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WARNING: Medtronic performed an evaluation of the MiniMed 670G system and determined that it may not be safe for use in children under the age of 7 because of the way that the system is designed and the daily insulin requirements. Therefore this device should not be used in anyone under the age of 7 years old. This device should also not be used in patients who require less than a total daily insulin dose of 8 U per day because the device requires a minimum of 8 U per day to operate safely.

Warranty

The expected life of the MiniMed insulin pump is a maximum of 4 years. Medtronic Diabetes warrants the MiniMed insulin pump against defects in materials and workmanship for a period of 4 years from the date of purchase.

During the warranty period, Medtronic Diabetes will, at its discretion, replace (with a new or recertified pump, at Medtronic Diabetes’ discretion) any defective pump or motor, subject to the conditions and exclusions stated herein. In the event that a pump is replaced, the warranty period will not be extended.

This warranty is valid only if the MiniMed insulin pump is used in accordance with the manufacturer’s instructions. This warranty will not apply:

- If damage results from changes or modifications made to the pump by the user or third persons after the date of manufacture.
- If damage results from use of non-Medtronic reservoirs and/or infusion sets.
- If damage results from service or repairs performed by any person or entity other than the manufacturer.
- If damage results from a Force Majeure or other event beyond the control of the manufacturer.
• If damage results from negligence or improper use, including but not limited to: improper storage, submersion in water or physical abuse, such as dropping or otherwise.

This warranty shall be personal to the original user. Any sale, rental or other transfer or use of the product covered by this warranty to or by a user other than the original user shall cause this warranty to immediately terminate. This warranty does not apply to batteries, infusion sets, reservoirs, and other accessories.

The remedies provided for in this warranty are the exclusive remedies available for any breach hereof. Neither Medtronic Diabetes nor its suppliers or distributors shall be liable for any incidental, consequential, or special damage of any nature or kind caused by or arising out of a defect in the product.

All other warranties, expressed or implied, are excluded, including the warranties of merchantability and fitness for a particular purpose.
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- Max Bolus
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Appendix A: End user software license agreement

End user software license agreement

Glossary

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1

Before you begin
Before you begin

This user guide is designed to help you understand the operation of your MiniMed 670G system with SmartGuard technology. In the MiniMed 670G system, SmartGuard technology can automatically adjust insulin delivery based on your sensor glucose values. Work closely with your healthcare professional when starting insulin pump therapy.

In this user guide, the term Auto Mode refers to the automatic control of insulin delivery. For more information, see About Auto Mode, page 249. When your pump is not operating in Auto Mode, the term Manual Mode is used to describe its functions.

Using this user guide

This user guide contains valuable information about using your new insulin pump. To help you find the information you need, you can use the table of contents at the beginning of the user guide and the index at the end of the user guide. Refer to the glossary for definitions of terms and acronyms used.

The following table describes certain terms, conventions, and concepts used in this user guide.

<table>
<thead>
<tr>
<th>Convention</th>
<th>What it means</th>
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<tr>
<td>Select</td>
<td>To activate a screen item, accept a value, or initiate an action.</td>
</tr>
<tr>
<td>Select and hold</td>
<td>To perform an action using your pump screen, press the Select button and hold until the action is complete.</td>
</tr>
<tr>
<td>Press</td>
<td>To push and then release a button.</td>
</tr>
<tr>
<td>Press and hold</td>
<td>To push and keep pressure on a button.</td>
</tr>
</tbody>
</table>
**Convention**  |  **What it means**  
---|---
Bold text  |  To indicate screen items and buttons. For example, “Select **Next** to continue.”
X  |  To indicate a numeric value.

**Note**  
**Note:** A note provides helpful information.

**Caution**  
![Caution Icon]  
**CAUTION:** A caution notifies you of a potential hazard which, if not avoided, may result in minor or moderate injury or damage to the equipment.

**WARNING**  
![Warning Icon]  
**WARNING:** A warning notifies you of a potential hazard which, if not avoided, could result in death or serious injury. It may also describe potential serious adverse reactions and safety hazards.

For instructions about setting up devices on the MiniMed 670G system, such as a sensor or infusion set, refer to the user guide for the related device.

**Acronyms and abbreviations**

The following table defines acronyms and abbreviations used in this guide.

<table>
<thead>
<tr>
<th>Acronym and abbreviations</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AST</td>
<td>alternative site testing</td>
</tr>
<tr>
<td>BG</td>
<td>blood glucose</td>
</tr>
<tr>
<td>CDC</td>
<td>Centers for Disease Control</td>
</tr>
<tr>
<td>CGM</td>
<td>continuous glucose monitoring</td>
</tr>
<tr>
<td>CT</td>
<td>computed tomography</td>
</tr>
<tr>
<td>DKA</td>
<td>diabetic ketoacidosis</td>
</tr>
<tr>
<td>EMC</td>
<td>electromagnetic compatibility</td>
</tr>
<tr>
<td>ESD</td>
<td>electrostatic discharge</td>
</tr>
<tr>
<td>FCC</td>
<td>Federal Communications Commission</td>
</tr>
<tr>
<td>FDA</td>
<td>Food and Drug Administration</td>
</tr>
<tr>
<td>Acronym and abbreviations</td>
<td>Definition</td>
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<tr>
<td>--------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>GPS</td>
<td>global positioning system</td>
</tr>
<tr>
<td>ISIG</td>
<td>interstitial signal</td>
</tr>
<tr>
<td>IV</td>
<td>intravenous</td>
</tr>
<tr>
<td>MRI</td>
<td>magnetic resonance imaging</td>
</tr>
<tr>
<td>NiMH</td>
<td>nickel-metal hydride</td>
</tr>
<tr>
<td>OTC</td>
<td>over the counter</td>
</tr>
<tr>
<td>RF</td>
<td>radio frequency</td>
</tr>
<tr>
<td>SG</td>
<td>sensor glucose</td>
</tr>
<tr>
<td>SN</td>
<td>serial number</td>
</tr>
<tr>
<td>TDD</td>
<td>total daily dose</td>
</tr>
</tbody>
</table>

**Emergency kit**

Keep an emergency kit with you at all times to make sure that you always have necessary supplies. Tell a family member, co-worker, or friend where you keep your emergency kit.

It is important that you test your blood glucose (BG) more frequently while you are traveling. The routine hassle of travel, including stress, changes in time zones, schedules and activity levels, meal times and types of food, can all affect your diabetes control. Be extra attentive to monitoring your BG frequently, and be prepared to respond if needed.

Your emergency kit should include these items:

- Fast-acting glucose tablets.
- Blood glucose monitoring supplies.
- Urine or blood ketone monitoring supplies.
- Extra infusion set and reservoir
- Extra new AA lithium or alkaline batteries, or fully charged NiMH batteries.
- Insulin syringe and fast-acting insulin (with dosage instructions from your healthcare professional).
• Wallet card (packaged with your pump accessories).
• Adhesive dressing.
• Glucagon emergency kit.

**WARNING:** Do not use the Bolus Wizard to calculate a bolus for a period of time after giving a manual injection of insulin by syringe or pen. Manual injections are not accounted for in the active insulin amount. Therefore, the Bolus Wizard could prompt you to deliver more insulin than needed. Too much insulin can cause hypoglycemia. Consult with your healthcare professional for how long you need to wait after a manual injection of insulin before you can rely on the active insulin calculation of your Bolus Wizard.

**WARNING:** Do not use Auto Mode for a period of time after giving a manual injection of insulin by syringe or pen. Manual injections are not accounted for in Auto Mode. Therefore, Auto Mode could deliver too much insulin. Too much insulin may cause hypoglycemia. Consult with your healthcare professional for how long you need to wait after a manual injection of insulin before you resume Auto Mode.

For details on pump safety, see *User safety, page 26.*

**User safety**

**Indications**

**MiniMed 670G System**

The Medtronic MiniMed 670G system is intended for continuous delivery of basal insulin (at user selectable rates) and administration of insulin boluses (in user selectable amounts) for the management of Type 1 diabetes mellitus in persons, fourteen years of age and older, requiring insulin as well as for the continuous monitoring and trending of glucose levels in the fluid under the skin. The MiniMed 670G System includes SmartGuard technology, which can be programmed to automatically adjust delivery of basal insulin based on Continuous Glucose Monitor sensor glucose values, and can
suspend delivery of insulin when the sensor glucose value falls below or is predicted to
fall below predefined threshold values.

The Medtronic MiniMed 670G System consists of the following devices: MiniMed 670G
Insulin Pump, the Guardian Link (3) Transmitter, the Guardian Sensor (3), One-press
Serter, and the CONTOUR NEXT Link 2.4 Glucose Meter. The system requires a
prescription.

The Guardian Sensor (3) is not intended to be used directly for making therapy
adjustments, but rather to provide an indication of when a finger stick may be required.
All therapy adjustments should be based on measurements obtained using a home
glucose monitor and not on values provided by the Guardian Sensor (3).

**WARNING:** Medtronic performed an evaluation of the MiniMed 670G
system and determined that it may not be safe for use in children
under the age of 7 because of the way that the system is designed and
the daily insulin requirements. Therefore this device should not be
used in anyone under the age of 7 years old. This device should also
not be used in patients who require less than a total daily insulin dose
of 8 U per day because the device requires a minimum of 8 U per day
to operate safely.

**WARNING:** Do not use the Suspend on low feature to prevent or treat
low glucose. Always confirm your sensor glucose reading using your
BG meter, and follow the instructions of your healthcare professional
to treat low glucose. Using Suspend on low alone to prevent or treat
low glucose may result in prolonged hypoglycemia.

**Guardian Sensor (3)**

The Guardian Sensor (3) is intended for use with the MiniMed 670G system to
continuously monitor glucose levels in persons with diabetes. It is intended to be used
for detecting trends and tracking patterns in persons aged fourteen years and older,
and to be used by the MiniMed 670G system to automatically adjust basal insulin levels.
It is indicated for use as an adjunctive device to complement, not replace, information
obtained from standard blood glucose monitoring devices. The sensor is intended for single use and requires a prescription. The Guardian Sensor (3) is indicated for 7 days of continuous use.

**One-press Serter**

The serter is used as an aid for inserting the sensor. It is indicated for single-patient use and is not intended for multiple patient use.

**Guardian Link (3) Transmitter**

The Guardian Link (3) Transmitter is intended for use with MiniMed 670G System. The Guardian Link (3) Transmitter powers the glucose sensor, collects and calculates sensor data, and wirelessly sends the data to the MiniMed 670G insulin pump. The Transmitter is intended for single-patient multi-use.

**CONTOUR NEXT LINK 2.4 Glucose Meter**

The CONTOUR NEXT LINK 2.4 Wireless Blood Glucose Monitoring System is an over-the-counter (OTC) device utilized by persons with diabetes in home settings for the measurement of glucose in whole blood, and is for single patient use only and should not be shared. The CONTOUR NEXT LINK 2.4 wireless blood glucose monitoring system is indicated for use with fresh capillary whole blood samples drawn from the fingertip and palm only. The CONTOUR NEXT Test Strips are intended for self-testing by persons with diabetes for the quantitative measurement of glucose in whole blood samples from 20 to 600 mg/dL. The CONTOUR NEXT LINK 2.4 wireless blood glucose transmit glucose values to the MiniMed 670G insulin pump and facilitate transfer of information to Medtronic CareLink Software through the use of radio frequency communication. The CONTOUR NEXT LINK 2.4 Wireless Blood Glucose Monitoring System is not intended for the diagnosis of, or screening for, diabetes mellitus. It is not intended for use on neonates.

**Contraindications**

Pump therapy is not recommended for people whose vision or hearing does not allow recognition of pump signals and alarms.
Do not use the serter on products other than the Enlite sensor or Guardian Sensor (3). Medtronic cannot guarantee the safety or efficacy of this product if used with other products.

The reservoir is contraindicated for the infusion of blood or blood products.

Infusion sets are indicated for subcutaneous use only and not for intravenous (IV) infusion or the infusion of blood or blood products.

Insulin pump therapy is not recommended for those who are unwilling to perform at least four blood glucose tests per day. As insulin pumps use rapid acting insulin only, BG testing is required to help identify rapid glycemic deterioration due to insulin infusion occlusion, infusion site problems, insulin stability issues, user error, or a combination of these.

Pump therapy is not recommended for people who are unwilling or unable to maintain contact with their healthcare professional.

**Potential risks**

**Risks related to insulin pump infusion set**

General risks related to insulin pump infusion set may include:

- Localized infection
- Skin irritation or redness
- Bruising
- Discomfort or pain
- Bleeding
- Irritation
- Rash
- Occlusions that can interrupt insulin delivery and lead to hyperglycemia or Diabetic Ketoacidosis

Patients should be instructed to follow the provided user guides for insertions and care of infusion sets. If an infusion site becomes irritated or inflamed, the infusion set should be removed and another placed in a new location.
**Risks related to insulin administration and pump use**

Due to the use of insulin, there is risk related to the infusion of insulin and the potential interruptions of insulin delivery. These general risks may include:

- Hypoglycemia
- Hyperglycemia
- Diabetic Ketoacidosis
- Seizure
- Coma
- Death

**Risks related to sensor use**

*General risks related to sensor use may include:*

- Skin irritation or other reactions
- Bruising
- Discomfort
- Redness
- Bleeding
- Pain
- Rash
- Infection
- Raised bump
- Appearance of a small “freckle-like” dot where needle was inserted
- Allergic reaction
- Fainting secondary to anxiety or fear of needle insertion
- Soreness or tenderness
- Swelling at insertion site
- Sensor fracture, breakage or damage
• Minimal blood splatter associated with sensor needle removal
• Residual redness associated with adhesive, tape, or both
• Scarring

**Specific risks related to sensor use**

Do not use continuous glucose monitoring if hydroxyurea, also known as hydroxycarbamide, is taken. Hydroxyurea is used to treat certain diseases, such as cancer and sickle cell anemia. Hydroxyurea use results in higher sensor glucose readings compared to blood glucose readings. Taking hydroxyurea while using continuous glucose monitoring can result in hypoglycemia caused by over-delivery of insulin, inaccurate or missed alarms and alerts, delay or loss of sensor-enabled insulin suspension, and substantially higher sensor glucose readings in reports than actual blood glucose readings.

Always check the label of any medication being taken to confirm if hydroxyurea or hydroxycarbamide is an active ingredient. If hydroxyurea is taken, consult a healthcare professional. Turn the Sensor feature off to disable continuous glucose monitoring. For more information, see *Turning off Sensor Settings, page 238*. Use additional blood glucose meter readings to verify glucose levels.

Always consult a healthcare professional before using sensor glucose values to make treatment decisions if a medication that contains acetaminophen or paracetamol is taken while wearing the sensor. Medications that contain acetaminophen or paracetamol can falsely raise sensor glucose readings. The level of inaccuracy depends on the amount of acetaminophen or paracetamol active in the body and can differ for each person. Falsely elevated sensor readings can result in over-delivery of insulin, which can cause hypoglycemia.

Medications that contain acetaminophen or paracetamol include, but are not limited to, cold medicines and fever reducers. Check the label of any medications being taken to see if acetaminophen or paracetamol is an active ingredient. Use additional blood glucose meter readings to confirm blood glucose levels.

Sensor placement and insertion has been studied in the belly (abdomen) and back of upper arm only and is not approved for other sites.
Specific risks related to meter use

Some types of medication or chronic medical conditions may affect BG meter readings and cause you to get inaccurate results. The level of inaccuracy depends on the amount of certain substances that are active in your body and may be different for each person. If you have taken the following medications, do not use your BG meter readings to calibrate the sensor and exit Auto Mode.

- Ascorbic Acid (known as vitamin C) can interfere with your meter if you get vitamin C injections.
- Xylose: Do not use during or soon after xylose absorption testing. Xylose in the blood will cause an interference.

If you have the following conditions, always consult with your healthcare professional before using Auto Mode.

- Liver problems, such as cirrhosis or Gilberts Syndrome resulting in bilirubin levels greater than 54 mg/dL.
- Gout or chronic kidney disease resulting in uric acid levels greater than 59 mg/dL.

Risks related to serter use

General risks with serter use may include skin infection around the area where the serter is used.

Risks related to the MiniMed 670G insulin pump system

General risks related to the MiniMed 670G insulin pump system may include:

- Hypoglycemia
- Hyperglycemia
- Diabetic Ketoacidosis
- Seizure
- Coma
- Death
Device performance: study description

The MiniMed 670G System can automatically increase or decrease insulin delivery when informed by continuous glucose monitoring (CGM) values; however, the user must still calculate and administer meal boluses. Previous clinical studies that did not involve the MiniMed 670G system have shown that other integrated insulin pump and CGM systems may provide better diabetes management, compared with multiple daily injections or with the pump alone. Some studies also suggest that when you pair pump therapy with the information provided by the sensor, it may significantly improve HbA1C levels without increasing the risk of hypoglycemia.\textsuperscript{1,2,3}

The MiniMed 670G system also features SmartGuard technology with different types of diabetes management. There are two levels of SmartGuard technology:

- The first level of SmartGuard technology automatically suspends insulin when the sensor reaches a preset low limit or before the low limit is reached, referred to as Suspend on low and Suspend before low, respectively. When a Suspend on low event occurs, you can choose to continue to keep insulin suspended, or you can choose to resume insulin delivery. When a Suspend before low occurs, insulin delivery will automatically resume when the sensor glucose levels recover. The Suspend on low and Suspend before low features are optional features available when the system is in Manual Mode.

- The second level of SmartGuard technology automatically calculates insulin dose using CGM data, referred to as Auto Mode. The Auto Mode feature can automatically increase or decrease the amount of insulin delivered based on sensor values. Elevated sensor glucose readings result in increased delivery rates and decreased sensor glucose values result in decreased insulin delivery rates.


During Auto Mode operation, the user must deliver meal boluses by entering the estimated amount of carbohydrates for meals at the time they are eaten. Failure to deliver meal boluses in association with meals during Auto Mode operation can result in significant post meal hyperglycemia.

Since adjustments to insulin delivery rates when the system is in Auto Mode are based on sensor glucose readings, it is critical to monitor blood glucose values using a home glucose meter regardless of whether the system is operating in the Manual Mode or the Auto Mode. If these home glucose meter measurements indicate hypoglycemia or hyperglycemia, you must follow your physician’s instruction for treating these conditions and you should not rely on the MiniMed 670G system to automatically restore your glucose levels to normal.

The SmartGuard technology contains two insulin delivery suspend options: Suspend on low and Suspend before low. The Suspend on low was previously evaluated and is currently available on commercially available pumps (MiniMed 530G Pump and MiniMed 630G Pump).

The Suspend before low feature was evaluated for safety in a multi center, single arm, in-clinic study. Study subjects included persons aged 14-75 years diagnosed with type 1 diabetes mellitus who were on pump therapy at the time of screening. A total of 71 subjects were subjected to hypoglycemic induction, followed by an observation period. For hypoglycemic induction, the target was set to 65 mg/dL, using the rate of change basal increase algorithm. Suspend before low was activated with the Low Limit setting for Suspend before low ON set to 65 mg/dL, and the subject was observed with frequent sample testing (FST) for a maximum of 19 hours. The observation period included the suspension period, the insulin resumption period, and if applicable, an insulin re-suspension after insulin delivery resumed.

Five adverse events were reported during the study. Four adverse events were neither device nor procedure related. One adverse event was procedure related.

Data from this in-clinic study demonstrated that the Suspend before low feature is safe to use. Study success criteria, as defined in the protocol, were met (i.e. there were no device related serious adverse events, no diabetic ketoacidosis events related to the Suspend before low feature, and no unanticipated adverse device effects). The second level of SmartGuard technology was evaluated under a pivotal, single-arm,
multi-center, home and hotel study in subjects with type 1 diabetes on insulin pump therapy. Study subjects included persons aged 14-75 years diagnosed with type 1 diabetes mellitus for two years or more that had used pump therapy for more than 6 months prior to screening. Study subjects had an HbA1C value of less than 10.0% at the time of screening.

This study consisted of a 2-week run-in phase and a 3-month study phase. A total of 124 subjects used the MiniMed 670G System in Manual Mode only first, before transitioning to Auto Mode during the study phase. In addition to system use at home, the study phase included a 6-day/5-night hotel stay during which subjects underwent daytime and nighttime frequent sample testing for a total of approximately 24 hours. Subjects were allowed to eat as they normally would, and participated in a daily exercise/activity regimen for a minimum of 4 hours per day, spread throughout the day, during the hotel stay. Two of the 124 subjects did not participate in a hotel stay. One of these two subjects withdrew from the study.

The MiniMed 670G System was used for 12,389 patient days. No serious adverse events, diabetic ketoacidosis (DKA), or severe hypoglycemia were reported during the study. Compared to Manual Mode use during the run-in phase, use of the system was associated with a higher percentage of sensor glucose values within the range of 71 to 180 mg/dL and lower percentage of sensor glucose values in the low and high glucose ranges. A change in mean A1C from 7.4±0.91 (median 7.3) at the start of the study to 6.9±0.61 (6.8) at the end of the study was observed. This observation was associated with a modest increase in the mean total daily dose of insulin (47.5 baseline to 50.9) and mild increase in mean weight (76.9 baseline to 77.6).

**CAUTION:** Please note that since this study did not include a control group, no claims regarding effectiveness can be made. However, the study does support that the device is relatively safe for use.

Device related adverse events reported during the different phases of the pivotal trial are listed in the following table.
### Table 1: Device Related Adverse Events

<table>
<thead>
<tr>
<th>Event</th>
<th>Run-In Period</th>
<th>Study Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe hyperglycemia</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Skin irritation</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Irritation on sensor site</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rash</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

The following table shows the time spent per day in specific glucose ranges during the run-in and study phases by all subjects.

### Table 2: Time Spent in Specific Glucose Ranges During the Run-In and Study Phases by All Subjects

<table>
<thead>
<tr>
<th>Glucose Range (mg/dL)</th>
<th>Run-In Phase Time in Glucose Range Mean±SD</th>
<th>Study Phase Time in Glucose Range Mean±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 50</td>
<td>12.8 min ± 14.5 min</td>
<td>7.7 min ± 7.6 min</td>
</tr>
<tr>
<td>≤ 60</td>
<td>35.2 min ± 31.2 min</td>
<td>19.9 min ± 14.8 min</td>
</tr>
<tr>
<td>≤ 70</td>
<td>1 hr 18.6 min ± 55.3 min</td>
<td>42.9 min ± 25.4 min</td>
</tr>
<tr>
<td>70 - 180</td>
<td>14 hrs 54.4 min ± 3 hrs 1.4 min</td>
<td>16 hrs 2.2 min ± 2 hrs 35.6 min</td>
</tr>
<tr>
<td>&gt; 180</td>
<td>6 hrs 2.1 min ± 2 hrs 52.7 min</td>
<td>5 hrs 20.7 min ± 1 hr 46.9 min</td>
</tr>
<tr>
<td>&gt; 250</td>
<td>1 hr 30.4 min ± 1 hr 32.3 min</td>
<td>1 hr 12.1 min ± 52.6 min</td>
</tr>
<tr>
<td>&gt; 300</td>
<td>29.6 min ± 51.7 min</td>
<td>21.1 min ± 22.2 min</td>
</tr>
<tr>
<td>&gt; 350</td>
<td>8.9 min ± 20.7 min</td>
<td>6.1 min ± 8.35 min</td>
</tr>
</tbody>
</table>

The following table shows the ranges of changes in HbA1C observed in the study and indicates the number of subjects that demonstrated each type of change in HbA1C observed.
Table 3: Number of Subjects with Change in HbA1C at Different Baselines

<table>
<thead>
<tr>
<th>HbA1C Change Range</th>
<th>Decrease &gt; 1%</th>
<th>Decrease 0 to 1%</th>
<th>No Change</th>
<th>Increase 0 to 1%</th>
<th>Increase &gt; 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline A1C (%)</td>
<td>Number of Subjects (% of Subjects) with Change in A1C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5% ≤ A1C &lt; 6%</td>
<td>0 (0.0%)</td>
<td>1 (0.8%)</td>
<td>0 (0.0%)</td>
<td>3 (2.4%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>6% ≤ A1C &lt; 7%</td>
<td>1 (0.8%)</td>
<td>20 (16.1%)</td>
<td>5 (4.0%)</td>
<td>11 (8.9%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>7% ≤ A1C &lt; 8%</td>
<td>8 (6.5%)</td>
<td>34 (27.4%)</td>
<td>1 (0.8%)</td>
<td>9 (7.3%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>8% ≤ A1C &lt; 9%</td>
<td>11 (8.9%)</td>
<td>12 (9.7%)</td>
<td>1 (0.8%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>9% ≤ A1C &lt; 10%</td>
<td>6 (4.8%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Overall</td>
<td>26 (21.0%)</td>
<td>67 (54.0%)</td>
<td>7 (5.6%)</td>
<td>23 (18.5%)</td>
<td>0 (0.0%)</td>
</tr>
</tbody>
</table>

The following table shows the number of subjects that spent a specific range of time per day in specific glucose ranges during the study phase.

Table 4: Number of Subjects that Spent a Certain Time Range in Each Glucose Range During the Study Phase

<table>
<thead>
<tr>
<th>Time Range</th>
<th>≤ 50</th>
<th>≤ 60</th>
<th>≤ 70</th>
<th>70 to 180</th>
<th>&gt; 180</th>
<th>&gt; 250</th>
<th>&gt; 300</th>
<th>&gt; 350</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 15 min</td>
<td>105</td>
<td>58</td>
<td>12</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>8 (6.5%)</td>
<td>66</td>
<td>112</td>
</tr>
<tr>
<td></td>
<td>(84.7%)</td>
<td>(46.8%)</td>
<td>(9.7%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 to 30 min</td>
<td>16</td>
<td>43</td>
<td>33</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>16</td>
<td>31</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>(12.9%)</td>
<td>(34.7%)</td>
<td>(26.6%)</td>
<td></td>
<td></td>
<td>(12.9%)</td>
<td>(25.0%)</td>
<td>(4.8%)</td>
</tr>
<tr>
<td>30 to 45 min</td>
<td>3</td>
<td>12</td>
<td>29</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>24</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>(2.4%)</td>
<td>(9.7%)</td>
<td>(23.4%)</td>
<td></td>
<td></td>
<td>(19.4%)</td>
<td>(9.7%)</td>
<td>(4.8%)</td>
</tr>
</tbody>
</table>
The following table shows the average amount of time spent in Auto Mode per day.

### Table 4: Number of Subjects that Spent a Certain Time Range in Each Glucose Range During the Study Phase

<table>
<thead>
<tr>
<th>Time Range</th>
<th>0 (0.0%)</th>
<th>10 (8.1%)</th>
<th>25 (20.2%)</th>
<th>0 (0.0%)</th>
<th>17 (13.7%)</th>
<th>6 (4.8%)</th>
<th>0 (0.0%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 min to 1 hr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 to 4 hr</td>
<td>0 (0.0%)</td>
<td>1 (0.8%)</td>
<td>25 (20.2%)</td>
<td>0 (0.0%)</td>
<td>34 (27.4%)</td>
<td>58 (46.8%)</td>
<td>9 (7.3%)</td>
</tr>
<tr>
<td>4 to 8 hr</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>83 (66.9%)</td>
<td>1 (0.8%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>8 to 12 hr</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>12 (9.7%)</td>
<td>7 (5.6%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>12 to 16 hr</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>38 (30.6%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>16 to 20 hr</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>70 (56.5%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>20 to 24 hr</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>4 (3.2%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
</tbody>
</table>

### Table 5: Time Spent in Auto Mode at Different Glucose Ranges during the Study Phase

<table>
<thead>
<tr>
<th>Glucose Range (mg/dL)</th>
<th>Study Phase Time in Glucose Range Mean±SD (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 50</td>
<td>4.8 min ± 4.6 min (4.0 min, 5.6 min)</td>
</tr>
<tr>
<td>≤ 60</td>
<td>13.2 min ± 10.1 min (11.4 min, 15.0 min)</td>
</tr>
<tr>
<td>≤ 70</td>
<td>29.9 min ± 18.8 min (26.6 min, 33.2 min)</td>
</tr>
<tr>
<td>70 to 180</td>
<td>13 hrs 50.3 min ± 3 hrs 1.4 min (13 hrs 18.1 min, 14 hrs 22.5 min)</td>
</tr>
<tr>
<td>&gt; 180</td>
<td>4 hrs 5.2 min ± 1 hr 5.0 min (3 hrs 53.7 min, 4 hrs, 16.8 min)</td>
</tr>
</tbody>
</table>
Table 5: Time Spent in Auto Mode at Different Glucose Ranges during the Study Phase

<table>
<thead>
<tr>
<th>Glucose Range (mg/dL)</th>
<th>Study Phase Time in Glucose Range Mean±SD (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 250</td>
<td>44.8 min ± 24.9 min (40.4 min, 49.2 min)</td>
</tr>
<tr>
<td>&gt; 300</td>
<td>9.3 min ± 7.6 min (8.0 min, 10.7 min)</td>
</tr>
<tr>
<td>&gt; 350</td>
<td>1.7 min ± 2.0 min (1.3 min, 2.0 min)</td>
</tr>
<tr>
<td>All</td>
<td>18 hrs 25.4 min ± 2 hrs 44.4 min (17 hrs 56.2 min, 18 hrs 54.7 min)</td>
</tr>
</tbody>
</table>

The pivotal clinical trial of the MiniMed 670G system suggested that the system was safe; however, this trial had a number of limitations which included the following:

- The study involved a relatively small number of patients.
- There was no control group for comparison purposes.
- The amount of time the system was used in the Manual Mode was much shorter than the time it was programmed to the Auto Mode. Additionally, for each subject, the study period lasted only three months.

Due to these limitations, the results of the clinical trial must be interpreted with caution and you should understand that your individual results when using the MiniMed 670G system may be significantly different from those of the subjects who participated in the trial.

**General warnings**

**Pump**

- Do not use the pump when a flammable anesthetic mixture with air, oxygen, or nitrous oxide is present. These environmental conditions can damage your pump and result in serious injury.
- Always use the fingertip for blood samples used for calibrating the sensor while in Auto Mode. The fingertip was the only site studied for use with Auto Mode. Do not
use blood samples from the palm to calibrate the sensor as this site was not studied for use with Auto Mode and the performance of the system is not known.

• Do not make treatment decisions, such as determining your insulin dose for meals, using the 670G continuous glucose monitor (CGM) values, as they are not intended to be used to make such treatment decisions. The MiniMed 670G CGM does not replace a blood glucose meter. Always use the values from your blood glucose meter for treatment decisions. Blood glucose values may differ from sensor glucose values. Using the sensor glucose readings for treatment decisions could lead to high or low blood glucose.

• Never rely on the pump beeps or vibrations alone to navigate through the pump screens or menus. Always check your pump screen as you navigate. The pump beeps and vibrations are intended to notify you of a condition that may require attention. Relying on the pump beeps or vibrations alone to navigate can result in incorrect menu selection or settings.

• Do not use your pump if the screen appears broken or unreadable. In some instances, impact to the pump can damage the screen while the buttons continue to function. If the screen is broken or unreadable, do not press any buttons. Remove the pump and begin using your backup insulin plan per the direction of your healthcare professional. If the pump is accidentally programmed while the screen is broken or unreadable, this could result in high or low blood glucose levels. If your screen is damaged, contact the 24 Hour HelpLine to arrange for shipment of a replacement pump.

• Only use rapid acting U100 insulin (Humalog™* and Novolog™*) that has been prescribed by your healthcare professional for use with an infusion pump. Do not put any other drugs or medications inside your reservoir for use with this pump. Other drugs or medications are not intended for use with this pump. Use of other drugs or medications can cause serious injury.

• Always make sure the infusion set is disconnected from your body before you rewind your pump or fill the infusion set tubing. Never insert the reservoir into the pump while the tubing is connected to your body. Doing so could result in an accidental infusion of insulin.
• Do not insert the reservoir in the pump if you did not rewind your pump. Doing so could result in an accidental infusion of insulin.

• Do not use the MiniMed 670G insulin pump or additional system devices adjacent to other electrical equipment which may cause interference with the normal system operation. This includes mobile communication devices such as cell phones, GPS navigation systems, anti-theft systems, and any electrical equipment that has an output transmitter power greater than 1 W. For more information about recommended separation distance guidelines between the insulin pump and common RF emitters, see Guidance and manufacturer’s declaration, page 354. The recommended separation distance between the insulin pump and common RF emitters is 12 in. Other electrical equipment that may compromise normal system operation has been contraindicated. For more information, see Exposure to magnetic fields and radiation, page 51.

• Do not unscrew or retighten the tubing connector on the reservoir while the infusion set is connected to your body. Doing so could result in an accidental infusion of insulin.

• Do not use Luer sets with the MiniMed 670G system. Only use MiniMed or Medtronic reservoirs and infusion sets that are specifically designed for use with the MiniMed 670G system.

• Do not change or modify the MiniMed or Medtronic reservoir and infusion set. Modification of these components may cause serious injury, interfere with device operation, and void the warranty.

• Do not rely on preset pump alarms or reminders alone to prompt you to check your blood glucose. This can cause you to forget to check your blood glucose. Set additional reminders on other devices, such as your cell phone.

• Do not change or modify the internal RF transmitter or antenna unless expressly approved by Medtronic Diabetes. Doing so could interfere with your ability to operate the equipment.

• Do not attempt to use the MiniLink transmitter (MMT-7703), the Guardian Link transmitter (MMT-7763), or the Guardian Connect transmitter (MMT-7821) with the MiniMed 670G insulin pump. These transmitters do not communicate with this insulin pump.
• If other devices that employ radio frequencies are in use, such as cell phones, cordless phones, and wireless networks, they may prevent communication between the transmitter and the insulin pump. This interference does not cause any incorrect data to be sent and does not cause any harm to your devices. Moving away from, or turning off, these other devices may enable communication. If you continue to experience RF interference, please contact the 24 Hour HelpLine.

• Special Precautions regarding Electromagnetic Compatibility (EMC): This body worn device is intended to be operated within a reasonable residential, domestic, public or work environment, where common levels of radiated “E” (V/m) or “H” fields (A/m) exist; such as cellular phones, Wi-Fi™*, Bluetooth™*, electric can openers, microwave and induction ovens. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the provided instructions, may cause harmful interference to radio communications.

• Portable and mobile RF communications equipment can affect Medical Electrical Equipment as well. If you encounter RF interference from a mobile or stationary RF transmitter, move away from the RF transmitter that is causing the interference.

• Do not rely on glucose sensor-enabled features when Airplane Mode is on because the pump does not receive sensor readings from the transmitter. Glucose sensor-enabled features include CGM, SmartGuard, and Auto Mode. When using Airplane Mode, always rely on your blood glucose (BG) values when making therapy decisions to avoid hypoglycemia or hyperglycemia.

• This device can generate, use, and radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If the device does cause interference to radio or television reception, you are encouraged to try to correct the interference by one or more of the following measures:
  – Decrease the distance between the transmitter and the insulin pump to 6 feet (1.8 meters) or less.
  – Decrease the distance between the meter and the insulin pump to 6 feet (1.8 meters) or less.
– Increase the separation between the transmitter and the device that is receiving/ emitting interference.

**Note:** Harmful interference is defined by the FCC as follows. Any emission, radiation or induction that endangers the functioning of a radio navigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radio communications service operating in accordance with FCC rules.

- The safety of the MiniMed 670G system has not been studied in people with impaired kidney function. Please let your healthcare professional know if you have kidney disease so you and your healthcare professional can determine if the potential benefits of using the system outweigh the risks.

- The safety of the MiniMed 670G system has not been studied in pregnant women, people with type 2 diabetes, or in people using other anti-hyperglycemic therapies apart from insulin. Please let your healthcare professional know if any of these conditions apply to you so you and your healthcare professional can determine if the potential benefits of using the system outweigh the risks.

- The safety of using Auto Mode, Suspend before low, and Suspend on low in people who have no pump experience is not known. Auto Mode, Suspend before low, and Suspend on low should not be used if insulin pump settings have not been previously established. Insulin pump settings include basal rates, insulin to carb ratio, or insulin sensitivity factors. Always discuss with your healthcare professional before using Auto Mode, Suspend before low, or Suspend on low.

**Reservoir and infusion sets**

For the most current warnings, see the user guide that came with your device.

- Only use rapid acting U100 insulin (Humalog™ and Novolog™) that has been prescribed by your healthcare professional for use with an infusion pump. Do not put any other drugs or medications inside your reservoir for use with this pump. Other drugs or medications are not intended for use with this pump, and can result in serious injury.
• If insulin, or any liquid, gets inside the tubing connector, it can temporarily block the vents that allow the pump to properly prime the infusion set. This may result in the delivery of too little or too much insulin, which can cause hyperglycemia or hypoglycemia. If this occurs, start over with a new reservoir and infusion set.

• Do not reinsert the introducer needle into the infusion set. Reinsertion may cause tearing of the soft cannula, which may result in unpredictable medication flow.

• If infusing insulin, and your blood glucose level becomes unexplainably high, or an occlusion alarm occurs, check for clogs and/or leaks.

• If in doubt, change the infusion set because the soft cannula may be dislodged, crimped and/or partially clogged. Should any of these problems arise, make a plan with your healthcare professional for rapidly replacing insulin. Test your blood glucose level to make sure the problem is corrected.

• Reuse of the infusion set may cause damage to the cannula/needle and lead to infection, site irritation, and/or inaccurate medication delivery.

• Dispose of transfer guard safely in sharps container.

• Never prime the set or attempt to free a clogged line while the set is inserted. You may accidentally inject too much medication.

• Do not put disinfectants, perfumes, or deodorants on the infusion set as these may affect the integrity of the set.

• Dispose of the infusion set and introducer needle safely, in a sharps container, after a single use. Do not clean or re-sterilize.

• Store infusion sets in a cool, dry place. Do not leave infusion sets in direct sunlight or inside a vehicle.

• Only use reservoir and infusion sets manufactured or distributed by Medtronic Diabetes. The pump has undergone extensive testing to confirm appropriate operation when used with compatible reservoirs and infusion sets manufactured or distributed by Medtronic Diabetes. We cannot guarantee appropriate operation if the pump is used with reservoirs or infusion sets offered by third parties. We are not responsible for any injury or malfunctioning of the pump that may occur in association with such use.
• Use aseptic techniques when temporarily disconnecting the set and consult your healthcare provider on how to compensate for missed medication when disconnected.

• If infusing insulin, carefully monitor your blood glucose levels when disconnected and after reconnecting.

• Reservoir and transfer guard are sterile, non-pyrogenic, and for single use only.

• Do not clean or re-sterilize. Reuse of the reservoir may lead to insulin degradation, infection, inaccurate medication delivery, and/or leaks which may cause damage to the pump.

• Inaccurate medication delivery, infection and/or site irritation may result from improper insertion and maintenance of the infusion site.

• If using this infusion set for the first time, do the first set-up in the presence of your healthcare professional.

• Do not leave air in the infusion set. Prime completely.

• Do not use the infusion set and reservoir longer than the duration of use indicated in the corresponding user guide. Using the infusion set or reservoir longer than the indicated duration of use can increase the risk of set occlusions and cause problems with insulin absorption, which can lead to severe hyperglycemia and diabetic ketoacidosis.

• If infusing insulin, do not change the infusion set just before bedtime unless you can check your blood glucose 1 to 3 hours after insertion.

• Do not use if package has been opened or damaged.

• Ensure sterility by checking that the sterile paper and tamper-proof seal are not damaged.

• This device is sterile and non-pyrogenic unless the package has been opened or damaged. Do not use if the package has been opened or damaged. Do not use the infusion set if the tubing connector needle has been damaged.

• Before insertion, clean the insertion site with isopropyl alcohol.
• Check frequently to make sure the soft cannula remains firmly in place as you may not feel pain if it pulls out. The soft cannula must always be completely inserted to receive the full amount of medication.

• Release the tubing with caution as a hard pull of the tubing can result in damage to the infusion set/introducer needle. Ensure that the infusion set is properly in place when the tubing is fully released.

• If the infusion site becomes inflamed, replace the set, and use a new site until the first site has healed. Replace the infusion set if the tape becomes loose, or if the soft cannula becomes fully or partially dislodged from the skin.

• Failure to remove trapped air from reservoir may result in inaccurate delivery of medication

• Never point a loaded insertion device towards the body part, where insertion is not desired.

• Remove the needle guard before inserting the infusion set.

**Sensor and serter**

For the most current warnings, see the user guide that came with your device.

• Keep the sensor away from children. This product contains small parts and may pose a choking hazard.

