you have to live with limited flexibility. Insulin pump therapy gives you more freedom to eat, sleep, and exercise when and how you want to.⁷

Insulin pump therapy reduces number of injections vs. multiple daily injections



Is insulin pump therapy right for you?

An insulin pump may be right for anyone who takes insulin and wants better glucose control, more convenience, more flexibility—and more freedom. You can be newly diagnosed or new to insulin and still take full advantage of the significant benefits delivered by insulin pump therapy. Be sure to discuss your individual needs with your healthcare provider.

Insulin pump therapy might be right for you if:

- you're frustrated by injections
- you're struggling to reach your HbA1c target
- you're worried about hypoglycaemia and tired of snacking
- you want more flexibility because you have a busy life
- you have an active lifestyle that includes sports
- you're a teenager with changing hormones, which affect insulin use
- you're pregnant or considering it
- you're interested in using the latest technology to improve your insulin therapy

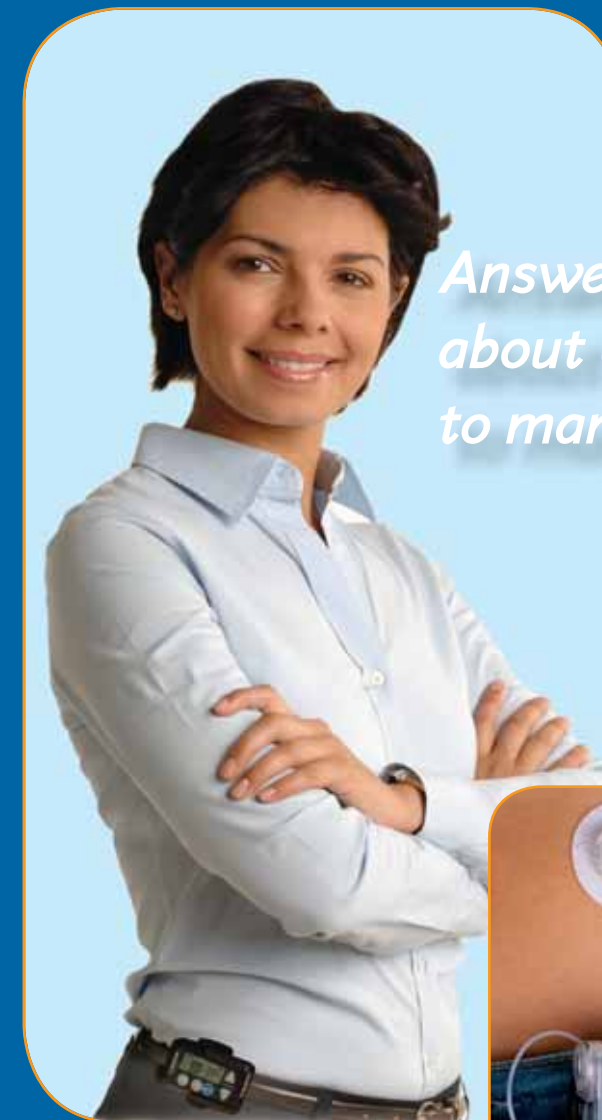
For more information, talk to your healthcare provider, contact Medtronic Diabetes on 1800 668 670 or visit our website at www.medtronic-diabetes.com.au

"There are so many things that I can do now that I have switched over to the insulin pump."

Dan B.

Boxford, Massachusetts

Your guide to insulin pump therapy



Answers to your questions about our simpler approach to managing diabetes.



Safety Information

Insulin Pump Therapy and Medtronic MiniMed Insulin Infusion Pumps

Patients should always discuss the benefits and potential risks with a clinician. Please review the product's technical manual prior to use for detailed instructions and disclosure. **Indications for use** The insulin pump is indicated for the continuous delivery of insulin, at set and variable rates, for the management of diabetes mellitus in persons requiring insulin. **Contraindications** Insulin pump therapy is not recommended for people who are unwilling or unable to perform a minimum of four blood glucose tests per day and to maintain contact with their healthcare professional. Successful operation of an insulin pump requires good vision and hearing. While features exist to help facilitate pump usage, Medtronic Diabetes does not recommend the use of this product by individuals whose impaired vision or hearing does not allow full recognition of the pump signals and alarms. **Warnings/Precautions/Adverse Reactions** Insulin pump therapy uses only faster-acting insulin. Therefore, any interruption in insulin delivery (due to infusion set clogs, leaks, loss of insulin potency, or pump malfunction) may result in hyperglycaemia (high blood glucose) within two-to-four hours and, subsequently, the rapid onset of diabetic ketoacidosis (DKA) within four-to-10 hours. The onset of stress or illness (caused by infection or an emotional event) can also result in a rise of blood glucose levels and the development of DKA. The intensive management of diabetes has also been associated with an increased incidence of hypoglycaemia (low blood glucose). Never go to bed with a blood glucose value below your target level. Blood glucose tests should be performed before driving a vehicle or operating machinery, because hypoglycaemia can have serious consequences.

