

# Comparison of Insulin Pumps Available in Canada

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	<i>Medtronic Minimed 630G</i>	<i>Medtronic Minimed 670G</i>	<i>Omnipod</i>	<i>Tandem t:slim X2</i>	<i>Ypsomed YpsoPump</i>	<i>*Accu-Chek</i>
Approved by Health Canada for <b>which populations?</b> Can my child wear it?	<b>All ages</b> Type 1 or 2	Age 7+ Type 1 only	<b>All ages</b>	Age 6+	Age 6+	

## DESIGN:

Is the pump <b>tubing-free?</b>	No	No	<b>Yes!</b> Omnipod is a <b>tubeless</b> "patch pump"	No	No	
<b>Size &amp; Weight</b>	As 670G (to the right)	9.6 x 5.3 x 2.44 cm  95.7 grams	PDM: 6.21 x 11.25 x 2.5 cm  125g (with batteries)	7.95 x 5.08 x 1.52cm  112 grams (with full disposable)	<b>7.8 × 4.6 × 1.6 cm</b>  <b>83 grams</b> (including battery and filled cartridge)	
<b>Screen</b>	LED Backlight	LED Backlight	3.6 x 4.8 cm; (6.1 cm diagonal) LCD	<b>Colour touchscreen</b>	4.1 × 1.6 cm black & white OLED <b>touchscreen</b>  Option to <b>rotate screen by 180°</b>	
<b>Water-Resistance:</b> Can I swim and bathe while wearing the pump?	<b>Yes.</b> Pump is waterproof. <b>IPX8</b> Rating (protected against moisture for submersion of up to 3.6m for 24 hours) Guardian Link Transmitter guaranteed for submersion up to 2.4m for 30 mins.	<b>Yes.</b> Pump is waterproof <b>IPX8</b> Rating (protected against moisture for submersion of up to 3.6m for 24 hours)	<b>Yes.</b> Pod is Waterproof <b>IPX8</b> Rating (pod is guaranteed for submersion of up to 7.6m for 60 mins);  But don't take the PDM with you into the water! It's not waterproof.	You can splash, but do not swim, surf, dive...  Pump is only Water-Resistant  IPX7 Rating (Watertight to a depth of 1 meter for up to 30 minutes)	Pump is waterproof <b>IPX8</b> Rating (protected against moisture for submersion of up to 1 m for up to 60 mins) but Ypsomed recommends disconnecting for water sports.	

<b>CGM:</b>	<i>Medtronic Minimed 630G</i>	<i>Medtronic Minimed 670G</i>	<i>Omnipod</i>	<i>Tandem t:slim X2</i>	<i>Ypsomed YpsoPump</i>	
Does the pump have an <b>integrated</b> Continuous Glucose Monitor (CGM) available?	<b>Yes.</b> Use as a Stand-alone Pump OR Integrated with Medtronic CGM	<b>Yes.</b> Use as a Stand-alone Pump OR Integrated with Medtronic CGM	No. (But you could use an independent CGM system alongside Omnipod.)	<b>Yes.</b> Use as a Stand-alone Pump OR Integrated with Dexcom G5 (sold separately)	No YpsoPump is open platform by design. (But you could use an independent CGM system alongside YpsoPump.)	
Will the pump <b>stop</b> insulin delivery when <b>my glucose is low</b> ?	<b>Yes.</b> <b>Suspend on Low</b> feature as 670G (to the right)	<b>Yes.</b> <b>Suspend on Low</b> feature: If user does not respond to the alert, basal insulin delivery will be shut off temporarily. Threshold is adjustable.	N/A (not integrated with CGM)	No <i>(This “Basal IQ” feature, available with Dexcom G6 integration, is not currently available in Canada.)</i>	N/A (not integrated with CGM)	
Will the pump <b>stop</b> insulin delivery when it predicts my glucose is <b>headed for a low</b> ?	No (Insulin turns off only when glucose reading crosses low threshold.)	<b>Yes.</b> <b>Suspend Before Low</b> feature: Stops insulin up to 30 minutes before reaching your preset low limits, then restarts again automatically when glucose rises.	N/A (not integrated with CGM)	No <i>(This “Basal IQ” feature, available with Dexcom G6 integration, is not currently available in Canada.)</i>	N/A (not integrated with CGM)	
Will the pump automatically <b>adjust insulin</b> delivery based on my current BG?	No	<b>Yes.</b> (in full Auto mode only) BASAL insulin is <b>automatically adjusted up or down</b> based on CGM readings.	N/A (not integrated with CGM)	No. <i>(This “Control IQ” Dexcom feature is not currently available in Canada.)</i>	N/A (not integrated with CGM)	