• Keep the serter away from children. This product contains small parts and may pose a choking hazard.

• A retractable needle is attached to the sensor and minimal blood splatter may occur. If you are a healthcare professional or caregiver, wrap sterile gauze around the sensor to minimize contact with blood. Keep as much distance as possible between you and the patient when removing the needle.

• Do not attempt to remove the sensor yourself if you suspect that the sensor is broken. While there is no evidence of a sensor breaking in a patient’s body, sensor breakage can result in serious injury. Contact your healthcare professional for assistance in removing the sensor.

• Always inspect the packaging for damage prior to use. Sensors are sterile and non-pyrogenic, unless the package has been opened or damaged. Do not use the
sensor if the sterile package has been opened or damaged. Use of an unsterile sensor can cause site infection.

- If bleeding continues, causes excessive pain or discomfort, or is significantly visible in the plastic base of the sensor, do the following:

  1. Remove the sensor and continue to apply steady pressure until the bleeding stops. Discard the sensor in a sharps container.

  2. Check the site for redness, bleeding, irritation, pain, tenderness, or inflammation. Treat based on instructions from your healthcare professional.

  3. Insert a new sensor in a different location.

- The One-press serter (MMT-7512) does not work the same as other Medtronic insertion devices. Failure to follow directions or using a different serter may result in improper insertion, pain, or injury.

- Keep the needle housing within sight at all times to avoid an accidental needlestick or puncture.

- Taking medications with acetaminophen while wearing the sensor may falsely raise your sensor glucose readings. The level of inaccuracy depends on the amount of acetaminophen active in your body and may be different for each person.

- Make sure the sensor is securely placed in the serter to avoid improper insertion, pain, or minor injury.

- Watch for bleeding at the insertion site (under, around, or on top of the sensor). If bleeding occurs, do the following:

  1. Apply steady pressure, using sterile gauze or a clean cloth placed on top of the sensor, for up to three minutes. The use of unsterile gauze can cause site infection.

  2. If bleeding stops, connect the transmitter (or recorder) to the sensor. If bleeding does not stop, do not connect the transmitter to the sensor because blood can get into the transmitter connector, and could damage the device.
• The sensor is designed to work with Guardian Link (3) transmitter only. It is not interchangeable with transmitters and recorders that are not compatible with the sensor. Connecting your sensor to a transmitter or recorder that is not approved for use with the sensor may cause damage to the components or inaccurate sensor glucose values.

• It is not known how different conditions or medications common to the critically ill population may affect the performance of the system. Therefore, the use of this sensor in the critically ill population is not recommended.

Transmitter

For the most current warnings, see the user guide that came with your device.

• Do not allow children to put small parts in their mouth. This product poses a choking hazard for young children.

• Do not use the tester if it comes in contact with blood. Touching blood can cause infection. Dispose of the tester according to the local regulations for medical waste disposal, or contact your healthcare professional for disposal information.

• Bleeding may occur after inserting the sensor. Always make sure that the site is not bleeding before connecting the transmitter to the sensor. Blood can get into the transmitter connector and damage the device. Discard the device if damaged. If bleeding occurs, apply steady pressure with a sterile gauze or clean cloth at the insertion site until bleeding stops. After bleeding stops, connect the transmitter to the sensor.

• Do not use the transmitter adjacent to other electrical equipment which may cause interference with the normal system operation. This includes mobile communication devices such as cell phones, GPS navigation systems, and other devices that have an output transmitter power greater than 1 W. Other electrical equipment that may compromise normal system operation has been contraindicated.

• Do not change or modify the device unless expressly approved by Medtronic Diabetes. Modifying the device can cause serious injury, interfere with your ability to operate the device, and void your warranty.
**Meter**

For the most current warnings, see the user guide that came with your device.

Always use the fingertip for blood samples used for calibrating the sensor while in Auto Mode. The fingertip was the only site studied for use with Auto Mode. Do not use blood samples from the palm to calibrate the sensor as this site was not studied for use with Auto Mode and the performance of the system is not known.

**Serious illness**

- Capillary (fingerstick or Alternative Site) blood glucose testing may not be clinically appropriate when peripheral flow is decreased. Shock, severe hypotension, hyperosmolar hyperglycemia, diabetic ketoacidosis, and occurrence of severe dehydration are examples of clinical conditions that may adversely affect the measurement of glucose in peripheral blood.\(^4\),\(^5\),\(^6\)

- Keep out of reach of children. This kit contains small parts which could cause suffocation if accidentally swallowed.

**Talk to your healthcare professional**

- Before setting any Target ranges or High or Low Alerts on your meter.

- Before changing your medication based on test results.

- If your blood sugar reading is under 50 mg/dL, follow medical device immediately.

- If your blood sugar reading is over 250 mg/dL, wash and dry your hands well and repeat the test with a new strip. If you get a similar result, call your healthcare professional as soon as possible.

- About whether Alternative Site Testing (AST) is appropriate for you.

---


CAUTION: Do not use Alternative Site Testing under the following conditions. Use fingertip testing in any of these cases:

- If you think your blood glucose is low (hypoglycemia).
- When blood glucose is changing rapidly (after a meal, insulin dose or exercise).
- If you have hypoglycemic unawareness (lack of symptoms).
- If you get alternative site blood glucose results that do not agree with how you feel.
- During illness or times of stress.
- If you will be driving a car or operating machinery.
- For calibration of CGM system.

AST testing should not be used for Bolus Wizard, to calibrate a device or verify a low blood glucose level.

Consult your healthcare professional to determine if alternative site testing is right for you.

Potential Biohazard

- Always wash and dry your hands well with soap and water before and after testing, handling the meter, lancing device or test strips.
- The meter, lancing device and lancets are for single person use. Do not share them with anyone including other family members. Do not use on multiple persons.7,8


The lancing device provided by Ascensia is intended for self-testing by a single patient. It must not be used on more than one person due to risk of infection.

Use a new lancet each time you test because it is no longer sterile after use.

Always dispose of test strips and lancets as medical waste or as advised by your healthcare professional. All products that come in contact with human blood should be handled as if capable of transmitting infectious diseases.

**Exposure to magnetic fields and radiation**

- Do not expose your pump to MRI equipment, diathermy devices, or other devices that generate strong magnetic fields (for example, x-ray, CT scan, or other types of radiation). The strong magnetic fields can cause the devices to malfunction, and result in serious injury. If your pump is exposed to a strong magnetic field, discontinue use and contact the 24 Hour HelpLine for further assistance. Magnetic fields, and direct contact with magnets, may affect the accurate functioning of your system, which may lead to health risks such as hypoglycemia or hyperglycemia.

- Do not expose your transmitter to MRI equipment, diathermy devices, or other devices that generate strong magnetic fields. Exposure to a strong magnetic field has not been evaluated and can cause the device to malfunction, result in serious injury, or be unsafe. If your transmitter is inadvertently exposed to a strong magnetic field, discontinue use and contact the 24 Hour HelpLine for further assistance.

- Do not expose your sensor to MRI equipment, diathermy devices, or other devices that generate strong magnetic fields as the performance of the sensor has not been evaluated under those conditions and may be unsafe. If your sensor is inadvertently exposed to a strong magnetic field, discontinue use and contact the 24 Hour HelpLine for further assistance.

- Always remove your pump, sensor, transmitter, and meter before entering a room that has x-ray, MRI, diathermy, or CT scan equipment. The magnetic fields and radiation in the immediate vicinity of this equipment can make your devices nonfunctional or damage the part of the pump that regulates insulin delivery, possibly resulting in over delivery and severe hypoglycemia.
• Do not expose your pump to a magnet, such as pump cases that have a magnetic clasp. Exposure to a magnet may interfere with the motor inside the pump. Damage to the motor can cause the device to malfunction, and result in serious injury.

• Always carry the Medical Emergency Card provided with your device when you are traveling. The Medical Emergency Card provides critical information about airport security systems, and using your pump on an airplane, that can help you and others. Not following the guidance on the Medical Emergency Card could result in serious injury.

**General precautions**

• Always test your blood glucose levels at least four times per day. Although the pump has multiple safety alarms, it cannot notify you if the infusion set is leaking, or the insulin has lost its potency. If your blood glucose is out of range, check the pump and the infusion set to ensure that the necessary amount of insulin is being delivered.

**Waterproof capabilities**

• At the time of manufacture and when the reservoir and tubing are properly inserted, your pump is waterproof. It is protected against the effects of being underwater to a depth of up to 12 feet (3.6 meters) for up to 24 hours.

• If the pump is dropped, hit against a hard object, or otherwise damaged, the waterproof characteristics of the outer casing of the pump may be compromised. If your pump has been dropped or you suspect your pump is damaged, carefully inspect your pump to ensure there are no cracks before exposing your pump to water.

• This waterproof capability rating applies only to your pump.

• If you believe that water has entered your pump or you observe any other possible pump malfunction, check your blood glucose, and treat high blood glucose as necessary, using an alternative source of insulin. Contact the 24 Hour HelpLine for further assistance. Always contact your healthcare professional if you experience excessively high or low blood glucose levels or if you have any questions about your care.
Electrostatic discharge

- Although your MiniMed 670G insulin pump is designed to be unaffected by typical levels of electrostatic discharge (ESD), very high levels of ESD can result in a reset of the pump’s software and a pump error alarm. After clearing the alarm, verify that your pump is set to the correct date and time, and that all other settings are programmed to the desired values. The software reset could erase your previously programmed settings. Following a pump reset, Auto Mode will be unavailable for 5 hours to allow active insulin to be updated.

- For more information on pump alarms, see Pump alarms, alerts, and messages, page 276. For more information on re-entering your pump settings, see My pump is asking me to enter my settings, page 315. If you are unable to re-enter your pump settings, or otherwise believe there is a problem with your pump, contact the 24 Hour HelpLine.

Extreme temperatures

Exposure to extreme temperatures can damage your device, which can adversely affect safety and effectiveness of your device. Avoid the following conditions:

1. Pump storage temperature above 122 °F (50 °C) or below -4 °F (-20 °C).
2. Pump operating temperature above 98.6°F (37°C) or below 41°F (5°C). Insulin solutions freeze near 32 °F (0 °C) and degrade at high temperatures. If you are outside in cold weather, wear your pump close to your body and cover it with warm clothing. If you are in a warm environment, take measures to keep your pump and insulin cool.
3. Do not steam, heat, sterilize, or autoclave your pump. Exposure to high temperatures may damage your device.

Lotion, sunscreen, and insect repellent

- Some skin care products, such as lotion, sunscreen, and insect repellents, can cause damage to plastics, which is a material used in your pump case. After using such products, be sure to wash your hands prior to handling your pump. If you get any skin care products or insect repellents on your pump, wipe them off as soon as possible with a damp cloth and mild soap. For instructions on cleaning your pump, see Cleaning your pump, page 323.
Infusion sets and sites

• Always refer to the infusion set user guide for all precautions, warnings, and instructions relating to the infusion set and your insertion sites. Not referring to the infusion set user guide can result in minor injury or damage to the infusion set.

Sensor

• Always refer to the sensor user guide for all precautions, warnings, and instructions relating to the sensor. Not referring to the sensor user guide can result in minor injury or damage to the sensor.

Transmitter

• Always refer to the transmitter user guide for all precautions, warnings, and instructions relating to the transmitter. Not referring to the transmitter user guide can result in minor injury or damage to the transmitter.

Meter

• Always refer to the meter user guide for all precautions, warnings, and instructions relating to compatible meters. Not referring to the meter user guide can result in minor injury or damage to the meter.

Adverse reactions

• Always refer to the sensor user guide for adverse reactions related to the sensor. Not referring to the sensor user guide can result in minor injury or damage to the sensor.

Keeping track of your system information

The serial number (SN) is located on the back of your pump. If you are using the pump clip, you need to remove the pump clip to view the serial number. It also displays in your Pump status screen. For more details on the status screens, see Status screens, page 74. You will need your pump serial number if you call the 24 Hour HelpLine. For future reference, enter the serial number of your pump and the purchase date in the following table:
Insulin guidelines

**WARNING:** Never start on insulin until directed by your healthcare professional. Do not use insulin in your pump while you are practicing by either inserting an insulin filled reservoir into your pump, or connecting an insulin filled infusion set to your body. Doing so could result in an infusion of insulin, not prescribed by your healthcare professional, which may result in low or high BG.

The MiniMed 670G insulin pump has been studied with and is intended for use with the following rapid acting U100 insulins:

- U100 NovoLog™*
- U100 Humalog™*

The use of any other insulin in the MiniMed 670G insulin pump has not been tested and may not be appropriate for use with this device.

**WARNING:** Only use rapid acting U100 insulin (Humalog™* and Novolog™*) in the MiniMed 670G insulin pump. Use of the incorrect insulin, or insulin with a greater or lesser concentration, may result in over delivery or under delivery of insulin. Over delivery or under delivery of insulin may result in high or low blood glucose levels. High blood glucose levels may lead to Diabetic Ketoacidosis. Low blood glucose levels may lead to coma or death. If you are unsure about whether you can use a specific insulin with this pump, please contact your healthcare professional.
**Consumables**

The pump uses disposable, single-use MiniMed and Medtronic reservoirs and infusion sets for insulin delivery.

**WARNING:** Only use reservoir and infusion sets manufactured or distributed by Medtronic Diabetes. The pump has undergone extensive testing to confirm appropriate operation when used with compatible reservoirs and infusion sets manufactured or distributed by Medtronic Diabetes. We cannot guarantee appropriate operation if the pump is used with reservoirs or infusion sets offered by third parties and therefore we are not responsible for any injury or malfunctioning of the pump that may occur in association with such use.

- **Reservoirs**—If using a Medtronic Extended infusion set, use the Medtronic Extended reservoir MMT-342, 3.0 mL (300-unit). Otherwise, use the MiniMed reservoir MMT-332A, 3.0 mL (300-unit).

- **Infusion sets**—Contact a healthcare professional for help in choosing a Medtronic Diabetes infusion set. Change the infusion set per the duration of use in the infusion set user guide.

The following table lists the compatible infusion sets. The MMT numbers may change if other compatible infusion sets become available.

<table>
<thead>
<tr>
<th>Type</th>
<th>MMT number</th>
</tr>
</thead>
</table>

**Note:** Some MMT numbers also include “A” versions, such as MMT-430A and MMT-430AJ, that are compatible with the pump system.
<table>
<thead>
<tr>
<th>Type</th>
<th>MMT number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medtronic Extended infusion set</td>
<td>MMT-430, MMT-431, MMT-432, MMT-433, MMT-440, MMT-441, MMT-442, MMT-443</td>
</tr>
</tbody>
</table>

**Additional MiniMed 670G system devices**

- **CONTOUR NEXT LINK 2.4 meter** – the MiniMed 670G system comes with a compatible meter. It wirelessly connects to your pump, allowing you to send BG meter readings to your pump. You can use this meter to upload system data to your diabetes management software using the USB port on your computer. For more details, see your meter user guide.

- **Guardian Link (3) transmitter (MMT-7811)** – used with your pump for Continuous Glucose Monitoring (CGM). A device that connects to a glucose sensor. The transmitter collects data measured by the sensor and wirelessly sends this data to monitoring devices.

- **Guardian Sensor (3) (MMT-7020)** – used with your pump for CGM. The sensor is a small part of the continuous glucose monitoring system that you insert just below your skin to measure glucose levels in your interstitial fluid. The sensor is a disposable (single-use) device. Only use the Guardian Sensor (3) (MMT-7020) glucose sensor with the transmitter. Do not use any other sensor. Other sensors are not intended for use with the transmitter, and will damage the transmitter and the sensor.

- **CareLink USB (MMT-7306)** – used to upload system data to the diabetes management software using a USB port on your computer.
**Accessories**

The following accessories may be used with the MiniMed 670G system.

- **Pump clip** – used to wear the pump on your belt. Also, you can use the tip of the pump clip to open the battery compartment on your pump. Refer to your pump clip user guide for instructions on using your pump clip.

- **Activity guard (ACC-1520)** – used if you are active in sports, or if a child is wearing the pump. Using the activity guard prevents the reservoir from being rotated or removed from the pump.

- **Skins** – used to personalize the look of your pump. Skins are decorative overlays. Your pump is designed to have skins attached to the back of the pump and the front of the pump clip. Skins also provide additional protection against surface scratches.

**Ordering supplies and accessories**

To order supplies or accessories, call 800 646 4633, +1 818 362 5958 (outside U.S.), refer to the contacts list at the beginning of this user guide, or visit our website at www.medtronicdiabetes.com.
This chapter gives you an overview of your pump so you can become familiar with the buttons and screens. Read this entire chapter to understand the basic features before using your pump to deliver insulin.

**Your pump**

The following illustration shows the different parts of your pump. The reservoir, with the tubing connector attached, is inserted into the reservoir compartment.
Using the buttons

**CAUTION:** Do not use sharp objects to press the buttons on your pump. Using sharp objects can damage your pump.

The following picture shows the buttons and the notification light on your pump. The notification light flashes when your pump has an alarm or alert. The notification light is not visible unless flashing.

The following table describes how to use the buttons.

<table>
<thead>
<tr>
<th>To do this:</th>
<th>Follow these steps:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display the menu.</td>
<td>From the Home screen, press the ○ button.</td>
</tr>
<tr>
<td>To do this:</td>
<td>Follow these steps:</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Scroll up or down a menu or list, or increase or decrease the value of a setting.</td>
<td>Press the ▲ or ▼ buttons.</td>
</tr>
<tr>
<td>Select an item on a screen or menu.</td>
<td>Press the ▲, ▼, ‹, or › buttons to select the desired item, and then press the ○ button.</td>
</tr>
<tr>
<td>Enter a value into a field.</td>
<td>Press the ▲, ▼, ‹, or › buttons to select the desired field, and then press the ○ button. The field you select flashes. Press the ▲ or ▼ buttons to enter the desired value, and then press the ○ button.</td>
</tr>
<tr>
<td>Return to the previous screen.</td>
<td>Press the ◄ button.</td>
</tr>
<tr>
<td>Display the Home screen.</td>
<td>Press and hold the ◄ button to return to the Home screen.</td>
</tr>
<tr>
<td>Put the pump in sleep mode.</td>
<td>Press and hold the ▼ button for about two seconds.</td>
</tr>
<tr>
<td>Wake up the pump.</td>
<td>Press any button.</td>
</tr>
</tbody>
</table>

**About batteries**

The pump requires one new AA (1.5 V) battery. For best results, use a new AA lithium (FR6) battery. The pump also accepts an AA alkaline (LR6) or a fully charged AA NiMH (HR6) nickel-metal hydride rechargeable battery.

**CAUTION:** Do not use a carbon zinc battery in your pump. Carbon zinc batteries are not compatible with the pump. Use of carbon zinc batteries can cause the pump to report inaccurate battery levels.

Carbon zinc batteries have a short shelf life, they deteriorate rapidly in cold weather, and oxidation of the zinc wall eventually causes the contents to leak out. They will not perform as well as other battery types to power the pump and may potentially damage your pump.
**Note:** Do not use cold batteries because the battery life may incorrectly appear as low. Allow cold batteries to reach room temperature before you insert them in your pump.

**Inserting the battery**

Your pump does not ship with the battery cap on. The battery cap is located in the pump box, separate from the pump.

To insert the battery:

1. Insert the new or fully charged AA battery, making sure to insert the negative end (−) first. After you insert the battery, the positive end (+) is visible.

2. Use the pump clip to tighten the battery cap.
CAUTION: Do not overtighten or undertighten the battery cap. Overtightening the battery cap can cause damage to your pump case. Undertightening the battery cap will prevent the pump from recognizing the new battery. Turn the battery cap clockwise until the cap is aligned horizontally with the pump case, as shown in the following example.

Note: If this is the first time you have inserted a battery in your pump, the Startup Wizard begins. For more information about the Startup Wizard, see Entering your startup settings, page 66. If this is not the first time you have inserted a battery into your pump, the Home screen appears and the pump resumes your basal delivery.

Removing the battery

CAUTION: Do not remove the battery unless you are inserting a new one, or if you are storing your pump. Your pump cannot deliver insulin while the battery is removed. After removing an old battery, be sure to replace it with a new battery within 10 minutes to clear the Insert battery alarm and avoid a Power loss alarm. If power loss occurs, you must re-enter your time and date settings.

To remove the battery:

1. Before removing a battery from your pump, clear any active alarms or alerts.
2. Use the pump clip to loosen and remove the battery cap.

   **Note:** Use your pump clip to remove and retighten the battery cap. If the pump clip is unavailable, you may use a coin.

3. Remove the battery.

4. Dispose of old batteries according to local regulations for battery disposal (nonincineration), or contact your healthcare professional for disposal information.

5. After removing your battery, wait until the Insert Battery screen appears before inserting a new battery.
   
   If you are removing the battery to place your pump in storage, see *Storing your pump, page 324* for more information.

**Getting to know your pump**

This section shows you how to navigate through the screens and menus on your pump. It also helps you learn how to enter information and view the status of your pump.

**Entering your startup settings**

Your pump has a Startup Wizard that begins when you insert your battery for the first time. The Startup Wizard guides you through setting the language, the time format, the current time, and the current date.
**Note:** Use this procedure when you are entering your settings for the first time. If this is not the first time you are entering your pump settings, and your pump is asking you to re-enter your settings, see *My pump is asking me to enter my settings, page 315.*

**To use the Startup Wizard:**

1. The Startup Wizard begins after the Welcome screen appears. When the Language screen appears, select your language.

   ![Language screen](Image)

2. When the Select Time Format screen appears, select a 12 hour or a 24 hour time format.

   ![Select Time Format screen](Image)

3. When the Enter Time screen appears, adjust the setting to the current time. If you are using a 12-hour clock, be sure to specify AM or PM. Select Next.

   ![Enter Time screen](Image)

4. When the Enter Date screen appears, adjust the Year, Month and Day to the current date. Select Next.
A message confirms that your initial setup is complete, and then the Home screen appears.

After you enter your initial settings, see the following sections in this chapter to become familiar with the buttons and screens on your pump.

**Unlocking your pump**

Your pump automatically locks when entering sleep mode. When you wake up your pump from sleep mode, you must unlock your pump before navigating to the menu. When you press select, you will be shown a screen asking you to unlock your pump. Press the highlighted button to unlock your pump.

The pump will take you to your selected screen after you press the correct button. If you press an incorrect button, the screen prompts you to try again. If you press the button, you will be taken back to the Home screen.

After your pump is unlocked, it will remain unlocked until you re-enter sleep mode. For information about the different power modes, or to put your pump to sleep, see *Power modes, page 80.*

**Home screen**

The Home screen appears by default after you change the battery, when you wake the pump from sleep mode, and when you are not actively using another screen.
To see what your Home screen looks like if you use a sensor, see *Home screen with CGM in Manual Mode, page 197*.

To see what your Home screen looks like when you are in Auto Mode, see *Home screen with Auto Mode, page 256*.

The following items appear on your Home screen:

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Status icons</strong></td>
<td>Displays icons that show a quick status of your pump system. For more information, see <em>Status icons, page 70</em>.</td>
</tr>
<tr>
<td><strong>Current time</strong></td>
<td>Displays the current time of day. For details on setting the time, see <em>Time and date, page 192</em>.</td>
</tr>
</tbody>
</table>
| **BG meter readings** | If you have taken a blood glucose (BG) meter reading using your CONTOUR NEXT LINK 2.4 meter or manually entered a BG meter reading within the last 12 minutes, the BG meter reading appears on the Home screen.  
You can enter your BG meter reading manually using the Enter BG feature, Event Markers feature, or when you use the Bolus Wizard to deliver a bolus. For details on using the Bolus Wizard, see *Bolus Wizard, page 113*. |
| **Active Insulin**    | Displays the amount of bolus insulin the pump estimates is still working to lower your blood glucose levels. For more details on active insulin, see *About active insulin, page 120*. |
**Status icons**

The status icons appear at the top of the Home screen to provide a way for you to quickly check the status of your system. The status icons are described in the following table. For information on viewing detailed status screens, see *Status screens, page 74*.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Icon name</th>
<th>What it means</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Battery Icon" /></td>
<td>Battery</td>
<td>The color and fill level of the battery icon indicate the charge level of your pump battery. When a new battery is inserted and your battery is full, the icon is solid green indicating that approximately 100% of your battery capacity remains. In most cases, you can expect at least 7 days of use remaining. As the battery life is used, the icon changes from solid green in the following order. This indicates that the charge level of your battery is decreasing from 100% to 0%. The yellow icon indicates that the battery will soon need to be replaced. It is recommended that you have a new or fully charged battery available. The remaining charge level of your battery varies based on the battery type and how you use the pump. When your battery is low, the icon has a single red bar indicating that under typical use you have up to 10 hours of use remaining. When your battery needs to be replaced immediately, the icon is solid black with a red outline, indicating you have less than 30 minutes of use remaining.</td>
</tr>
<tr>
<td><img src="image" alt="Reservoir Icon" /></td>
<td>Reservoir</td>
<td>The reservoir icon shows the approximate amount of insulin left in your reservoir. The color and the fill level of the icon indicate the status. The reservoir icon is representative of the MiniMed or Medtronic 3.0 mL (300-unit) reservoir. When your reservoir is full, the icon is solid green. As your insulin is used, the icon becomes emptier, and the color of the icon changes as shown in the following example.</td>
</tr>
<tr>
<td>Icon</td>
<td>Icon name</td>
<td>What it means</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>---------------</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Icon name</td>
<td>For more information about your reservoir, see Reservoir and infusion set on <em>Setting up the reservoir and infusion set, page 141</em>.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Icon name</td>
<td>• Approximately 85–100% of the reservoir remains.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Icon name</td>
<td>• Approximately 71–84% of the reservoir remains.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Icon name</td>
<td>• Approximately 57–70% of the reservoir remains.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Icon name</td>
<td>• Approximately 43–56% of the reservoir remains.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Icon name</td>
<td>• Approximately 29–42% of the reservoir remains.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Icon name</td>
<td>• Approximately 15–28% of the reservoir remains.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Icon name</td>
<td>• Approximately 1–14% of the reservoir remains.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Icon name</td>
<td>• The reservoir remaining amount is unknown.</td>
</tr>
</tbody>
</table>

**Audio**

The audio mode you are using: vibrate only 🎧, audio only 🎫, or vibrate and audio 🎧.

When the Alert Silence feature is turned on, the audio mode icons appear as follows: vibrate only 🎧, audio only 🎫, or vibrate and audio 🎧.

**Connection**

The connection icon appears green 🤠 when the Sensor feature is on and your transmitter is successfully communicating with your pump. The connection icon appears with a red X ✗ when the Sensor feature is turned on, but the transmitter is not connected or communication with your pump has been lost. For more information about the Sensor feature, see *Understanding Continuous Glucose Monitoring (CGM), page 195*.  

**Airplane Mode**

The Airplane Mode icon 🛫 appears in place of the Connection icon if Airplane Mode is turned on. When Airplane Mode is turned on, the pump cannot receive wireless
<table>
<thead>
<tr>
<th>Icon</th>
<th>Icon name</th>
<th>What it means</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Temporary Network Connection</td>
<td>Replaces Connection icon while you are temporarily connected to a remote upload device.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Calibration</td>
<td>The approximate time left until your next sensor calibration is due. Appears only when the Sensor feature is turned on. The color and the circle around the icon indicate the status. When your sensor is fully calibrated, the icon has a solid green circle around it. As the time for your next sensor calibration approaches, the green circle around the icon becomes smaller, and the color of the icon changes as shown in the following example. For more information about calibrating your sensor, see <em>Calibrating your sensor</em>, page 234.</td>
</tr>
<tr>
<td>•</td>
<td>Time to your next sensor calibration is more than 10 hours.</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Time to your next sensor calibration is 8 to 10 hours.</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Time to your next sensor calibration is 6 to 8 hours.</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Time to your next sensor calibration is 4 to 6 hours.</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Time to your next sensor calibration is 2 to 4 hours.</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Time to your next sensor calibration is less than 2 hours.</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Sensor calibration is required now.</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Time to your next sensor calibration is unavailable.</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>Sensor is not ready for a calibration. This occurs when a new sensor is connected or within 15 minutes of a Calibration not accepted alert.</td>
<td></td>
</tr>
</tbody>
</table>

Communication from other devices. For more information about using Airplane Mode, see *Airplane Mode*, page 181.
<table>
<thead>
<tr>
<th>Icon</th>
<th>Icon name</th>
<th>What it means</th>
</tr>
</thead>
</table>
| ![Sensor Life Icon](image) | Sensor Life | The number in the center of the Sensor Life icon indicates the number of days remaining in the life of your sensor. The icon appears only when the Sensor feature is turned on. When you insert a new sensor, the icon color is solid green. When one day is remaining in the life of your sensor, the icon color turns red.  

**Note:** For a short time after starting a new sensor, the Sensor Life icon may show an 8. When the Sensor Life icon changes to show a 7, the seven-day period of sensor life begins.  

![Sensor Life Icon](image)  

If the number of days remaining in the life of your sensor is unavailable, the Sensor Life icon appears with three dots. |
| ![Auto Mode Readiness Icon](image) | Auto Mode Readiness | The Auto Mode Readiness icon indicates whether your pump is ready to enter Auto Mode. The icon appears with a loading symbol when the pump is updating a condition that requires you to wait. The icon appears with a question mark when the pump requires an action from you to enter Auto Mode. For more information about Auto Mode Readiness, see *Auto Mode Readiness, page 253*. |
| ![Block Mode Icon](image) | Block Mode | Indicates that the pump is in Block Mode, and that certain functions are restricted. Caregivers, such as parents of a young child, can use Block Mode to restrict access to critical pump settings. For more information about Block Mode, see *Block Mode, page 184*. |
Using the menu

The menu is where you access the various features and functions of your system. To display the menu, press 🎉 from the Home screen.

The following options are available from the menu:

<table>
<thead>
<tr>
<th>Select this</th>
<th>Menu Indicators</th>
<th>To do this</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolus</td>
<td>🚨</td>
<td>Set up and deliver your bolus insulin delivery.</td>
</tr>
<tr>
<td>Enter BG</td>
<td>⚡</td>
<td>Enter your blood glucose value.</td>
</tr>
<tr>
<td>Basal</td>
<td>🍗</td>
<td>Set up your basal insulin delivery.</td>
</tr>
<tr>
<td>Audio Options</td>
<td>🎧</td>
<td>Set your audio, vibrate, and volume options for the notifications you receive.</td>
</tr>
<tr>
<td>Status</td>
<td>📚</td>
<td>View information about your pump, any notifications you have received, your current settings, and optional sensor.</td>
</tr>
<tr>
<td>Suspend Delivery</td>
<td>⏳</td>
<td>Stop your current basal and bolus insulin delivery.</td>
</tr>
<tr>
<td>Options</td>
<td>🌟</td>
<td>Set your SmartGuard settings, reminders, delivery settings, enter event markers, view your history, and access the Utilities menu.</td>
</tr>
</tbody>
</table>

Status screens

The Status screens provide information about your pump, any notifications you have received, your current settings, and optional sensor. The Status screens are described in the following table:
<table>
<thead>
<tr>
<th>Status screen</th>
<th>Displays this information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Mode Readiness</td>
<td>A list of conditions your pump has to meet before it can enter Auto Mode. For more information on Auto Mode, see Auto Mode, page 249.</td>
</tr>
<tr>
<td>Notifications</td>
<td>A list of alarms, alerts, and reminders that have occurred over the past 24 hours. You can display further details about a particular alarm, alert, or reminder by selecting it from the list. For more information on alarms and alerts, see Alarms, alerts, and messages, page 273.</td>
</tr>
<tr>
<td>Quick Status</td>
<td>A summary of status information, including your last bolus, last BG meter reading, current basal rate, reservoir level, and pump battery charge level. If you are using a sensor, this screen also displays the time that your next calibration is due and the SmartGuard status.</td>
</tr>
<tr>
<td>Pump</td>
<td>Provides a detailed view of your pump status, including whether your pump is in a specific mode, the reservoir status, battery status, the pump serial number, and other details about your pump.</td>
</tr>
<tr>
<td>Sensor</td>
<td>The Sensor status screen is available only if your sensor feature is turned on. The Sensor status screen indicates if any alert silence options are turned on. It also shows the status of your calibrations, your sensor life, ISIG, transmitter battery, serial number and version number of your transmitter, and the SmartGuard status.</td>
</tr>
<tr>
<td>Settings Review</td>
<td>The Settings Review screen provides a list of all your pump settings. The settings are organized by where they appear in the menu for your pump. For example, your bolus settings appear under the Insulin Settings section, and your brightness level setting appears under the Utilities section.</td>
</tr>
</tbody>
</table>

**Viewing the Status screens**

1. From the Home screen, press 🛡️ and select Status from the menu.
The Status screen appears. The Reservoir icon shows the approximate amount of insulin left in your reservoir. For more information, see Status icons, page 70.

2. Press ⇧ or ⬇ to move up or down the screen. Select the status screen that you want to view. Refer to the table at the beginning of this section for a description of the different status screens.

Modes

You can choose to use your pump in Manual Mode or in Auto Mode. The following tables show the differences between Manual Mode and Auto Mode. The tables also show delivery and suspend options available for each mode.

Manual Mode

<table>
<thead>
<tr>
<th>Mode CGM options</th>
<th>Bolus delivery options</th>
<th>Basal delivery</th>
<th>Suspend options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump without CGM</td>
<td>• Bolus Wizard, uses programmed carb ratio, insulin sensitivity, BG target, and active insulin time settings.</td>
<td>• Programmed basal delivery settings — For more information, see Basal insulin settings, page 86.</td>
<td>Manual suspend — For more information, see Stopping and resuming your insulin delivery, page 101.</td>
</tr>
<tr>
<td></td>
<td>• Normal bolus</td>
<td>• Temporary basal rates — For more information, see Temporary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Square Wave bolus</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Mode CGM options</th>
<th>Bolus delivery options</th>
<th>Basal delivery</th>
<th>Suspend options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Dual Wave bolus</td>
<td><em>basal rates</em>, page 94.</td>
<td>Manual suspend — For more information, see Stopping and resuming your insulin delivery, page 101.</td>
</tr>
<tr>
<td></td>
<td>- Preset bolus</td>
<td><em>Preset temporary basal rates — For more information, see Preset Temp basal rates, page 97.</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Easy bolus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump with CGM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Bolus Wizard, uses programmed carb ratio, insulin sensitivity, BG target, and active insulin time settings.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Normal bolus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Square Wave bolus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Dual Wave bolus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Preset bolus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Easy bolus</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For more information, see *Bolus*, page 107.
<table>
<thead>
<tr>
<th>Mode CGM options</th>
<th>Bolus delivery options</th>
<th>Basal delivery</th>
<th>Suspend options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump with CGM and with Suspend before low or Suspend on low enabled</td>
<td>• Bolus Wizard, uses programmed carb ratio, insulin sensitivity, BG target, and active insulin time settings. • Normal bolus • Square Wave bolus • Dual Wave bolus • Preset bolus • Easy bolus For more information, see Bolus, page 107.</td>
<td>• Programmed basal delivery settings — For more information, see Basal insulin settings, page 86. • Temporary basal rates — For more information, see Temporary basal rates, page 94. • Preset temporary basal rates — For more information, see Preset Temp basal rates, page 97.</td>
<td>• Manual suspend — For more information, see Stopping and resuming your insulin delivery, page 101. • Suspend before low — For more information, see Suspend before low, page 205. • Suspend on low — For more information, see Suspend on low, page 209.</td>
</tr>
</tbody>
</table>

**Auto Mode**

<table>
<thead>
<tr>
<th>Auto Mode (Auto Basal delivery)</th>
<th>Bolus delivery options</th>
<th>Basal delivery</th>
<th>Suspend options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Mode (Auto Basal delivery)</td>
<td>• Auto Mode Bolus impacted by Carb Ratio and Active In-</td>
<td>• Automatic delivery of basal insulin based on recent insulin delivery needs and SG</td>
<td>Manual suspend – For more information, see Stopping and resuming your insulin delivery, page 101.</td>
</tr>
<tr>
<td>Bolus delivery options</td>
<td>Basal delivery</td>
<td>Suspend options</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------</td>
<td>-----------------</td>
<td></td>
</tr>
</tbody>
</table>
| • Patient enters carb grams and BGs  
  • Pump may recommend bolus when BG ≥ 150 mg/dL entered  
  • Patient accepts or cancels bolus  
  For more information, see Auto Mode, page 78. | • Automatic delivery of basal insulin at a fixed rate  
  • Does not use SG values to adjust rate  
  For more information, see Auto Mode, page 78. | Manual suspend –  
  For more information, see Stopping and resuming your insulin delivery, page 101. |

<table>
<thead>
<tr>
<th>Auto Mode (Safe Basal delivery)</th>
</tr>
</thead>
</table>
| • Auto Mode Bolus impacted by Carb Ratio and Active Insulin Time settings  
  • Patient enters carb grams and BGs  
  • Pump may recommend bolus when |  
|  

For more information, see Auto Mode, page 78.
### Bolus delivery options

<table>
<thead>
<tr>
<th>BG≥150 mg/dL entered</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Patient accepts or cancels bolus</td>
</tr>
</tbody>
</table>

For more information, see *Auto Mode, page 78.*

### Basal delivery

### Suspend options

| Scroll bar

The scroll bar is located on the right side of the display, as shown in the following example. It appears only when there is more information available to view on the screen. Press ⬆️ or ⬇️ to move up or down the screen.

### Power modes

Your pump is designed to conserve battery power when you are not actively using the pump screens.

<table>
<thead>
<tr>
<th>In this mode</th>
<th>Your pump behaves like this</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awake</td>
<td>Your pump screen is on. Unless you are actively using another screen, your Home screen appears.</td>
</tr>
</tbody>
</table>
In this mode
Your pump behaves like this
To wake up your pump from being in power save or sleep mode, press any button. If your pump has been in sleep mode, the pump is locked. To unlock your pump, see Unlocking your pump, page 68.

Power save
Your pump is fully functional, but the screen goes dark to save power. You can set how long it takes for your screen to enter power save mode by changing the Backlight setting. For more information, see Display Options, page 185. If any button is pressed while the pump is in Power save mode, the pump returns to the screen that was last displayed.

Sleep
Your pump automatically enters sleep mode when you have not pressed any buttons for about two minutes after your screen goes dark (power save mode). Your pump is still fully functional. If any button is pressed while the pump is in sleep mode, you will be shown a screen asking you to unlock your pump. For details, see Unlocking your pump, page 68.
To put your pump into sleep mode, press and hold the button for about two seconds.

If you remove your pump
You may have an occasion when you need or want to remove your pump. If you have to remove and store your pump, it is recommended that you do the following:

- Write down a record of your current basal rates and use the Save Settings feature. See Saving your settings, page 187 for more information.
- Remove the battery. See Storing your pump, page 324 for more information.

Remember, your body still needs insulin while your pump is removed.
Consult your healthcare professional to determine an alternate method of receiving insulin. Disconnecting from your pump for less than one hour may not require an insulin adjustment. If you remove your pump for more than one hour, you should take your insulin another way, as prescribed by your healthcare professional.
Basal insulin is the “background” insulin that you need throughout the day and night to maintain your target blood glucose values (BG) when you are not eating. Your basal insulin accounts for approximately one half of your daily insulin requirements. Your pump mimics a pancreas by delivering insulin continuously over 24 hours.

**Note:** In Manual Mode, your basal insulin is delivered according to your programmed basal pattern. In Auto Mode, insulin is delivered based on sensor values and your recent insulin delivery needs. For more information on Manual Mode, see *Manual Mode, page 250*. For more information on Auto Mode, see *Auto Mode, page 249*.

The pump is intended to be used with a basal pattern. The basal pattern must be manually entered and saved into the pump. The pump will operate with a basal rate of 0.0 U/hr until a basal pattern is entered and saved. There is no reminder message to program basal rates. Consult a healthcare professional to determine what basal pattern is needed. For more information about basal patterns, see *Basal patterns, page 88*.

**Basal rate**

Your basal rate is the specific amount of basal insulin that your pump continuously delivers each hour. While some people use one basal rate all day, others require different rates at different times of the day.

Your basal rates are set in one or more basal patterns. Each basal pattern covers 24 hours. For specific information about basal patterns, see *Basal patterns, page 88*. 
**Basal insulin settings**

Your basal insulin delivery settings are described in the following table.