Medtronic Diabetes Continuous Glucose Monitoring

Indications for Use The CGMS System is intended to continuously record interstitial glucose levels in persons with diabetes mellitus. This information is intended to supplement, not replace, blood glucose information obtained using standard home glucose-monitoring devices. A confirmatory fingerstick is required prior to treatment. This information collected by the Continuous Glucose Monitoring System may be downloaded and displayed on a computer and reviewed by healthcare professionals. This information may allow identification of patterns of glucose-level excursions above or below the desired range, facilitating therapy adjustments that may minimize these excursions. **Contraindications** Successful operation of the CGMS System requires adequate vision and hearing. Use of the CGMS System is not recommended for patients whose impaired vision or hearing does not allow full recognition of the monitor signals and alarms, or who do not have a caregiver who can perform this function for them. **Warnings/Precautions** CGMS System users should be educated to program and operate the monitor and respond to alarm conditions prior to attempted use of the system. The current and voltage signals shown in the monitor are to be used only for finding potential problems with the System and do not indicate the current glucose value. Infection and/or site irritation may result from improper insertion and maintenance of insertion site.

Please visit www.minimed.com/precautions for complete safety information.

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You should always seek advice from your medical practitioner to determine your suitability for insulin pump therapy.

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1. Narayan KM. Cost-effectiveness of intensive insulin therapy in the Diabetes Control and Complications Trial. *JAMA*. 1997;277(5):374-375. 2. American Diabetes Association. Standards of medical care for patients with diabetes mellitus. *Diabetes Care*. 2002;25(1):213-229. 3. Rudolph JW, Hirsch IB. Assessment of therapy with continuous subcutaneous insulin infusion in an academic diabetes clinic. *Endocr Pract*. 2002;8(6):401-405. 4. The Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications (DCCT/EDIC) Study Research Group. Intensive diabetes treatment and cardiovascular disease in patients with type 1 diabetes. *NEJM*. 2005;353(25):2643-2653. 5. Doyle EA, Weinzimer SA, Steffen AT, Ahern JAH, Vincent M, Tamborlane WV. A randomized prospective trial comparing the efficacy of insulin pump therapy with multiple daily injections using insulin glargine. *Diabetes Care*. 2004;27(7):1554-1558. 6. Weissberg-Benchell J, Antisdel-Lomaglio J, Seshadri R. Insulin pump therapy: a meta-analysis. *Diabetes Care*. 2003;26(4):1079-1087. 7. Bode BW, Tamborlane WV, Davidson PC. Insulin pump therapy in the 21st century. Strategies for successful use in adults, adolescents, and children with diabetes. *Postgrad Med*. 2002;111(5):69-77. 8. Bode BW, Sabbah HT, Gross TM, Fredrickson LP, Davidson PC. Diabetes management in the new millennium using insulin pump therapy. *Diabetes Metab Res Rev*. 2002;18(suppl 1):S14-S20. 9. Peyrot M, Rubin RR. Validity and reliability of an instrument for assessing health-related quality of life and treatment preferences: the Insulin Delivery System Rating Questionnaire. *Diabetes Care*. 2005;28(1):53-58. 10. Lauritzen T, Pramming S, Deckert T, Binder C. Pharmacokinetics of continuous subcutaneous insulin infusion. *Diabetologia*. 1983;24(5):326-329. 11. Bode BW, Steed RD, Davidson PC. Reduction of severe hypoglycaemia with long-term continuous subcutaneous insulin infusion in type 1 diabetes. *Diabetes Care*. 1996;19(4):324-327. 12. Boland EA, Grey M, Oesterle A, et al. Continuous subcutaneous insulin infusion. A new way to lower risk of severe hypoglycaemia, improve metabolic control, and enhance coping in adolescents with type 1 diabetes. *Diabetes Care*. 1999;22(11):1779-1784.