<b>BASAL:</b>	<i>Medtronic Minimed 630G</i>	<i>Medtronic Minimed 670G</i>	<i>Omnipod</i>	<i>Tandem t:slim X2</i>	<i>Ypsomed YpsoPump</i>
How <b>big or small</b> can the basal rates be?	As 670G (to the right)	Basal rate of <b>0.025(min) to 35.0(max)</b> U/hr in increments as low as 0.025 U/hr for smaller basal rates (ex. Change from 0.100 to 0.125 U/hr)	Basal rate of 0.05(min) to 30.0(max) U/hr in 0.05 increments (ex. Change from 0.100 to 0.150 U/hr)	Basal rate of 0.1(min) to 15.0(max) U/hr in <b>0.001 increments</b> (ex. Change from 0.100 to 0.101 U/hr)	Basal rate of 0.05(min) to 30.0(max) U/hr in steps as low as 0.01 U/hr for smaller basal rates (ex. Change from 0.100 to 0.110 U/hr)
How many different <b>basal rates</b> can I set throughout the day (24-hour period)?	<b>48</b> basal rate segments	Manual Mode: 48  Auto mode: pump automatically adjusts basal insulin (based on glucose reading from CGM) every 5 mins, equivalent to a potential 288 basal rates per day	24 basal rate segments per program (up to 7 basal programs)	16 basal rate segments per Insulin Delivery Profile	24 basal rate segments in each basal profile
Can I create and switch between <b>alternate basal profiles</b> ? (for weekends, exercise, illness, school days...)	<b>Up to 8</b> profiles (including primary) in which you can set varied basal rates	Manual mode: Yes (as 630G)  Auto mode: TBD	Up to 7 profiles (including primary) in which you can set varied basal rates	Up to 6 <b>Personal Profiles</b> in which you can set varied basal rates, <b>correction factor (ISF), Carb Ratio (I:C) and target BG</b>	Up to 2 basal rate profiles (A and B), programmed by the user.

Can I set a <b>temporary basal rate?</b> (for illness, exercise, couch potato days, to cover hi-fat foods...)	Yes % or Units/hr (from pump only, not from remote) Range: 0 to 200% (in 5% increments)  Duration: 30-min to 24-hour in 15-min increments  temp basal presets available	Manual mode: Yes (as 630G)  Auto mode: to meet this same objective, you would set a Temp Glucose Target instead <i>(see below)</i>	Yes: % or Units/hr  Duration: 30-min to 12-hour in 30-min increments  7 temp basal presets available	Yes  Range: 0 to <b>250%</b>  Duration: 15-min to <b>72-hr</b> in <b>1-min increments</b>	Yes  Range: 0 to 200% (in 10% basal steps)  Duration: 15-min to 24-hrs in 15-min steps	
Is there a <b>temporary glucose target</b> feature? (for exercise, overnight after a high-activity day, or for sleepovers)	n/a	Manual Mode: No  <b>Auto Mode:</b> <b>Yes</b> Alternate Temp Glucose Target is 8.3 mmol/L (default is 6.7 mmol/L)	n/a	n/a	n/a	
<b>BOLUS:</b>	<i>Medtronic Minimed 630G</i>	<i>Medtronic Minimed 670G</i>	<i>Omnipod</i>	<i>Tandem t:slim X2</i>	<i>Ypsomed YpsoPump</i>	
<b>Bolus Size &amp; Range:</b> How small or large of a bolus can the pump deliver?	As 670G (to the right)	Bolus Delivery Range of <b>min 0.025</b> to max 25U, in bolus increments of 0.025, 0.05, or 0.1U	Bolus Delivery Range of min 0.05 to <b>max 30U</b> , in bolus increments of 0.05, 0.1, 0.5, or 1.0 U	Bolus Delivery Range of min 0.05U to max 25U, in bolus <b>increments as small as 0.01U</b> .	Bolus Delivery Range of min 0.1U to <b>max 30U</b> in bolus steps of 0.1, 0.5, 1, or 2 U.	
<b>Bolus Delivery Speed:</b> Can the pump deliver bolus insulin at different rates of speed? (for time efficiency, absorbability, and comfort)	As 670G (to the right)	<b>2 user-selected speeds:</b> Standard (1.5U/min) or Quick (15U/min)	1 speed: 1.5U/min	Auto-adjusts (not user-selectable)	1 speed: 0.555 U/sec	