<table>
<thead>
<tr>
<th>Setting</th>
<th>What it is</th>
<th>What it does for you</th>
</tr>
</thead>
</table>
| Basal Pattern   | A set of one or more basal rates that cover a 24-hour period.              | Determines the amount of insulin you receive per hour throughout the day and night. Allows you to vary your basal rate according to your needs. You can set up to eight basal patterns. For details on setting up basal patterns, see *Adding a new basal pattern, page 89*. For details about starting a basal pattern, see *Changing from one basal pattern to another, page 93*.
| Temp Basal      | A basal rate that you use in place of your scheduled basal rate for short-term situations. | Allows you to temporarily change your current basal rate for a duration of time that you specify. For details about starting a Temp Basal rate, see *Starting a Temp Basal rate, page 96*. |
| Preset Temp     | A temporary basal rate that you can define ahead of time.                  | Allows you to set and save temporary basal rates for known short-term situations, such as when you are sick or have times of increased or decreased activity. For details about setting up a Preset Temp basal rate, see *Preset Temp basal rates, page 97*. For details about starting a Preset Temp basal rate, see *Starting a Preset Temp basal rate, page 98*. |
| Max Basal Rate  | Maximum amount of basal insulin that your pump can deliver per hour.       | Provides a safety measure by limiting the total amount of basal insulin your pump can deliver per hour. For details |
### Max Basal Rate

Max Basal Rate limits the amount of basal insulin that can be delivered per hour, based on the maximum rate you set. You are unable to set any basal rates, temp basal rates, or preset temp basal rates that exceed the max basal rate amount. You can set your max basal rate from 0 to 35 U per hour. Set your max basal rate as prescribed by your healthcare professional.

**Note:** If you are setting your max basal rate after you have set up your basal patterns or preset temp basal rates, you cannot set your max basal rate lower than any of your existing basal rates. You cannot access this feature during a Normal bolus delivery.

#### To set your Max Basal Rate:

1. Press 🔄 and go to the Max Basal/Bolus screen.
   - **Options > Delivery Settings > Max Basal/Bolus**

2. Select **Max Basal** to set the maximum number of basal insulin units that can be delivered each hour.
   - Because the Max Basal Rate setting determines your basal insulin limits, a warning message appears any time you enter the screen to change the value. To continue setting the value, select **Continue**.

3. In the Max Basal Rate screen, select **Max Basal** to set the maximum units per hour.

4. Select **Save**.

#### Example 1: Max basal

Helen has a very low insulin requirement. Her highest basal rate is only 0.400 units per hour. As a safety measure, Helen’s healthcare professional set her pump with a max basal rate of 1.00 units per hour.
Example 2: Max basal

Rusty needs large amounts of insulin to control his blood glucose levels. His new pump was delivered from the factory with a max basal rate of 2.00 U per hour, but he needs 2.80 U per hour in the early morning. Rusty plans to consult his healthcare professional about increasing his max basal rate to 3.00 U per hour to accommodate his needs.

Basal patterns

Your basal pattern determines the amount of basal insulin you receive throughout the day and night. Because your basal insulin needs can vary, you can set up to eight basal patterns. For example, you might use one basal pattern during the week and a different basal pattern during the weekend.

A basal pattern is made up of one to 48 basal rates that you set up to cover a full 24-hour period. If you only need one basal rate throughout the day, you set only one rate for the 24-hour period. If you need the basal rates to change during the day or night to better match your insulin needs, you can set more than one rate, each with a separate start and end time.

The following example represents one basal pattern with three basal rates set for three different time periods.

[Diagram showing basal rate changes over 24 hours]

Consult a healthcare professional to determine the basal pattern. The basal pattern must be manually entered and saved into the pump. There will be no reminder message to program basal rates.
**WARNING:** Confirm a basal pattern is entered. If a basal pattern is needed but not entered and saved, this could result in an under-delivery of basal insulin. Under-delivery of insulin can potentially cause severe hyperglycemia, which may lead to diabetic ketoacidosis.

**Note:** If you have already set up basal patterns and want to switch from using one basal pattern to another, see *Changing from one basal pattern to another, page 93.*

### Adding a new basal pattern

This procedure shows you how to add a new basal pattern.

**To add a new basal pattern:**

1. Press 🔄 and go to the Basal Pattern Setup screen.
   
   **Options > Delivery Settings > Basal Pattern Setup**
   
   The Basal Pattern Setup screen appears. Your active basal pattern appears with a check mark and the 24-hour delivery amount, as shown in the following example.

   ![Baseline Pattern Setup Example](image)

2. If this is your first time setting up a basal pattern, the unit amount will be 0.0. Select **Basal 1** and proceed to step 5.
   
   If this is not your first time setting up a basal pattern, proceed to the next step to add a new pattern.

3. To add a new basal pattern, select **Add New**.
   
   The Select Name screen appears.
4. Select the basal pattern that you want to set up. An edit screen appears for the pattern you selected. The following example shows the Edit Workday screen.

5. To create one continuous 24-hour basal rate for your basal pattern, continue with this step. To create more than one basal rate for your new basal pattern, skip to step 6.
   a. Leave End time at 12:00 AM to set a 24-hour rate. The Start time of the first time segment is always 12:00 AM.
   b. Set your rate in units per hour.
   c. Skip to Step 7.

6. To create more than one basal rate for your new basal pattern, enter one basal rate at a time, as described in the following steps:
a. Set the End time and the Rate for your first basal rate. You set your rates in 30-minute increments.

If you set the End time to anything other than 12:00 AM, a second basal rate setting appears.

The Start time for the next rate is always the same as the End time of the previous rate.

Note: If you need to make a change, you can press ▲ to scroll up to the rate you want to change. Adjust the End time or Rate values as desired.

Note that pressing ▲ or ▼ when a field is selected (flashing) adjusts the value of that field. When there is no field selected, pressing ▲ or ▼ allows you to scroll up or down the list of basal rates.

b. Continue setting rates for different time periods as needed. The End time for your last rate must be 12:00 AM, as shown in the example below.
7. The Done option appears only when the last End time in your basal pattern is set to 12:00 AM. Select **Done** after all settings are entered to go to the next screen.

```
<table>
<thead>
<tr>
<th>Time</th>
<th>U/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 AM</td>
<td>0.025</td>
</tr>
<tr>
<td>6:00 PM</td>
<td>0.025</td>
</tr>
</tbody>
</table>
```

A screen appears that lets you review your basal pattern. Press ✔️ to review all the settings. If you need to make any changes, press ← to return to the previous screen.

8. Select **Save**. If you do not select Save, your changes are not saved.

If this is an added basal pattern and you want to activate it, see *Changing from one basal pattern to another, page 93.*

**CAUTION:** If you have not pressed Save after settings are entered and the screen goes dark, the entered settings will not be saved.

**Note:** Programming a basal pattern is an important part of setting up the insulin pump for use. Please review the settings to confirm that these are programmed accurately based on settings provided from a healthcare professional.

**Editing, copying, or deleting a basal pattern**

To edit, copy, or delete a basal pattern:

1. Press 📊 and go to the Basal Pattern Setup screen.

   **Options > Delivery Settings > Basal Pattern Setup**

   The Basal Pattern Setup screen displays all of your existing basal patterns.

2. Select the basal pattern you want to edit, copy, or delete.
3. Select **Options**.

4. Do one of the following:

   • Select **Edit** to adjust the End time or rate values for one or more of the basal rates in this basal pattern.

   • Select **Copy** to copy the basal rate information from the selected basal pattern to a new basal pattern. When the Select Name screen appears, you can select any available name from the list. Use the Edit option to adjust the new basal pattern as desired.

   • Select **Delete** to delete the selected basal pattern. You cannot delete the active basal pattern.

**Changing from one basal pattern to another**

When you change to a new basal pattern, your pump delivers your basal insulin according to the basal pattern you selected.

**To change to a different basal pattern:**

1. Press \( \text{ basal } \) and go to the Basal Patterns screen.

   **Basal > Basal Patterns**

   The Basal Patterns screen shows the basal patterns you have set up. The active basal pattern is indicated with a check mark.

2. Select the basal pattern you want to start.

   The Basal screen displays the details for the selected basal pattern.

3. To start this pattern, select **Begin**.

**Example 1: Basal patterns**

Ken has had his insulin pump for about a month. He tests his blood glucose 4–6 times a day and records his results in his logbook. He is happy with his glucose control during the week but on the weekends, he noticed that he has to eat more food to prevent his blood glucose from running too low.

Ken has realized that during the week while he is at work, he is very inactive and sits at a desk most of the time. On the weekends, though, he is busy with yard work, running
errands, and playing with his kids. Ken plans to speak with his healthcare professional to see if he should add a different Basal Pattern to lower his basal settings to receive less insulin during active times, such as his weekends.

He can use the Basal Patterns feature to support his weekend change in activity. During the week, he can set his pump to deliver his Basal 1 pattern, and on Saturday morning, he can switch over to his Weekend pattern, which he can set with lower basal rates for the weekend. On Monday morning, he can return his pump to the Basal 1 pattern for his weekday insulin needs.

**Example 2: Basal patterns**

Cynthia has had diabetes for about 12 years and has been on her pump for several weeks. Every Monday, Wednesday and Friday, Cynthia goes on a two mile walk in the morning. To prevent hypoglycemia on these days, she uses a different basal pattern. For those days, she simply switches over to Basal 2, which she has programmed with a lower set of basal rates. Before she learned to use the patterns feature, she would have to eat more food throughout the day to keep her blood glucose at a safe level. Cynthia has also noticed that a few days prior to menstruation, her blood glucose levels seem to rise, requiring more insulin. She has programmed a Sick Day pattern on her pump with higher basal rates for this time.

**Temporary basal rates**

The Temp Basal feature and Preset Temp feature allow you to set temporary basal rates to manage blood glucose levels during short-term activities or conditions that require a basal rate different than your current one, such as an illness or a change in physical activity. You can make an immediate change to your basal insulin for a set period of time (30 minutes to 24 hours), up to your max basal rate.

**Note:** Auto Mode is not available if Temp Basal is active. If you wish to switch your pump to Auto Mode, you must first cancel Temp Basal. For more information on canceling a Temp Basal or Preset Temp basal rate, see *Canceling a Temp Basal or Preset Temp basal rate*, page 100.
**About Temp Basal rates**

A temp basal rate temporarily overrides all other basal programming. Your programmed basal pattern resumes after the temp basal rate delivery is completed or cancelled.

The Temp Basal feature allows you to set and start a temporary basal rate immediately. The Preset Temp feature allows you to set up a temp basal rate ahead of time for known situations. You define temp basal rates and preset temp basal rates using either a percentage of your current basal pattern, or by setting a specific rate, as described in the following table.

<table>
<thead>
<tr>
<th>This temp basal type:</th>
<th>Works like this:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>Delivers a percentage of the basal rates programmed in your active basal pattern for the duration of the temp basal rate. The temp basal amount is rounded down to the next 0.025 U if your basal rate is set at less than 1 U per hour, or to the next 0.05 U if your basal rate is set at more than 1 U per hour. Temp basal rates can be set to deliver from 0 to 200% (twice the amount) of your scheduled basal rate. The percent amount you can use, however, is based on the largest basal rate scheduled during the temp basal duration, and is limited by your max basal rate.</td>
</tr>
<tr>
<td>Rate</td>
<td>Delivers a fixed basal insulin rate in units per hour for the duration of your temporary basal, limited by your max basal rate.</td>
</tr>
</tbody>
</table>

To use the Temp Basal feature, see *Starting a Temp Basal rate, page 96*. To use the Preset Temp Basal feature, see *Preset Temp basal rates, page 97*.

**Example 1: Temporary basal rates**

Jessica enjoys her exercise classes, but finds that her glucose levels drop after she attends them. She is working with her healthcare professional to learn how to use the Temp Basal feature so that she receives a reduced percentage of her usual basal insulin while exercising.
Starting a Temp Basal rate

When you start a temp basal rate, your basal insulin delivery changes to the temporary basal rate for the duration you set. When the duration is complete, your basal insulin delivery automatically returns to the active basal pattern.

To start a temp basal rate:

1. Press 📌 and go to the Temp Basal screen.
   Basal > Temp Basal

2. Duration is flashing. Set the Duration for this temp basal rate. The Duration can be set from 30 minutes to 24 hours, in 15-minute increments.

3. Select Next.

4. The Type defaults to Percent. You can switch between Percent and Rate by selecting Type.

5. Depending on the Type you selected, do one of the following:
   - Enter a percentage:
• Enter a basal rate, making sure you do not exceed your max basal rate:

6. If desired, select Review to review your temp basal setting.

7. Select Begin to start the temp basal rate.

Your Temp Basal rate continues for the duration you set. A Temp Basal banner appears on the Home screen during your temp basal delivery. Your scheduled basal rate automatically starts again when your Temp Basal rate finishes.

Preset Temp basal rates

The Preset Temp feature allows you to set up basal rates for recurring short-term situations where you need to temporarily change your basal rate.

There are four names you can use to match your preset temp basal rate to a situation: High Activity, Moderate Activity, Low Activity, and Sick. There are also four additional preset temp rates available to use for other circumstances (Temp 1 through Temp 4).

Setting up and managing Preset Temp basal rates

This section describes how to set up, edit, rename, or delete a preset temp basal rate. For information on how to start using a preset temp basal rate, see Starting a Preset Temp basal rate, page 98.

To set up a preset temp basal rate:

1. Press and go to the Preset Temp Setup screen.
Options > Delivery Settings > Preset Temp Setup

2. Select **Add New**.

3. Select a name for the preset temp basal rate you want to set (Temp 1, High Activity, Moderate Activity, Low Activity, or Sick).

4. The Type defaults to Percent. You can switch between Percent and Rate by selecting **Type**.

5. If you are using Percent, enter the percentage you want to use. If you are using Rate, enter the rate in units per hour. You cannot exceed your max basal rate.

6. Set the **Duration** (from 30 minutes to 24 hours in 15 minute increments) that you want this preset temp basal to be active.

7. Select **Save**.

To edit, rename, or delete a preset temp basal rate:

1. Press and go to the Preset Temp Setup screen.

2. Select the desired preset temp basal.

Note: You cannot select a preset temp basal rate that is currently in use.

3. The next screen displays the temp basal info. Do one of the following:
   - Select **Edit** to adjust the Type (Percent or Rate), the Percentage or Rate amount, and the Duration for this preset temp basal rate.
   - Select **Rename** to assign a different name to this preset temp basal rate. When the Select Name screen appears, you can select any available name from the list.
   - Select **Delete** to delete this preset temp basal rate.

Starting a Preset Temp basal rate

You must set up preset temp basal rates before you can use the Preset Temp feature. For more information, see **Preset Temp basal rates, page 97**.
To start a preset temp basal rate:

1. Press \( \text{○} \) and go to the Preset Temp screen. The Preset Temp option only appears if you have set up preset temp basal rates.

**Basal > Preset Temp**

The Preset Temp screen displays the preset temp basal rates you have set up, along with their percentage or rate amounts.

2. Select the preset temp basal rate that you want to use.

3. Select **Begin**.

Your preset temp basal rate continues for the duration you set. A Temp Basal banner appears on the Home screen during your preset temp basal delivery. Your scheduled basal rate automatically starts again when your preset temp basal rate finishes.
**Switching to Auto Mode from Temp Basal**

In order to switch to Auto Mode, you must first cancel any active Temp Basal rate. Auto Mode cannot begin while a Temp Basal rate is active. For information on how to cancel a Temp Basal rate, see *Canceling a Temp Basal or Preset Temp basal rate, page 100.*

**Canceling a Temp Basal or Preset Temp basal rate**

You can cancel a temp basal or preset temp basal rate at any time. When you do so, your scheduled basal pattern automatically starts again.

**To cancel a Temp Basal rate:**

1. From the Home screen, press 📲 and go to the Cancel Temp Basal screen. The Temp Basal screen displays the name (Preset Temp only), current basal rate, the set duration, and the remaining time.

2. Select **Cancel Temp Basal.**

**Viewing your basal information**

The following table describes how you can view your basal rates and patterns.

<table>
<thead>
<tr>
<th>To do this:</th>
<th>Do this:</th>
</tr>
</thead>
<tbody>
<tr>
<td>View your current basal</td>
<td>From the Quick Status, you can view your current basal rate. Press 📲 and go to the Quick Status screen.</td>
</tr>
<tr>
<td>rate</td>
<td><strong>Status &gt; Quick Status</strong></td>
</tr>
<tr>
<td>View your basal patterns</td>
<td>Press 📲 and go to the Basal Patterns screen:</td>
</tr>
<tr>
<td></td>
<td><strong>Basal &gt; Basal Patterns</strong></td>
</tr>
<tr>
<td></td>
<td>The Basal Pattern screen shows the basal patterns you have set up, and the 24-hour insulin total for each basal pattern. A check mark appears next to the active basal pattern.</td>
</tr>
</tbody>
</table>
To do this: 

Do this:

To see the individual basal rates, select the desired basal pattern.

Stopping and resuming your insulin delivery

Use Suspend Delivery if you need to stop all active basal and bolus insulin deliveries. While your insulin delivery is suspended, your pump beeps, vibrates, or both depending on your audio settings. This reminder occurs every 15 minutes to remind you that insulin is not being delivered.

**Note:** The first reminder occurs 15 minutes after your pump display times out. If you press a button and wake up your pump, the reminder will not occur until 15 minutes after your pump display times out again. To adjust your timeout setting, see *Display Options, page 185.*

To continue your basal insulin delivery, use the Resume feature. When you use the Resume feature, your pump starts your programmed basal pattern, but does not start any previously programmed bolus deliveries.

**Note:** If you want to stop a bolus delivery only, without stopping your basal delivery, see *Stopping a bolus delivery, page 136.*
**WARNING:** Always check the pump Daily History after you resume insulin delivery to determine the amount that was delivered. If needed, program a new bolus or fill the cannula. A bolus delivery or fill cannula that was suspended does not restart when you resume. Failing to resume insulin delivery can result in hyperglycemia and ketoacidosis.

**WARNING:** Do not rely solely on the Audio or Vibration notifications when using Audio or Vibrate. These notifications may not occur as expected if the speaker or vibrator in your pump malfunctions. A missed notification could result in the delivery of too much or too little insulin. This is most common when using the Easy Bolus feature, or when your pump is in Manual Suspend.

Contact the 24 Hour HelpLine with any concerns.

**To suspend all insulin delivery:**

1. Press 🌇 and go to the **Suspend Delivery** screen.
   
   A confirmation message appears.

2. Select **Yes** to suspend your pump and stop all insulin delivery.
   
   The Home screen indicates that your insulin is suspended. Your pump functions are limited until you resume your insulin delivery.

**To resume basal insulin delivery:**

1. While insulin delivery is suspended, press 🌇 and go to the **Resume Delivery** screen.
   
   A confirmation message appears.

2. To resume your basal insulin delivery, select **Yes**. If a Temp Basal was active when you suspended your pump, it resumes if the time is still within the duration that you set.
Note: If you still need a bolus delivery that was in progress before you suspended your delivery, check the Daily History screen for the actual bolus units delivered and the intended bolus amount. Then you can set up a new bolus amount as needed. See *Daily History, page 165* for details about using the Daily History screen.
A bolus is the amount of insulin taken to cover an expected rise in blood glucose (BG), typically when you eat a meal or snack. You can also use a bolus to correct a high blood glucose reading.

**About bolus deliveries**

There are different types of bolus deliveries you can use, depending on your insulin needs at the time. There are also different ways you can deliver a bolus. Discuss these options with your healthcare professional to determine what is best for you.

**Bolus types**

*Note:* While in Auto Mode, you can only deliver a Normal bolus.

The following table provides general information about the available bolus types.

<table>
<thead>
<tr>
<th>Type</th>
<th>How it works</th>
<th>When to use it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Provides a single immediate dose of insulin.</td>
<td>This is the typical bolus type you use to cover your food intake, or to correct a high BG meter reading. For details about using the Normal bolus feature, see <em>Normal bolus, page 121</em>.</td>
</tr>
<tr>
<td>Square Wave</td>
<td>Delivers a single bolus evenly over an extended</td>
<td>You might use a Square Wave bolus:</td>
</tr>
</tbody>
</table>
### Type

<table>
<thead>
<tr>
<th>How it works</th>
<th>When to use it</th>
</tr>
</thead>
<tbody>
<tr>
<td>period of time (30 minutes to 8 hours).</td>
<td>• If you have delayed food digestion due to gastroparesis or meals high in fat.</td>
</tr>
<tr>
<td></td>
<td>• When snacking over an extended period of time.</td>
</tr>
<tr>
<td></td>
<td>• If a Normal bolus drops your blood glucose too rapidly.</td>
</tr>
<tr>
<td></td>
<td>For details about using the Square Wave bolus feature, see <em>Square Wave bolus, page 124</em>.</td>
</tr>
</tbody>
</table>

**Dual Wave**

Delivers a combination of an immediate Normal bolus followed by a Square Wave bolus.

You might use a Dual Wave bolus:

• When you eat meals that are both high in carbs and fat which may delay digestion.

• When your meal bolus is combined with a correction bolus for an elevated blood glucose.

For details about using a Dual Wave bolus, see *Dual Wave bolus, page 127*.

### Bolus type example

The following example shows how the different bolus types work.

### Bolus delivery options

The following table describes the different ways you can deliver a bolus.
**Note:** Different bolus delivery options are available depending on whether the pump is in Manual Mode or Auto Mode. For a list of delivery options available for each mode, see *Modes, page 76*.

<table>
<thead>
<tr>
<th>Delivery method</th>
<th>Type of bolus available</th>
<th>How it works</th>
</tr>
</thead>
</table>
| Bolus Wizard    | Normal bolus, Square Wave bolus, Dual Wave bolus | You enter your BG meter reading or your carbs you plan to eat, or both. Then the Bolus Wizard calculates an estimated bolus amount based on your individual settings. The Bolus Wizard feature is only available in Manual Mode. For details about using the Bolus Wizard feature, see *Bolus Wizard, page 113*. To deliver a:
  - Normal bolus using Bolus Wizard, see *Delivering a Normal bolus with the Bolus Wizard, page 121*.
  - Square Wave bolus using Bolus Wizard, see *Delivering a Square Wave bolus with the Bolus Wizard, page 126*.
  - Dual Wave bolus using Bolus Wizard, see *Delivering a Dual Wave bolus with the Bolus Wizard, page 128*.

<p>| Auto Mode Bolus | Normal bolus                     | You enter your BG meter reading or your carbs you plan to eat, or both. Then the Auto Mode Bolus feature calculates a bolus amount to cover the meal or correction. The Auto Mode Bolus feature is only available in Auto Mode. |</p>
<table>
<thead>
<tr>
<th>Delivery method</th>
<th>Type of bolus available</th>
<th>How it works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual</td>
<td>Normal bolus, Square Wave bolus, Dual Wave bolus</td>
<td>You do your own calculation and manually enter your bolus amount. To deliver a:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Normal bolus, see Delivering a Normal bolus using Manual Bolus, page 123</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Square Wave bolus, see Delivering a Square Wave bolus using Manual Bolus, page 127</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dual Wave bolus, see Delivering a Dual Wave Bolus using Manual Bolus, page 130</td>
</tr>
<tr>
<td>Preset Bolus</td>
<td>Normal bolus, Square Wave bolus, Dual Wave bolus</td>
<td>You select from specific bolus settings that you define ahead of time for recurring situations. For details about using the Preset Bolus feature, see Preset Bolus, page 134.</td>
</tr>
<tr>
<td>Easy Bolus</td>
<td>Normal bolus</td>
<td>After the Easy Bolus feature is set up, you can deliver a Normal bolus by using the button when the pump is in sleep mode. For details about using the Easy Bolus feature, see Easy Bolus, page 131.</td>
</tr>
</tbody>
</table>

**Bolus settings**

The following table describes some bolus settings that may need to be changed before you use your bolus options. Consult with your healthcare professional for the settings that are right for you.
**Note:** There are additional settings required if you want to use the Bolus Wizard. These are described in the section, *Bolus Wizard, page 113.*

<table>
<thead>
<tr>
<th>Setting</th>
<th>What it is</th>
<th>What it does for you</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Bolus</td>
<td>Maximum amount of bolus insulin (in units) your pump can deliver in a single bolus.</td>
<td>Provides a safety measure by limiting the total amount of bolus insulin you can program for a single bolus delivery. For details about setting the max bolus amount, see <em>Max Bolus, page 111.</em></td>
</tr>
<tr>
<td>Bolus Incre‐</td>
<td>The amount of insulin (in units) that is increased or decreased with each button press when adjusting your bolus amount. The Bolus Wizard and Auto Mode Bolus will also use the increment to display the bolus total and adjustment amounts. This setting does not apply to Easy Bolus.</td>
<td>Allows you to set your increment value according to your typical bolus amounts. For details about setting the bolus increment, see <em>Bolus Increment, page 112.</em></td>
</tr>
<tr>
<td>speed</td>
<td>The speed that your pump delivers your bolus insulin.</td>
<td>Allows you to set your bolus insulin delivery speed to Standard or Quick. For details about setting your bolus speed, see <em>Bolus Speed, page 113.</em></td>
</tr>
</tbody>
</table>

**Max Bolus**

Max Bolus limits the amount of insulin that can be delivered in a single bolus. Your pump prevents single bolus insulin deliveries that exceed the max bolus you set. You can set your max bolus from 0 to 25 U. Set your max bolus as prescribed by your healthcare professional.
If you are setting your max bolus after you have set up your Preset Bolus deliveries, you cannot set your max bolus lower than any of your Preset Bolus amounts.

The max bolus setting applies to both Manual Mode and Auto Mode.

**To set your max bolus:**

1. Press \( \) and go to the Max Basal/Bolus screen.
   
   *Options > Delivery Settings > Max Basal/Bolus*

2. Select **Max Bolus**.

3. Because the Max Bolus setting determines your bolus insulin limit, a warning message appears any time you go to the screen to change the value. To continue to the Max Bolus screen, select **Continue**.

4. Select **Max Bolus**, and then set the maximum number of insulin units your pump can deliver in one bolus.

5. Select **Save**.

**Example 1: Max Bolus**

Shelby takes very small doses of insulin for her meal boluses. As a safety limit, her healthcare professional had her reset her pump with a Max Bolus of 5.0 U.

**Example 2: Max Bolus**

David is a growing teenager. He loves to eat big meals and requires very large doses of insulin for his food. David’s healthcare professional had him reset his pump with a Max Bolus of 20.0 U so he can take more insulin when needed.

**Bolus Increment**

The Bolus Increment setting determines the number of units that are increased or decreased with each button press when you adjust your bolus delivery amount in the Bolus Wizard, Manual Bolus, and Preset Bolus screens. Depending on your typical bolus amount, you can set your increment to 0.1 U, 0.05 U, or 0.025 U.
To set your Bolus Increment:

1. Press ☀ and go to the Bolus Increment screen.

   **Options > Delivery Settings > Bolus Increment**

2. Select **Increment** to set your desired increment value.

3. Select **Save**.

**Bolus Speed**

Bolus Speed sets the rate at which your pump delivers bolus insulin. You can set a Standard rate (1.5 units per minute), or a Quick rate (15 units per minute).

To set your Bolus Speed:

1. Press ☀ and go to the Bolus Speed screen.

   **Options > Delivery Settings > Bolus Speed**

2. Select **Standard** or **Quick**.

3. Select **Save**.

**Bolus Wizard**

The Bolus Wizard is a feature that uses your individual Bolus Wizard settings to calculate an estimated bolus amount based on the BG values and carbs that you enter. Work with your healthcare professional to define your personal settings, which include your carb ratio, insulin sensitivity, BG target range, and active insulin time.

**Note:** If you do not know how to count carbs, consult with your healthcare professional before using the Bolus Wizard.

After you set up the Bolus Wizard, you can use it to calculate and deliver a food bolus, a correction bolus, or a food plus correction bolus using a Normal bolus (see *Delivering*
a Normal bolus with the Bolus Wizard, page 121), Square Wave bolus (see Delivering a Square Wave bolus with the Bolus Wizard, page 126), or Dual Wave bolus (see Delivering a Dual Wave bolus with the Bolus Wizard, page 128).

The following sections describe how to set up the Bolus Wizard. Bolus delivery instructions are provided in the individual sections for each bolus type.

**Understanding your Bolus Wizard settings**

Your pump guides you through entering the following settings when you first turn on the Bolus Wizard feature. Get your prescribed settings from your healthcare professional, and always consult your healthcare professional before changing your settings. The setup procedure begins on Setting up the Bolus Wizard feature, page 115.

<table>
<thead>
<tr>
<th>Setting</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carb Ratio</td>
<td>Used for food bolus calculations. The number of carb grams that are covered by 1 U of insulin.</td>
</tr>
<tr>
<td>Insulin Sensitivity Factor</td>
<td>Used to calculate correction bolus amounts. Your insulin sensitivity factor is the amount that blood glucose is reduced by one unit of insulin.</td>
</tr>
<tr>
<td>BG Target</td>
<td>The Bolus Wizard calculates your estimated bolus based on your BG target range. The high and low values you set are the values to which your blood glucose is corrected. To use a single target value rather than a range, set the same value for High and Low. If your BG value is above the high target value, a correction dose is calculated. If your BG value is below the low target value, a negative correction is calculated and subtracted from your food bolus.</td>
</tr>
<tr>
<td>Active Insulin Time</td>
<td>Active insulin is the bolus insulin that has been delivered by the pump and is still working to lower your blood glucose levels. Active insulin time is the length of time that bolus insulin is tracked as active insulin. Work with your healthcare professional to get the active insulin time that best represents the insulin type you use and your physiological insulin absorption rate.</td>
</tr>
</tbody>
</table>
### Setting up the Bolus Wizard feature

Before you can use the Bolus Wizard to calculate a bolus, you must turn on this feature and enter your Bolus Wizard settings.

**To set up the Bolus Wizard feature:**

1. Press  and go to the Bolus Estimate Setup screen.

   **Options > Delivery Settings > Bolus Estimate Setup**

   The Bolus Estimate Setup screen appears with the Bolus Wizard turned off.

   ![Bolus Estimate Setup Screen](image)

2. Select **Bolus Wizard** to turn on the feature.

   If this is the first time you have turned on the Bolus Wizard feature, your pump displays information about the settings you need to enter.

   ![Bolus Wizard Settings](image)

   Make sure you have the values you need, and then select **Next** to continue.
3. When the Edit Carb Ratio screen appears, enter your carb ratio. You can set up to eight carb ratios using different time segments. The time segments must cover a 24-hour period.

![Edit Carb Ratio 1/4](image)

If your ratio value is outside the range of 5 to 50 g per unit, a message appears asking you to confirm your setting.

4. When the Edit Sensitivity screen appears, enter your insulin sensitivity factor. You can set up to eight different sensitivity factors using different time segments. The time segments must cover a 24-hour period.

![Edit Sensitivity 2/4](image)

If the value you enter is outside the range of 20 to 100 mg/dL per U, a message appears asking you to confirm your setting.

5. When the Edit BG Target screen appears, enter your Bolus Wizard BG target range. You can set up to eight different BG target ranges using different time segments. The time segments must cover a 24-hour period.
If your Bolus Wizard BG target is outside the range of 90 to 140 mg/dL, a message appears asking you to confirm your setting.

6. When the Active Insulin Time screen appears, enter your active insulin time value. The default is 4 hours.

7. Select **Save**.

   A message appears letting you know the Bolus Wizard setup is complete. You can now use the Bolus Wizard to calculate a bolus.

**Changing your Bolus Wizard settings**

This section shows you how to make changes to your personal settings after you initially set up the Bolus Wizard. Except for the carb ratio setting, these settings are available only if the Bolus Wizard is turned on. Always consult with your healthcare professional before making changes to your personal settings.

**Changing your carb ratio**

The carb ratio setting is always available whether or not you have the Bolus Wizard turned on.

**To change your carb ratio:**

1. Press ⚪ and go to the Carb Ratio screen.
Options > Delivery Settings > Bolus Estimate Setup > Carb Ratio

2. Select Edit.

3. Select the carb ratio to adjust the Start time, the End time, and the ratio. You can set up to eight different carb ratios using different time segments. The time segments must cover a 24-hour period.

If you set a value outside the typical range of 5 to 50 g per unit, a message appears asking you to confirm your setting.

4. When you have made your changes, select Save.

Changing your insulin sensitivity factor

The Insulin Sensitivity Factor option is only available if the Bolus Wizard feature is turned on.

To change your insulin sensitivity factor:

1. Press ⌘ and go to the Sensitivity screen.

Options > Delivery Settings > Bolus Estimate Setup > Insulin Sensitivity Factor

2. Select Edit.

3. Select the sensitivity factor to adjust the Start time, the End time, and the Sensitivity amount. You can set up to eight different sensitivity amounts using different time segments. The time segments must cover a 24-hour period.

If you set a value that is outside the typical range of 20 to 100 mg/dL per unit, a message appears asking you to confirm your setting.

4. When you have made your changes, select Save.

Changing your Bolus Wizard BG target

Your target range can be from 60 to 250 mg/dL. The Bolus Wizard BG Target option is only available if the Bolus Wizard feature is turned on.

To change your Bolus Wizard BG target range:

1. Press ⌘ and go to the BG Target screen.
Options > Delivery Settings > Bolus Estimate Setup > BG Target

2. Select **Edit**.

3. Select the BG target to adjust the Start time, the End time, and the Lo (low) and Hi (high) BG Target values. Your high value cannot be less than your low value. You can set up to eight different values using different time segments. The time segments must cover a 24-hour period.

   If your BG target is outside the typical range of 90 to 140 mg/dL, a message appears asking you to confirm your setting.

4. When you have made your changes, select **Save**.

**Changing your Active Insulin Time**

The active insulin time setting lets the pump know which active insulin time to use in calculating the amount of active insulin to subtract before estimating a bolus. Your healthcare professional will prescribe the active insulin time that is best for you.

**To change your active insulin time:**

1. Press \( \) and go to the Active Insulin Time screen.

   Options > Delivery Settings > Bolus Estimate Setup > Active Insulin Time

2. Select **Duration**, then adjust your active insulin time (in hours), using 15-minute increments.

3. Select **Save**.

**Turning off the Bolus Wizard feature**

You can turn off the Bolus Wizard feature at any time. Your Bolus Wizard settings remain in your pump. When the Bolus Wizard is turned off, the Bolus Wizard option does not appear in the Bolus menu, and you cannot edit your Insulin Sensitivity Factor or BG Target settings from the Bolus Wizard Setup screen.

**To turn off the Bolus Wizard feature:**

1. Press \( \) and go to the Bolus Estimate Setup screen.

   Options > Delivery Settings > Bolus Estimate Setup

2. Select **Bolus Wizard** to turn the feature off.
About active insulin

Active insulin is the bolus insulin that has already been delivered to your body, and is still working to lower your blood glucose levels. The pump considers your active insulin time setting in determining if any active insulin is still in your body from prior boluses. This may help prevent hypoglycemia caused by over-correcting for high blood glucose.

Your current active insulin amount displays on the Home screen, and includes only the bolus insulin you have already received.

When you are using the Bolus Wizard, the Bolus Wizard calculator uses your current active insulin value to determine if there is an active insulin adjustment needed. The active insulin adjustment calculation considers both the bolus insulin that has already been delivered (the amount shown on the Home screen), as well as any insulin that is going to be delivered by an active Square Wave bolus.

**WARNING:** Do not use the Bolus Wizard to calculate a bolus for a period of time after giving a manual injection of insulin by syringe or pen. Manual injections are not accounted for in the active insulin amount. Therefore, the Bolus Wizard could prompt you to deliver more insulin than needed. Too much insulin can cause hypoglycemia. Consult with your healthcare professional for how long you need to wait after a manual injection of insulin before you can rely on the active insulin calculation of your Bolus Wizard.

**Bolus Wizard warnings**

When you use the Bolus Wizard, there may be times when you see one of the following:

<table>
<thead>
<tr>
<th>Warning:</th>
<th>What it means:</th>
<th>What to do:</th>
</tr>
</thead>
<tbody>
<tr>
<td>High BG</td>
<td>Your BG meter reading is above 250 mg/dL.</td>
<td>• Check infusion set.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check ketones.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Consider an insulin injection.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Monitor your BG.</td>
</tr>
</tbody>
</table>
### Warning

<table>
<thead>
<tr>
<th>Warning:</th>
<th>What it means:</th>
<th>What to do:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low BG</td>
<td>Your BG meter reading is below 70 mg/dL.</td>
<td>Treat your low BG. Do not give yourself a bolus until your BG returns to normal.</td>
</tr>
<tr>
<td>Max Bolus exceeded</td>
<td>The bolus amount entered exceeds your Max Bolus setting.</td>
<td>Check the bolus amount. Select No to cancel, or Yes to continue. If you select Yes, the bolus amount that you entered is reduced to your max bolus limit. Let your healthcare professional know if you routinely receive the Max Bolus exceeded warning so that they can adjust your pump settings.</td>
</tr>
</tbody>
</table>

### Normal bolus

A Normal bolus provides a single immediate dose of insulin. You use a Normal bolus to cover your food intake or to correct a high BG meter reading.

You cannot access the Reservoir & Tubing, Delivery Settings, or Sensor Settings menu options during a Normal bolus delivery.

**Note:** Your pump allows you to deliver a Normal bolus while a Square Wave bolus or the Square portion of a Dual Wave bolus is being delivered.

### Delivering a Normal bolus with the Bolus Wizard

**To deliver a Normal bolus using the Bolus Wizard:**

1. For a correction bolus or a food bolus with a correction, use your BG meter to check your blood glucose. For a food bolus only, skip this step.

2. Press 🖇️ and go to the Bolus Wizard screen.

   **Bolus > Bolus Wizard**
The Bolus Wizard screen shows your current BG meter reading (if applicable) and any insulin that is still active from previous boluses. For more information about active insulin, see About active insulin, page 120. For more information, see About your CONTOUR NEXT LINK 2.4 meter, page 157.

3. If you are not using a wirelessly connected meter, you can select BG to manually enter your BG meter reading.

**Note:** If you choose not to enter a BG value, three dashes appear on the screen in place of the BG value.

4. For a food bolus, select Carbs to enter the carb count of your meal. For a correction bolus where no food was eaten, leave the Carbs value at 0.

5. Your calculated bolus appears in the Bolus field.

If you want to change the bolus amount, select Bolus and make any desired adjustment. If you change your bolus amount, the word “Modified” appears next to the new bolus amount.
6. Select **Next** to review your bolus information.

Your bolus amount appears.

**Note:** If you modified your bolus amount in the previous step, **Bolus Calculated** displays your original bolus amount, **Modification** displays the amount you added or subtracted from your bolus, and **Bolus** displays the actual bolus amount.

7. Select **Deliver Bolus** to start your bolus.

Your pump beeps or vibrates and displays a message when your bolus starts. The Home screen shows your bolus amount as it is being delivered. Your pump beeps or vibrates when your bolus is complete.

**Delivering a Normal bolus using Manual Bolus**

The following section describes how to deliver a Normal bolus using the Manual Bolus feature.
To deliver a Normal bolus using Manual Bolus:

1. Press and go to the Manual Bolus screen.

Bolus > Manual Bolus

Note: If the Bolus Wizard is turned off, the Manual Bolus screen appears when you select Bolus.

The Manual Bolus screen shows your current BG value (if applicable) and any insulin that is still active from previous boluses. For more information about active insulin, see About active insulin, page 120.

2. Select Bolus to set your bolus delivery amount (in units).

3. Select Deliver Bolus to start your bolus.

Your pump beeps or vibrates and displays a message when your bolus starts. The Home screen shows your bolus amount as it is being delivered. Your pump beeps or vibrates when your bolus is complete.

Square Wave bolus

A Square Wave bolus delivers a bolus evenly over a period of time (30 minutes to 8 hours).

When using the Bolus Wizard, a Square Wave bolus is available only when giving a food bolus without a correction for an elevated BG. A Square Wave bolus is not available for a correction bolus alone, or a correction bolus with food bolus.

A Square Wave bolus can be useful in these situations:
• If you have delayed food digestion due to gastroparesis or meals high in fat.
• When you are snacking over an extended period of time.
• If a Normal bolus drops your blood glucose too rapidly.

Since the Square Wave bolus extends delivery over a period of time, the insulin is more likely to be available as you need it.

**Note:** You cannot perform these functions during a Square Wave bolus delivery:

- Enable Auto Mode.
- Change the Max Bolus or the Active Insulin Time settings.
- Set a second Square Wave or a Dual Wave bolus.
- Fill the cannula.
- Rewind your pump.
- Run a self-test.
- Access the Manage Settings menu.

All other functions are available during the Square Wave bolus.

### Turning on or off Square Wave bolus

The Square Wave bolus delivery option is available only after you turn on the Square Wave feature.

**To turn on or turn off the Square Wave feature:**

1. Press 📊 and go to the Dual/Square Wave screen.
   
   **Options > Delivery Settings > Dual/Square Wave**

2. Select **Square Wave** to turn the feature on or off.

3. Select **Save**.
Delivering a Square Wave bolus with the Bolus Wizard

The Square Wave option is available in the Bolus Wizard only after you turn on the Square Wave feature. Also, you must have entered a Carbs value.

To deliver a Square Wave bolus with the Bolus Wizard:

1. Press 🔄 and go to the Bolus Wizard screen.

**Bolus > Bolus Wizard**

The Bolus Wizard screen shows your current BG meter reading (if applicable) and any insulin that is still active from previous boluses. For more information about active insulin, see *About active insulin, page 120*. For more information, see *About your CONTOUR NEXT LINK 2.4 meter, page 157*.

2. If you are not using a wirelessly connected meter, you can select **BG** to manually enter your BG meter reading.

   **Note:** If you choose not to enter a BG meter reading, three dashes appear on the screen instead.

3. Select **Carbs** to enter the amount of carbs in your food.

4. Review your calculated bolus amount in the Bolus field. If you want to change the bolus amount, select **Bolus** and make your desired change. Remember, if there is a correction bolus amount calculated, you are not able to give a Square Wave bolus.

   **Note:** If you change your bolus amount, the word “Modified” appears next to the new bolus amount.

5. Select **Next** to review your bolus information.

6. Select **Square**.

   The Bolus Wizard screen appears with your bolus amount.

7. To change the time period over which your bolus is delivered, select **Duration** to adjust the time. The duration can be from 30 minutes to 8 hours, in 15 minute increments.
8. Select **Deliver Bolus** to start your bolus.

During a Square Wave bolus delivery, the Square Bolus banner displays on your Home screen until bolus delivery is complete. You can press 🛑 and select **Bolus** to stop the bolus, to see details on the insulin that has been delivered, or to access the Bolus menu.

**Delivering a Square Wave bolus using Manual Bolus**

The Square Wave option is available in the Manual Bolus screen only after you turn on the Square Wave feature.

**To deliver a Square Wave bolus manually:**

1. Press 🛑 and go to the Manual Bolus screen.
   
   **Bolus > Manual Bolus**

2. Set your bolus delivery amount (in units), and then select **Next**.

3. Select **Square**.

4. Select **Duration** and set the amount of time over which you want your Square Wave bolus to be delivered. The duration can be from 30 minutes to 8 hours, and is set in 15-minute increments.

5. Select **Deliver Bolus** to start your bolus.

   During a Square Wave bolus delivery, the Square Bolus banner displays on your Home screen until bolus delivery is complete. You can press 🛑 and select **Bolus** to stop the bolus, to see details on the insulin that has been delivered, or to access the Bolus menu.

**Dual Wave bolus**

The Dual Wave bolus feature meets both immediate and extended insulin needs by delivering a combination of an immediate Normal bolus followed by a Square Wave bolus.

A Dual Wave bolus can be useful in these situations:
• When you need to correct elevated blood glucose before a meal, and you also need a delayed bolus for food that is absorbed slowly.

• When you eat meals with mixed nutrients, such as carbs, fats and proteins, that are absorbed at different rates.

**Turning on or off Dual Wave bolus**

The Dual Wave bolus delivery option is available only after you turn on the Dual Wave feature.

**To turn on or turn off the Dual Wave feature:**

1. Press and go to the Dual/Square Wave screen.
   
   **Options > Delivery Settings > Dual/Square Wave**

2. Select **Dual Wave** to turn the feature on or off.

3. Select **Save**.

**Delivering a Dual Wave bolus with the Bolus Wizard**

The Dual Wave option is available in the Bolus Wizard only after you turn on the Dual Wave feature.

**To deliver a Dual Wave bolus with the Bolus Wizard:**

1. For a correction bolus or a food bolus with a correction, use your BG meter to check your blood glucose. For a food bolus only, skip this step.

2. Press and go to the Bolus Wizard screen.

   **Bolus > Bolus Wizard**

   The Bolus Wizard screen shows your current BG meter reading (if applicable) and any insulin that is still active from previous boluses. For more information about active insulin, see *About active insulin, page 120*. For more information, see *About your CONTOUR NEXT LINK 2.4 meter, page 157*. 
3. If you are not using a wirelessly connected meter, you can select **BG** to manually enter your BG meter reading.

**Note:** If you choose not to enter a BG value, three dashes appear on the screen in place of the BG value.

4. For a food bolus, select **Carbs** to enter the carb count of your meal. For a correction bolus where no food was eaten, leave the Carbs value as 0.

5. Review your calculated Bolus amount. If you want to change the amount, select **Bolus** and make your desired change.

**Note:** If you change your bolus amount, the word “Modified” appears next to the new bolus amount.

6. Select **Next** to review your bolus information.

7. Select **Dual**.

   The Bolus Wizard screen appears, with the food amount split evenly between the Now and Square portions.

8. If you need to change the amounts, select the area of the screen with the Now value and adjust the **Now** amount.

   When you adjust the Now amount, the Square amount adjusts automatically.
9. Adjust the **Duration** over which you want the Square Wave portion to be delivered. The duration can be from 30 minutes to 8 hours.

10. Select **Deliver Bolus** to start your bolus.

During a Dual Wave delivery, the Home screen shows the progress of the Now portion of your delivery. When the Now portion is complete, the Dual Bolus banner displays until bolus delivery is complete. You can press 🔄 and select **Bolus** to stop the bolus, to see details on the amount of bolus insulin delivered, or to access the Bolus menu.

**Delivering a Dual Wave Bolus using Manual Bolus**

The Dual Wave option is available in the Manual Bolus screen only after you turn on the Dual Wave feature.

**To deliver a Dual Wave bolus using Manual Bolus:**

1. Press 🔄 and go to the Manual Bolus screen.

   **Bolus > Manual Bolus**

   The Manual Bolus screen appears.

2. Set your bolus delivery amount (in units), and then select **Next**.

3. Select **Dual**.

   The Manual Bolus screen appears, with the Now and Square portions split evenly.

   ![Manual Bolus Screen](image)

4. If you need to change the amounts, select the area of the screen with the Now value and adjust the **Now** amount. When you adjust the Now amount, the Square amount adjusts automatically.

5. Adjust the **Duration** over which you want the Square Wave portion to be delivered. The duration can be from 30 minutes to 8 hours.
6. Select **Deliver Bolus** to start your bolus.

During a Dual Wave delivery, the Home screen shows the progress of the Now portion of your delivery. When the Now portion is complete, the Dual Bolus banner displays until bolus delivery is complete. You can press 🔄 and select **Bolus** to stop the bolus, to see details on the amount of bolus insulin delivered, or to access the Bolus menu.

**Easy Bolus**

The Easy Bolus feature allows you to quickly deliver a Normal bolus using only the ↑ button. Your pump must be in sleep mode to use the Easy Bolus feature.

Before using Easy Bolus, you must turn on the feature and set the step size. The step size determines the number of units the bolus amount increases each time you press the ↑ button. Your Easy Bolus delivery is limited to 20 steps or your max bolus limit, whichever comes first.

To help you count your Easy Bolus steps, each time you press the ↑ button, your pump makes a different tone. There are five different tones that repeat in a pattern for every five steps you use. If your audio options are set to Vibrate only, the pump will not beep at all, and instead it will vibrate once with each key press.

**Understanding Easy Bolus step sizes**

When setting up Easy Bolus, you can set the step size from 0.1 to 2.0 U. Your step size cannot be higher than your max bolus. Set the step size to a number that makes it easy for you to calculate your bolus amount.

The following example shows how your bolus amount is increased with each step, or each press of the ↑ button when using the Easy Bolus feature to deliver a bolus. In this example, the step size is 0.5 U. For a delivery of 2.0 U, you would need four steps, or press the ↑ button four times when using the Easy Bolus feature.
Setting up Easy Bolus

The Easy Bolus option is available only after you turn on the feature.

To set up Easy Bolus:

1. Press and go to the Easy Bolus screen.
   
   **Options > Delivery Settings > Easy Bolus**

2. Select Easy Bolus to turn on the feature.

3. Set the Step Size amount (in units). You can set the step size from 0.1 to 2.0 U. Your step size cannot be higher than your max bolus.

4. Select Save.

Delivering a bolus using Easy Bolus

Initially you should use the Easy Bolus feature while looking at the pump screen as you count the tones or vibrations.
To use the Easy Bolus feature, your pump must be in sleep mode. Your pump automatically goes into sleep mode two minutes after the screen turns off. You can manually put your pump into sleep mode by pressing and holding the button for about two seconds.

**To deliver a bolus using Easy Bolus:**

1. While your pump screen is in sleep mode, press and hold for about one second. After your pump beeps or vibrates, release . You can now start programming your Easy Bolus.

   **Note:** If your pump does not respond when you press , it may not be in sleep mode, even if the screen is dark.

2. Press the number of times needed to set your bolus amount.

   Each time you press , your pump sounds a tone or vibrates, and your bolus amount increases by the number of units set for the step size.

   **Note:** You cannot use to select the Easy Bolus values. Pressing cancels the Easy Bolus.

3. When you have reached the desired bolus amount, press and hold to confirm the amount. You should hear a confirmation tone or feel a vibration for each button press. Count to ensure the amount is correct. If the amount is not correct, press and hold until you hear a tone, and then start again from step 1.
4. When the bolus amount is confirmed, press and hold ⌈ for about one second to deliver your bolus. Your pump beeps or vibrates. Your bolus starts immediately after the confirmation.

**Note:** If you do not start your bolus within 10 seconds, your Easy Bolus is cancelled, and you receive a message letting you know that your bolus was not delivered.

**Preset Bolus**

The Preset Bolus feature allows you to set up in advance bolus deliveries you expect to use frequently. There are four Preset Bolus names that allow you to match a bolus to a meal with a known carb content: Breakfast, Lunch, Dinner, and Snack. There are four additional Preset Bolus names that can be set for other circumstances (Bolus 1 through Bolus 4).

**Note:** To set up a Dual Wave bolus or Square Wave bolus, the Dual Wave or Square Wave feature must be turned on.

**Setting up and managing Preset Bolus deliveries**

**To set up Preset Bolus amounts:**

1. Press ⌁ and go to the Preset Bolus Setup screen.

   **Options > Delivery Settings > Preset Bolus Setup**

   The Preset Bolus Setup screen appears, showing any existing Preset Bolus settings.

2. Select **Add New**.

   The Select Name screen appears with the available Preset Bolus names.

3. Select the Preset Bolus you want to set.

   The Edit screen for that particular Preset Bolus appears.

4. Select **Bolus** to set the bolus amount.

5. Select **Type** to set this as a Normal bolus, Square Wave bolus, or Dual Wave bolus.
Note: The Type field appears only when you have the Dual Wave bolus or Square Wave bolus features turned on.

If you set the type to Square Wave or Dual Wave, additional settings appear.

6. If you are setting up a Square Wave bolus or Dual Wave bolus, do the following:
   - For a Square Wave bolus, set the Duration of time for the bolus delivery.
   - For a Dual Wave bolus, adjust the Now/Square percentages as needed, then set the Duration of time for the Square Wave portion of the bolus.

Note: If you later turn off the Dual Wave or Square Wave feature, your existing Preset Bolus settings are still available for use.

7. Select Save.

**Editing, renaming, or deleting a Preset Bolus**

You cannot delete, rename, or edit a Preset Bolus while it is delivering.

**Note:** You cannot edit a Dual Wave or Square Wave Preset Bolus when the Dual Wave or Square Wave features are turned off. You can, however, rename or delete a Dual Wave or Square Wave Preset Bolus when the features are turned off.

**To edit, rename, or delete a Preset Bolus:**

1. Press and go to the Preset Bolus Setup screen.
   - Options > Delivery Settings > Preset Bolus Setup
     The Preset Bolus Setup screen appears, showing any existing Preset Bolus settings.
2. Select the desired Preset Bolus.
3. Select Options.

4. Do one of the following:
   - Select Edit to adjust the Bolus value and Type, if applicable. If you change to a Square Wave bolus, you need to enter the Duration. If you change to a Dual Wave bolus, you need to enter the Now and Square amounts, and the Duration.
   - Select Rename to assign a different name to this Preset Bolus. When the Select Name screen appears, you can select any available name from the list.
   - Select Delete to delete this Preset Bolus.

**Delivering a Preset Bolus**

Follow these steps to deliver a Preset Bolus. You must set up Preset Bolus deliveries before you can use the Preset Bolus feature. For more information, see Setting up and managing Preset Bolus deliveries, page 134.

**To deliver a Preset Bolus:**

1. Press and go to the Preset Bolus screen.
   - **Bolus > Preset Bolus**
     The existing preset bolus settings appear, showing your current BG value (if applicable) and any insulin that is still active from previous boluses. For more information about active insulin, see About active insulin, page 120.

2. Select the Preset Bolus you want to deliver.

3. Verify your bolus amounts, and then select Deliver Bolus.
   - Your pump displays a progress bar on the Home screen when your bolus starts. The pump beeps or vibrates when delivery starts and when delivery finishes.

**Stopping a bolus delivery**

The following procedures describe how to stop a Normal bolus or a Dual Wave bolus during the Now portion delivery, and how to stop a Square Wave bolus or a Dual Wave bolus during the Square portion delivery.
Note: This procedure describes how to stop a bolus that is in progress. It does not stop your basal insulin delivery. If you need to stop all insulin delivery, use the Suspend Delivery feature (press \( \text{○} \) and select Suspend Delivery).

To stop a Normal bolus delivery or the Now portion of a Dual Wave bolus delivery:

1. While your pump is delivering your Normal bolus or the Now portion of a Dual Wave bolus, press \( \text{○} \) from the Home screen.

2. Select Stop Bolus, then select Yes to confirm.

Note: If you are delivering a Normal bolus and a Square Wave bolus at the same time, or a Normal bolus and the Square portion of a Dual Wave bolus at the same time, both boluses are stopped.

The Bolus Stopped screen appears and shows the amount of bolus delivered, and the original bolus amount you set up.
To stop a Square Wave bolus delivery or the Square portion of a Dual Wave bolus delivery:

1. Press © from the Home screen.
2. Select Bolus.
3. Select Stop Bolus.
4. To stop your bolus, select Yes to confirm.

**Note:** If you are delivering a Normal bolus and a Square Wave bolus at the same time, or a Normal bolus and the Square portion of a Dual Wave bolus at the same time, both boluses are stopped.

The Bolus Stopped screen appears and shows the amount of bolus delivered, and the original bolus amount you set up.
Reservoir and infusion set

Setting up the reservoir and infusion set

When you are ready to use your pump with insulin, make sure the time and date are correct on your pump. You must also program your settings as instructed by your healthcare professional.

You will need these items:

- MiniMed 670G insulin pump
- Vial of insulin (U-100)
- MiniMed or Medtronic reservoir
- MiniMed or Medtronic-compatible infusion set and its user guide

**WARNING:** Clear the active insulin value before using your pump to deliver insulin for the first time. If you have practiced giving boluses on your pump before using insulin, the active insulin value could be inaccurate. This could result in inaccurate insulin delivery, and serious injury. For details, see *Clearing your active insulin, page 188.*

Removing the reservoir

If this is the first time you are inserting a reservoir into your pump and you do not currently have a reservoir loaded, skip to *Rewinding your pump, page 142.*
**WARNING:** Never insert the reservoir into the pump while the tubing is connected to your body. Doing so could result in an accidental infusion of insulin, which may cause low blood glucose (BG).

**To remove your reservoir:**

1. Wash your hands.
2. Remove the entire infusion set from your body.
3. If you have the optional activity guard attached to the reservoir compartment on your pump, remove it now.
4. Turn the tubing connector a half-turn counter-clockwise, then pull the reservoir and connector out from the pump.

5. Dispose of the used reservoir and infusion set according to local regulations, or contact your healthcare professional for disposal information.

**Rewinding your pump**

**WARNING:** Always make sure the infusion set is disconnected from your body before you rewind your pump or fill the infusion set tubing. Never insert the reservoir into the pump while the tubing is connected to your body. Doing so could result in an accidental infusion of insulin, which can cause hypoglycemia.
When you rewind your pump, the piston in the reservoir compartment returns to its starting position and allows a new reservoir to be placed into the pump.

**Note:** The piston is located in the reservoir compartment of your pump. It engages the reservoir and pushes insulin through the tubing.

To rewind your pump:

1. Press 📌 and go to the New Reservoir screen.
   
   **Options > Reservoir & Tubing > New Reservoir**
   
   The New Reservoir screen appears.
   
   If you have not yet removed the infusion set and reservoir, do so now.
   
   **New Reservoir**
   
   1. Remove infusion set from body.
   2. Remove reservoir from pump.

2. Select **Rewind**.
   
   The piston in the reservoir compartment of your pump returns to its starting position. This may take several seconds. During this process, a “Rewinding” message appears.
   
   Another message appears to let you know that your pump has finished rewinding, and then the New Reservoir screen appears.
3. Follow the instructions in the next section to fill your reservoir.

**Filling the reservoir**

**WARNING:** Do not use the reservoir or infusion set if any liquid gets on the top of the reservoir or inside the tubing connector (as shown in the image). Liquid can temporarily block the vents. This may result in the delivery of too little or too much insulin, which can cause hyperglycemia or hypoglycemia. If any liquid gets on the top of the reservoir or inside the tubing connector, start over with a new reservoir and infusion set.

**WARNING:** Always allow your insulin to reach room temperature before use. Cold insulin can cause air bubbles in the reservoir and tubing, which may result in inaccurate insulin delivery.

**To fill the reservoir, do these steps:**

1. Remove the reservoir from the package, and fully extend the plunger.
2. Swab the vial with alcohol (not shown).

3. Press the transfer guard onto the vial without pushing down on the plunger.

4. Push down on the plunger to pressurize the vial. Hold down the plunger rod.

5. While still holding down the plunger rod, flip the vial over so the vial is on top. Slowly pull down on the plunger to fill the reservoir.

6. Gently tap the side of the reservoir to make any air bubbles rise to the top of the reservoir.

7. Slowly push up on the plunger just enough to remove any air bubbles from the reservoir.
8. Slowly pull down on the plunger to fill the reservoir to the number of units desired.

9. To avoid getting liquid on the top of the reservoir, flip the vial over so that it is upright. Turn the reservoir counter-clockwise, then pull straight up to remove the reservoir from the transfer guard.

10. Place the tubing connector onto the reservoir. Turn the connector clockwise, pressing gently against the reservoir until you feel it slide in. Push in and continue turning until the reservoir and the connector lock with a click.

11. Tap the side of the reservoir to remove any air bubbles.

12. To purge air bubbles that have risen to the top of the reservoir, push up on the plunger until you see insulin in the tubing.

13. Without pulling, turn the plunger counter-clockwise to remove it from the reservoir.

The New Reservoir screen now instructs you to place the reservoir in your pump.

15. Follow the instructions in the next section to insert the reservoir into the reservoir compartment of your pump immediately after filling it.

**Inserting the reservoir into your pump**

Be sure to perform the following steps in the order they are presented.

**Note:** Do not insert the reservoir into your pump until you have received training.

**WARNING:** Always rewind your pump before inserting a new reservoir. Failing to rewind your pump could result in an accidental infusion of insulin, which can cause hypoglycemia.

Never insert the reservoir into the pump while the tubing is connected to your body. Doing so could result in an accidental infusion of insulin, which can cause hypoglycemia.
To insert the reservoir into your pump:

1. If you are using the pump for the first time, remove the shipping cap from the reservoir compartment.

2. Rewind your pump if you have not yet done so. See Rewinding your pump, page 142 for more information.

3. Insert the reservoir into the top of the reservoir compartment.

4. Turn the tubing connector approximately a half-turn clockwise until the connector is locked. The tubing connector should be aligned horizontally with the pump case as shown in the following example.

5. Your pump should be displaying the New Reservoir screen shown in the following example. Select Next to continue.

6. Select and hold Load until you see a checkmark on the screen and your pump beeps or vibrates. Holding Load moves the piston up in the reservoir compartment until it engages with the bottom of the reservoir.
Note: If you press the Back button after the loading process begins, a Loading incomplete alarm will occur.

When the loading process is completed, the following screen appears.

7. Select Next to continue.

8. Follow the instructions in the next section to fill the tubing with insulin.

**Filling the tubing**

You need to fill the infusion set tubing with insulin before you insert the set into the body.

**WARNING:** Always make sure the infusion set is disconnected from your body before you rewind your pump or fill the infusion set tubing. Never insert the reservoir into the pump while the tubing is connected to your body. Doing so could result in an accidental infusion of insulin, which can cause low BG.

**WARNING:** Always check your tubing for air bubbles. Continue to press Fill until the bubbles have been removed from the tubing. Air bubbles may result in inaccurate insulin delivery.
To fill the tubing:

1. After you load your reservoir and select **Next** from the Load Reservoir screen, the Fill Tubing screen appears.

2. Select and hold **Fill**. Your pump beeps six times to let you know it is positioning the reservoir. Continue holding **Fill** until insulin droplets form on the tip of the infusion set needle, then release. Your pump beeps as it fills the tubing, and the amount of insulin you are using appears on the screen.

   If you get the Max Fill Reached alarm, it means you have used more than 30 U of insulin to fill your tubing. For details, go to *Pump alarms, alerts, and messages*, page 276, and see the description for Max Fill Reached.

3. Select **Next** to continue.

4. Follow the instructions in the next section to insert the infusion set into your body before filling the cannula.

**Inserting the infusion set**

*WARNING:* Do not remove the reservoir from the pump while the infusion set is connected to your body. Doing so could result in the delivery of too little or too much insulin, which can cause high BG or low BG.

You must have completed the following procedures, as described previously, before inserting the infusion set into your body:

- Rewinding your pump.
- Filling your reservoir.
• Inserting the reservoir into pump.
• Filling the tubing with insulin.

Shown here are the best body areas (shaded) for infusion set insertion. Avoid the 2-inch (5.0 cm) area around the navel to help ensure a comfortable infusion site and to help with adhesion.

**CAUTION:** Do not use the same infusion set insertion site for an extended period of time. This can cause the site to become overused. Rotate the infusion set insertion sites regularly.

To keep sites healthy, some people find it helpful to use a visual scheme to help them rotate their insertion sites in an organized way. For example, here are two commonly used methods. For maximum effectiveness, use both methods, alternating between them:

• Visualize an imaginary clock drawn on your abdomen surrounding your belly button. Rotate infusion set insertion sites by starting at 12 o’clock and then rotate the site clockwise to 3 o’clock, 6 o’clock, and so on.
• Imagine a letter M or a letter W on either side of your belly button. Start at the end of one letter and proceed through the letter, rotating to each intersection in turn.

Medtronic Diabetes offers a variety of infusion sets for your pump.

Note: Always refer to your infusion set user guide for instructions on inserting an infusion set.

After your infusion set is inserted, see Filling the cannula, page 152 to fill the infusion set cannula.

**Filling the cannula**

Filling the soft cannula with insulin is required after the infusion set is inserted into your body and the introducer needle is pulled out. The insulin amounts required to fill the cannula depend on the type of infusion set you are using. Refer to your infusion set instructions for this information.

Note: If you are using an infusion set with a needle, you do not need to fill the cannula. Select Done when the system prompts you to continue with the fill process.
Note: The Fill Cannula action is not required during a reservoir only change. If performing a reservoir only change, select Done on the Fill Cannula? screen.

WARNING: Never leave your pump on the Fill Cannula? screen. Insulin delivery is suspended while on the Fill Cannula? screen. Always finish filling your cannula or return to the Home screen to avoid continued insulin delivery suspension. Failing to do this can result in hyperglycemia.

To fill the cannula:

1. After you fill your tubing and insert your infusion set, the Fill Cannula? screen appears.

   Fill Cannula?
   1. Insert infusion set into body.
   2. Select Fill to fill cannula or Done if not needed.

   Fill       Done

Note: If your screen turns off before you are ready to fill your cannula, press any button on your pump to turn it on again.

2. To fill your cannula now, select Fill. If you are using an infusion set with a needle, you do not need to fill the cannula. Select Done to skip this step.

   The Fill Cannula screen appears.

   Fill Cannula
   1. Verify Fill amount.
   2. Select Fill Now when ready. Select Back to cancel.

   Fill amount
   Fill Now
3. Adjust the Fill amount for your particular infusion set, and then select Fill Now. If you are unsure about the fill amount, see the instructions that came with your infusion set.

4. As the cannula starts filling, your screen displays the amount of units being delivered. The pump beeps or vibrates when the delivery is complete. After the cannula is filled, the Home screen appears. Your pump is now ready to deliver insulin.

**To stop filling the cannula:**

1. Select Stop Filling to stop filling the cannula.

2. Select Yes.
   The Fill Stopped screen appears confirming amount delivered.

3. Select Done.

**Disconnecting your infusion set**

Always refer to your infusion set user guide for instructions on how to disconnect your infusion set.

**Reconnecting your infusion set**

Always refer to your infusion set user guide for instructions on how to reconnect your infusion set.

**Reservoir change without set change**

Always refer to your infusion set user manual for a reservoir only change, when using a Medtronic Extended infusion set and Medtronic Extended reservoir.
The MiniMed 670G insulin pump can only wirelessly connect with a CONTOUR NEXT LINK 2.4 meter to receive remote blood glucose (BG) readings. If you do not connect a CONTOUR NEXT LINK 2.4 meter to your pump, you must enter your blood glucose readings manually. To wirelessly connect your pump and meter, you need the following items:

- MiniMed 670G insulin pump
- CONTOUR NEXT LINK 2.4 meter
- CONTOUR NEXT LINK 2.4 meter user guide

**About your CONTOUR NEXT LINK 2.4 meter**

You can set up your pump to automatically receive blood glucose readings from your CONTOUR NEXT LINK 2.4 meter. When the pump is on the Home screen, it beeps or vibrates when it receives a blood glucose reading from the meter. After confirming the BG value, your BG Meter screen appears, where you can view your current blood glucose reading and, if necessary, deliver a bolus from your pump. Once received from the meter, you must confirm the value on your pump. Your BG values will appear on your pump screen for 12 minutes, along with any insulin that is still active from any previous boluses. If your blood glucose reading is outside the range of 70 to 250 mg/dL, the pump displays an alert. In this case, treat your low blood glucose or high blood glucose as directed by your healthcare professional.
Note: You can wirelessly connect up to six CONTOUR NEXT LINK 2.4 meters to your pump. Only one CONTOUR NEXT LINK 2.4 meter can communicate with your pump at a time. Your pump will only display the blood glucose reading from the latest value received from the connected CONTOUR NEXT LINK 2.4 meter. In order for your pump to receive the blood glucose reading, you must confirm the reading on your pump.

The CONTOUR NEXT LINK 2.4 meter may not be available in all countries.

Wirelessly connecting your pump and meter
Always refer to your CONTOUR NEXT LINK 2.4 meter user guide for instructions on connecting the meter to the pump.

Deleting a meter from your pump
Follow this procedure to delete your CONTOUR NEXT LINK 2.4 meter from the pump.

To delete the meter from the pump:

1. Press ⏯️ and go to the Manage Devices screen. 
   
   Options > Utilities > Device Options > Manage Devices
   
   The Manage Devices screen appears.

2. Identify and select your meter by the serial number. See your CONTOUR NEXT LINK 2.4 meter user guide for instructions on locating your serial number.

3. Select Delete.

4. A screen appears confirming that you would like to delete the device. Select Yes to confirm or No to cancel.
History and events
This chapter describes the History and Event Markers features. The History screens provide personal pump therapy details, including information about your insulin deliveries, blood glucose (BG) meter readings, sensor glucose (SG) readings, and any alarms and alerts you received. The Event Markers feature allows you to enter and save information, such as manual BG readings, carbohydrates eaten, and exercise.

You can view updates on the Daily History summary screen to learn the following information about your therapy with your pump over a period of time:

- the automatic and manual transitions into and out of Auto Mode
- the start time and the end time for all your Temp Target events
- the correction boluses that your pump automatically calculates for you

For more information about the Auto Mode feature on your pump, refer to Auto Mode, page 249.

**History**

The History feature includes the Summary, Daily History, and Alarm History screens. The SG Review and ISIG History screens are available if you are using the Sensor feature.

**Summary screen**

The Summary screen shows details about past insulin deliveries and meter readings. If you are using a sensor, the Summary screen also shows information about your sensor alerts and sensor glucose readings.
You can view historical details for a single day, or you can select multiple days to view an average of all the results for the number of days that you selected.

To view your Summary screen:

1. Press 🔄 and go to the Summary screen.

   Options > History > Summary

2. Select the time period for the Summary screen.

   The Summary screen appears, showing information for the number of days that you selected.

3. You can scroll down to view the entire screen. If you are using the 1 Day view, you can use the ◀️ and ▶️ buttons on your pump to view the results for each day in history.

Understanding the Summary screen

The Summary screen separates information into these categories:

- Auto Mode
- overview
- bolus
- BG meter
- sensor
- low management mode

Summary screen: Auto Mode

The following table describes the Auto Mode portion of the Summary screen.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time in Auto Mode</td>
<td>number of hours / percent of time in Auto Mode</td>
</tr>
<tr>
<td>Time in target range</td>
<td>number of hours / percent of time in target range (70 mg/dL to 180 mg/dL)</td>
</tr>
<tr>
<td>Time below range</td>
<td>number of hours / percent of time below target range (below 70 mg/dL)</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Time above range</td>
<td>number of hours / percent of time above target range (above 180 mg/dL)</td>
</tr>
</tbody>
</table>

**Summary screen: overview**

The following table describes the overview portion of the Summary screen.

**Note:** If you are viewing a single day of Summary results, then the values shown are the actual results for the selected day. If you are viewing more than one day of Summary results, then the value is an average of the days that you selected.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDD</td>
<td>Total daily dose of insulin units.</td>
</tr>
</tbody>
</table>
| Basal | • Insulin units devoted to basal delivery.  
       | • Percentage of insulin devoted to basal delivery. |
| Bolus | • Insulin units devoted to bolus delivery.  
       | • Percentage of insulin devoted to bolus delivery. |
| Total Carbs | Daily carbohydrate amount, in grams. |

**Summary screen: bolus**

The following table describes the bolus portion of the Summary screen:

**Note:** If you are viewing a single day of Summary results, then the values shown are the actual results for the selected day. If you are viewing more than one day of Summary results, then the value is an average of the days that you selected.

**Note:** The Summary screen does not show a bolus that has had both Carb and BG corrections.
Carb bolus only  
• Total insulin units delivered using the Bolus Wizard or Auto Mode Bolus with food amount only.
• Number of times the Bolus Wizard or Auto Mode Bolus delivered a food bolus only.

BG Correction Only  
• Total insulin units delivered using the Bolus Wizard or Auto Mode Bolus with BG correction amount only.
• Number of times the Bolus Wizard or Auto Mode Bolus delivered a BG correction bolus only.

**Summary screen: BG meter**

The following table describes the BG meter portion of the Summary screen:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG</td>
<td>Total number of BG meter readings, including readings from a CONTOUR NEXT LINK 2.4 meter and BG meter readings entered manually.</td>
</tr>
<tr>
<td>Average BG</td>
<td>Average BG meter readings.</td>
</tr>
<tr>
<td>BG Standard Dev</td>
<td>Standard deviation of BG meter readings.</td>
</tr>
<tr>
<td>Low BG</td>
<td>Lowest BG meter reading.</td>
</tr>
<tr>
<td>High BG</td>
<td>Highest BG meter reading.</td>
</tr>
</tbody>
</table>

**Summary screen: sensor**

The following table describes the sensor portion of the Summary screen. If the sensor feature has never been turned on, this portion of the screen does not appear. If the sensor feature was turned on at least once, but is currently turned off, this portion of the screen appears gray.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG Average</td>
<td>Average sensor glucose value.</td>
</tr>
<tr>
<td>SG Std. Dev.</td>
<td>Standard deviation of the SG readings.</td>
</tr>
</tbody>
</table>
Summary screen: low management mode

The following table describes the low management mode portion of the Summary screen. For details on the low management feature, see *SmartGuard Technology*, page 196.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suspend before low</td>
<td>The average number of Suspend before low events per day.</td>
</tr>
<tr>
<td>Suspend on low</td>
<td>The average number of Suspend on low events per day.</td>
</tr>
<tr>
<td>Time suspended by sensor</td>
<td>The average duration (amount of time) suspended as a result of Suspend on low or Suspend before low events per day.</td>
</tr>
</tbody>
</table>

Daily History

The Daily History screen displays a list of actions you performed on your pump or event entries that you made for the selected day, such as your BG meter readings, SG calibrations, bolus deliveries, any temp basal rates you have used, and so on. The list displays the most recent action or event first. From this list, you can display further details about any action or event.

To view your Daily History:

1. Press ☺ and go to the Daily History screen.

   **Options > History > Daily History**

   A list of dates appears.

2. Select a specific date of history to view. A list appears with any pump actions or events entered on the specified day.

3. You can select any item in the list to open the Detail screen, which displays more information about the selected action or event. For example, if you view the details of a bolus delivered using the Bolus Wizard, the Detail screen shows you all of the data associated with that bolus, such as the BG correction amount, active insulin adjustment, carbs entered, and calculated bolus.
Alarm History

The Alarm History screen displays a list of alarms and alerts that occurred on the selected day. The list displays the most recent alarm or alert first. From this list, you can display further details about any alarm or alert.

To view your Alarm History:

1. Press and go to the Alarm History screen.

   Options > History > Alarm History
   
   A list of dates appears.

2. Select a specific date of alarm history to view. A list appears showing any alarms or alerts that occurred on the specified day.

3. You can select any alarm or alert in the list to open the Alarm Detail screen, which displays more information about the selected alarm or alert.

Using Sensor Glucose Review

The Sensor Glucose Review feature allows you to view a graph of your SG history, based on high and low limits you enter. You can view information for one day, or view an average of your SG data over a number of days.

This Sensor Glucose Review feature is available if you are using the Sensor feature.

Note: The high and low limits that you set are for the purpose of viewing your sensor glucose data only, and are not the same as the High and Low Alert Limits used for your sensor alerts. Changing your Sensor Glucose Review limits does not affect your high and low glucose limits.

To review your sensor glucose history:

1. Press and go to the SG Review screen.

   Options > History > Sensor Glucose Review
   
   The SG Review screen appears. The high and low limits that appear are either the values you entered for the last SG Review, or the default values of 180 mg/dL for the High Limit and 70 mg/dL for the Low Limit.
2. Enter the High Limit and Low Limit that you want to use for the sensor glucose review. There must be a minimum of 20 mg/dL difference between the high and low SG limits.

3. Enter the number of days of sensor glucose history to average, and select Next. A graph of your SG data appears. If you specified one day of history to view, the graph shows details about when your SG was above, below, or within your specified limits. You can scroll down to view the number of hours and percentage of time you were above, within, and below your SG limits. If you have no data saved, a message appears on the screen letting you know there is no data available.

If you view information for multiple days, the graph shows the average percentage of time that your SG was above, below, or within your specific limits.
ISIG History

ISIG is an electronic reading from your sensor that is used in conjunction with your calibration numbers to calculate the current glucose reading on your pump.

To review your ISIG History:

1. Press 🊽 and go to the ISIG History screen.
   
   **Options > History > ISIG History**
   
   The ISIG History screen displays an hourly sequence for one 24-hour day.

2. Scroll through the list to highlight an hour, then press 🊽 to select it.
   
   Use the ◀ or ► buttons to scroll through the listing of ISIG readings, which occur every five minutes.

Event Markers

The Event Markers feature allows you to electronically save certain types of information. When using this feature, enter events when they happen because the system records the time of the entry. You cannot change entries after you have put the information into your pump. You can view your saved events in the Daily History screen.

The entered information can be sent to CareLink Personal therapy management software. There it can be used to generate reports you can share with your healthcare professional.

To enter Event Markers:

1. Press 🊽 and go to the Event Markers screen.
   
   **Options > Event Markers**

2. Select and enter event information for any of the following categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG</td>
<td>If you are not using the Bolus Wizard, Auto Mode Bolus, manual entry, or a CONTOUR NEXT LINK 2.4 meter to record your BG meter readings in your pump, you can enter them here. If you are using a sensor, you may use a BG meter reading you enter here for calibration. You can also enter non-calibration BG meter readings, such</td>
</tr>
</tbody>
</table>
as those readings taken when eating or when your BG is rising or falling rapidly.

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection</td>
<td>Enter the number of units of any insulin you have given by injection. <strong>Note:</strong> Insulin units entered using the injection event marker are not added to your Active Insulin amount tracked on the pump.</td>
</tr>
<tr>
<td>Food</td>
<td>Enter the amount of carbohydrates that you have eaten or drunk that have not been entered in the Bolus Wizard or Auto Mode Bolus. For example, you might enter carbs that you ate to correct a low BG. Do not enter carbs here that you have already entered in the Bolus Wizard or Auto Mode Bolus.</td>
</tr>
<tr>
<td>Exercise</td>
<td>Enter the length of time you exercised. It is helpful to be consistent and enter the information either before or after each time you exercise.</td>
</tr>
<tr>
<td>Other</td>
<td>Examples of Other event markers can include when you take medications, when you feel ill, or when you are under stress.</td>
</tr>
</tbody>
</table>
Reminders

Reminders help you remember to do important routine activities. There are specific reminders that prompt you to check your blood glucose (BG) after a bolus, give a food bolus, check your reservoir level, and change your infusion set. There are also personal reminders you can use for any purpose. If you have the sensor feature turned on, the calibration reminder prompts you to calibrate your sensor.

Personal reminders

The Personal reminders include six numbered reminders, along with the specific reminders for BG Check and Medication.

To create a new Personal reminder:

1. Press Options and go to the Personal screen.
   Options > Reminders > Personal

2. Select Add New.
   The Select Name screen appears showing the available reminders.

3. Select the reminder that you want to set.
   The Edit screen appears for the selected reminder.

4. Enter the time that you want the reminder to occur.

5. Select Save. The Personal reminder occurs at the specified time each day unless you change or delete it.
To edit, rename or delete an existing Personal reminder:

1. Press 📅 and go to the Personal screen.

   Options > Reminders > Personal

2. Select the reminder that you want to change.

3. Do one of the following:
   • Select Reminder to turn this reminder on or off.
   • Select Edit to change the time of the reminder.
   • Select Rename to select a new name for this reminder.
   • Select Delete to delete this reminder.

Bolus BG Check reminder

Bolus BG Check reminder helps you remember to check your blood glucose after a bolus. After you start a bolus, the pump asks you when you want to be reminded to check your blood glucose. The timer counts down from the time the bolus started.

To turn on or turn off Bolus BG Check reminders:

1. Press 📅 and go to the BG Check screen.

   Options > Reminders > Bolus BG Check

2. To turn the reminder on or off, select Reminder.

3. Select Save.

To use a Bolus BG Check reminder when delivering a bolus:

1. After you turn on the Bolus BG Check reminder, each time you start a bolus, the following screen appears:
2. Enter a time from 30 minutes to 5 hours, in 30 minute increments. Select OK. If you do not want a reminder after the bolus, select the dashes without adding a time, and then select OK. If needed, press ✔️ to return to the dashes.

**Missed Meal Bolus reminder**

The Missed Meal Bolus reminder alerts you if a bolus is not delivered within a time period that you set. These time periods are usually set around your typical meal times to help ensure a meal bolus is not missed. You can set up to eight Missed Meal Bolus reminders.

**To create a new Missed Meal Bolus reminder:**

1. Press ⬅️ and go to the Missed Meal Bolus screen.
   
   Options > Reminders > Missed Meal Bolus

2. Select Add New.

3. Select Start Time, and enter a time.

4. Select End Time, and enter a time. The time range is from one minute to 24 hours.

5. Select Save.

**To turn on or off, edit, or delete existing Missed Meal Bolus reminders:**

1. Press ⬅️ and go to the Missed Meal Bolus screen.
   
   Options > Reminders > Missed Meal Bolus

2. Select one of the reminders that you have already created.

3. Change any of the following:
   
   • Select Reminder to turn this reminder on or off.
   
   • Select Edit to change the time of this reminder.
   
   • Select Delete to delete this reminder.
**Low Reservoir reminder**

The Low Reservoir reminder alerts you when the insulin level in your reservoir is low. This feature allows you to program your pump to generate a reminder before your reservoir is empty. You can adjust the Units amount to notify you when your reservoir has a specified number of units remaining, and then alert you again when half of the remaining units are used.