<p>Does the pump have a <b>bolus calculator</b>, using my programmed rates and ratios to do the math for me/my child?</p>	<p>As 670G (to the right)</p>	<p><b>Yes</b> ("Bolus Wizard" available from pump only, not from meter remote)</p>	<p><b>Yes</b> ("Suggested Bolus" calculator available via PDM remote only)</p>	<p><b>Yes</b> (Bolus Calculator is available on pump touchscreen)</p>	<p>No (Bolus Calculator is in the YpsoPump app only, not in the pump itself.) Enter bolus amounts into pump in Units of Insulin only.</p>	
<p>Can I program varied <b>carb ratios</b> across the day?  <i>Ratio = 1:C (1 unit of insulin covers C grams of carbs)</i></p>	<p>As 670G (to the right)</p>	<p>Yes in 8 time segments  the C in I:C ratio can be set from 1 to 200g carb/U  in increments as small as <b>0.1g</b> for ratios &lt;10 (ex. You can change carb ratio from 1:8 to 1:8.1)</p>	<p>Yes in 4 time segments  the C in I:C ratio can be set from 1 to 150g carb/U  in increments as small as 1g (ex. You can change carb ratio from 1:8 to 1:9)</p>	<p>Yes in <b>16 time segments</b>  the C in I:C ratio can be set from 1 to <b>300g</b> carb/U  in increments as small as <b>0.1g</b> for ratios &lt;10 (ex. You can change carb ratio from 1:8 to 1:8.1)</p>	<p>Bolus Calculator is in the YpsoPump app.  <i>app I:C specs TBD</i></p>	
<p>Can I program varied <b>Insulin Sensitivity Factors</b> (ISF) across the day?  <i>Ratio = 1:X (1 unit of insulin reduces glucose by X mmol/L)</i></p>	<p>As 670G (to the right)</p>	<p>Yes in 8 time segments  the X in ISF ratio can be set from 0.3 to 22.2mmol/L  in increments of 0.1 mmol/L</p>	<p>Yes in 4 time segments  the X in ISF ratio can be set from <b>0.1</b> to 16.7mmol/L  in increments of 0.1 mmol/L</p>	<p>Yes in <b>16 time segments</b>  the X in ISF ratio can be set from <b>0.1 to 33.3</b> mmol/L  in increments of 0.1 mmol/L</p>	<p>Bolus Calculator is in the YpsoPump app.  <i>app ISF specs TBD</i></p>	
<p>Does the pump calculate <b>active insulin remaining</b>, to avoid insulin stacking and reduce the risk of lows?</p>	<p>As 670G (to the right)</p>	<p>Yes "Active Insulin" is shown on home screen of pump</p>	<p>Yes "Insulin on Board" is shown on status screen of PDM</p>	<p>Yes "Insulin on Board" is shown on home screen of receiver (pump)</p>	<p>Pump itself does not calculate IOB, but "Insulin on Board" is shown in the app</p>	

<p><b>Duration Of Insulin Action (DIA):</b> Can I set my own individualized length of time for which insulin continues to act?</p>	<p>As 670G (to the right)</p>	<p>"Active Insulin Time" can be set for <b>2 to 8 hours</b> in 15-min increments</p>	<p>"Duration of Insulin Action" can be set for 2 to 6 hours in 30-min increments</p>	<p>"Insulin Duration" can be set for <b>2 to 8 hours</b> in <b>1-minute increments</b> (and is displayed on the home screen of the pump)</p>	<p>Pump itself does not calculate IOB (and so does not have DIA setting).  <i>app DIA specs TBD</i></p>	
<p><b>Extended Bolus:</b> Can I split or extend a bolus to cover slower-digesting or hi-fat foods?</p>	<p>As 670G (to the right)</p>	<p>Square Wave® or Dual Wave® bolus  in % of total units of insulin, (inputted in Units or using bolus calculator to input grams of carbs) <b>in 1% increments</b>  for 30-min to 8-hr duration in 15-min increments.  You cannot use an extended bolus if BG correction amount is included – need to do each bolus separately.</p>	<p>Extended Bolus (with "Deliver Now" and "Extend" portions) <b>in Units or % of total bolus upfront</b>  for 30-min to 8-hr duration (in 30-minute increments)</p>	<p>Extended or Combination Bolus  in % of total units of insulin) (inputted in Units or using bolus calculator to input grams of carbs) <b>in 1% increments</b>  for 15-min to 8-hr duration (in <b>1-minute increments</b>)  <b>BG Correction amount is automatically separated out and delivered,</b> you do not need to do 2 separate bolus actions.</p>	<p>Extended or Combination bolus  in Units of Insulin only (from 0.1 to 30.0 U)  for 15-min to <b>12-hr duration</b> (in 15-min steps)</p>	
<p>Is there a <b>Quick Bolus</b> function (to deliver a bolus without looking or opening the pump screen)?</p>	<p>As 670G (to the right)</p>	<p>Yes "Easy Bolus"</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes "Blind Bolus"</p>	
<p>Is there a <b>Bolus Pre-set</b> option, for my "usual" snacks / meals?</p>	<p>As 670G (to the right)</p>	<p>Yes, based on bolus size (in U of insulin)</p>	<p>Yes, <b>36 presets (in grams of carbs OR units of insulin)</b></p>	<p>No (though touchscreen allows for convenience without preset amounts)</p>	<p>No pre-sets; use Blind Bolus for the most convenient bolus delivery.</p>	