**Note:** The number of units remaining in your reservoir can be found on the Quick Status screen. For more information on accessing the Status Screens, see *Status screens, page 74*.

**WARNING:** When the pump detects a low reservoir condition during a bolus or fill cannula delivery, the Low reservoir alert displays. When delivery has finished, check the amount left in the reservoir to make sure your pump does not run out of insulin, as this could lead to an under delivery of insulin, which may cause hyperglycemia.

**Low Reservoir reminder setup:**

1. Press and go to the Low Reservoir screen.
   
   **Options > Reminders > Low Reservoir**

2. Select **Units** to enter the number of units. You can set a value from 5 U to 50 U.

3. Select **Save**.

**Set Change reminder**

The Set Change reminder helps you remember to change your infusion set. After you turn on this reminder, it automatically tracks the time between infusion set changes and reminds you to change your infusion set.

**To turn on or off, or change the Set Change reminder:**

1. Press and go to the Set Change screen.

   **Options > Reminders > Set Change**
2. Select **Reminder** to turn the reminder on or off. If you turn on the reminder, select **Time** and choose two or three days for the reminder.

3. Select **Save**.

**Note:** The Extended infusion set and Extended reservoir can be used with the pump for a maximum of seven days. The Set Change reminder can only be programmed for a maximum of three days. To avoid confusion, turn off the Set Change reminder if the Extended infusion set is used.

### Calibration reminders

The Calibration reminder is available if you are using the Sensor feature. This feature helps you remember to calibrate your sensor. For example, if you set your reminder to four hours, you receive a Calibrate By alert four hours before the next BG meter reading is due.

**To turn on or off, or change the Calibration reminder:**

1. Press 📰 and go to the Calibration screen.
   
   **Options > Reminders > Calibration**

2. Select **Reminder** to turn the reminder on or off.

3. If you turn on the reminder, select **Time** and enter a time between 5 minutes and 6 hours. The time can be set in 5 minute increments.

4. Select **Save**.
9 General settings
This chapter provides information about common tasks for various settings.

**Airplane Mode**

Airplane Mode temporarily stops wireless communication with your pump. Use this mode during airline travel when you are instructed to turn off wireless devices.

**WARNING:** Do not rely on glucose sensor-enabled features when Airplane Mode is on because the pump does not receive sensor readings from the transmitter. Glucose sensor-enabled features include CGM, SmartGuard, and Auto Mode. When using Airplane Mode, always rely on your blood glucose (BG) values when making therapy decisions to avoid hypoglycemia or hyperglycemia.

Check airline policies for specific instructions about operating medical devices during a flight. Check local airport policies for specific instructions about medical devices and security procedures.

The following table provides special instructions when using Airplane Mode and additional devices with your pump:
When using this device:

<table>
<thead>
<tr>
<th>CONTOUR NEXT LINK 2.4 meter</th>
<th>Do this: When Airplane Mode is turned on, you must enter BG meter readings manually. When Airplane Mode is turned off, use your meter normally.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-linked BG meter</td>
<td>Use your non-linked BG meter normally whether Airplane Mode is on or off.</td>
</tr>
</tbody>
</table>
| Sensor and transmitter | When Airplane Mode is turned on, your pump does not receive sensor readings from your transmitter. When Airplane Mode is turned off, it can take up to 15 minutes before the pump and the transmitter start to wirelessly communicate again. The transmitter begins to send up to the last 10 hours of sensor data to the pump. When you turn off Airplane Mode:  
  • If Airplane Mode was turned on for six hours or less, wait 15 minutes for the sensor and transmitter to wirelessly send your pump the missing sensor glucose readings.  
  • If Airplane Mode was turned on for more than six hours, disconnect and reconnect the transmitter and sensor, and then select Reconnect Sensor when it appears on the pump screen. |

To turn on or turn off Airplane Mode:

1. Press 🔍 and go to the Airplane Mode screen.  
   **Options > Utilities > Airplane Mode**
2. Select **Airplane Mode** to turn the feature on or off.
3. Select **Save**.  
   When Airplane Mode is turned on, the Home screen shows the Airplane Mode icon �𫘝 in place of the Connection icon.
Note: Airplane Mode cannot be used while in Auto Mode. To use Airplane Mode, you must be in Manual Mode. To return to Auto Mode after using Airplane Mode, Auto Mode must be turned on and a BG must be entered. For instructions on turning Auto Mode on or off, see Setting up Auto Mode, page 251. Additional steps may be required before you can return to Auto Mode. Follow the instructions on your pump screen. For more information, see Auto Mode Readiness, page 253.

Audio Options

The Audio Options screen lets you set the audio and vibrate options. It also lets you change the volume of most alerts and notifications if audio is enabled.

The audio setting that you are currently using appears on the Home screen. An audio icon will indicate if your settings are audio only ⌘, vibrate only ⚪, or audio and vibrate both ⌘⇧. For more information, see Status icons, page 70.

To adjust the audio and vibrate settings:

1. Press  and select Audio Options to go to the Audio Options screen.
2. Select Audio or Vibrate for the option you want to use. You can use one option or both.
3. If the Audio option is enabled, the volume can be changed. Select Volume and use the left or right button to adjust to the desired level.
4. Select Save.

Auto Suspend

Auto Suspend is a safety feature that stops all insulin delivery and sounds an alarm if you do not press any buttons for a specified period of time. For example, your healthcare professional may have you set the time based on the number of hours that you typically sleep at night. Discuss with your healthcare professional how to best use this feature.
To set up Auto Suspend:

1. Press \( \) and go to the Auto Suspend screen.

   Options > Delivery Settings > Auto Suspend

2. Select Alarm.

3. Select Time and enter the number of hours that you want to set.

4. Select Save.

Block Mode

The Block Mode feature allows caregivers, such as parents of a young child, to restrict access to critical pump settings.

WARNING: Always monitor pump use during Block Mode. You can manually suspend while in Block Mode. This could result in hyperglycemia and ketoacidosis.

When Block Mode is on, you cannot start a new bolus delivery, start a new basal pattern, or start a new temp basal delivery. However, any previous bolus and basal deliveries continue normally, and the pump user can stop a bolus delivery at any time.

When your pump is in Block Mode, you can suspend insulin delivery, receive SG values, receive BG values from your CONTOUR NEXT LINK 2.4 meter, review history, test the pump, and clear alarms and alerts. However, you cannot change any settings.

Note: The Block Mode feature has some differences when your pump is in Auto Mode. See Block Mode when in Auto Mode, page 258.

To turn Block Mode on or off:

1. Press \( \) and go to the Block Mode screen.
Options > Utilities > Block

2. Select Block Mode to turn the feature on or off.

3. Select Save. While Block Mode is turned on, a lock icon appears on the Home screen.

Display Options

The Display Options allow you to increase or decrease the brightness of your screen. From the Display Options screen, you can also adjust the amount of time the backlight stays on after you press a button.

To adjust the display options:

1. Press and go to the Display Options screen.

   Options > Utilities > Display Options

2. Select Brightness to adjust the brightness of your screen. You can set a level from 1 to 5, or select Auto to have the screen automatically adjust to your current environment.

   Note: The brightness setting you select can affect the life of your battery. For a longer lasting battery, consider using a lower level setting.

3. Select Backlight to adjust the timeout for the backlight on your pump screen. You can select 15 seconds, 30 seconds, 1 minute, or 3 minutes.

   Note: The backlight can affect the life of your battery. For a longer lasting battery, consider setting the screen timeout to 30 seconds.

4. Select Save.

   CAUTION: If you have not pressed Save after settings are entered and the screen goes dark, the entered settings will not be saved.
Language
You can change the language that your pump uses to display information.

To change the Language setting:

1. Press ⏹️ and go to the Language screen.

   Options > Utilities > Language
   A checkmark indicates which language is active.

2. Select your desired language.

3. Select Yes when the confirmation message appears.

Managing your pump settings
Manage Settings lets you save, restore, or clear your settings.

The following table describes the Manage Settings options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save Settings</td>
<td>Saves a record of your current settings that you can use if a future event requires you to re-enter your settings.</td>
</tr>
<tr>
<td>Restore Settings</td>
<td>Allows you to restore your settings, using the backup settings that you saved using the Save Settings feature.</td>
</tr>
<tr>
<td>Clear All Settings</td>
<td>Erases your settings and returns them to the factory defaults. To use your pump again after clearing all settings, you must use Restore Settings. This enables you to restore a previous version of your settings or enter your settings again.</td>
</tr>
<tr>
<td>Clear Active Insulin</td>
<td>This option appears only if you have never cleared your active insulin. It clears both Active Insulin and sets your Total Daily Dose to 0 for Auto Mode. Use this option when you are ready to use your pump with insulin for the first time or when directed by your healthcare professional. You can only clear your active insulin once.</td>
</tr>
<tr>
<td>Settings History</td>
<td>Displays a history of recent activities that relate to managing your settings, such as saving, clearing, and restoring your settings.</td>
</tr>
</tbody>
</table>
Saving your settings

Saving a record of your settings allows you to restore your settings at a later date, if necessary.

To save your current settings:

1. Press 📋 and go to the Manage Settings screen.
   Options > Utilities > Manage Settings
2. Simultaneously press and hold ⏩ and ◀️ until the Manage Settings menu appears.
3. Select Save Settings.
   - If these are the first settings you have saved, a message appears telling you that your settings are saved.
   - If you have previously saved settings, a message appears asking if you would like to replace your previous settings with your current settings. Select Yes to accept. Select No to cancel.

Restoring your settings

This option allows you to replace your current pump settings with the last settings that you have saved. The Restore Settings menu option is available only if you have previously saved your settings.

To restore your previous settings:

1. Press 📋 and go to the Manage Settings screen.
   Options > Utilities > Manage Settings
2. Simultaneously press and hold ⏩ and ◀️ until the Manage Settings menu appears.
3. Select Restore Settings.
4. To replace your current settings with your previous settings, select Yes. To cancel, select No.
Clearing your settings

The Clear All Settings feature erases your current settings and returns them to the factory defaults. After you clear your settings, your pump displays the Startup Wizard, where you can re-enter your pump settings. You must re-enter your settings to continue using your pump.

The Clear All Settings feature does not delete wireless connections to other devices, such as your transmitter or meter.

**CAUTION:** Do not clear your pump settings unless directed by your healthcare professional. If you clear your pump settings, it will be necessary to reprogram all your personal pump settings as directed by your healthcare professional.

To clear all your settings:

1. Make sure the pump is not connected to your body.
2. Press **O** and go to the Manage Settings screen.
   
   **Options > Utilities > Manage Settings**
3. Simultaneously press and hold **>** and **buat** until the Manage Settings menu appears.
4. Select **Clear All Settings**.
   
   A confirmation screen appears asking if you want to clear all your settings.
5. To continue clearing your settings, select **Yes**. If you do not want to clear your settings, select **No**.
   
   If you clear your settings, your pump displays the Welcome screen and continues to the Startup Wizard. For more details on entering your startup settings, see **Entering your startup settings, page 66**.

Clearing your active insulin

Use this feature when you are ready to use your pump with insulin for the first time. This feature clears the total daily dose and any active insulin values that your pump has tracked, and then sets the active insulin value to zero. If you have practiced delivering
a bolus with your pump prior to using your pump with insulin, you must clear the active insulin. This ensures that the Bolus Wizard has an accurate active insulin amount for bolus calculations.

You can clear your active insulin only once. After you clear your active insulin, the feature is no longer available.

1. Press ⚪️ and go to the Manage Settings screen.
   **Options > Utilities > Manage Settings**

2. Simultaneously press and hold ➔ and ← until the Manage Settings menu appears.
   The Manage Settings screen appears. If you have never cleared your active insulin, the Clear Active Insulin option appears.

   ![Manage Settings menu](image)

   **Note:** If the Clear Active Insulin selection does not appear on the Manage Settings screen, it means that you have already cleared your active insulin on the pump.

3. Select **Clear Active Insulin**.
   A confirmation screen appears asking if you want to continue.

4. Select **Clear** to clear your active insulin value from your pump. If you do not want to clear your active insulin at this time, select **Cancel**.
   A message appears confirming that your active insulin value is cleared.

**Viewing your pump setting history**

The Settings History shows you a history of activities you have performed in the Manage Settings area, such as saving, restoring, or clearing your settings.

1. Press ⚪️ and go to the Manage Settings screen.
Options > Utilities > Manage Settings

2. Simultaneously press and hold ➤ and ◀ until the Manage Settings menu appears.

3. Select Settings History.
   The Settings History screen appears.

Self Test

Self Test is a safety utility that allows you to check if your pump is operating properly. This self-diagnostic feature can be used for maintenance or to check that your pump is operating properly. Self Test is additional to the routine tests that run independently while the pump operates.

Note: Your insulin delivery suspends for up to two minutes while your pump runs self test.

Self Test includes the following tests:

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>Turns on the display for up to 45 seconds.</td>
</tr>
<tr>
<td>Notification light</td>
<td>Turns on the notification light for three seconds and then turns it off.</td>
</tr>
<tr>
<td>Vibration</td>
<td>Generates two vibration cycles.</td>
</tr>
<tr>
<td>Tone</td>
<td>Generates an alert tone, an Easy Bolus (step 1) tone, and an alarm tone.</td>
</tr>
</tbody>
</table>

The pump will run through a series of tests as listed in the previous table. Self Test requires you to observe the pump during the test.

To run the Self Test:

1. Press ◀ and go to the Self Test screen.

   Options > Utilities > Self Test

   A message indicates that the Self Test is in progress.
Self Test takes up to two minutes to complete. During that time, the display briefly turns white, the notification light blinks, the pump vibrates, and the pump beeps.

2. If Self Test does not detect a problem, the display returns to the Utilities screen. If Self Test detects a problem, a message appears with more information about the problem. If Self Test displays an error message or you observe the pump not behaving as indicated during the test, contact the 24 Hour HelpLine.

**Sensor Demo**

Sensor Demo lets you see what the Home screen would look like if you were using the optional Continuous Glucose Monitoring (CGM) feature. For more information about sensor graphs, please see *The sensor graph, page 241*.

![WARNING: Do not use Sensor Demo to make any decisions related to your therapy. Information seen in the Sensor Demo is not real data. It is an example of the type of information you can access when using the sensor feature. Making treatment decisions based on data that is not real can cause hypoglycemia or hyperglycemia.]

To view the sensor graph example screens:

1. Press and go to the Sensor Demo screen.

   **Options > Utilities > Sensor Demo**

   The Sensor Demo screen appears as an example of what your Home screen looks like when you are using the optional CGM feature.

2. Press to view the sensor graph examples.
3. Press the < or > buttons to view the different sensor screen examples. Sensor Demo simulates a sensor glucose graph, showing an example of the general trend of glucose as it rises and falls over time. The top of the graph indicates the time of day, while the side bar shows the sensor glucose (SG) reading markers.

4. To exit Sensor Demo, press ".

**Time and date**

Make sure the time and date are always set correctly on your pump. This is necessary to ensure the correct basal insulin delivery and to keep an accurate record of pump functions. You may need to change the time or the date if you travel to a different time zone or practice daylight saving time. After the time and date are changed, the pump adjusts all settings automatically.

**To change the time and the date:**

1. Press ◯ and go to the Time & Date screen.

   **Options > Utilities > Time & Date**

2. Select and change the **Time, Time Format**, or **Date** as necessary. If you are using a 12-hour clock, be sure to specify AM or PM.

3. Select **Save**.
10

Setting up Continuous Glucose Monitoring
Setting up Continuous Glucose Monitoring

This chapter explains how to wirelessly connect your pump and transmitter, and how to enter your sensor settings and set up continuous glucose monitoring (CGM) on your pump. You will need the following:

- MiniMed 670G insulin pump
- Sensor glucose settings (provided by your healthcare professional)
- Guardian Sensor (3)
- Guardian Link (3) transmitter kit

**WARNING:** Do not make therapy treatment decisions based on sensor glucose values. Sensor glucose (SG) and blood glucose (BG) values may differ. If your sensor glucose reading is low or high, or if you feel symptoms of low or high glucose, confirm your sensor glucose reading with your BG meter prior to making therapy decisions to avoid hypoglycemia or hyperglycemia.

**Understanding Continuous Glucose Monitoring (CGM)**

The Sensor feature on the pump lets you integrate and use continuous glucose monitoring (CGM). CGM is a sensor glucose monitoring tool that uses a glucose sensor that is placed below your skin to continuously measure the amount of glucose in your interstitial fluid. CGM helps you better manage your diabetes by:
- Recording your glucose values throughout the day and night
- Showing the effects that your diet, exercise, and medication can have on your glucose levels
- Giving you additional tools to help you prevent high and low glucose levels

**Note:** If you lose sensor functionality, you will no longer have access to CGM features. For details on restoring sensor functionality, see *Troubleshooting sensor issues, page 317.*

Sensor glucose (SG) readings and blood glucose (BG) meter readings are not the same.

**SmartGuard Technology**

SmartGuard technology automatically adjusts insulin delivery based on your sensor glucose values. SmartGuard technology has two features, Manual Mode and Auto Mode. This chapter describes SmartGuard technology used in Manual Mode, with the Low Management features. Low Management features can automatically stop and resume insulin delivery based on your sensor glucose values and low limit. When your pump suspends insulin delivery based on your sensor glucose values and your low limit, it is called a suspend by sensor event. Your low limit should be set based on recommendations from your healthcare professional. When a SmartGuard suspend by sensor event occurs, basal insulin delivery automatically resumes if your sensor glucose values are rising and have met the specified criteria, or if the maximum suspend time of two hours is reached.

Auto Mode is also part of SmartGuard technology. When your pump is in Auto Mode, your basal insulin delivery is automatically controlled. For details, see *About Auto Mode, page 249.*

The following table lists SmartGuard features and where to find them.

<table>
<thead>
<tr>
<th>To learn more about:</th>
<th>Go to this section:</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to use SmartGuard technology to automatically suspend your insulin delivery before you reach your low limit.</td>
<td><em>Suspend before low, page 205.</em></td>
</tr>
</tbody>
</table>
### To learn more about:

| How to use SmartGuard technology to automatically suspend your insulin delivery when you reach your low limit. | Go to this section: Suspend on low, page 209. |
| How SmartGuard technology automatically resumes your basal insulin delivery after a suspend by sensor event. | Automatically resuming basal delivery after a SmartGuard suspend by sensor event, page 212. |
| Auto Mode | About Auto Mode, page 249 |

To set up SmartGuard suspend by sensor settings, see Setting up the Low Settings, page 221.

### Home screen with CGM in Manual Mode

When you turn on the Sensor feature, the Home screen on your pump changes to display a real-time graph that shows your sensor glucose (SG) information. For more information, see Turning on the Sensor feature, page 218.

#### Note:
To see the Home screen in Auto Mode, see Home screen with Auto Mode, page 256.

The following items appear on your Home screen with CGM in Manual Mode:
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airplane Mode icon</td>
<td>The Airplane Mode icon 🌋 appears in place of the Connection icon if Airplane Mode is turned on. When Airplane Mode is turned on, the pump cannot receive wireless communication from other devices.</td>
</tr>
<tr>
<td><strong>WARNING:</strong></td>
<td>Do not rely on glucose sensor-enabled features when Airplane Mode is on because the pump does not receive sensor readings from the transmitter. Glucose sensor-enabled features include CGM, SmartGuard, and Auto Mode. When using Airplane Mode, always rely on your blood glucose (BG) values when making therapy decisions to avoid hypoglycemia or hyperglycemia.</td>
</tr>
<tr>
<td>Calibration icon</td>
<td>The approximate time left until your next sensor calibration is due. Appears only when the Sensor feature is turned on. The color and the circle around the icon indicate the status. When your sensor is fully calibrated, the icon has a solid green circle around it. As the time for your next sensor calibration approaches, the green circle around the icon becomes smaller,</td>
</tr>
</tbody>
</table>
and the color of the icon changes as shown in the following example. For more information about calibrating your sensor, see *Calibrating your sensor, page 234*.

- 🔄 Time to your next sensor calibration is more than 10 hours.
- 🔄 Time to your next sensor calibration is 8 to 10 hours.
- 🔄 Time to your next sensor calibration is 6 to 8 hours.
- 🔄 Time to your next sensor calibration is 4 to 6 hours.
- 🔄 Time to your next sensor calibration is 2 to 4 hours.
- 🔄 Time to your next sensor calibration is less than 2 hours.
- 🔄 Sensor calibration is required now.
- 🔄 Time to your next sensor calibration is unavailable.
- 🔄 Sensor is not ready for a calibration. This occurs when a new sensor is connected or within 15 minutes of a Calibration not accepted alert.

### Connection icon

The connection icon appears green 🖉 when the Sensor feature is on and your transmitter is successfully communicating with your pump. The connection icon appears with a red X 📺 when the Sensor feature is turned on, but the transmitter...
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Mode Readiness</td>
<td>The Auto Mode Readiness icon indicates whether your pump is ready to enter Auto Mode. The icon appears with a loading symbol when the pump is updating a condition that requires you to wait. The icon appears with a question mark when the pump requires an action from you to enter Auto Mode. For more information about Auto Mode Readiness, see <em>Auto Mode Readiness, page 253</em>. When your pump is in Auto Mode, the Auto Mode shield appears in the center of your Home screen. For more information, see <em>Home screen with Auto Mode, page 256</em>.</td>
</tr>
<tr>
<td>Sensor graph</td>
<td>Displays your SG readings over a period of 3 hours. The orange line represents your high SG limit, and the red line represents your low SG limit. The blue line represents your SG trends during the specified period. For more information, see <em>The sensor graph, page 241</em>.</td>
</tr>
<tr>
<td>Sensor Life</td>
<td>The number of days remaining in the life of your sensor. The Sensor Life icon appears only when the Sensor feature is turned on. The color and the fill level of the icon indicate the status. When you insert a new sensor, the icon is solid green.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>When one day is remaining in the life of your sensor, the icon color turns red.</td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> For a short time after starting a new sensor, the Sensor Life icon may show an 8. When the Sensor Life icon changes to show a 7, the seven-day period of sensor life begins.</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Sensor Life Icon" /></td>
<td>If the number of days remaining in the life of your sensor is unavailable, the Sensor Life icon appears with three dots 🔽.</td>
</tr>
<tr>
<td>SG reading</td>
<td>Shows your current SG reading which is sent wirelessly to your pump by the transmitter.</td>
</tr>
<tr>
<td>Low Management icon</td>
<td>The Low Management icon appears only when either the Suspend before low or Suspend on low feature is set to on. For details on SmartGuard technology, see <em>SmartGuard Technology, page 196</em>. The Low Management icon indicates the current status of the suspend features, as follows:</td>
</tr>
<tr>
<td></td>
<td>• The icon is a white arrow with a dotted red line 🔴 when either the Suspend on low or Suspend before low is turned on and ready.</td>
</tr>
<tr>
<td></td>
<td>• The arrow icon flashes if your insulin delivery is currently suspended due to low.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>to a Suspend on low or Suspend before low event.</td>
</tr>
<tr>
<td></td>
<td>• The icon appears as a gray cross with a dotted line under it when neither suspend feature is available. The suspend features might be unavailable due to a recent suspend or because there are no SG values available. It might also be unavailable because the pump is not currently delivering insulin.</td>
</tr>
<tr>
<td>Trend arrows</td>
<td>Shows the rate at which the most recent sensor glucose level is rising or falling.</td>
</tr>
<tr>
<td></td>
<td>• ‹ or ‹‹ or ‹‹‹‹ - Rising trend arrows</td>
</tr>
<tr>
<td></td>
<td>• ‹‹ or ‹‹‹ or ‹‹‹‹‹ - Falling trend arrows</td>
</tr>
<tr>
<td></td>
<td>For more information about trend arrows, see Identifying rapid changes in sensor glucose, page 242.</td>
</tr>
</tbody>
</table>

**Understanding glucose settings**

There are several types of glucose alerts you can set to notify you if your glucose values are changing at a particular rate, or if they are approaching or have reached a specified low or high limit. You can also set your pump to automatically suspend insulin delivery before or when you reach your low limit.

The following graph shows the different high and low glucose alerts you can use.
The high alerts are described in the High settings section on *High SG settings, page 203*. For details on low alerts and suspend options, see *Low settings, page 204*.

**High SG settings**

These settings alert you if your sensor glucose:

- is rising rapidly (Rise Alert)
- is approaching your high limit (Alert before high)
- has reached your high limit (Alert on high)

The following table describes the High Settings.

<table>
<thead>
<tr>
<th>High glucose setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>High limit</td>
<td>Your high limit is the value on which your other high settings are based. Your high limit can be set from 100 mg/dL to 400 mg/dL. You can set a different high limit for up to eight time segments throughout the day or night.</td>
</tr>
<tr>
<td>Alert before high</td>
<td>When Alert before high is on, you will receive an alert any time the sensor glucose is predicted to reach the high limit. This makes you aware of potential highs before they occur.</td>
</tr>
<tr>
<td>Time before high</td>
<td>Time before high is only available when using Alert before high. Time before high determines when you will receive an Alert before high. You can set a time between 5 and 30 minutes.</td>
</tr>
</tbody>
</table>
### High glucose setting

<table>
<thead>
<tr>
<th>Description</th>
<th>Alert on high</th>
<th>Rise Alert</th>
</tr>
</thead>
<tbody>
<tr>
<td>When Alert on high is on, your system alerts you when your SG reading reaches or exceeds your High Limit.</td>
<td>The Rise Alert notifies you when your glucose is rising rapidly. This alert helps you understand how much your glucose levels are affected by meals or, for example, when forgetting to give a bolus. You can set the rise rate to match the arrows that display on the Home screen during a glucose rise, or to a custom rise rate.</td>
<td>The Rise Limit determines when you will receive a Rise Alert. Rise Limit is only available when using Rise Alert.</td>
</tr>
<tr>
<td>• - SG is rising at a rate of 1 mg/dL per minute or more.</td>
<td>• - SG is rising at a rate of 2 mg/dL per minute or more.</td>
<td>The Rise Limit determines when you will receive a Rise Alert. Rise Limit is only available when using Rise Alert.</td>
</tr>
<tr>
<td>• - SG is rising at a rate of 3 mg/dL per minute or more.</td>
<td>• - Custom - SG is rising at the rate that you set which can be set from 1.0 to 5.0 mg/dL per minute.</td>
<td></td>
</tr>
</tbody>
</table>

To set up your high settings, see *Setting up the High Settings, page 218*.

### Low settings

The low settings allow you to be alerted and/or have insulin delivery suspended when you are either approaching or have reached your low limit. This is done by using alerts and SmartGuard technology described on *SmartGuard Technology, page 196*.

The following graph shows the different low settings you can use:
**WARNING:** Suspend before low and Suspend on low are not intended to be a treatment for low blood glucose. Having insulin suspended when glucose is low may not bring your blood glucose back to your target range for several hours. In that case, you run the risk of hypoglycemia. Always confirm your blood glucose readings with your BG meter and treat according to the recommendations of your healthcare professional.

The following sections describe Auto Mode and the low settings. For details on setting up Auto Mode and your low settings, see *Setting up the Low Settings, page 221*.

**Low limit**

The low limit is the value on which the other low settings are based. The low limit can be set from 50 mg/dL to 90 mg/dL. You can set a different low limit for up to eight time segments throughout the day or night.

**Suspend before low**

The Suspend before low feature stops insulin delivery when your sensor glucose values are approaching your low limit. This feature is intended to suspend insulin delivery to minimize the amount of time spent low.

The default setting for the Suspend before low feature is off. Consult your healthcare professional for the Suspend before low setting that is best for you.

If you turn on Suspend before low, then Alert on low is automatically turned on. You also have the option to turn on Alert before low.
• If Alert before low is on, your pump alerts you when insulin delivery is suspended. For details, see Alert before low, page 208.

• If Alert before low is off, then Suspend before low appears on the screen, but the pump will not beep or vibrate when insulin delivery is suspended.

• The user can enable Alert before low, Alert on low, Suspend before low, and Suspend on low. There is an additional fixed low alert at 50 mg/dL that cannot be turned off.

• Suspend before low and Suspend on low cannot be enabled at the same time. When either is enabled, the user can enable the Resume basal alert.

• The Low SG alert appears when your sensor glucose values reach or fall below 50 mg/dL. This alert cannot be turned off. When the alert appears on your screen, it shows your sensor glucose value next to your Low SG alert. In this user guide, the sensor glucose value will be represented as “Low SG XX” for this alert.

![Low SG alert example]

**WARNING:** Always confirm your sensor glucose readings with your BG meter and treat according to the recommendations of your healthcare professional. The Suspend before low feature uses the sensor glucose value, not your blood glucose value, to automatically suspend insulin delivery. Your pump automatically suspends insulin delivery when your sensor glucose is approaching the low limit. However your blood glucose reading may be higher or lower than the sensor glucose value. Assuming that your sensor glucose value is accurate may result in the delivery of too little or too much insulin, which can cause hyperglycemia or hypoglycemia.
**Suspend before low conditions**

When a Suspend before low event occurs, all insulin delivery is suspended. A Suspend before low event occurs when:

- Your SG value is at or within 70 mg/dL above your low limit.
- Your SG is predicted to reach or fall below a level that is 20 mg/dL above your low limit within approximately 30 minutes.

**Responding to a Suspend before low event**

When you clear the Suspend before low alert, the SmartGuard Suspend by sensor icon flashes and “Suspended before low” appears on your Home screen. If your SG reaches your low limit, an Alert on low occurs.

When a Suspend before low event occurs, insulin delivery will remain suspended for at least 30 minutes. Insulin delivery will be suspended for a maximum of two hours. You can manually resume insulin delivery at any time. For details, see *Manually resuming basal delivery during a suspend by sensor event, page 224*. After the minimum 30-minute suspend time, basal insulin delivery will automatically resume if the following conditions are met:

- Your SG is at least 20 mg/dL above your low limit.
- Your SG is estimated to be more than 40 mg/dL above your low limit within 30 minutes.

If you do not respond to the Suspend before low alert, your pump resumes insulin delivery after two hours and displays a Basal delivery resumed alert.

**When Suspend before low is unavailable**

After a Suspend before low event occurs, there is a period of time when the Suspend before low functionality is unavailable. This is to prevent prolonged suspended basal delivery. The length of time it is unavailable will vary. For details, see *Stopping and resuming your insulin delivery, page 101*.

---

**Note:** The maximum amount of time the Suspend before low feature will be unavailable is four hours.
When the SmartGuard suspend by sensor features are unavailable, the SmartGuard suspend by sensor icon on the Home screen appears as a gray cross.  

**When a Suspend before low event occurs and you respond within two hours and:**  
- Stay suspended for the two hour maximum suspend time, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.  
- Your insulin automatically resumes due to your rising SG levels, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.  
- Manually resume your basal insulin delivery, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.  

**If your pump has been suspended for two hours and you have not responded,** basal insulin delivery automatically resumes.  

**If you respond within 30 minutes of basal insulin delivery being resumed,** the SmartGuard suspend by sensor features will be unavailable for a total of 30 minutes. For example:  
- If you respond 10 minutes after your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be unavailable for an additional 20 minutes.  
- If you respond 20 minutes after your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be unavailable for an additional 10 minutes.  

**If you respond 30 minutes to four hours after** your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be available immediately.  

**If you do not respond,** the SmartGuard suspend by sensor features will be unavailable for four hours after basal delivery resumes.  

**Alert before low**  
When Alert before low is on, you will receive an alert when you are approaching your low limit. This makes you aware of potential lows before they occur.
The Alert before low feature can be used with the Suspend before low and Suspend on low features. The Alert before low feature works as follows:

- If Alert before low is on, and both suspend by sensor features are off, you receive the Alert before low 30 minutes before you reach your low limit.
- If Suspend on low is on, and Alert before low is on, you receive an Alert before low 30 minutes before you reach your low limit.
- If Suspend before low is on, and Alert before low is on, you receive a Suspend before low alert when insulin delivery is suspended. For details, see Suspend before low, page 205.

You can also choose to have the Alert before low off.

**Suspend on low**

The Suspend on low feature stops insulin delivery when your sensor glucose value reaches or falls below the low limit that you set. When a Suspend on low event occurs, all insulin delivery is suspended. This feature is used for situations when you cannot respond to a low glucose condition. It is intended to suspend insulin delivery and minimize the amount of time spent low.

**WARNING:** Do not use the Suspend on low feature until you have read the information in this user guide and received instructions from your healthcare professional. The Suspend on low feature causes the pump to temporarily suspend insulin delivery for a maximum of two hours. Under some conditions of use, the pump can suspend again, resulting in limited insulin delivery. Prolonged suspension can increase the risk of serious hyperglycemia, ketosis, and ketoacidosis.

The default setting for the Suspend on low feature is off. Consult your healthcare professional for the Suspend on low setting that is best for you.

If you turn on Suspend on low, then Alert on low is turned on automatically. For more information, see Alert on low, page 212.
**WARNING:** Always confirm your sensor glucose readings with your BG meter and treat according to the recommendations of your healthcare professional. The Suspend on low feature uses the sensor glucose value, not your blood glucose value, to automatically suspend your pump. Your pump may automatically suspend when your sensor glucose is at or below the low limit, while your blood glucose is above that limit. Assuming that your sensor glucose value is accurate may result in the delivery of too little or too much insulin, which can cause hyperglycemia or hypoglycemia.

**Responding to a Suspend on low event**

When you clear the Suspend on low alarm, the SmartGuard suspend by sensor icon \(\checkmark\) flashes and “Suspended on low” appears on your Home screen.

When a Suspend on low event occurs, the pump alerts you.

When a Suspend on low event occurs, insulin delivery will remain suspended for at least 30 minutes. Insulin delivery will be suspended for a maximum of two hours. You can manually resume insulin delivery at any time. For details, see *Manually resuming basal delivery during a suspend by sensor event, page 224*. After the minimum 30-minute suspend time, basal insulin delivery will automatically resume if the following conditions are met:

- Your SG is at least 20 mg/dL above your low limit.
- Your SG is estimated to be more than 40 mg/dL above your low limit within 30 minutes.

If you do not respond to the Suspend on low alarm, your pump resumes insulin delivery after two hours and continues to display an emergency message.

**When Suspend on low is unavailable**

After a Suspend on low event occurs, there is a period of time when the suspend functionality is unavailable. This time will vary depending on whether or not you respond to the Suspend on low event. You can manually suspend insulin delivery at any time. For details, see *Stopping and resuming your insulin delivery, page 101*. 


When the SmartGuard suspend by sensor features are unavailable, the SmartGuard suspend by sensor icon on the Home screen appears gray.

**When a Suspend on low event occurs and you respond within two hours and**

- Stay suspended for the two hour maximum suspend time, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.
- Your insulin automatically resumes due to your rising SG levels, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.
- Manually resume your basal insulin delivery, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.

**If your pump has been suspended for two hours and you have not responded,** basal insulin delivery automatically resumes.

**If you respond within 30 minutes of basal insulin delivery being resumed,** the SmartGuard suspend by sensor features will be unavailable for a total of 30 minutes. For example:

- If you respond 10 minutes after your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be unavailable for an additional 20 minutes.
- If you respond 20 minutes after your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be unavailable for an additional 10 minutes.

**If you respond 30 minutes to four hours after** your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be available immediately.

**If you do not respond,** the SmartGuard suspend by sensor features will be unavailable for four hours after basal delivery resumes.
Alert on low

The Alert on low feature is automatically turned on when either the Suspend before low or the Suspend on low feature is turned on.

When Alert on low is set to on, you receive an alert when your SG reading reaches or falls below your low limit. If your pump is suspended and you have not responded, an emergency message appears.

Automatically resuming basal delivery after a SmartGuard suspend by sensor event

In addition to suspending insulin delivery, the pump can also automatically resume delivery of basal insulin. If insulin has been suspended by either the Suspend before low or the Suspend on low feature, insulin delivery will automatically be resumed if either of the following conditions are met:

- if insulin has been suspended for a minimum of 30 minutes and SG values are at least 20 mg/dL above the low limit and expected to be more than 40 mg/dL above the low limit in 30 minutes.
- after a maximum of two hours.

Resume basal alert

When the Resume basal alert is on, you will be alerted when insulin is automatically resumed. If the Resume basal alert is off, basal insulin resumes, but you do not receive an alert. However, you will get a message indicating that the basal has automatically resumed.

If basal resumes after the maximum suspend time of two hours, you will be alerted even if the Resume basal alert is set to off. It is important that you check your BG and ensure your glucose is at a safe level.

For details on setting up the Resume basal alert, see Setting up the Low Settings, page 221.

SmartGuard suspend by sensor examples

The following table shows the different scenarios that occur during and after a Suspend before low or Suspend on low event. Examples of scenarios are shown after the table.
<table>
<thead>
<tr>
<th>What happens</th>
<th>Suspend on low</th>
<th>Suspend before low</th>
</tr>
</thead>
<tbody>
<tr>
<td>The pump suspends insulin delivery.</td>
<td>Your sensor glucose value reaches or falls below the low limit that you set. The pump suspends insulin delivery for at least 30 minutes and up to a maximum of 2 hours. The pump automatically resumes basal insulin delivery between 30 minutes and 2 hours if your sensor glucose value is predicted to go above the low limit that you set.</td>
<td>Your sensor glucose value is approaching your low limit and is predicted to be reached within 30 minutes. The pump suspends insulin delivery for at least 30 minutes and up to a maximum of 2 hours. The pump automatically resumes basal insulin delivery between 30 minutes and 2 hours if your sensor glucose value is predicted to go above the low limit that you set.</td>
</tr>
<tr>
<td>You manually resume insulin delivery.</td>
<td>Your pump resumes insulin delivery at the programmed basal rate. The suspend by sensor features are unavailable for 30 minutes after insulin delivery resumes. The pump will not automatically suspend insulin again until after the suspend features are available and your sensor glucose value is below the low limit that you set.</td>
<td>Your pump resumes insulin delivery at the programmed basal rate. The suspend by sensor features are unavailable for 30 minutes after insulin delivery resumes. The pump will not automatically suspend insulin again until after the suspend features are available and your sensor glucose value is approaching the low limit that you set.</td>
</tr>
<tr>
<td>Your sensor glucose value is predicted to go above your low limit while insulin is auto-</td>
<td>The pump automatically resumes insulin delivery after 30 minutes and if your sensor glucose values are at least 20 mg/dL above your low limit and predicted to be more than 40 mg/dL.</td>
<td>The pump automatically resumes insulin delivery after 30 minutes and if your sensor glucose values are at least 20 mg/dL above your low limit and predicted to be more than 40 mg/dL.</td>
</tr>
</tbody>
</table>

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**Setting up Continuous Glucose Monitoring**

Setting up Continuous Glucose Monitoring

213
<table>
<thead>
<tr>
<th>What happens</th>
<th>Suspend on low</th>
<th>Suspend before low</th>
</tr>
</thead>
<tbody>
<tr>
<td>matically suspended.</td>
<td>above your low limit in 30 minutes.</td>
<td>above your low limit in 30 minutes.</td>
</tr>
<tr>
<td>You respond to the alert that occurs while insulin delivery is suspended. Insulin delivery is suspended for the maximum two hour suspend time.</td>
<td>Your pump resumes insulin delivery at the programmed basal rate. The suspend by sensor features are unavailable for 30 minutes after insulin delivery resumes. The pump will not automatically suspend insulin again until after the suspend features are available and your sensor glucose value is below the low limit that you set.</td>
<td>Your pump resumes insulin delivery at the programmed basal rate. The suspend by sensor features are unavailable for 30 minutes after insulin delivery resumes. The pump will not automatically suspend insulin again until after the suspend features are available and your sensor glucose value is approaching the low limit that you set.</td>
</tr>
<tr>
<td>The pump resumes insulin delivery after the maximum two hour suspend time. You respond to the alert that occurs after insulin delivery resumes.</td>
<td>Your pump resumes insulin delivery at the programmed basal rate. The suspend by sensor features are unavailable for 30 minutes. The pump will not automatically suspend insulin again until after the suspend features are available and your sensor glucose value is below the low limit that you set.</td>
<td>Your pump resumes insulin delivery at the programmed basal rate. The suspend by sensor features are unavailable for 30 minutes. The pump will not automatically suspend insulin again until after the suspend features are available and your sensor glucose value is approaching the low limit that you set.</td>
</tr>
<tr>
<td>You do not respond to the alerts that occur while insulin delivery is suspended. Insulin delivery is suspended for the maximum two hour suspend time.</td>
<td>Your pump resumes insulin delivery at the programmed basal rate. The suspend by sensor features are unavailable for 4 hours after insulin delivery resumes. The pump will not automatically</td>
<td>Your pump resumes insulin delivery at the programmed basal rate. The suspend by sensor features are unavailable for 4 hours after insulin delivery resumes. The pump will not automatically</td>
</tr>
</tbody>
</table>
The following examples describe several scenarios that illustrate different types of suspend events, user actions in response to these events, and what happens to insulin delivery in each case.

The examples cover the following:

- Example 1: Suspend before low, non-responsive, auto resume basal (trending upwards)
- Example 2: Suspend before low, responsive, manually resume basal
- Example 3: Suspend before low, responsive, stays suspended
- Example 4: Suspend on low, response after basal delivery resumes

**Note:** During the Suspend on low siren, you can press any button to silence your pump for two minutes. The temporary silencing of the alarm does not affect the suspension or delivery of insulin.

### Example 1: Suspend before low, non-responsive, auto resume basal (trending upwards)

Sarah has been experiencing low sensor glucose values. Her healthcare professional has recommended she use the Suspend before low feature. While at a concert, Sarah’s sensor glucose values are approaching her low limit. Her pump recognizes that her glucose will be at or within 20 mg/dL above her low limit within 30 minutes and suspends her insulin. Sarah has her Alert before low set to off so that she is not alerted when this occurs.
An hour later, her sensor glucose values are 21 mg/dL above her low limit. Her pump estimates her sensor glucose values will be 45 mg/dL above her low limit within 30 minutes. Her pump automatically resumes her basal insulin delivery.

When the concert ends, Sarah sees that her pump automatically suspended and resumed her insulin delivery and a potential low was avoided. She clears the messages by selecting OK.

**Example 2: Suspend before low, responsive, manually resume basal**

Kate decides to meet her friends at the mall. While shopping, she gets a Suspend before low alert. This indicates that her sensor glucose values are approaching the low limit she has set. She clears the alert and sees that her insulin has been suspended. Kate checks her BG to confirm. Based on her healthcare professional’s recommendation, Kate stops for a snack to help avoid hypoglycemia. Knowing the carbohydrate will make her glucose rise, Kate manually resumes her basal insulin delivery by selecting Suspended before low from the Home screen and choosing Resume basal.

Kate knows that after she has manually resumed her basal insulin delivery, the suspend functions will be unavailable for 30 minutes. However, she will be alerted if she reaches her low limit.

**Example 3: Suspend before low, responsive, stays suspended**

Doug has just finished his evening jog on the beach. As he is walking home, he receives a Suspend before low alert. He sees that his pump has automatically suspended his insulin delivery. Doug clears the alert by selecting OK on his pump. He knows that his pump is now suspended and insulin delivery has been stopped. He checks his BG to confirm and keeps his insulin suspended.
A while later, Doug receives another alert. He looks at his pump and sees that he has received an Alert on low. His SG has reached his low limit. He clears the alert and checks his BG to confirm. He eats carbohydrates to treat the low glucose as instructed by his healthcare professional.

Doug keeps his insulin suspended as directed by his healthcare professional. He knows that once his SG is above his low limit and trending upward, or reaches the maximum suspend time of two hours, basal insulin delivery will automatically resume.

**Example 4: Suspend on low, response after basal delivery resumes**

Michael is on his college hockey team. He played in a hockey tournament all day and is so exhausted that he falls asleep watching television. His sensor glucose value begins to drop. When his sensor glucose value reaches his low limit, the pump begins to alarm. His pump automatically suspends all insulin delivery. Michael does not respond to the alarm. After ten minutes, his pump begins to siren and displays the emergency message.

About three hours later, Michael’s roommate comes home. He hears the pump sirening and wakes up Michael. Michael clears any messages by selecting OK. He sees that his basal insulin was suspended for the two hour maximum and had automatically resumed delivery. He checks his blood sugar and sees that it is within the target range.

Michael has responded to his alert. The pump will suspend insulin delivery and alarm again if his sensor value reaches or falls below his low limit again.
**Turning on the Sensor feature**

You must turn on the Sensor feature before you can set up your glucose alerts and start monitoring your sensor glucose.

**To turn on the Sensor feature:**

1. Press ☰ and go to the Sensor Settings screen.
   
   Options > Utilities > Sensor Settings

2. Select Sensor to turn on the Sensor feature. The sensor settings become accessible.

**Setting up the High Settings**

The steps below guide you through setting up your high settings. For details on your high settings, see *High SG settings, page 203*.

**Note:** When you enter your settings, you first define the time segment, and then select the high settings you want on during that time segment.

**To set up the High Settings:**

1. Press ☰ and go to the High Setup screen.
   
   Options > SmartGuard > High Setup

   The High Setup screen appears.

   ![](image)

2. Select the time segment. The End time starts flashing.

   The Start time of the first time segment is always 12:00 A. You can set up to eight time segments, each with a different high limit. If you set more than one time segment, the time segments must cover a 24-hour period.
3. Set the End time.

4. Set your High limit. You can enter a value from 100 to 400 mg/dL, in increments of 5 mg/dL.

5. Select the arrow to the right of the End time to select the high alerts for this time segment.

A screen appears showing the high alerts for the selected time segment.

6. Set the following alerts as desired:
   a. Select **Alert before high** if you want to receive an alert before you reach your high limit.
   b. If you turned on Alert before high, enter the **Time before high** to set how soon you want to be alerted before reaching your high limit. You can enter a value from 5 to 30 minutes.
   c. Select **Alert on high** if you want an alert when you reach your high limit.
   d. Select **Rise Alert** if you want to receive an alert when your SG is rising quickly.
      
      Skip to step 11 if you do not select Rise Alert.

7. If you turned on the Rise Alert, you need to set the Rise Limit. Scroll down and select **Rise Limit** to access this option.

The Rise Limit screen appears.
8. Select the arrow option (one, two, or three arrows) that corresponds to the rise rate you want to use. To use a custom rate, skip to the next step.
   
   • Select ↑ for an alert when your SG has been rising at a rate of 1 mg/dL per minute or more.
   
   • Select ↑↑ for an alert when your SG has been rising at a rate of 2 mg/dL per minute or more.
   
   • Select ↑↑↑ for an alert when your SG has been rising at a rate of 3 mg/dL per minute or more.

Select OK, and skip to step 11.

9. To enter a custom rise limit, do the following:
   
   a. Select Custom. The Custom Limit screen appears.

   b. Select Rise Limit and set a rise rate from 1 to 5 mg/dL/min. You set the rate in 0.1 mg/dL/min increments.

   c. Select OK to return to the Rise Limit screen and then select OK again to confirm your settings.

10. When you have set all the high settings for the selected time segment, select Next to continue.

11. If you entered an End time of anything other than 12:00 A, another time segment appears. When you are finished entering high settings, select Done.

12. Review your settings, and select Save.
To change your High Settings:

1. Press \( \text{\textcopyright} \) and go to the High Setup screen.
   
   \( \text{Options > SmartGuard > High Setup} \)
   
   The High Setup screen appears.

2. Select \textbf{Edit}.

3. Select and, if needed, adjust the time segment you would like to change.

4. Select any alert setting to turn it on or off or to adjust the setting.

5. Select \textbf{Next}.

6. Select \textbf{Review}.

7. Review your settings, and select \textbf{Save}.

**High Snooze**

High Snooze is available once you have set your High Settings. High Snooze allows you to set the amount of time that you want to wait before you are reminded that an alert condition still exists. After a high alert is received and cleared, you will be alerted again only if the high alert condition still exists after the snooze time you have set.

**Setting the High Snooze:**

1. Press \( \text{\textcopyright} \) and go to the Snooze screen.
   
   \( \text{Options > SmartGuard > Snooze} \)
   
   The Snooze screen appears.

2. Select \textbf{High Snooze} and enter a value from 5 minutes to 3 hours, in 5 minute increments.

3. Select \textbf{Save} to save your Snooze settings.

**Setting up the Low Settings**

The steps below guide you through setting up the Low Settings. For details on the Low Settings, see \textit{Low settings, page 204}. 
**Note:** When you enter your settings, you first define the time segment and then select the low settings you want during that time segment.

**To set up the Low Settings:**

1. Press 🍁 and go to the Low Setup screen.

   **Options > SmartGuard > Low Setup**

   The Low Setup screen appears.

2. Select the time segment. The End time starts flashing.

   The Start time of the first time segment is always 12:00 A. You can set up to eight time segments, each with a different low limit. If you set more than one time segment, the time segments must cover a 24-hour period.

3. Set the End time.

4. Set your low limit. You can enter a value from 50 to 90 mg/dL, in increments of 5 mg/dL.

5. Select the arrow to the right of the End time to select the low settings for this time segment.

   A screen appears showing the available settings for the selected time period.

6. Set the following as desired:
a. Select **Suspend before low** to have insulin suspended before you reach your low limit. The Alert on low alert is automatically turned on and cannot be turned off.

b. Select **Alert before low** to receive an alert before you reach your low limit. If Suspend before low is also on, you are alerted when insulin is suspended.

c. Select **Suspend on low** to have insulin suspended when you reach or fall below your low limit. The Alert on low alert is automatically turned on and cannot be turned off.

d. Select **Alert on low** if you want to receive an alert when your SG reaches or falls below your low limit. If either suspend feature is on, this will already be on.

e. Select **Resume basal alert** if you want an alert when basal insulin delivery is resumed based on SG values during a suspend by sensor event. If you do not turn on the alert, the Basal delivery resumed message will still appear on the pump, but you will not be alerted.

### Note:

When setting your low alerts:

If you turn on the Suspend before low or the Suspend on low feature, then the Alert on low feature is turned on automatically.

Only one suspend by sensor feature can be used during each time segment. You cannot use both the Suspend before low and the Suspend on low features in the same time segment.

7. When you have set all the low settings for the selected time segment, select **Next** to continue.

8. If you entered an End time of anything other than 12:00 A, another time segment appears.
When you are finished entering your low settings, select Done.

9. Review your settings, and select Save.

To make changes to your Low Settings:

1. Press \ and go to the Low Setup screen.

   Options > SmartGuard > Low Setup

   The Low Setup screen appears.

2. Select Edit.

3. Select, and if needed, adjust the time segment you would like to change.

4. Select any alert setting to turn it on or off or to adjust the setting.

5. Select Next.

6. Select Done.

7. Review your settings, and select Save.

Low Snooze

Low Snooze is available once you have set your Low Settings. Low Snooze allows you to set the amount of time that you want to wait before you are reminded that an alert condition still exists. After a low alert is received and cleared, you will be alerted again only if the low alert condition still exists after the snooze time you have set.

Setting the Low Snooze:

1. Press \ and go to the Snooze screen.

   Options > SmartGuard > Snooze

   The Snooze screen appears.

2. Select Low Snooze and enter a time between 5 minutes and 1 hour.

Manually resuming basal delivery during a suspend by sensor event

When your pump suspends insulin due to a Suspend before low or Suspend on low event, the bottom of your Home screen displays either Suspended before low or Suspended on low depending on which is active.
If you do not want to wait for your pump to automatically resume your basal insulin, you can follow the procedure below to manually resume your basal delivery.

**To manually resume basal delivery:**

1. Press and select **Suspended before low** or **Suspended on low**.
   
   The SmartGuard screen appears.

2. Select **Resume Basal**.

3. Select **Yes** to resume basal insulin delivery.

**Wirelessly connecting your pump and transmitter using Auto Connect**

Before you can start using your sensor, you must first wirelessly connect your pump to your transmitter so they can begin communicating with each other.

The Auto Connect process locates your transmitter without having to enter the serial number of the transmitter into your pump manually.

Note the following before trying to connect your pump and transmitter:

- You can connect only one transmitter to your pump. If you already have a transmitter connected to your pump, you must delete it before continuing. For instructions on deleting a transmitter from your pump, see *Deleting the transmitter from your pump, page 231*.

- Ensure that you are not close to other Medtronic devices that are in search mode before using Auto Connect. (For example, if another household member is connecting a BG meter or transmitter to his or her insulin pump.) If you know multiple people are connecting devices, such as in a training class, use the Manual Connect process on *Wirelessly connecting your pump and transmitter using Manual Connect, page 229*. 
Connecting your pump and transmitter using Auto Connect:

1. Attach your transmitter to the charger and make sure the transmitter is fully charged. Keep your transmitter attached to the charger.

   ![Charger and Transmitter](image)

   **Note:** Both lights on the charger are off when the transmitter is fully charged. For more information, see your transmitter user guide.

2. Press 🔄 and go to the Auto Connect screen.

   **Options > Utilities > Device Options > Connect Device > Auto Connect**

3. Make sure there are no other devices in search mode nearby, scroll down to the bottom of the Auto Connect screen, and select **Continue**.

   ![Auto Connect Screen](image)

4. Place the transmitter (still attached to the charger) next to the pump.

   The New Device screen appears.
5. Select **Search** on your pump and immediately remove the transmitter from the charger.

The following happens when you start the search process:

- On your pump, a message appears to let you know your pump is searching.
- On your transmitter, a green light flashes 10 times and then turns off.

**Note:** The search process can take up to two minutes. You cannot access your pump screens or suspend your pump during the search process.

When your pump finds the transmitter, the Confirm Device SN screen appears.

6. Ensure the transmitter serial number on your pump screen matches the serial number on the back of your transmitter and then select **Confirm**.
If the connection is successful, your pump displays a success message. If the Sensor feature is turned on, the Connection icon 🗺 appears on the Home screen.

If your pump does not find your transmitter, see the following procedure, **If your pump does not find your transmitter**. If your pump finds multiple devices, skip to **If your pump found multiple devices**.

**If your pump does not find your transmitter:**

1. Place the transmitter back on the charger and make sure your transmitter is fully charged before continuing.
2. Place your pump and transmitter within an arm’s length of each other.
3. Select **Retry** on your pump and immediately remove the transmitter from the charger to start the search process.
4. If the search is unsuccessful the second time, select **Cancel** when the No Devices Found message appears and then follow the instructions in *Wirelessly connecting your pump and transmitter using Manual Connect, page 229*.

**If your pump found multiple devices:**

1. Write down the serial number for your transmitter. The serial number can be found on the back of your transmitter.
2. Place the transmitter back on the charger and make sure your transmitter is fully charged before continuing.
3. Select **Next** from the Multiple Devices Found message to display the Enter Device SN screen.
4. Manually enter your device serial number by following the instructions, starting with step 4 in *Wirelessly connecting your pump and transmitter using Manual Connect, page 229*. 
Wirelessly connecting your pump and transmitter using Manual Connect

The Manual Connect process requires you to enter the serial number of the transmitter into your pump. Use this process if you are unsuccessful using the Auto Connect process, or when multiple people in close range are connecting their pumps with other devices, such as a group training session.

**Note:** You can connect only one transmitter to your pump. If you already have a transmitter connected to your pump, you must delete it before continuing. For instructions on deleting a transmitter from your pump, see *Deleting the transmitter from your pump, page 231.*

Connecting your pump and transmitter using Manual Connect:

1. You need the serial number for your transmitter during the connection process. Write down the serial number in the following space provided.

   **Find your serial number here:**  Write it here:

   - SN GΤ________

   Write your serial number here, include any letters: SN GT ___ ___ ___ ___ ___ ___

2. Attach your transmitter to the charger, and make sure the transmitter is fully charged. Keep your transmitter attached to the charger.
Note: Both lights on the charger are off when the transmitter is fully charged. For more information, see your transmitter user guide.

If you remove the transmitter from the charger to write down the serial number, the green charger light may start flashing when you attach the transmitter to the charger again. You can continue the connection process without waiting for the charger light to stop flashing.

3. On the pump, press enter and go to the Enter Device SN screen.

   Options > Utilities > Device Options > Connect Device > Manual Connect

4. Use the pump navigation buttons to enter the serial number of the transmitter and select OK.

   The New Device screen appears.

5. Select Search on your pump and immediately remove the transmitter from the charger.

   The following happens when you start the search process:
• On your pump, a message appears to let you know your pump is searching.

• On your transmitter, a green light flashes 10 times and then turns off.

**Note:** The search process can take up to two minutes. You cannot access your pump screens or suspend your pump during the search process.

6. Place the transmitter next to the pump.

   If the connection is successful, your pump displays a success message. If the Sensor feature is turned on, the Connection icon 📡 appears on the Home screen.

   **If your pump does not connect to your transmitter:**

   1. If your pump does not connect to the transmitter, do one of the following:
      - Select **Retry** to return to the Enter Device SN screen on your pump, and then return to step 4 of the procedure above and follow the instructions to search again.
      - Select **Cancel** to return to the Connect Device screen, where you can search again using Manual Connect or Auto Connect.

   2. If you have tried to connect multiple times without success, see *My pump cannot find the sensor signal, page 317*.

**Deleting the transmitter from your pump**

Follow this procedure to delete the transmitter from your pump. Use this process when you are replacing your transmitter.

**To delete your transmitter from your pump:**

1. Press 📡 and go to the Manage Devices screen.

   **Options > Utilities > Device Options > Manage Devices**

2. Identify and select your transmitter by the serial number. The serial number can be found on the back of the transmitter.
3. Select **Delete**.

4. A screen appears confirming that you would like to delete the device. Select **Yes** to confirm or **No** to cancel.

**Inserting the sensor**

Always refer to your sensor user guide for instructions on how to insert the sensor.

**Connecting the transmitter to the sensor**

Refer to your transmitter user guide for instructions on how to connect the transmitter to the sensor.

**Starting the sensor**

After you insert your sensor and connect your sensor and transmitter, your pump starts communicating with the transmitter. The pump notifies you when the sensor is ready to use.

**To start a new sensor using the Start New Sensor message:**

1. Select **Start New Sensor** when it appears on the pump screen.

   The “Sensor warm-up started” message appears.

   **Note:** It may take up to 5 minutes for the “Sensor warm-up started” message to appear.

2. Select **OK**.

   “Warm up…” appears on the Home screen until the sensor is ready for first calibration.
To start a new sensor using manual connect:

1. Press \( \) and go to the Sensor Connections screen.

   **Options > Utilities > Sensor Settings > Sensor Connections**

2. Select **Start New Sensor**.

   The Start New Sensor screen appears.

3. If you have not done so already, connect the transmitter to your sensor. For details about connecting your transmitter and sensor, see your transmitter user guide.

   Your pump searches for your transmitter signal. It can take up to six minutes for your pump and transmitter to start communicating.

4. Select **OK**.

5. The Sensor warm-up started message appears on the screen. Select **OK**.

   If you receive a message that your pump cannot find the sensor signal, continue to the next section.

If your pump cannot find the sensor signal:

1. If your pump cannot find the sensor signal, follow the instructions on your pump screen. Your pump guides you through the following steps:
   a. Disconnect and reconnect the transmitter from the sensor. Pay attention to the transmitter, and notice if the transmitter light blinks when connected to the sensor. If the transmitter light does not blink, you need to charge your transmitter.
   b. Move your pump closer to your transmitter. It can take up to 15 minutes for your pump to find the sensor signal.
   c. If your pump is still unable to find the sensor signal, make sure you are away from any electronic devices that might cause interference.
2. If you have gone through all of the troubleshooting on your pump screen and your pump still cannot find the sensor signal, call the 24 Hour HelpLine for assistance.

Calibrating your sensor

Calibration is the process of entering a BG meter reading to calculate sensor glucose values. You must calibrate your sensor regularly to ensure you continue to receive sensor glucose data. For details, see Guidelines for calibrating, page 237.

Within two hours after you use your pump to start the sensor, your pump displays a Calibrate now alert to let you know that a calibration is due. This BG meter reading is the first calibration for your sensor. It takes up to five minutes after calibration to see the first sensor glucose reading on your Home screen. You enter your second calibration within six hours after your first calibration.

After you have entered your first two calibrations, you must calibrate your sensor again within 12 hours. If you do not enter a BG meter reading within 12 hours, your pump displays the Calibrate now alert and stops calculating sensor glucose values until a calibration BG is successfully entered. The sensor must be calibrated at a minimum of every 12 hours throughout the life of the sensor. For better sensor performance, it is recommended that you calibrate your sensor three or four times each day.

You may also receive additional Calibrate now alerts to let you know that another calibration is required to improve performance.

When the Calibrate now alert appears, the system stops calculating SG values until a calibration BG is successfully entered.

**Note:** Sensor calibration is successful only if your BG entry is in the range of 40 to 400 mg/dL. Remember to calibrate three to four times throughout the day for optimal results.

**To calibrate your sensor:**

1. Take a BG meter reading.
2. Press ○ and go to the Calibrate Sensor screen.

   **Options > Utilities > Sensor Settings > Calibrate Sensor**
3. Select **BG** and enter the value.

4. Select **Calibrate**.

### Where to enter your calibration BG meter reading

There are several screens on the pump where you can enter a BG meter reading for calibration. These screens are described in the following table. These options are available only if you are using a sensor.

**Note:** After your CONTOUR NEXT LINK 2.4 meter wirelessly transmits your BG reading to your pump, you will be required to confirm your BG on your pump before you can use it for calibration.

<table>
<thead>
<tr>
<th>Pump screen</th>
<th>How to enter your calibration BG</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG screen</td>
<td>Enter a BG meter reading specifically for calibration.</td>
</tr>
<tr>
<td>When you manually enter a BG, the pump will prompt if you want to calibrate your sensor with the BG reading. Press 0 then select <strong>Enter BG</strong>.</td>
<td></td>
</tr>
<tr>
<td>Calibrate Sensor screen</td>
<td>Enter a BG meter reading specifically for calibration.</td>
</tr>
<tr>
<td>Press 0, then select:</td>
<td></td>
</tr>
<tr>
<td><strong>Options &gt; Utilities &gt; Sensor Settings &gt; Calibrate Sensor</strong></td>
<td></td>
</tr>
<tr>
<td>BG Meter screen</td>
<td>Select the Calibrate Sensor option to calibrate your sensor with the current BG meter reading.</td>
</tr>
<tr>
<td>The BG Meter screen appears when your CONTOUR NEXT LINK 2.4 meter sends a BG meter reading to your pump, and you confirm the BG.</td>
<td></td>
</tr>
<tr>
<td>BG screen in Event Markers</td>
<td>When you enter a BG meter reading in Event Markers, the Event Markers screen has an option to use the BG value for calibration.</td>
</tr>
<tr>
<td>Press 0, then select:</td>
<td></td>
</tr>
<tr>
<td><strong>Options &gt; Event Markers &gt; BG</strong></td>
<td></td>
</tr>
<tr>
<td>BG field in the Bolus Wizard screen</td>
<td>When you enter a BG meter reading to deliver a bolus using the Bolus Wizard, the</td>
</tr>
</tbody>
</table>
Pump screen | How to enter your calibration BG
---|---
**Bolus > Bolus Wizard**<br>The Bolus Wizard is only available in Manual Mode. | Bolus Wizard gives you the option to use the BG value for calibration after the bolus is delivered.

BG field in the Auto Mode Bolus screen<br>Press ‼, then select **Bolus**. <br>Auto Mode Bolus is only available in Auto Mode. | When you enter a BG meter reading to deliver a bolus using the Auto Mode Bolus feature, Auto Mode gives you the option to use the BG value for calibration after the bolus is delivered.

---

**When to calibrate**

The following table describes when to calibrate your sensor.

<table>
<thead>
<tr>
<th>Calibrate</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>After warm-up is complete.</td>
<td>Do your first sensor calibration. &lt;br&gt;Your pump displays a Calibrate now alert within two hours after starting a new sensor. Your first sensor glucose reading appears up to five minutes after you calibrate.</td>
</tr>
<tr>
<td>Six hours after your first calibration.</td>
<td>Do your second sensor calibration. &lt;br&gt;Six hours after you calibrate for the first time, a Calibrate now alert appears, and your pump stops calculating your SG values. It takes up to five minutes after you calibrate to receive SG values again.</td>
</tr>
<tr>
<td>Within 12 hours after your second calibration and at least every 12 hours thereafter.</td>
<td>After you do your second calibration, you need to calibrate at least every 12 hours. For better sensor performance, it is recommended that you calibrate your sensor three or four times each day. &lt;br&gt;If you do not calibrate for more than 12 hours, a Calibrate now alert appears. It takes up to five minutes after you calibrate to receive SG values again.</td>
</tr>
<tr>
<td>When the Calibrate now alert appears.</td>
<td>You may also receive additional Calibrate now alerts to let you know that another calibration is required to improve</td>
</tr>
</tbody>
</table>
Calibrate | Description
--- | ---
 | performance. It takes up to five minutes after you calibrate to receive SG values again.

**Guidelines for calibrating**

Follow these guidelines for best sensor calibration results:

- Calibrate three to four times spread out throughout the day to improve accuracy. For details, see *When to calibrate, page 236.*

- You can calibrate anytime. However, calibrating with two or three trend arrows may temporarily decrease accuracy until the next calibration. For an example of trend arrows on the Home screen, see *Home screen with CGM in Manual Mode, page 197.*

- Always calibrate immediately after testing your BG. Never calibrate with a BG meter reading that you have taken more than 12 minutes earlier as that BG value would no longer be considered valid.

- Always use clean, dry fingers when you test your blood glucose levels.

- Use only your fingertips when obtaining blood samples for calibration.

**Note:** If your BG meter readings are significantly different than your sensor glucose readings, you need to wash your hands and calibrate again.

**Disconnecting the transmitter from the sensor**

Always refer to your transmitter user guide for instructions on disconnecting the transmitter from the sensor.

**Removing the sensor**

Always refer to the sensor user guide for instructions on how to remove the sensor.
Turning off Sensor Settings

You can turn off Sensor Settings at any time. If you disconnect the transmitter from the sensor, turn off the Sensor Settings to avoid getting a sensor alert. Your sensor settings remain in your pump. You cannot make changes to the settings until you turn on the Sensor Settings again.

To turn off Sensor Settings:

1. Press ○ and go to the Sensor Settings screen.
   
   Options > Utilities > Sensor Settings

2. Select Sensor.

3. Select Yes to turn off the Sensor feature.
Using continuous glucose monitoring
Using continuous glucose monitoring

This chapter provides information on how to use CGM on your pump and view your sensor glucose data. This information helps you identify sensor glucose trends, including being notified if your sensor glucose is falling or rising rapidly. You can also view historical sensor glucose readings in a graph format. Information is also included on how to silence your glucose alerts.

The sensor graph

The sensor graph displays your current sensor glucose (SG) reading that is wirelessly sent to your pump by the transmitter.

The sensor graph includes the following information:
• The most recent sensor glucose reading
• Historical sensor glucose readings for the last 3-hour, 6-hour, 12-hour, or 24-hour periods
• Your high and low limits
• The bolus deliveries you have given during the time period shown on the graph
• Any suspend events that have occurred

If an SG reading does not appear on the graph, some possible reasons for this include:

• An error condition or a sensor-related alert is occurring.
• A new sensor that you just inserted is still initializing.
• A new sensor that just initialized is still calibrating.
• An existing sensor that you have recently reconnected is not ready.
• More than six hours have passed since the initial sensor calibration.
• More than 12 hours have passed since the last sensor calibration.

**To view the sensor graph:**

1. From the Home screen, press the button.
   A full-screen view of the 3-hour graph appears.

2. Press to navigate to the 6-hour, 12-hour, and 24-hour graphs.

3. Press to view SG readings and event details.

4. To exit the full-screen view, press or press the button again.

**Identifying rapid changes in sensor glucose**

When you use a sensor, trend arrows appear on the Home screen if your SG has been rising or falling faster than a certain per-minute rate. The number of arrows that appear tell you how quickly your SG has been changing.

The following table shows the trend arrows and their corresponding rates.

<table>
<thead>
<tr>
<th>Arrow</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑</td>
<td>SG has been rising at a rate of 1 mg/dL per minute or more, but less than 2 mg/dL per minute.</td>
</tr>
</tbody>
</table>
Silencing Glucose Alerts

The Alert Silence feature allows you to make sensor glucose alerts silent for a set period of time. This is useful in situations where you do not want to disturb others, such as when you are in a business meeting or in a movie theater. When using this feature, one of the following status icons appears on the Home screen, depending on your Audio Options settings: vibrate only, audio only, or vibrate and audio. Your system still records the time and glucose value for any alerts that occur. You can view this information in the Alarm History screen.

Note: Alert Silence does not silence Auto Mode exit, High SG, Auto Mode off, and Low SG XX mg/dL (XX represents 50 mg/dL or below) alerts. These alerts are based on set glucose thresholds and cannot be silenced.

If a glucose alert occurs when you are using the Alert Silence feature, the notification light begins to flash and the Sensor alert occurred message appears letting you know an alert was silenced, but there is no vibration or beep. If you have not cleared the alert by the end of the preset alert silence duration, your pump begins to beep or vibrate periodically until the alert is cleared.

The following table describes the glucose alerts that are silenced with each option.
This Alert Si-lence setting | Silences these alerts
---|---
High Alerts Only | Alert on high, Alert before high, and Rise Alert
High & Low Alerts | Alert on high, Alert before high, Rise Alert, Alert on low, Alert before low, Suspend before low, and Resume Basal Alert
All Sensor Alerts | All of the alerts listed previously for High & Low Alerts, plus the following:
  • All calibration alerts, reminders, or error messages
  • All alerts relating to sensor insertion, including alerts about sensor warm-up, changing your sensor, sensor expiration, sensor errors, connection issues, and so on
  • All alerts related to your transmitter, including all alerts about your transmitter battery and all connection issues

To silence Glucose alerts:

1. Press \( \text{ \textregistered} \) and go to the Alert Silence screen.
   
   **Audio Options > Alert Silence Options**

2. Select High Alerts Only, High & Low Alerts, or All Sensor Alerts to set the alerts you want silenced. Refer to the previous table for details about the alerts silenced with each selection.
Note: If you select **All Sensor Alerts**, you will not receive most alerts related to your sensor glucose readings, your sensor, calibration requirements, or your transmitter. Low SG XX mg/dL (XX represents 50 mg/dL or below), Auto Mode off, Auto Mode exit, and High SG alerts cannot be silenced. You will still hear these alerts when Alert Silence is on. You will still receive alerts for Auto Mode off, Auto Mode exit, High SG, and Low SG XX mg/dL (XX represents 50 mg/dL or below). If a silenced glucose alert occurs, the notification light flashes and a message appears on your pump to let you know a silenced alert occurred, but there is no vibration or beep. You can view the specific alert in Alarm History. For more information on how to view the Alarm History screen, see *Alarm History, page 166*.

3. Set the **Duration** time (from 30 minutes to 24 hours) for which the alerts will be silenced.

4. Select **Begin**. The Alert Silence settings immediately take effect and you are returned to the Sensor Settings screen.

**To cancel Alert Silence:**

1. Press ☺ and go to the Alert Silence screen.

   **Audio Options > Alert Silence Options**

2. Select **Cancel Alert Silence**.
Auto Mode

The Auto Mode feature is part of SmartGuard technology. It automatically controls basal insulin delivery. However, the Auto Mode feature still requires your input for meals, calibrations, and times when you need the target value raised.

Note: The pump requires a minimum of 8 U and a maximum of 250 U per day to operate in Auto Mode.

About Auto Mode

Auto Mode is an insulin delivery feature designed to help people on intensive insulin therapy to achieve better control 24 hours a day. This is achieved by automatically controlling basal insulin delivery to regulate glucose levels to a target sensor glucose (SG) amount. The standard target SG setting is 120 mg/dL and the target can be set temporarily to 150 mg/dL for exercise and other events.

When Auto Mode is active, the sensor glucose values it receives from the transmitter are used to automatically calculate the basal insulin dose. This process of automatic delivery of insulin is called Auto Basal.

Auto Mode depends on reliable, accurate sensor measurements and your accurate entry of carbs to deliver insulin for meals. Therefore, the basic management of the therapy requires the following activities:

- Periodic blood glucose (BG) readings using a BG meter to calibrate the sensor. The minimum calibration is every 12 hours. For better sensor performance, it is recommended that you calibrate your sensor three or four times each day. You may
also receive periodic requests from your pump for BG readings without the need for calibration.

- Use of the Auto Mode Bolus feature to deliver boluses to cover meals, and when your pump recommends a bolus.

**Note:** Delivering a bolus in Auto Mode is similar to delivering a bolus with the Bolus Wizard feature in Manual Mode.

A BG reading above 150 mg/dL causes Auto Mode to automatically calculate if a correction bolus is needed to bring BG down to the 150 mg/dL BG correction target. If needed, a correction bolus will be recommended.

**Manual Mode**

In this user guide, the term Manual Mode refers to system functions other than Auto Mode. In other words, if Auto Mode is not functioning, the system is in Manual Mode.

**Before using Auto Mode**

Auto Mode can be enabled at any time, but it does not activate until the system completes a 48-hour warm-up period while you use the pump to deliver insulin. This warm-up period begins the midnight after the pump starts delivering insulin and it does not require sensor use. During the warm-up period, your Auto Mode system collects and processes data that help enable its automatic function. Some alarms that occur during warm-up, including a Suspend before low alert or a Suspend on low alert, will turn off Auto Mode.

**Note:** A basal pattern must be programmed for use during the warm-up period and for instances when the pump is in manual mode. During the warm-up period the pump should also be used to give boluses.
**WARNING:** Do not put your pump into Auto Mode if you have used the pump in the last 3 days to practice button pressing, or if basal insulin that was programmed into your pump was not your actual basal delivery. Doing so may result in the delivery of too little or too much insulin, which can cause hyperglycemia or hypoglycemia. Auto Mode uses the recent delivery history on your pump to determine the Auto Basal delivery amount you receive. If you have been practicing with your pump, you must clear the active insulin and the total daily doses in the pump before using Auto Mode. Use the Clear Active Insulin option in the Manage settings menu to clear both active insulin and the total daily dose.

To ready your pump for Auto Mode, you must:

1. Cancel any active Temp Basal rates. See *Canceling a Temp Basal or Preset Temp basal rate, page 100.*

2. Ensure your delivery is not suspended. See *Stopping and resuming your insulin delivery, page 101.*

3. Set your carb ratio. See *Changing your carb ratio, page 117.*


5. Enter a BG reading if you have not entered one in the past 12 minutes. If necessary, calibrate your sensor. If you have just started a new sensor, calibrate your sensor, and then wait 30 minutes before you enter a BG for Auto Mode. For more information about calibrating your sensor, see *Calibrating your sensor, page 234.*

**Setting up Auto Mode**

Auto Mode can be enabled at any time but will not activate until the 48-hour warm-up period has been completed. For details about the warm-up period, see *Before using Auto Mode, page 250.* Once enabled, Auto Mode begins automatically when all conditions are met and a BG is entered. For more information, see *Auto Mode Readiness, page 253.*
To set up Auto Mode:

1. Press \( \text{ } \) and go to the Auto Mode Settings screen.

   **Options > SmartGuard > Auto Mode**

2. Select **Auto Mode** to turn the feature on or off.

3. Select **Auto Mode BG alert** to turn it on or off.

   **Note:** The Auto Mode BG alert is set to On by default. When this setting is on, your pump alerts you when Auto Mode requires a BG to remain active. For information about the conditions that cause Auto Mode to require a BG, see Safe Basal, page 256.

4. Select **Save**.

**Conditions to activate Auto Mode**

If you have been using Auto Mode and you turn off your pump for less than two weeks, there will only be a five hour warm up period once the pump is restarted. The other conditions must still be met before Auto Mode will activate.

If you have turned off your pump for more than two weeks, a new 48 hour warm-up period will be required.

If Auto Mode is enabled but not active, the Auto Mode Readiness screen indicates the reason why Auto Mode has not yet activated. See Auto Mode Readiness, page 253.

It takes 5 hours for the Auto Mode Active Insulin to be updated. This update time happens under the following conditions:

- when your pump is turned on the first time
- may occur following a complete pump reset caused by a loss of power or a software error
- following a Suspend lasting 4 hours or longer

Once the Active Insulin is updated, it will be valid unless one of the conditions above happens, which will restart the update period. Auto Mode will then be locked out for another 5 hours.
Low Management and Auto Mode

When Auto Mode is active, then the Low Management features are unavailable and automatically turned off. If you are using Suspend before low or Suspend on low, they are automatically turned off when Auto Mode becomes active. If your pump exits Auto Mode, the Low Management features are not active until you turn them on after you exit Auto Mode. If you want to use these features, you must manually turn them on after you exit Auto Mode. See Low settings, page 204.

Auto Mode Readiness

The Auto Mode Readiness screen indicates whether your pump is ready to enter Auto Mode, or return to Auto Basal from Safe Basal.

The following table shows what to do when the wait icon  or the question icon  appear by items on the Auto Mode Readiness status screen.

<table>
<thead>
<tr>
<th>Line</th>
<th>If this appears</th>
<th>Do this</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Calibration required</td>
<td>Perform a fingerstick and calibrate your sensor.</td>
</tr>
<tr>
<td></td>
<td>BG required</td>
<td>Perform a fingerstick and enter a new BG.</td>
</tr>
<tr>
<td></td>
<td>Wait to enter BG...</td>
<td>Wait until the pump prompts you to enter a BG.</td>
</tr>
<tr>
<td>Line</td>
<td>If this appears</td>
<td>Do this</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>---------</td>
</tr>
<tr>
<td></td>
<td>Processing BG...</td>
<td>Wait until the BG has processed.</td>
</tr>
<tr>
<td>2</td>
<td>Auto Mode turned off</td>
<td>Turn on Auto Mode in the SmartGuard Auto Mode screen.</td>
</tr>
<tr>
<td>3</td>
<td>Sensor not ready</td>
<td>Do the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check to see if your pump has a transmitter ID entered in Utilities, Device Options. For example, GT6133333M.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Make sure your pump is connected to a transmitter. For more information, see <em>Wirelessly connecting your pump and transmitter using Auto Connect, page 225</em>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check your Home screen. If you see ⌚️, move your pump and transmitter closer together. The pump will try to find the transmitter signal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If after 30 minutes the pump and transmitter are still not communicating, you will receive a Lost sensor signal alert. Check that the sensor is still inserted in the skin, and the transmitter and sensor are still connected. Move your pump closer to your transmitter.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If your SG is outside of the 40 to 400 mg/dL range, your pump will not enter Auto Mode.</td>
</tr>
<tr>
<td>Line</td>
<td>If this appears</td>
<td>Do this</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Sensor off</td>
<td>Turn on the sensor in the Utilities, Sensor Settings screen.</td>
</tr>
<tr>
<td>2</td>
<td>Airplane mode on</td>
<td>Turn off the Airplane Mode in the Utilities, Airplane Mode screen.</td>
</tr>
<tr>
<td>3</td>
<td>Bolus in progress</td>
<td>Wait until the bolus is complete or stop the bolus yourself before Auto Mode can activate.</td>
</tr>
<tr>
<td>4</td>
<td>Delivery suspended</td>
<td>If insulin delivery is suspended, Auto Mode cannot activate. Treat low BG if necessary as instructed by your healthcare professional.</td>
</tr>
<tr>
<td>5</td>
<td>Carb ratio not set</td>
<td>Enter your Carb Ratio in the Bolus Estimate Setup screen or the Bolus Wizard Setup screen.</td>
</tr>
<tr>
<td>6</td>
<td>Temp Basal rate</td>
<td>If a temp basal is currently active, you must wait until it has completed or cancel the temp basal yourself before Auto Mode can activate.</td>
</tr>
<tr>
<td>7</td>
<td>Active insulin updating</td>
<td>If active insulin is currently updating, it may take up to 5 hours to complete. You must wait until this amount is updated before Auto Mode can activate.</td>
</tr>
<tr>
<td>8</td>
<td>Auto Mode warming up</td>
<td>Auto Mode is gathering information on your insulin delivery history in order to personalize its automatic delivery of insulin.</td>
</tr>
</tbody>
</table>

**To check Auto Mode Readiness:**

1. Press ⌘ and select **Status** to go to the Status screen.
2. Select **Auto Mode Readiness**.
Home screen with Auto Mode

When your pump transitions into Auto Mode, the Home screen on your pump changes to display a shield that contains a real-time display of your current SG level. The Home screen also displays your current Active Insulin value.

Using Auto Mode

The following sections provide information on how to use Auto Mode and how to view your SG data. This information helps you identify SG trends, including indications that your SG is falling or rising rapidly. You can also view historical SG readings in a graph format.

Safe Basal

Safe Basal is an automatic function within Auto Mode and cannot be modified. The Safe Basal rate is determined by the Auto Mode feature based on your insulin delivery history. It allows you time to perform additional actions required to ensure Auto Mode remains active. Safe Basal covers your basal needs by delivering insulin at a constant rate. Safe Basal does not adjust insulin delivery based on your current SG values.