<b>INFUSION SETS:</b>	<i>Medtronic Minimed 630G</i>	<i>Medtronic Minimed 670G</i>	<i>Omnipod</i>	<i>Tandem t:slim X2</i>	<i>Ypsomed YpsoPump</i>	<i>*Accu-Chek</i>
What <b>type of infusion sets</b> are available?	As 670G (to the right)	Use only those with patented Minimed connection:  6 or 9mm cannula with 90° insertion in 4 tubing lengths;  13 or 17mm cannula with angled insertion in 4 tubing lengths;  6 or 8mm steel cannula with 90° insertion in 3 tubing lengths;  with or without auto-inserter device	Only use Omnipod Pods, since the Internal reservoir, insertion components and pumping mechanism are built right into the Pod.  6.5mm angled flexible cannula only  Inserts automatically at the push of a button, with <b>no injection needles in sight</b>	You can use <b>any Luer-lock infusion sets.</b>  Tandem Infusion Sets available:  flexible cannula: 6 or 9mm; angled or 90° insertion; with auto-inserter; 2 tubing lengths.  29G steel cannula: 8mm; 90° insertion; manual insertion; 80cm tubing.	YpsoPump Orbit Infusion Sets (with <b>360 degree tubing rotation</b> ) have a proprietary connection:  All have 90° insertion; with or without auto-inserter; 4 tubing lengths.  flexible cannula: 6 or 9mm.  <b>31G steel</b> cannula is the <b>thinnest</b> on the market: 5.5 or 8.5mm	6 or 9mm; angled or 90° insertion; flexible or steel cannula; with or without auto-inserter
Will the pump <b>remind me</b> when it's time to <b>change</b> my infusion set?	As 670G (to the right)	Yes (pop-up message)	Pod Expiration Alert 1 to 24 hours in 1-hour increments	Site Reminder Prompts user to change infusion set. Can be set for 1 to 3 days at a time selected by user	No (See the YpsoPump app)	
<b>LINKED BG METER or REMOTE:</b>	<i>Medtronic Minimed 630G</i>	<i>Medtronic Minimed 670G</i>	<i>Omnipod</i>	<i>Tandem t:slim X2</i>	<i>Ypsomed YpsoPump</i>	
Is there a <b>linked BG meter</b> (that communicates blood glucose results wirelessly to the insulin pump)?	<b>Yes</b> Contour Next Link Blood Glucose Meter also functions as a remote for units of insulin OR for carb pre-sets.	<b>Yes</b> Contour Next Link 2.4 Blood Glucose Meter also functions as a remote for units of insulin OR for carb pre-sets.	<b>Yes</b> Built in Freestyle Blood Glucose Meter also functions as a remote for all insulin pump features.	No Manually enter fingerstick BG results from the meter of your choice.	No YpsoPump design is open platform. Pump is <b>compatible with any Bluetooth enabled meter or smartphone.</b>	