When the pump is in Safe Basal, the Auto Mode shield appears with a white outline.
Several conditions can cause a transition into Safe Basal. The following table describes these conditions and the actions you must take to resume Auto Basal delivery. An optional setting called the Auto Mode BG alert can be set to have the pump alert you when a BG entry is required. This setting is turned on by default. For more information about setting the Auto Mode BG alert, see Setting up Auto Mode, page 251.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Actions to take</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Mode has been at the minimum delivery limit for 2 1/2 hours.</td>
<td>• Enter a BG. If your Auto Mode BG alert setting is enabled, you will receive an Auto Mode min delivery alert.</td>
</tr>
<tr>
<td>Auto Mode has been at the maximum delivery limit for 4 hours.</td>
<td>• Enter a BG. If your Auto Mode BG alert setting is enabled, you will receive an Auto Mode max delivery alert.</td>
</tr>
<tr>
<td>Auto Mode detects that your sensor might be under-reading.</td>
<td>• Enter a BG. If your Auto Mode BG alert setting is enabled, you will receive a BG entry required alert.</td>
</tr>
<tr>
<td>An entered BG is 35% or more different than your current SG value.</td>
<td>• Enter another BG or calibration if prompted. If your Auto Mode BG alert setting is enabled, you will receive a BG entry required or Cal required for Auto Mode alert.</td>
</tr>
<tr>
<td>No SG data has been received for more than 5 minutes.</td>
<td>• If SG data is not available due to a signal interference, three dashes appear on the screen in place of the SG data. If the interference is intermittent, the Auto Mode shield appears with a white outline, and no action will be required.</td>
</tr>
<tr>
<td></td>
<td>• If your pump has not received SG data for 30 minutes or more, you will receive a Lost sensor signal alert. For more information about what to do in case of a lost sensor signal, see CGM (sensor) alarms, alerts, and messages, page 293.</td>
</tr>
<tr>
<td></td>
<td>• If the SG data is not available because the SG calibration has expired, you will receive a Calibrate Now alert.</td>
</tr>
<tr>
<td>Condition</td>
<td>Actions to take</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------</td>
</tr>
<tr>
<td></td>
<td>Calibrate your sensor. See CGM (sensor) alarms, alerts, and messages, page 293. The Auto Mode BG alert does not apply to this condition.</td>
</tr>
</tbody>
</table>

After 90 minutes in Safe Basal, if the condition that caused the pump to transition into Safe Basal has not been resolved, the pump will enter Manual Mode.

**Note:** When you change your sensor, your pump will switch to Safe Basal for up to 90 minutes. The pump will guide you through calibrating and entering a BG for Auto Mode.

**Example: Safe Basal**

Alex’s pump is in Auto mode. Before lunch, he checks his BG, and enters the value into his pump. Alex notices the BG he entered was much higher than his current SG reading. His pump displays a gray shield, indicating that Auto mode is now in Safe Basal delivery. Alex also received a BG Required for Auto Mode alert. He washes his hands, repeats his fingerstick, and enters the new BG into the pump.

After his pump enters Safe Basal, Alex checks his user guide and realizes that his pump entered Safe Basal because the difference between his SG and BG entry was greater than 35%.

**Block Mode when in Auto Mode**

The Block Mode feature allows a caregiver to block the patient from changing settings or delivering a bolus directly on the pump. In Auto Mode, the Block Mode feature still allows:

- Auto Basal delivery
- BG correction bolus if BG was sent from your CONTOUR NEXT LINK 2.4 meter
- Calibration if BG was sent from your CONTOUR NEXT LINK 2.4 meter

The Block Mode feature does not allow:
• Bolus delivery or entry unless prompted by the Bolus Recommended screen
• Changes to Auto Mode settings
• Manual BG entry

**Setting Temp Target**

You may set a temporary SG target (Temp Target) of 150 mg/dL for situations in which you would like your target to be temporarily higher, such as exercise. Check with your healthcare professional regarding use of a Temp Target.

**To set a Temp Target:**

1. Press ♦️ and select **Temp Target** to go to the Temp Target screen.

2. Set the duration. The default is 2 hours and the maximum duration is 12 hours. Use ∧️ and ∨️ to set the duration in 30-minute increments.

3. Select **Start**.

   The screen will show Temp Target Started, then change to the Home screen, where a banner will show the remaining Temp Target time.

   ![Temp Target Screen](image)

When the Temp Target time has run out, the banner will disappear from the Home screen.
To cancel Temp Target:

1. Press 🔒 and select **Cancel Temp Target** to go to the Cancel Temp Target screen.

![Temp Target screen](image)

2. Select **Cancel Temp Target**.

The Temp Target will be cancelled and the Home screen will appear, with no Temp Target banner.

**Auto Mode sensor graph**

Your Auto Mode sensor graph displays your current sensor glucose (SG) reading that is wirelessly sent to your pump by your transmitter.

The Auto Mode sensor graph includes the following information:

- The selected SG or event details are displayed at the bottom of the screen.
- Historical sensor glucose readings are displayed for the last 3-hour, 6-hour, 12-hour, or 24-hour periods. They appear as a blue line across the screen.
- Correction boluses are shown as white vials inside blue circles.
• Meal (carb) boluses are shown as yellow knife and fork symbols. These represent any bolus amounts that include a carb entry.

• Blood glucose entries appear as red drop symbols.

• The numerous small magenta dots along the top represent the automatically delivered basal insulin (Auto Basal or Safe Basal) delivered by Auto Mode.

• A time change event appears as a white clock symbol.

If an SG reading does not appear on the graph, some possible reasons for this include:

• An error condition or a sensor-related alert is occurring.

• A new sensor that you just inserted is still initializing.

• A new sensor that just initialized is still calibrating.

• An existing sensor that you have recently reconnected is not ready.

• More than six hours have passed since the initial sensor calibration.

• More than 12 hours have passed since the last sensor calibration.

To view the sensor graph:

1. From the Home screen, press the button to display the SG graph.
   A full-screen view of the 3-hour graph appears.

2. Press to navigate to the 6-hour, 12-hour, and 24-hour graphs.

3. Press to view SG readings and event details.

4. To exit the full-screen view, press or press the button again.

Enter BG

The BG screen lets you manually enter a BG value. When you access the BG screen, it does not show any previously entered manual or linked meter BG values. If a BG value is received from a linked meter, that value will immediately display in a separate BG Meter screen and you will be prompted to confirm the BG value.

When you enter a BG while in Auto Mode, a correction bolus may be suggested if necessary.
To manually enter Blood Glucose (BG) readings:

1. Press and select **Enter BG** to go to the BG screen.
2. Select **Enter BG**.
3. Enter a BG value.
4. Select **Save**.
5. A screen appears prompting you to calibrate your sensor with the BG value if you want. Select **Yes** or **No**.

**Auto Mode Bolus**

Delivering a bolus in Auto Mode is similar to delivering a bolus using the Bolus Wizard feature in Manual Mode. The Bolus feature in Auto Mode requires you to enter either carbs or a BG value. You may also choose to enter both. Auto Mode then calculates the bolus amount needed to cover the meal or correction. Once you confirm this amount, Auto Mode will deliver the bolus.

The Auto Mode Bolus screen shows your current Active Insulin value.

**WARNING:** Do not use Auto Mode for a period of time after giving a manual injection of insulin by syringe or pen. Manual injections are not accounted for in Auto Mode. Therefore, Auto Mode could deliver too much insulin. Too much insulin may cause hypoglycemia. Consult with your healthcare professional for how long you need to wait after a manual injection of insulin before you resume Auto Mode.

**Note:** Auto Mode Bolus only supports Normal boluses. Square Wave, Dual Wave, Easy, Manual, and Preset bolus types cannot be delivered while in Auto Mode.
If you are using a CONTOUR NEXT LINK 2.4 meter, you may send your BG meter readings directly to your pump. A confirmation screen will appear asking you to confirm the BG value on the pump. Confirmed BG values will automatically be used in the BG selection of the Auto Mode Bolus screen. These entries will be valid for up to 12 minutes after sending them to the pump. If you wish to enter your BG using a CONTOUR NEXT LINK 2.4 meter, do this prior to using the Auto Mode Bolus screen. If you are not using a CONTOUR NEXT LINK 2.4 meter, you must manually enter your BG value.

**Note:** In order to ensure accuracy, do not use a BG meter reading in the Auto Mode Bolus screen if more than 12 minutes have passed since you have taken the reading. That BG reading and the corresponding bolus amount may no longer be accurate.

**To use the Auto Mode Bolus feature:**

1. Press 🔄 and select **Bolus** to go to the Auto Mode Bolus screen.

2. If you are using a CONTOUR NEXT LINK 2.4 meter, skip to step 3. Otherwise, enter your BG amount. You can enter a range from 20 mg/dL to 600 mg/dL.

3. Enter your Carb amount in grams. If you choose not to enter a Carb amount, skip to step 4.

4. Select **Next**.
   
   The screen indicates the amount of the calculated bolus.

5. Select **Deliver Bolus**.

   A screen appears briefly to indicate the bolus delivery has started. Then, the Home screen appears and shows the progress of the bolus delivery.
**Note:** You can stop a bolus at any point by pressing \( \text{○} \) and selecting *Stop Bolus*.

6. If a new BG value is used in the Auto Mode Bolus feature, the following screen also appears, prompting you to calibrate your sensor. Select **Yes** or **No**.

### Correction Boluses

When a BG reading over 150 mg/dL is received and confirmed while your pump is in Auto Mode, your pump automatically calculates and recommends a correction bolus if needed. The calculation takes into account any active insulin that has already been delivered by the pump. If the BG is not above 150 mg/dL, or if the bolus would be zero after accounting for active insulin, no correction will be recommended. If your pump calculates that a correction bolus is needed, the Bolus Recommended screen appears.

To administer a correction bolus from the Bolus Recommended screen, select the Bolus option. If you do not wish to bolus at this time, you may select Cancel to reject the correction bolus. Selecting Bolus will take you to the Auto Mode Bolus screen where you can confirm and deliver the correction bolus. For more information, see *Auto Mode Bolus, page 262*.
Alert Silence

The Alert Silence feature allows you to temporarily silence SG alerts. This is useful in situations where you do not want to disturb others, such as when you are in a business meeting or in a movie theater. When using this feature, your system still records the time and glucose value for any alerts that occur. You can view this information in the Alarm History screen. See Alarm History, page 166 for details.

If a glucose alert occurs when you are using the Alert Silence feature, the notification light begins to flash and the Sensor alert occurred message appears, but there is no vibration or sound. If you have not cleared the alert by the end of the preset alert silence duration, your pump begins to beep or vibrate periodically until the alert is cleared.

Note: The following alerts are never silenced:

- Low SG XX mg/dL (XX represents 50 mg/dL or below)
- Auto Mode exit
- High SG
- Auto Mode off

For more information about the Auto Mode exit, High SG, and Auto Mode off alerts, see Auto Mode alerts and messages, page 303. For more information about the Low SG XX mg/dL (XX represents 50 mg/dL or below) alert, see CGM (sensor) alarms, alerts, and messages, page 293.

You can check the status of the Alert Silence feature in the Sensor Status Screen. For more information, see Status screens, page 74.

The following table describes the glucose alerts that are silenced with each option.

<table>
<thead>
<tr>
<th>This Alert Silence setting</th>
<th>Silences these alerts</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Alerts Only</td>
<td>Alert on high, Alert before high, and Rise Alert</td>
</tr>
<tr>
<td>High and Low Alerts</td>
<td>Alert on high, Alert before high, Rise Alert, Alert on low, and Alert before low</td>
</tr>
</tbody>
</table>
This Alert Silence setting | Silences these alerts
--- | ---
All Sensor Alerts | All of the alerts listed previously for High and Low Alerts, plus the following:
  * All calibration alerts, reminders, or error messages
  * All alerts relating to sensor insertion, including alerts about sensor warm-up, changing your sensor, sensor expiration, sensor errors, connection issues, and so on
  * All alerts related to your transmitter, including all alerts about your transmitter battery and all connection issues

To set Alert Silence in Auto Mode:

1. Press 🕒 and go to the Alert Silence Options screen.

   **Audio Options > Alert Silence Options**

   ![Alert Silence Options Menu]

2. Select High Alerts Only, High and Low Alerts, or All Sensor Alerts to set the alerts you want silenced. Refer to the previous table for details about the alerts silenced with each selection.
Note: If you select All Sensor Alerts, you will not receive any alerts related to your SG readings, your sensor, calibration requirements, or your transmitter. You will still receive the Auto Mode exit, High SG, Auto Mode off, and Low SG XX mg/dL (XX represents 50 mg/dL or below) alerts, which cannot be silenced. If a glucose alert occurs, the notification light flashes and a message appears on your pump to let you know an alert occurred, but there is no vibration or beep. You can view the specific alert in Alarm History. For more information, see Alarm History, page 166.

3. Set the Duration time (from 30 minutes to 24 hours) for which the alerts will be silenced.

4. Select Begin. The Alert Silence settings immediately take effect and you are returned to the Sensor Settings screen.

To cancel Alert Silence:

1. Press⊙ and go to the Alert Silence screen.

   Audio Options > Alert Silence

2. Select Cancel Alert Silence.

Exiting Auto Mode

Auto Mode is turned off automatically after most pump alarms, except for the following alarms:

- Auto Suspend
- Battery failed
• Power loss
• Battery not compatible
• Insert battery
• Replace battery now
• Loading incomplete
• No reservoir detected
• Max fill reached
• Fill Cannula

If an alarm has initiated a pump reset, you must turn on Auto Mode again and go through a 5-hour warm-up period. For more information about pump alarms, see *Pump alarms, alerts, and messages, page 276*.

Auto Mode may stop working because:

• You manually turned off the feature through the Auto Mode settings.
• Auto Mode has been in Safe Basal for 90 minutes. See *Safe Basal, page 256*.
• Any suspend event has not been cleared within 4 hours.
• You manually turned off the Sensor feature or disconnected the transmitter.

You can turn off Auto Mode at any time. For more information, see *Setting up Auto Mode, page 251*.

**Returning to Auto Mode**

If you have automatically transitioned to Manual Mode, you can return to Auto Mode if all readiness conditions are satisfied and you enter a BG. For more information, see *Auto Mode Readiness, page 253*.

**Note:** If you have turned Auto Mode off, you cannot return to Auto Mode until you turn Auto Mode on again.

You may return to Auto Mode if:
• Auto Mode is enabled on your pump.
• Your sensor is providing good SG values.
• A bolus is not in progress.
• A Temp Basal rate is not in progress.
• 48 hour warm-up is complete.
• Auto Mode is not in a 5-hour warm-up period.
• You have entered a new BG reading.

If any of these conditions are not met, Auto Mode cannot restart.
13

Alarms, alerts, and messages
This chapter describes the general behavior of the most common and the most serious notifications and how to resolve them.

About alarms, alerts, and messages

Your pump has a sophisticated safety network. If this safety network detects anything unusual, it conveys this information in the form of notifications. Notifications include alarms, alerts, and messages.

When you have received more than one notification and there are multiple messages to view, a small white flap appears on the notification icon in the upper-right corner of the screen. When you clear the first notification, the next notification becomes visible.

Note: It is important that you promptly respond to all notifications and confirmations that appear on your pump. In the event that you do not respond, your pump may remain on that screen until addressed.

When you respond to a message, there may be times when another message appears. Always be sure to address all notifications you have received.

A white triangle in the lower-right corner means you must press to continue.
**WARNING:** If you receive a Critical pump error alarm on your pump, the following screen displays and the pump sirens.

Immediately disconnect from your insulin pump and discontinue use. Contact the 24 Hour HelpLine for assistance.

**Remember, your body still needs insulin while your pump is removed.** It is important that you consult your healthcare professional to determine an alternate method of receiving insulin while your pump is removed. For more information on the Critical pump error alarm, see *Pump alarms, alerts, and messages, page 276.*

### Alarms

An alarm warns you of a condition that needs your immediate attention. Stopped insulin delivery and low glucose levels are the most common reasons for alarms.

**WARNING:** Always address alarms immediately when they occur. Ignoring an alarm can result in hyperglycemia or hypoglycemia.

When an alarm occurs:

**Display:** The pump displays a notification with a red icon and instructions.
**Notification light:** The red notification light blinks twice, followed by a pause, in a continuous repeating pattern.

**Audio:** Depending on your Audio Options settings, the pump emits an alarm tone, a continuous three-pulse-and-pause vibration pattern, or both the alarm tone and vibration.

You must resolve the underlying problem that triggered the alarm. In most cases, you clear an alarm by pressing ✓ and then you make a selection. In some cases, however, clearing the alarm does not fix the underlying problem. The alarm repeats until the underlying problem is fixed.

If you do not respond to an alarm, after ten minutes the alarm tone escalates to a loud emergency siren.

**Alerts**

An alert makes you aware of a situation that may require your attention. When an alert occurs, always check your pump screen to see if any action is required.

When an alert occurs:

**Display:** The pump displays a notification with a yellow icon and instructions.

**Notification light:** The red notification light on your pump blinks once, followed by a pause, then blinks once again in a continuous repeating pattern.

**Audio:** Depending on your Audio Options settings, the pump either beeps or vibrates in a continuous three-pulse-and-pause pattern, or does both.

To clear an alert, press ✓ and then make a selection. If you do not respond to an alert, the pump beeps every five minutes or every fifteen minutes, depending on the alert. Some alerts will also escalate to a loud emergency siren after ten minutes.
Note: If an alert occurs when you are in a screen other than the Home screen, the alert message may appear after you return to the Home screen.

Messages

A message informs you about the status of your pump or if you need to make a decision. When a message occurs:

Display: The pump displays a notification with a blue icon and instructions.

Notification light: Does not illuminate or blink.

Audio: Depending on the message, the pump emits a message tone, an alert tone, or no tone. Depending on your Audio Options settings, you may hear a tone, feel a one-pulse-only vibration, or hear a tone and feel a vibration.

You clear the message by pressing ✔ and making a selection.

Pump alarms, alerts, and messages

The following table lists the most common or serious alarms, alerts, and messages related to your pump. The table also explains the meaning, consequences, and the reasons why these notifications appear, and provides steps for problem resolution. For a list of the alarms that do not turn off Auto Mode, see Exiting Auto Mode, page 267.

<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
</table>
| **Active Insulin cleared**<br>Any Active Insulin amount | Alert | Your active insulin amount is now at 0 U. This may occur because certain alarms automatically clear active | • Select OK to clear the alarm.  
• The active insulin tracked prior to pump |
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>has been cleared.</td>
<td></td>
<td>insulin to ensure the pump returns to a known state.</td>
<td>restart is not included in new Bolus Wizard calculations. Consult your healthcare professional for how long you need to wait after active insulin is cleared before you can rely on the active insulin calculation of your Bolus Wizard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• You can check Daily History for the time and amount of your last bolus.</td>
</tr>
<tr>
<td>Auto Suspend</td>
<td>Alarm</td>
<td>Insulin delivery is currently suspended by Auto Suspend. Auto Suspend is a feature you enabled to automatically suspend insulin delivery and trigger an alarm after no buttons are pressed for a specified period of time. Auto Suspend does not disable Auto Mode. Insulin delivery is suspended until you clear the alarm and resume basal delivery.</td>
<td>• To clear the alarm and resume basal insulin delivery, select <strong>Resume Basal</strong>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Check your blood glucose (BG) and treat as necessary.</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Battery failed</strong></td>
<td>Alarm</td>
<td>The pump battery does not have enough power.</td>
<td>• Select <strong>OK</strong> to clear the alarm.</td>
</tr>
<tr>
<td>Insert a new AA battery.</td>
<td></td>
<td></td>
<td>• Remove the old battery and insert a new AA battery.</td>
</tr>
<tr>
<td><strong>Battery not compatible.</strong></td>
<td>Alarm</td>
<td>The battery that you inserted into the pump is not compatible.</td>
<td>• To clear the alarm, remove the incompatible battery.</td>
</tr>
<tr>
<td>See User Guide.</td>
<td></td>
<td></td>
<td>• Insert a new AA battery.</td>
</tr>
<tr>
<td><strong>Bolus not delivered.</strong></td>
<td>Alert</td>
<td>Bolus values entered, but bolus was not delivered within 30 seconds.</td>
<td>• Select <strong>OK</strong> to clear the alert.</td>
</tr>
<tr>
<td>Bolus entry timed out before delivery. If bolus intended, enter values again.</td>
<td></td>
<td></td>
<td>• If bolus delivery was intended, check your BG, re-enter bolus values and deliver bolus.</td>
</tr>
<tr>
<td><strong>Bolus stopped</strong></td>
<td>Alarm</td>
<td>The battery power was exhausted while a bolus or Fill Cannula was in progress, or you did not respond to the Resume bolus alert after replacing the battery.</td>
<td>• Note the amount of insulin not delivered.</td>
</tr>
<tr>
<td>Cannot resume bolus or cannula fill. XX.XXX of YY.XXX U delivered. ZZ.ZZZ U not delivered. If needed, enter values again.</td>
<td></td>
<td></td>
<td>• Replace the AA battery.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Select <strong>OK</strong> to clear the alarm.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Deliver the remaining bolus amount if needed.</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
</tr>
<tr>
<td>------------------------</td>
<td>------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Cannot connect device  | Alert| • You may be trying to connect a device that is not compatible with your pump.  
• You are trying to connect a transmitter to your pump but another transmitter is already wirelessly connected to your pump. | • Select **OK** to clear the alert.  
• Check the list of devices that are compatible with your pump in *Additional MiniMed 670G system devices, page 57.*  
• If you are replacing your transmitter, make sure that you first delete the old transmitter from your pump before you try to connect your new transmitter. Only one transmitter can be connected to your pump. For details, see *Deleting the transmitter from your pump, page 231.* |
| Check settings         | Alert| Some settings have been cleared or reverted to factory default values.                                                                                                                                         | • Select **OK** to clear the alert.  
• Review any settings that you have not already set in Startup Wizard and re-enter the values, if necessary. |
<p>| Critical pump error    | Alarm| Your pump has encountered an error that cannot be resolved.                                                                                                                                                  | The pump is not able to deliver insulin. Remove your                                          |</p>
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery stopped. Pump not working properly. Stop using pump. Remove infusion set from body. Consider other insulin treatment. See User Guide.</td>
<td>Be resolved. For example, your pump may have a mechanical problem.</td>
<td>infusion set and stop using your pump.</td>
<td>- Consider another form of insulin delivery.</td>
</tr>
<tr>
<td>Delivery limit exceeded</td>
<td>Alarm</td>
<td>Your pump has suspended because the hourly delivery limit was met. This limit is based on the maximum bolus and maximum basal setting. If this alarm occurs during a bolus, the bolus is canceled before it can complete.</td>
<td>- Check your BG.</td>
</tr>
<tr>
<td>- Check Bolus History and reevaluate your need for insulin. - Continue to monitor your BG.</td>
<td>- Select Resume Basal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fill Cannula?</td>
<td>Alarm</td>
<td>You had the Fill Cannula screen displayed for 15 minutes.</td>
<td>- To proceed and fill the cannula, select Fill.</td>
</tr>
<tr>
<td>Select Fill to fill cannula or select Done if not needed.</td>
<td>- If you do not need to fill the cannula, select Done to skip this process.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High BG XXX mg/dL Check infusion set. Check keypad.</td>
<td>Message</td>
<td>Your BG meter reading is above 250 mg/dL. This alert applies only to Manual Mode. For High BG</td>
<td>- Select No to prevent the remote BG from being used by your pump. Select Yes to</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
</tr>
<tr>
<td>----------------</td>
<td>------</td>
<td>-------------</td>
<td>------------</td>
</tr>
</tbody>
</table>
| tones. Consider injection. Monitor BG. Confirm BG? | XXX mg/dL in Auto Mode, see Auto Mode alerts and messages, page 303. | confirm the BG reading.  
• Check your BG and treat as necessary. | |
| **Insert battery**  
Delivery stopped. Insert a new battery now. | Alarm | The battery was removed from the pump.  
If a bolus was in progress when the battery was removed, a Resume bolus? alarm sounds when a new battery is inserted. A message also appears, indicating how much bolus was delivered. | • Insert a new AA battery.  
• The alarm clears when you insert a new battery.  
• The pump powers off after 10 minutes unless you insert a new battery. |
| **Insulin flow blocked**  
Check BG. Consider injection and testing ketones. Change reservoir and infusion set. | Alarm | Your pump has detected that the basal or bolus insulin flow was blocked. | • Check your blood glucose. Consider checking ketones and take an injection if needed.  
• Remove your infusion set and reservoir.  
• Select Rewind to start the new reservoir process using a new infusion set and reservoir.  
If a bolus delivery was in progress when the alarm occurred:  
• Check the Daily History screen for the amount of bolus al- |
### Insulin flow blocked

Check BG. Consider injection and testing ketones. Estimated 0 U insulin in reservoir. Change reservoir and infusion set.

**Alarm**

Your pump has detected that the insulin flow was blocked and there is no insulin in the reservoir.

- Check your blood glucose. Consider checking ketones and take an injection if needed.
- Remove your infusion set and reservoir.
- Select **Rewind** to start the new reservoir process using a new infusion set and reservoir.

If a bolus delivery was in progress when the alarm occurred:

- Check the Daily History screen for the amount of bolus al-

<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready delivered before the pump alarmed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Consider delivering remaining bolus, if the bolus insulin was not included in an insulin injection.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WARNING:** Do not use Auto Mode for a period of time after giving a manual injection of insulin by syringe or pen. Manual injections are not accounted for in Auto Mode. Therefore, Auto Mode could deliver too much insulin. Too much insulin may cause hypoglycemia. Consult with your healthcare professional for how long you need to wait after a manual injection of insulin before you resume Auto Mode.
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Insulin flow blocked</strong>&lt;br&gt;Fill Cannula stopped. Remove infusion set from body. Change reservoir and infusion set.</td>
<td>Alarm</td>
<td>Your pump has detected the insulin flow was blocked while filling the cannula.</td>
<td>• Consider delivering remaining bolus, if the bolus insulin was not included in an insulin injection.</td>
</tr>
</tbody>
</table>
| **Insulin flow blocked**<br>Fill Tubing stopped. Remove reservoir and select Rewind to restart. | Alarm   | Your pump has detected the insulin flow was blocked while filling the tubing. Possible connection issue between the tubing and reservoir. | • Check your blood glucose. Consider checking ketones and take an injection if needed.  
  • Remove your infusion set and reservoir.  
  • Select Rewind to start the new reservoir process using a new infusion set and reservoir.  
  • Remove the reservoir and select Rewind to restart the fill tubing process.  
  • Disconnect tubing from reservoir.  
  • Be sure tubing is not crimped or bent.  
  • Continue following the steps displayed on the pump using the correct insulin dose. |
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
</table>
| Low battery Pump  | Alert      | The battery in the pump is low on power. Remaining battery life is 10 hours or less. | • Select OK to clear the alert.  
• Replace the AA battery as soon as possible. Otherwise, insulin delivery stops, and the Replace Battery Now alarm occurs.  
• If the pump is delivering a bolus or filling the cannula, wait until delivery is complete to replace battery. |
<p>| Low BG XX mg/dL   | Message    | Your BG meter reading is below 70 mg/dL.                                   | • Select No to prevent the remote BG from being used by your pump. Select Yes to |
|                   |            | Treat low BG.                                                              |                                                                            |
|                   |            | Do not bolus until BG is normal. Monitor                                   |                                                                            |</p>
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG. Confirm BG?</td>
<td></td>
<td></td>
<td>confirm the BG reading.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Check your BG and treat as necessary.</td>
</tr>
<tr>
<td><strong>Low reservoir</strong></td>
<td>Alert</td>
<td>Your reservoir is low on insulin, according to the number of units set in the Low Reservoir Reminder.</td>
<td>• Select <strong>OK</strong> to clear the alert.</td>
</tr>
<tr>
<td><strong>XX units remaining.</strong></td>
<td></td>
<td></td>
<td>• Change the reservoir soon.</td>
</tr>
<tr>
<td>Change reservoir.</td>
<td></td>
<td></td>
<td>• If you do not change the reservoir after you receive this alert, you will receive a second Low reservoir alert when the insulin level reaches half of your original alert amount.</td>
</tr>
<tr>
<td><strong>Manage settings error</strong></td>
<td>Alarm</td>
<td>A pump error has occurred, and you need to restart your pump. Your backup settings have been lost, but your current settings are unchanged.</td>
<td>• Select <strong>OK</strong> to restart your pump. Your current settings are unchanged. Only your backup settings are lost.</td>
</tr>
<tr>
<td>Delivery stopped. Backup settings cleared from Manage Settings. Current settings are working properly. Select <strong>OK</strong> to restart. See User Guide.</td>
<td></td>
<td></td>
<td>• When the pump restarts, follow instructions on the pump display.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If the pump was delivering a bolus or filling the cannula, check Daily History and eval-</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Max Fill reached</td>
<td>Alarm</td>
<td>You have exceeded the number of units expected to fill the tubing. By now, insulin should be at the end of the tubing.</td>
<td>• If you see drops at the end of the tubing, select <strong>Yes</strong>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If you do not see drops, select <strong>No</strong>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Follow instructions displayed on the pump.</td>
</tr>
<tr>
<td>Max Fill reached</td>
<td>Alarm</td>
<td>You have exceeded the number of units expected to fill the tubing. By now, insulin should be at the end of the tubing.</td>
<td>• Remove the reservoir.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Check if you still have insulin in the reservoir. If you do, you can con-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>tinue using the same reservoir.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Select <strong>Rewind</strong> to restart the new reservoir procedure.</td>
</tr>
<tr>
<td>No reservoir detected</td>
<td>Alarm</td>
<td>There is no reservoir in the pump or the reservoir is not properly locked into place.</td>
<td>• Select <strong>Rewind</strong>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Ensure that your reservoir is filled with insulin.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• When prompted, ensure that your reservoir is inserted and properly locked into place.</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
</tr>
<tr>
<td>--------------------------------</td>
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<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Power error detected</strong></td>
<td>Alarm</td>
<td>The internal power source in your pump is unable to charge. Your pump is operating on the AA battery only.</td>
<td>• Select <strong>OK</strong> to clear the alert.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Check your BG and treat as necessary.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Record your settings as soon as possible because your AA battery may not last long.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Call the 24 Hour HelpLine for assistance with your pump.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power loss</strong></td>
<td>Alarm</td>
<td>Your pump battery has been out for more than ten minutes, and your pump has lost power. You must reset your time and date.</td>
<td>• Select <strong>OK</strong> to go to the Time &amp; Date screen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Enter the current time, time format, and date.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pump error</strong></td>
<td>Alarm</td>
<td>Your pump encountered an error and will restart. Your pump settings will return to factory default values.</td>
<td>• When the pump restarts, follow instructions on the pump display.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• After restart, check settings and re-enter values as needed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If you recently saved backup settings in Manage Settings, use Restore Settings.</td>
</tr>
</tbody>
</table>

**Alarms, alerts, and messages**
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump error</td>
<td>Alarm</td>
<td>A pump error has occurred, you need to restart your pump.</td>
</tr>
</tbody>
</table>

- Select **OK** to restart your pump.
- If the pump was delivering a bolus or filling the cannula, check Daily History and reevaluate your need for insulin.
- If this alarm recurs frequently, write down the error code displayed on the alarm screen (you can also find it in your Alarm History) and call 24 Hour HelpLine.
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pump error</strong></td>
<td>Alarm</td>
<td>Your pump encountered an error but a restart is not necessary. The issue is resolved. Your settings are not changed.</td>
<td>• Select <strong>OK</strong> to resume basal delivery.</td>
</tr>
<tr>
<td>Delivery stopped. Set-</td>
<td></td>
<td></td>
<td>• If the pump was delivering a bolus or filling the cannula, check Daily History and reevaluate your need for insulin.</td>
</tr>
<tr>
<td>tings unchanged. Sel-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ect <strong>OK</strong> to con-</td>
<td></td>
<td></td>
<td>• If this alarm recurs frequently, write down the error code displayed on the alarm screen (you can also find it in your Alarm History) and call 24 Hour HelpLine.</td>
</tr>
<tr>
<td>tinue. See User Guide.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pump restarted</strong></td>
<td>Alarm</td>
<td>Your pump has encountered a problem and has restarted. Your settings have not been changed.</td>
<td>• Select <strong>OK</strong> to continue.</td>
</tr>
<tr>
<td>Delivery stopped. Set-</td>
<td></td>
<td></td>
<td>• If the pump was delivering a bolus or filling the cannula, check Daily History and re-evaluate your need for insulin.</td>
</tr>
<tr>
<td>tings unchanged. Sel-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ect <strong>OK</strong> to con-</td>
<td></td>
<td></td>
<td>• If this alarm recurs frequently, write down the error code displayed on the alarm screen (you can also find it in your Alarm History) and call 24 Hour HelpLine.</td>
</tr>
<tr>
<td>tinue. See User Guide.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
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<td>------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Replace battery</td>
<td>Alert</td>
<td>Battery life is low and will be exhausted within 30 minutes.</td>
<td>• Select <strong>OK</strong> to clear the alert.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Replace the AA battery.</td>
</tr>
<tr>
<td>Replace battery now</td>
<td>Alarm</td>
<td>Insulin delivery has stopped due to low power. Battery was not replaced</td>
<td>Replace the battery immediately to resume insulin delivery.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>after the Low battery Pump alert.</td>
<td></td>
</tr>
<tr>
<td>Reservoir estimate at 0 U</td>
<td>Alert</td>
<td>Your reservoir level is estimated at 0 U.</td>
<td>• Select <strong>OK</strong> to clear the alert.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Change the reservoir now.</td>
</tr>
<tr>
<td>Resume bolus? XXX of YYY U</td>
<td>Alarm</td>
<td>A normal bolus delivery has been interrupted because the pump battery was</td>
<td>• Check the message to see how much of the bolus was actually delivered.</td>
</tr>
<tr>
<td>delivery of ZZZ U?</td>
<td></td>
<td>removed. If it is within 10 minutes since this interruption, you can resume</td>
<td>• To cancel remaining amount of bolus, select <strong>Cancel</strong>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>this bolus.</td>
<td>• To resume remaining amount of bolus, select <strong>Resume</strong>.</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
</tr>
<tr>
<td>----------------</td>
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<td>-------------</td>
<td>------------</td>
</tr>
<tr>
<td>Resume Dual bolus?</td>
<td>Alarm</td>
<td>The Square portion of Dual Bolus delivery has been interrupted. If it is within 10 minutes since this interruption, you can resume this bolus.</td>
<td>• Check the message to see how much of the Dual Wave bolus was actually delivered. • To cancel remaining amount of bolus, select <strong>Cancel</strong>. • To resume remaining amount of bolus, select <strong>Resume</strong>.</td>
</tr>
<tr>
<td>Resume Dual bolus?</td>
<td>Alarm</td>
<td>The Now portion of a Dual Wave bolus delivery has been interrupted because the pump battery was removed. If it is within 10 minutes since this interruption, you can resume this bolus.</td>
<td>• Check the message to see how much of the Dual Wave bolus was actually delivered. • To cancel remaining amount of bolus, select <strong>Cancel</strong>. • To resume remaining amount of bolus, select <strong>Resume</strong>.</td>
</tr>
<tr>
<td>Resume Square bolus?</td>
<td>Alarm</td>
<td>The Square Wave bolus delivery was interrupted. If it is within 10 minutes since this interruption, you can resume this bolus.</td>
<td>• Check the message to see how much of the Square Wave bolus was actually delivered. • To cancel remaining amount of bolus, select <strong>Cancel</strong>. • To resume remaining amount of bolus, select <strong>Resume</strong>.</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Rewind required</strong></td>
<td>Alarm</td>
<td>Your pump encountered an error.</td>
<td>• Select <strong>OK</strong> to clear the alarm after the pump has completed rewinding.</td>
</tr>
<tr>
<td>Delivery stopped.</td>
<td></td>
<td></td>
<td>• Select <strong>Reservoir &amp; Tubing</strong> from the Home screen to start the new reservoir process using a new infusion set and reservoir. For details, see <em>Setting up the reservoir and infusion set, page 141</em>.</td>
</tr>
<tr>
<td>Rewind was required due</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to pump error.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select <strong>OK</strong> to con-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tinue. See User Guide.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stuck button</strong></td>
<td>Alarm</td>
<td>The pump has detected that a button has been pressed for an unusually long time.</td>
<td>• Select <strong>OK</strong> to clear the alarm.</td>
</tr>
<tr>
<td>Button pressed</td>
<td></td>
<td></td>
<td>• If this alarm occurs again, call 24 Hour HelpLine for assistance with your pump.</td>
</tr>
<tr>
<td>for more than 3 minutes.</td>
<td></td>
<td></td>
<td>If you are unable to clear the alarm:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If you are unable to clear the alarm, see <em>Troubleshooting pump issues, page 312</em>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Consider another form of insulin, because your pump is not delivering insulin.</td>
</tr>
</tbody>
</table>
CGM (sensor) alarms, alerts, and messages

The following table lists the most common or serious alarms, alerts, and messages related to your sensor glucose readings, as well as the status of your transmitter and sensor. The table also explains the meaning, consequences, and the reasons why these notifications appear, and provides steps for problem resolution.