Can I deliver an insulin bolus wirelessly from a <b>meter remote</b> or <b>smartphone app</b> ?	As 670G (to the right)	<b>Yes</b> – for a manual bolus, or up to 8 preset amounts (in units of insulin).	<b>Yes</b> – you use the PDM (meter remote) for all functions, including bolus delivery & bolus calculator.	No	No. Communication is 1-way, from pump to app (not from app to pump)	
Is the insulin pump <b>fully operational on its own</b> (if I misplace/my child leaves behind at school the remote or smart phone)?	<b>Yes</b>	<b>Yes</b>	No	<b>Yes</b>	<b>Yes</b> (App does not control pump functions)	
<b>INSULIN RESERVOIR:</b>	<i>Medtronic Minimed 630G</i>	<i>Medtronic Minimed 670G</i>	<i>Omnipod</i>	<i>Tandem t:slim X2</i>	<i>Ypsomed YpsoPump</i>	
Reservoir size	<b>300U (3.0 ml)</b>	<b>300U (3.0 ml)</b>	200U (2.0 ml)	<b>300U (3.0 ml)</b>	160U (1.6 ml)	
<b>Low Insulin Warning:</b> Does the pump alert you when insulin is beginning to run out?	As 670G (to the right)	Yes. Low Reservoir warning is user adjustable from <b>5 to 50</b> units in 5-unit increments. Pump will <b>alert you again when half of the remaining units are used.</b>	Yes. Low Reservoir warning is user adjustable from <b>10 to 50 units</b> in 5-unit increments	Low Insulin Alert is user adjustable from 10 to 40 units. Status indicator visible on Home Screen.	Cartridge Level Low warning if the programmed basal rate (incl. existing temp basal) for the next 12 hours, plus the remaining amount of any bolus in progress, is greater than or equal to the remaining insulin in the cartridge.	
If the insulin runs out...	... you can refill reservoir without replacing infusion set	... you can refill reservoir without replacing infusion set	... you need to replace the pod (infusion set) because the pos contains the insulin reservoir.	... you can refill reservoir without replacing infusion set	... you can refill reservoir without replacing infusion set	

<b>OTHER:</b>	<i>Medtronic Minimed 630G</i>	<i>Medtronic Minimed 670G</i>	<i>Omnipod</i>	<i>Tandem t:slim X2</i>	<i>Ypsomed YpsoPump</i>	
<p>In addition to automatic safety alarms, What kind of <b>alerts or reminders</b> will prompt me to do diabetes tasks?</p>	<p>As 670G (to the right)</p>	<p>BG Check After Bolus Reminder Missed Meal Bolus Reminder <b>Personal Reminders</b> that you name and set (based on time of day)</p>	<p>BG Check After Bolus Reminder Bolus Reminder (i.e. for missed meal bolus) <b>Custom Reminders</b> that you name and set (based on time of day)</p>	<p>BG Check After Bolus Reminder Missed Meal Bolus Reminder <b>Incomplete Bolus Alert</b> <b>Incomplete Temp Rate Alert</b> <b>Incomplete Fill Tubing and Fill Cannula Alerts</b> <b>High BG Alert</b> <b>Low BG Reminder to re-check</b></p>	<p>Pump issues only safety alerts, not task reminders.  See YpsoPump app for task Alerts and Reminders.</p>	
<p>What type of <b>batteries</b> can I use?  How long do they last?</p>	<p>As 670G (to the right)</p>	<p>AA Lithium recommended. Also accepts alkaline, or NiMH (rechargeable)</p>	<p>2 x AAA Alkaline in PDM  Battery Life approx. 3 weeks</p>	<p>Internal rechargeable, non-replaceable medical-grade battery.  Battery lasts up to 7 days (5 days if using CGM).  4-year minimum service life.</p>	<p>AAA Alkaline in pump (Service life typically 30 days of average use)  PLUS internal rechargeable battery, which <b>allows battery change without disrupting basal, temp basal or extended bolus functions.</b></p>	
<p>Can I <b>lock the screen or keypad</b> to prevent accidental button-presses?</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>	<p>“Feature Lock” blocks access to insulin delivery screens and pump setting screens;  “Screen Lock” prevents unintentional taps</p>	<p>Yes  “Access Lock” prevents unintentional taps.</p>	

How can I <b>download</b> the Pump History, Glucose Results (if applic) and <b>analyze</b> the data?	CareLink™	CareLink™ USB	Diasend or Abbott CoPilot®	Diasend	YposPump app	
<b>CUSTOMER SUPPORT:</b>	<i>Medtronic Minimed 630G</i>	<i>Medtronic Minimed 670G</i>	<i>Omnipod</i>	<i>Tandem t:slim X2</i>	<i>Ypsomed YpsoPump</i>	
<b>Vacation Loaner Program:</b> Can I borrow a back-up pump as a safety net for when I'm away from home?	Yes	Yes	No	Yes	Yes	
<b>Warranty:</b> For how long after purchase will the company provide support, and replace the pump if necessary?	As 670G (to the right)	4 years (pump and CGM Receiver) plus 1 additional year under <u>certain circumstances</u>  1 year (CGM transmitter)	5 year Limited (PDM)	4 years for insulin pump only. 5 years under provincial pump funding program <i>(Dexcom CGM has separate warranty.)</i>	5 years	