<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
</table>
| Alert before high | Alert | Your SG value is approaching your specified high limit. | • Select OK to clear the alert.  
• Check your BG.  
• Follow instructions from your healthcare professional and continue to monitor your BG. |
| Alert before low | Alert | Your SG value is approaching your specified low limit. | • Select OK to clear the alert.  
• Check your BG.  
• Follow instructions from your healthcare professional and continue to monitor your BG. |
| Alert on high XXX mg/dL | Alert | Your SG value is at or above your specified high limit. | • Select OK to clear the alert.  
• Check your BG.  
• Follow instructions from your healthcare professional and continue to monitor your BG. |
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
</table>
| Alert on low XXX mg/dL Low sensor glucose. Check BG. | Alert | Your SG value is at or below your specified low limit. | • Select **OK** to clear the alert.  
• Check your BG.  
• Follow instructions from your healthcare professional and continue to monitor your BG. |
| Alert on low XXX mg/dL Low sensor glucose. Insulin delivery suspended since XX:XX AM/PM. Check BG. | Alarm | Your SG value is at or below your specified low limit, and the pump has suspended insulin delivery due to a Suspend on low or Suspend before low event. | • Select **OK** to clear the alarm.  
• Check your BG.  
• Follow instructions from your healthcare professional and continue to monitor your BG. |
| **Basal delivery resumed** Basal delivery resumed at XX:XX AM/PM after suspend by sensor. Check BG. | Alert | Your pump is resuming basal insulin delivery after a Suspend on low or Suspend before low event occurred. | • Select **OK** to clear the alert.  
• Check your BG.  
• Follow instructions from your healthcare professional and continue to monitor your BG. |
| **Basal delivery resumed** Low settings change caused basal to be resumed at XX:XX AM/PM. Check BG. | Alert | Your pump is resuming basal insulin delivery after a Suspend before low or a Suspend on low event occurred, because you have turned off the Suspend before low or the | • Select **OK** to clear the alert.  
• Check your BG.  
• Follow instructions from your healthcare professional and continue to monitor your BG. |
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suspend on low feature.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Basal delivery resumed</strong></td>
<td>Alert</td>
<td>Your pump is resuming basal insulin delivery two hours after a Suspend before low or Suspend on low event occurred.</td>
<td>• Select <strong>OK</strong> to clear the alert.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Check your BG.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Follow instructions from your healthcare professional and continue to monitor your BG.</td>
</tr>
<tr>
<td><strong>Basal delivery resumed</strong></td>
<td>Alarm</td>
<td>Your pump is resuming basal insulin delivery two hours after a Suspend before low or Suspend on low event occurred.</td>
<td>• Your pump has resumed basal insulin delivery; however, your SG value is still at or below your low limit.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Select <strong>OK</strong> to clear the alarm.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Check your BG.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Follow instructions from your healthcare professional and continue to monitor your BG.</td>
</tr>
<tr>
<td><strong>BG not received</strong></td>
<td>Alert</td>
<td>The transmitter was unable to receive the calibration BG meter readings from the pump.</td>
<td>• Move your pump and transmitter closer together.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Select <strong>OK</strong>. Your pump tries again to send your BG to your transmitter for sensor calibration.</td>
</tr>
<tr>
<td><strong>Calibrate now</strong></td>
<td>Alert</td>
<td>A BG meter reading is needed immediately to calibrate your sensor so that you can continue receiv-</td>
<td>• If you are unable to calibrate now, you can use the Snooze feature. Set the desired time, and select <strong>Snooze</strong>. If you do not calibrate before the</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
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</tbody>
</table>
| Calibration not accepted | Alert | Your system was unable to use the BG meter readings you entered to calibrate your sensor. | • Wash and dry hands thoroughly. See Guidelines for calibrating, page 237.  
• Select OK to clear the alert.  
• After 15 minutes, enter a new BG meter reading for calibration as instructed in Calibrating your sensor, page 234. If you receive a Calibration not accepted alert on your second calibration after 15 minutes, a Change sensor alert occurs.  
• Call the 24 Hour HelpLine if you have questions. |
| Cannot find sensor signal | Alert | The pump has not received a signal from the transmitter. | • Disconnect and reconnect your transmitter and sensor.  
• See if the light on your transmitter blinks when connected to the sensor. You may need this information for troubleshooting later.  
• Select OK. Your pump searches for your sensor. If your pump receives a signal from your sensor, you do not need to do anything else. If your pump does not receive a signal from the sensor, another |
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change sensor</td>
<td>Alert</td>
<td>You selected No in the Check sensor insertion message, indicating that your</td>
<td>• Select OK to clear the alert.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sensor is not fully inserted.</td>
<td>• Change your sensor. For details, see your sensor user guide.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• After you change your sensor, refer to <em>Starting the sensor, page 232.</em></td>
</tr>
<tr>
<td>Change sensor</td>
<td>Alert</td>
<td>This alert occurs when you receive two Calibration not accepted errors in a</td>
<td>• Select OK to clear the alert.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>row.</td>
<td>• Change your sensor. For details, see your sensor user guide.</td>
</tr>
<tr>
<td>Check connection</td>
<td>Alert</td>
<td>The pump fails to detect the transmitter and is unable to receive sensor</td>
<td>• Select OK to clear the alert.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>signal.</td>
<td>• If your sensor is fully inserted, select <strong>Yes.</strong> If your sensor is not</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>fully inserted, select <strong>No.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• if your sensor was not fully inserted, insert a new sensor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If you still cannot connect your sensor, see *My pump cannot find the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>sensor signal, page 317.*</td>
</tr>
<tr>
<td>Lost sensor signal</td>
<td>Alert</td>
<td>Transmitter signal has not been received for 30 minutes during or after</td>
<td>• Move your pump closer to your transmitter. It can take up to 15 minutes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>initialization.</td>
<td>for your pump to start communicating with your transmitter.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Select OK to clear the alert.</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
</tr>
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<td>-----------------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Low battery transmitter**        | Alert   | The battery in the transmitter needs to be recharged within 24 hours.      | • Select OK to clear the alert.  
                                       |         |                                                                             | • Recharge your transmitter as soon as possible. |
| Recharge transmitter within 24     |         |                                                                             |                                                 |
| hours.                             |         |                                                                             |                                                 |
| **Low SG XX mg/dL**                | Alarm   | Your sensor glucose value has reached or fallen below 50 mg/dL. This alert  | • Select OK to clear the alarm.  
                                       |         | is factory set and cannot be changed or turned off. This alarm cannot    | • Check your BG and treat as necessary.         |
| SG is under 50 mg/dL. Check BG and |         | be silenced and is always enabled, whether the pump is in Auto Mode or     |                                                 |

**Note:** XX represents the sensor glucose value that appears on your pump.

| Medical device                      | Alarm   | Your pump is suspended due to low SG, and you have not responded to the    | • Select Dismiss.  
| CALL FOR EMERGENCY ASSISTANCE. I    |         | alarm within 10 minutes.                                                  | • Immediately call for emergency assistance.    |
| have diabetes.                     |         |                                                                             |                                                 |

| No calibration occurred            | Alert   | The transmitter was unable to receive the calibration BG meter             | • Select OK to clear the alert.  
<p>|                                   |         |                                                                             | • Check the status icons on your Home screen to ensure that your pump has a signal |</p>
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirm sensor signal. Calibrate by XX:XX AM/PM.</td>
<td></td>
<td>readings from the pump.</td>
<td>from your sensor. If there is no sensor signal, see <em>My pump cannot find the sensor signal, page 317</em>. - Calibrate again by the time shown on the pump screen to ensure you continue SG monitoring.</td>
</tr>
<tr>
<td><strong>No calibration occurred</strong> Confirm sensor signal. Check BG again to calibrate sensor.</td>
<td>Alert</td>
<td>The transmitter was unable to receive the required calibration BG from the pump. Calibration is required by the system for SG values to resume. “Calibration required” appears on your sensor graph.</td>
<td>- Select OK to clear the alert. - Take another BG meter reading and calibrate again.</td>
</tr>
<tr>
<td><strong>Possible signal interference</strong> Move away from electronic devices. May take 15 minutes to find signal.</td>
<td>Alert</td>
<td>There may be interference from another electronic device that is affecting the communication between your pump and transmitter.</td>
<td>- Move away from other electronic devices. It can take up to 15 minutes for your pump to start communicating with your transmitter. - Select OK to clear the alert.</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>--------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Rise Alert</strong></td>
<td>Alert</td>
<td>Your SG value has been rising as fast or faster than your preset Rise Alert Limit.</td>
<td>• Select <strong>OK</strong> to clear the alert.</td>
</tr>
<tr>
<td>Sensor glucose rising rapidly.</td>
<td></td>
<td></td>
<td>• Monitor trend and glucose level.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Follow instructions from your healthcare professional.</td>
</tr>
<tr>
<td><strong>Sensor alert occurred</strong></td>
<td>Alert</td>
<td>Sensor alert occurred when Alert Silence is on.</td>
<td>• Select <strong>OK</strong> to clear the alert.</td>
</tr>
<tr>
<td>Check Alarm History for silenced alerts.</td>
<td></td>
<td></td>
<td>• Check the Alarm History screen to see which alerts were silenced.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Select the alert to open the Alarm Detail screen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Take action based on the selected alert.</td>
</tr>
<tr>
<td><strong>Sensor connected</strong></td>
<td>Message</td>
<td>The transmitter has detected that you have connected a sensor. The pump needs to know if this is a new sensor or if you have reconnected your old sensor.</td>
<td>• If you have connected a new sensor, select <strong>Start New</strong>.</td>
</tr>
<tr>
<td>If new sensor, select <strong>Start New</strong>. If not, select <strong>Reconnect</strong>.</td>
<td></td>
<td></td>
<td>• If you have reconnected a sensor you have been using, select <strong>Reconnect</strong>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• In either case, a “warm-up” message appears on your Home screen, and you will be prompted to enter a BG value when your sensor is ready for calibration. Your pump starts receiving your SG values again after the two-hour initialization is complete.</td>
</tr>
<tr>
<td><strong>Sensor connected</strong></td>
<td>Message</td>
<td>The pump has detected that this is a new sensor,</td>
<td>• Select <strong>Start New Sensor</strong>.</td>
</tr>
<tr>
<td>Start new sensor.</td>
<td></td>
<td></td>
<td>The alert will close and a “warm-up” message appears</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
</tr>
<tr>
<td>---------------</td>
<td>------</td>
<td>-------------</td>
<td>------------</td>
</tr>
<tr>
<td>Sensor expired</td>
<td>Alert</td>
<td>The sensor has reached the end of its useful life.</td>
<td>Change your sensor. For details, see your sensor user guide.</td>
</tr>
<tr>
<td>Sensor signal not found</td>
<td>Alert</td>
<td>Did transmitter light blink when connected to sensor?</td>
<td>When you reconnected the transmitter to the sensor, did you see a blinking green light on the transmitter?</td>
</tr>
<tr>
<td>Sensor signal not found</td>
<td>Alert</td>
<td>After multiple attempts, the pump failed to detect the transmitter and is unable to receive sensor signal.</td>
<td>Select Yes or No and follow the instructions on the screen.</td>
</tr>
</tbody>
</table>

- Select OK to clear the alert.
- Repeat the connection process. Remove the transmitter from the sensor for about ten seconds, and then reconnect it to the sensor.
- It can take up to 15 minutes for your pump to find the sensor signal.
- Move your pump closer to your transmitter to improve reception.
- Make sure you are away from any electronic devices that might cause interference.
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>such as cellular phones and other wireless devices.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If your pump still cannot find the sensor signal, call the 24 Hour HelpLine for assistance.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sensor warm-up started</strong></td>
<td>Alert</td>
<td>The sensor warm-up has begun.</td>
<td>• Select OK to close the alert. A “Warm-up” message with a progress bar appears on the sensor graph during warm-up, which takes up to 2 hours. You will be notified when calibration is needed.</td>
</tr>
<tr>
<td>Warm-up takes up to 2 hours. You will be notified when calibration is needed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sensor updating</strong></td>
<td>Alert</td>
<td>The SG value is unavailable due to a temporary situation.</td>
<td>• Select OK to clear the alert. • Follow the instructions on the pump screen. You do not need to change the sensor.</td>
</tr>
<tr>
<td>Do not calibrate unless notified. This could take up to 3 hours.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Suspend before low</strong></td>
<td>Alert</td>
<td>Your SG value is falling. Insulin delivery is suspended according to your Suspend before low setting and your SG is approaching your specified low limit. Suspend before low is not avail-</td>
<td>• Select OK to clear the alert. • Check your BG. If necessary, treat your BG as directed by your healthcare professional.</td>
</tr>
<tr>
<td>Delivery stopped. Sensor glucose approaching Low Limit. Check BG.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Auto Mode alerts and messages

The following table lists the most common or serious alerts and messages related to Auto Mode. The table also explains the meaning, consequences, and the reasons why these notifications appear, and provides any necessary steps for problem resolution.

<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Auto Mode started</strong></td>
<td>Alert</td>
<td>This alert happens when the user starts an operation that is not allowed in Auto Mode while the pump is trans-</td>
<td>• Select OK to clear the alert.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ied.</td>
<td>• Allow your pump to complete its transition to Auto Mode.</td>
</tr>
<tr>
<td><strong>Suspend on low</strong></td>
<td>Alarm</td>
<td>Your SG value is at or below the low limit you specified. Suspend on low is</td>
<td>• Select OK to clear the alarm.</td>
</tr>
<tr>
<td>Delivery stopped.</td>
<td></td>
<td>not available in Auto Mode.</td>
<td>• Check your BG. If necessary, treat your BG as directed by your healthcare</td>
</tr>
<tr>
<td>Sensor glucose XXX mg/dL.</td>
<td></td>
<td></td>
<td>professional.</td>
</tr>
<tr>
<td>Check BG.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transmitter battery depleted</strong></td>
<td>Alert</td>
<td>The battery in the transmitter needs to be recharged. SG values are not</td>
<td>• Select OK to clear the alert.</td>
</tr>
<tr>
<td>Recharge transmitter now.</td>
<td></td>
<td>recorded or transmitted until you recharge transmitter.</td>
<td>• Recharge your transmitter.</td>
</tr>
</tbody>
</table>

**Auto Mode**

- **Title and text**: Auto Mode started
- **Type**: Alert
- **Explanation**: This alert happens when the user starts an operation that is not allowed in Auto Mode while the pump is transitioning.
- **Next steps**:
  - Select OK to clear the alert.
  - Allow your pump to complete its transition to Auto Mode.
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Auto Mode started</strong></td>
<td>Alert</td>
<td>The following SmartGuard settings are now turned off:</td>
<td>- Select OK to clear the alert.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Suspend before low</td>
<td>- Allow your pump to complete the transition into Auto Mode.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Suspend on low</td>
<td></td>
</tr>
<tr>
<td><strong>Auto Mode exit</strong></td>
<td>Alert</td>
<td>Your pump has exited Auto Mode because you have turned off your sensor, a suspend has not been cleared within 4 hours, or you have been in Safe Basal the maximum of 90 minutes. This alert cannot be silenced, and is always enabled whenever the system is in Auto Mode.</td>
<td>- Select No to clear the alert.</td>
</tr>
<tr>
<td>Basal Name started. Would you like to review the Auto Mode Readiness screen?</td>
<td></td>
<td></td>
<td>- Select Yes to view the Auto Mode Readiness screen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Check your BG.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Calibrate your sensor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Follow instructions from your healthcare professional and continue to monitor your BG. For details, see Exiting Auto Mode, page 267 and Returning to Auto Mode, page 268.</td>
</tr>
<tr>
<td><strong>High SG</strong></td>
<td>Alert</td>
<td>Your pump has exited Auto Mode based on a set glucose threshold</td>
<td>- Select OK to clear the alert.</td>
</tr>
<tr>
<td>SG has been high for over 1 hour. Check infusion</td>
<td></td>
<td></td>
<td>- Check your BG and treat as necessary.</td>
</tr>
<tr>
<td>Title and text</td>
<td>Type</td>
<td>Explanation</td>
<td>Next steps</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>set. Check ketones. Monitor BG.</td>
<td></td>
<td>and length of time:</td>
<td></td>
</tr>
<tr>
<td>Followed by</td>
<td></td>
<td>• 300 mg/dL or higher for one hour</td>
<td></td>
</tr>
<tr>
<td><strong>Auto Mode exit</strong></td>
<td></td>
<td>• 250 mg/dL or higher for three hours. This alert cannot be silenced and is</td>
<td></td>
</tr>
<tr>
<td>Monitor BG and treat as necessary.</td>
<td>Alert</td>
<td>always enabled whenever the pump is in Auto Mode.</td>
<td></td>
</tr>
<tr>
<td>Basal Name started. Enter BG to continue in Auto Mode.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Auto Mode max delivery</strong></td>
<td>Alert</td>
<td>Auto Mode has been delivering at your maximum Auto Mode basal delivery rate</td>
<td>• Select OK to clear the alert.</td>
</tr>
<tr>
<td>Auto Mode has been at maximum delivery for 4 hours. Enter BG to continue in</td>
<td></td>
<td>for four hours. This rate is determined automatically by your system.</td>
<td>• Check your BG and enter it into your pump to exit Safe Basal and return</td>
</tr>
<tr>
<td>Auto Mode.</td>
<td></td>
<td></td>
<td>to Auto Basal.</td>
</tr>
<tr>
<td><strong>Auto Mode max delivery</strong></td>
<td>Alert</td>
<td>Auto Mode has been unable to lower your SG value. Your pump is suspended,</td>
<td>• Follow instructions from your healthcare professional and continue to</td>
</tr>
<tr>
<td>Auto Mode has been unable to bring your SG down. Enter BG and resume deliv-</td>
<td></td>
<td>and your predicted SG is above target.</td>
<td>monitor your BG.</td>
</tr>
<tr>
<td>ery.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Your pump has been delivering at your minimum Auto Mode basal delivery rate for two and a half hours. This rate is determined automatically by your system.

- Select OK to clear the alert.
- Check your BG and enter it into your pump to exit Safe Basal and return to Auto Basal.
- Follow instructions from your healthcare professional and continue to monitor your BG.

Your SG has been below target for two and a half hours. Enter BG and resume delivery when ready to continue in Auto Mode.

- Select OK to clear the alert.
- Check your BG and enter it into your pump.
- Follow instructions from your healthcare professional and continue to monitor your BG.

Notes:
- The title of the alert appears the same as the previous Auto Mode min delivery alert in the table.
- If you have suspended your pump, you will have no delivery. However, the alert may still occur.
<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
</table>
| **Auto Mode off** Basal Name started. Would you like to review the Auto Mode Readiness screen? | Alert | The Auto Mode setting in the SmartGuard menu is turned off. | • Select **Yes** to check the Auto Mode Readiness status screen for information to re-enter Auto Mode.  
• Select **No** to clear the alert. |
| **BG required** Enter a new BG for Auto Mode. | Alert | Auto Mode requires a BG to check the reliability of the sensor. | • Select **OK** to clear the alert.  
• Enter a BG to return to Auto Basal from Safe Basal, or to enter Auto Mode from Manual Mode. |
| **Bolus recommended** For XXX mg/dL entered, a correction bolus is recommended. Select Bolus to program a bolus. | Alert | Auto Mode calculated that a bolus is recommended based on the BG value that you entered. | • Select **Bolus** to program a correction bolus.  
• Select **Cancel** if you do not want to deliver a correction bolus. |
| **Cal required for Auto Mode** Enter a BG and calibrate sensor for Auto Mode. | Alert | Calibration may be required by Auto Mode, even when SG values are available. | • Select **OK** to clear the alert.  
• Check your BG and enter it into your pump.  
• Calibrate your sensor using the BG that you entered. |
| **High BG** XXX mg/dL Check infusion set. Check ketones. Monitor BG. Confirm BG? | Alert | Your BG meter reading is above 250 mg/dL. This alert applies only to Auto Mode. There is an equivalent alert | • Select **No** to Prevent the remote BG from being used by your pump. Select **Yes** to confirm the BG reading. |
for Manual Mode.
See *Pump alarms, alerts, and messages, page 276.*

**CareLink alert and message**

The following table lists the most common or serious alerts and messages related to CareLink. The table also explains the meaning, consequences, and the reasons why these notifications appear, and provides steps for problem resolution. If you get an alarm, alert, or message that is not listed, select **OK** to clear the notification and call the 24 Hour HelpLine.

<table>
<thead>
<tr>
<th>Title and text</th>
<th>Type</th>
<th>Explanation</th>
<th>Next steps</th>
</tr>
</thead>
</table>
| **Connect Device?** | Message    | The CareLink USB software is attempting to connect to your pump in preparation for data download. | • Select **Yes** to allow connection, only if you are expecting or performing a data download.  
• Select **No** to deny connection.  
If no selection is made, the screen will timeout after 30 seconds and will automatically reject the request. |
| **Download slow** | Alert      | The download of pump data is taking longer than expected. Data will not be affected. | • Select **OK** to clear the alert.  
• Wait for the data to finish downloading.  
• If problem still persists or if there is no progress in download, call the 24 Hour HelpLine for assistance. |
| **Device with SN <XXXXXXXXXX> is trying to connect to your pump. Allow connection?** |  |  |  |
This chapter contains procedures and information to help you understand and address conditions that might occur with your pump.

For a list of alarms, alerts, and messages that may appear on your pump, see *Pump alarms, alerts, and messages, page 276*. 

## Troubleshooting pump issues

### WARNING:

If you receive a critical error on your pump, the following screen displays and the pump sirens.

Immediately disconnect from your insulin pump and discontinue use. Contact the 24 Hour HelpLine for assistance.

Remember, your body still needs insulin while your pump is removed. It is important that you consult your healthcare professional to determine an alternate method of receiving insulin while your pump is removed. For more information on pump alarms, see *Pump alarms, alerts, and messages, page 276.*

### My pump buttons are stuck

During atmospheric pressure changes, your pump buttons may not work for up to 45 minutes. For example, during airplane travel your pump buttons may get stuck. This is rare. If this occurs, either wait for the problem to correct itself, or if you have a new AA battery with you:

1. Remove the battery cap.
2. Place the battery cap back onto the pump.
   
   Your pump will check the AA battery power, and may require a new AA battery.
3. If prompted, insert a new AA battery.

If these steps do not correct the problem, contact your local representative for assistance.
What is a Check Settings alarm?

This alarm occurs when a condition causes your pump to reset to factory settings. You see this alarm after your pump guides you through re-entering the Startup Wizard settings.

The Check Settings alarm is letting you know that other settings may have been cleared or reverted to factory default values. Review any settings that you have not already set in Startup Wizard and re-enter the values, if necessary.

My pump is asking me to rewind

**WARNING:** Do not insert the reservoir into your pump until you have received training for your pump. Doing so could damage your reservoir. Damaging your reservoir could cause an inaccurate insulin delivery, which may cause hypoglycemia.

You must rewind your pump when changing the reservoir. Rewinding returns the piston in the reservoir compartment to its starting position. It is normal for your pump to ask you to rewind anytime you must remove and replace the reservoir, such as when resolving an Insulin Flow Blocked alarm or addressing a problem loading the reservoir.

I dropped my pump

The pump was dropped or there are concerns that the pump may be damaged.

**CAUTION:** Always inspect the pump for cracks before exposing the pump to water, especially if the pump was dropped or damaged. Water leakage can cause the pump to malfunction and result in injury.

1. Disconnect the pump from body. Confirm all infusion set and reservoir connections are secure.
2. Disconnect the pump from body. Check the infusion set, including the tubing connector and tubing, for cracks or damage.
3. Check the display, button area, and pump case for cracks or damage.
4. Confirm that the information on the Status screen is correct.

5. Confirm the settings for the basal rates and the pump are correct.

6. Perform a self test. For more information, see Self Test, page 190.

7. Check BG.

If necessary, contact 24-Hour Technical Support.

**I cannot get to the Manage Settings screen**

These personalized settings, under the Manage Settings screen, should be provided by your healthcare professional in your training session. If you go to Options > Utilities > Manage Settings, a message appears telling you that the feature is not normally accessible and to consult your user guide. To access the Manage Settings screen press and select:

1. Options > Utilities > Manage Settings

2. Simultaneously press and hold and for about two seconds. The Manage Settings screen appears.

**My pump display times out too quickly**

Your pump display times out after 15 seconds by default in order to conserve battery power. You can increase this setting up to three minutes. Press and select Options > Utilities > Display Options, and then adjust the Backlight setting as desired.

**Note:** Be aware that using a longer Backlight time causes your pump to use more battery power. When your pump battery is low, the timeout for the backlight on your pump screen is automatically reduced.

**Where is my pump status screen?**

1. Press and select Status to go to the Status screen.

   The Status screen appears.
2. From the Status screen, you can select the type of status information you want to view. For example, to see a quick status of your pump and recent insulin deliveries, go to Quick Status. For details, see Status screens, page 74.

**My pump is asking me to enter my settings**

Certain pump errors can clear your settings and return them to their factory default values. This also happens if you intentionally clear your settings. Do not clear your settings unless directed to do so by your healthcare professional.

If you have saved your settings using the Save Settings option, you can restore them using the Restore Settings option. If you restore your settings, ensure the restored settings match the settings prescribed most recently by your healthcare professional.

The Startup Wizard appears automatically when your pump restarts. The wizard guides you through entering the following information. Be sure to have these values ready when you begin.

- Time format, time, and date
- Active Insulin Time
- Basal patterns

After you enter your pump settings, you have the option of entering the following Bolus Wizard settings:

- Carb ratio
- Insulin sensitivity factor
- BG target
To enter your pump settings:

1. Begin entering your settings by selecting English. Select Next to go to each new screen.

2. When the Select Time Format screen appears, select a 12-hour or a 24-hour time format.

3. When the Enter Time screen appears, adjust the setting to the current time. If you are using a 12-hour clock, be sure to specify AM or PM.

4. When the Enter Date screen appears, adjust the Year, Month and Day to the current date.

5. When the Active Insulin Time screen appears, enter the Duration.
   For details, see About active insulin, page 120.

6. Enter your first basal rate by entering the End time and the Rate. You can enter more basal patterns after you complete the startup wizard.
   For details, see Adding a new basal pattern, page 89.
   After you complete your basal pattern, a screen appears to allow you to review your basal information.

7. When the message appears asking if you want to setup the Bolus Wizard settings, do one of the following:
   - Select Yes to continue entering your settings, then continue to the next section.
   - Select No if you do not want to enter your Bolus Wizard settings. A message appears letting you know that your settings are complete. Select OK to continue using your pump.

To enter your Bolus Wizard settings:

1. When your pump shows a list of settings for the Bolus Wizard, make sure you have the values you need before continuing.

2. When the Carb Ratio screen appears, enter your carb ratio by entering the End time and the Rate. You can adjust your carb ratio at any time.
   For details, see Changing your carb ratio, page 117.
3. When the Edit Sensitivity screen appears, enter your insulin sensitivity factor by entering the End time and the mg/dL per unit. You can adjust your insulin sensitivity factor at any time.

For details about entering insulin sensitivity factors, including how to set multiple time periods, see *Changing your insulin sensitivity factor, page 118*.

4. When the BG Target screen appears, enter your BG Target range by entering the End time and your Lo (low) and Hi (high) limits. You can adjust your BG Target ranges at any time.

For details, see *Changing your Bolus Wizard BG target, page 118*.

A message appears confirming that your setup is complete.

5. Select **Next** to display the Home screen, and continue using your pump.

**Troubleshooting sensor issues**

**My pump cannot find the sensor signal**

If your pump cannot find the sensor signal after you connect your sensor and transmitter, follow the instructions on the pump screen to troubleshoot the issue as described below.

If your pump finds the sensor signal at any time during troubleshooting, your pump beeps or vibrates, and “Warm up” appears on your sensor graph. It can take up to two hours for your sensor to warm up.

1. Make sure your system meets the following requirements:
   - Your transmitter is fully charged.
     - If both lights on the charger are off, your transmitter is fully charged.
     For details, see your transmitter user guide.
• You have only one transmitter connected to your pump. Delete the current transmitter that is connected to your pump before continuing. For details, see [Deleting the transmitter from your pump, page 231].

• Your transmitter is placed next to your pump.

• Your transmitter is reconnected to the pump, if your pump has been recently reset. For details, see [Wirelessly connecting your pump and transmitter using Auto Connect, page 225].

• The Airplane Mode is turned off on your pump.

• You have applied the tape correctly, as instructed in the server user guide.

2. Disconnect the transmitter from the sensor for at least 10 seconds.

3. Reconnect the transmitter with the sensor to restart communication. While the light on the transmitter is blinking, select **OK** on the pump to acknowledge the alert.

4. Depending on whether the light blinked when you connected the transmitter to the sensor, select **Yes** or **No** on your pump and do one of the following:

   ![Sensor signal not found](image.png)

   - Did transmitter light blink when connected to sensor?  
     - No  
     - Yes

   • If the transmitter light did not blink, you need to charge your transmitter. When your transmitter is charged, start your sensor. For details, see [Starting the sensor, page 232].

   • If your transmitter light blinked, but you still have no sensor signal, continue to the next step.

5. Move your pump closer to your transmitter and select **OK**. It can take up to 15 minutes for your pump to find the sensor signal.
6. If your pump still cannot find the sensor signal, make sure you are away from any electronic devices that might cause interference, such as cellular phones and other wireless devices, and select **OK**.

7. If you have gone through all the troubleshooting steps on your pump screen, and your pump still cannot find the sensor signal, or if your sensor graph displays “Sensor signal not found. See User Guide,” call the 24 Hour HelpLine for assistance.

**Calibration not accepted**

Calibration not accepted alert occurs when one of the following happens:

- System was unable to use the BG meter readings you entered to calibrate your sensor.
- System rejects two calibrations in a row from the same sensor.
- The transmitter was unable to receive the calibration BG meter readings from the pump due to failed sensor signal.

For details on when and how to calibrate your sensor, see *Calibrating your sensor*, page 234.

**Why does the SmartGuard suspend by sensor icon on my Home screen appear gray?**

The SmartGuard suspend by sensor icon appears gray 🕑 on the Home screen when either the Suspend on low or Suspend before low feature is unavailable. The suspend features may be unavailable due to the following conditions:

- A suspend event has occurred recently.
  After a Suspend before low or Suspend on low event occurs, there is a period of time when the suspend functionality is unavailable. This time will vary depending on whether or not you respond to the suspend event. Typically, the suspend features will be unavailable for 30 minutes after your basal insulin delivery is resumed. For details, see *When Suspend before low is unavailable, page 207* or *When Suspend on low is unavailable, page 210*.

- No SG values are available.
  SG values may be unavailable because:
- Your pump is in Airplane Mode.

- Sensor calibration is required.
  For details on when and how to calibrate your sensor, see *Calibrating your sensor, page 234*.

- Your pump has lost connection to the sensor.
  Move your pump closer to the sensor. For more details, see *My pump cannot find the sensor signal, page 317*.

- The sensor glucose value received was outside the expected range and was not displayed.
  Select **OK** to clear the alert. If the issue continues, you may need to replace the sensor.

If the issue persists, call the 24 Hour HelpLine for assistance.
Maintenance

Cleaning your pump

CAUTION: Never use organic solvents, such as lighter fluid, nail polish remover, or paint thinner to clean your pump. Never use lubricants with your pump. When cleaning your pump, be sure to keep the reservoir compartment dry and away from moisture. Cleaning your pump with organic solvents can cause the pump to malfunction, and result in minor injury.

Make sure you have the following supplies ready for cleaning your pump: three or four small, clean, soft cloths, a mixture of water with a mild detergent, clean water, 70% alcohol, and a few clean cotton tips and cotton balls.

To clean your pump:

1. Dampen a cloth with water mixed with a mild detergent.
2. Using the cloth, wipe the outside of the pump while keeping the inside of the reservoir compartment dry.
3. Dampen a clean cloth with water and wipe to remove any detergent residue.
4. Dry with a clean cloth.
5. Wipe your pump with a 70% alcohol wipe.
6. Using a dry clean cotton tip, remove any battery residue from the battery cap.

7. Using a dry, clean, cotton swab to remove any battery residue from the battery compartment opening.

Cleaning your transmitter

Always refer to your transmitter user guide for instructions on cleaning the transmitter.

Storing your pump

Storage mode allows you to safely place your pump in storage while not in use.

Note: If you place your pump in storage mode, it is important to insert a new AA battery for 8 to 12 hours every six months to ensure that the internal battery does not discharge to a deep discharge. A battery that is deeply discharged takes longer to charge than a normal battery.

WARNING: After placing your pump in storage mode, do not rely on active insulin tracked in the pump when making new Bolus Wizard calculations. Storage mode clears active insulin. Inaccurate Bolus Wizard calculations could result in inaccurate insulin delivery, and serious injury.

Placing your pump in storage mode:

1. Remove the AA battery from the pump. For details, see Removing the battery, page 65.

   Note: When you remove the battery, your pump issues an Insert Battery alarm for 10 minutes or until you place your pump into storage mode.

2. Press and hold until your screen turns off.
CAUTION: Always store your pump at room temperature. While in storage, the pump should never be exposed to temperatures below 41 °F (5 °C) or above 104 °F (40 °C). Storing your pump in temperatures outside of this range can damage your pump.

Waking your pump from storage mode

1. Insert a new AA battery into your pump. For details, see Inserting the battery, page 64.
   A Pump Error message appears.

2. Select OK.
   Your pump displays a Power Loss alarm.

3. Select OK.
   The Time & Date screen appears.

4. Enter the current Time, Time Format and Date.

5. Select Save.
   Your pump displays an Active Insulin Cleared alert.

6. Select OK.
   Make sure that all of your settings, such as basal rate, are set as desired. If you need to, reapply your last saved settings by using the Restore Settings option as instructed in Restoring your settings, page 187.

7. You must repeat the connection process for your transmitter and meter. For details, see Wirelessly connecting your pump and transmitter using Auto Connect, page 225. Always refer to your CONTOUR NEXT LINK 2.4 meter user guide for instructions on connecting the meter to the pump.

Storing your transmitter

Always refer to your transmitter user guide for instructions on storing your transmitter.
Product specifications and safety information
Product specifications and safety information

This chapter provides detailed product specifications and safety information.

**Product specifications**

**Alarm and alert escalation**

The following alerts may escalate to a siren if not cleared:

- Alert before high
- Alert before low
- Alert on high
- Alert on low
- Basal delivery resumed
- BG not received
- Calibration not accepted
- Calibrate now
- Cannot find sensor signal
- Change sensor
- Check connection
- Lost sensor signal
- No calibration occurred
- Possible signal interference
- High SG
- Rise Alert
- Sensor expired
- Sensor signal not found
- Low SG XX mg/dL (XX represents 50 mg/dL or below) alert
- SG value not available
- Transmitter battery depleted
For alerts that escalate to a siren, the pump will begin to siren if the alert is not cleared in 10 minutes. Before the siren occurs, your pump will beep, vibrate, or both, depending on your audio settings.

<table>
<thead>
<tr>
<th>Minutes</th>
<th>Audio</th>
<th>Audio and vibration</th>
<th>Vibration</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Audio</td>
<td>Audio and vibrate</td>
<td>Vibrate</td>
</tr>
<tr>
<td>1</td>
<td>Audio</td>
<td>Audio and vibrate</td>
<td>Vibrate</td>
</tr>
<tr>
<td>2</td>
<td>Audio</td>
<td>Audio and vibrate</td>
<td>Vibrate</td>
</tr>
<tr>
<td>3</td>
<td>Audio</td>
<td>Audio and vibrate</td>
<td>Vibrate</td>
</tr>
<tr>
<td>4</td>
<td>Audio</td>
<td>Audio and vibrate</td>
<td>Vibrate</td>
</tr>
<tr>
<td>5</td>
<td>Audio</td>
<td>Audio and vibrate</td>
<td>Vibrate</td>
</tr>
<tr>
<td>6</td>
<td>Audio and vibrate</td>
<td>Audio and vibrate</td>
<td>Audio and vibrate</td>
</tr>
<tr>
<td>7</td>
<td>Audio and vibrate</td>
<td>Audio and vibrate</td>
<td>Audio and vibrate</td>
</tr>
<tr>
<td>8</td>
<td>Audio and vibrate</td>
<td>Audio and vibrate</td>
<td>Audio and vibrate</td>
</tr>
<tr>
<td>9</td>
<td>Audio and vibrate</td>
<td>Audio and vibrate</td>
<td>Audio and vibrate</td>
</tr>
<tr>
<td>10</td>
<td>Siren and vibrate</td>
<td>Siren and vibrate</td>
<td>Siren and vibrate</td>
</tr>
</tbody>
</table>

**Note:** The Medical device alarm sirens immediately when this screen displays.

**Medical device**

12:44 AM
CALL FOR EMERGENCY ASSISTANCE. I have diabetes.

**Altitude range**

- Pump operating range is from 10.2 psiA (70.33 kPa) to 15.4 psiA (106.18 kPa)
- Storage range is from 7.2 psiA (49.64 kPa) to 15.4 psiA (106.18 kPa)
**Audio frequency**

The following table lists the various audible tones and their corresponding frequencies:

<table>
<thead>
<tr>
<th>Tone name</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm</td>
<td>1655 Hz followed by 3310 Hz</td>
</tr>
<tr>
<td>Alternate Alarm</td>
<td>1850 Hz</td>
</tr>
<tr>
<td>Siren (escalated alarm)</td>
<td>1655 Hz, followed by 3310 Hz</td>
</tr>
<tr>
<td>Alert</td>
<td>934 Hz</td>
</tr>
<tr>
<td>High Sensor Glucose</td>
<td>1312 Hz, followed by 1410 Hz, 1500 Hz, 1619 Hz, 1722 Hz</td>
</tr>
<tr>
<td>Low SG</td>
<td>1722 Hz, 1619 Hz, 1500 Hz, 1410 Hz, 1312 Hz</td>
</tr>
<tr>
<td>Lost SG</td>
<td>1485 Hz, followed by 1395 Hz, 1320 Hz, 1395 Hz</td>
</tr>
<tr>
<td>Message tone</td>
<td>1655 Hz</td>
</tr>
<tr>
<td>Reminder tone</td>
<td>934 Hz</td>
</tr>
<tr>
<td>Fill tubing tone</td>
<td>1850 Hz</td>
</tr>
<tr>
<td>Bolus delivery cancellation tone</td>
<td>1485 Hz, followed by 1655 Hz and 1485 Hz</td>
</tr>
<tr>
<td>Loading complete tone</td>
<td>934 Hz</td>
</tr>
<tr>
<td>Reservoir loading in progress tone</td>
<td>1850 Hz</td>
</tr>
<tr>
<td>Easy Bolus activation</td>
<td>1045 Hz</td>
</tr>
<tr>
<td>Easy Bolus step 1 increment</td>
<td>1175 Hz</td>
</tr>
<tr>
<td>Easy Bolus step 2 increment</td>
<td>1320 Hz</td>
</tr>
<tr>
<td>Easy Bolus step 3 increment</td>
<td>1395 Hz</td>
</tr>
<tr>
<td>Easy Bolus step 4 increment</td>
<td>1570 Hz</td>
</tr>
<tr>
<td>Easy Bolus step 5 increment</td>
<td>1760 Hz</td>
</tr>
</tbody>
</table>

**Backlight**

<table>
<thead>
<tr>
<th>Type</th>
<th>LED (Light-emitting Diode)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time out</td>
<td>15 seconds (default), 30 seconds, one minute, three minutes</td>
</tr>
<tr>
<td>Time out when battery is low</td>
<td>15 seconds (default), 30 seconds</td>
</tr>
</tbody>
</table>
### Basal delivery

<table>
<thead>
<tr>
<th>Delivery rate range</th>
<th>0 to 35 U per hour or the Max Basal Rate amount, whichever is lower.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Basal Rate default</td>
<td>2 U per hour</td>
</tr>
<tr>
<td>Basal patterns</td>
<td>Maximum of 8 patterns. Each pattern covers a 24 hour period and can have up to 48 rates. Rates are set in 30 minute increments.</td>
</tr>
<tr>
<td>Basal pattern names</td>
<td>Fixed names: Basal 1, Basal 2, Basal 3, Basal 4, Basal 5, Workday, Day Off, Sick Day</td>
</tr>
</tbody>
</table>
| Increments | • 0.025 U per hour for basal amounts in the range 0 to 0.975 U  
                      • 0.05 U per hour for basal amounts in the range 1 to 9.95 U  
                      • 0.1 U per hour for basal amounts of 10 to 35 U |

### BG Target

| Maximum targets | 8 |
| Range | 60 to 250 mg/dL |
| Default value for High BG targets and Low BG targets | None |

**Note:** Auto Mode uses a fixed BG Target of 150 mg/dL.

### BG meter value

The most recent BG value received from the meter. If you are using a CONTOUR NEXT LINK 2.4 meter, this value appears on the Home screen when the Sensor feature is off. This value also appears in the Bolus Wizard screen when setting up a bolus.

| Expiration | 12 minutes |
| Range | 20 to 600 mg/dL |
Bolus delivery

Bolus Speed options
• Standard: 1.5 U/minute
• Quick: 15 U/minute

Bolus programming increments
• 0.025 U
• 0.05 U
• 0.1 U

Fluid delivered/stroke
• 0.25 µL (microliter) for 0.025 U pump stroke
• 0.5 µL for 0.05 U pump stroke
• 2.0 µL for 0.2 U pump stroke

Bolus Wizard feature default settings

<table>
<thead>
<tr>
<th>Item</th>
<th>Default</th>
<th>Limits</th>
<th>Increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carb units</td>
<td>grams</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Insulin to carb ratio</td>
<td>None</td>
<td>1–200 g/U</td>
<td>0.1 g/U for 1–9.9 g/U; 1 g/U for ratios of 10 g/U to 200 g/U</td>
</tr>
<tr>
<td>Insulin Sensitivity</td>
<td>None</td>
<td>5–400 mg/dL</td>
<td>1 mg/dL</td>
</tr>
<tr>
<td>BG Target</td>
<td>None</td>
<td>60–250 mg/dL</td>
<td>1 mg/dL</td>
</tr>
<tr>
<td>Active Insulin Time</td>
<td>4 hours</td>
<td>2 to 8 hours</td>
<td>15 minutes</td>
</tr>
</tbody>
</table>

Bolus Wizard feature specifications

There are four different formulas the Bolus Wizard feature uses to estimate a bolus, depending on your current BG. The following formulas apply only when the carb units are in grams.

1. If your current BG is greater than your High BG Target, the Bolus Wizard feature subtracts active insulin from the BG correction estimate, then adds this to the food estimate to get the total bolus estimate. However, if the result of subtracting active insulin from BG correction estimate is a negative number (less than zero), the total bolus estimate is based only on the food estimate.
A = food (grams)
B = carb ratio
C = current BG
D = High BG Target
E = insulin sensitivity

where:

\[
\text{total bolus estimate} = \frac{A}{B} + \frac{C - D}{E} - \text{active insulin}
\]

Food estimate:
Carb grams ÷ Carb ratio = Units of insulin

Correction estimate:
(Current BG - High BG Target) ÷ Insulin sensitivity - Active insulin = Units of insulin

Total bolus estimate:
Food estimate + Correction estimate = Units of insulin

2. If your current BG is less than your Low BG Target, the Bolus Wizard feature adds the BG correction estimate to the food estimate to get the total bolus estimate.

\[
\text{total bolus estimate} = \frac{A}{B} + \frac{C - D}{E}
\]

where:
A = food (grams)
B = carb ratio
C = current BG
D = Low BG Target
E = insulin sensitivity

Food estimate:
Carb grams ÷ Carb ratio = Units of insulin

Correction estimate:
(Current BG - Low BG Target) ÷ Insulin sensitivity = Units of insulin

Total bolus estimate:
Food estimate + Correction estimate = Units of insulin
3. If your current BG is within your High or Low BG Target, the total bolus estimate is based only on the food estimate.

\[
\text{total bolus estimate} = \frac{\text{food estimate}}{\text{carb ratio}}
\]

Food estimate:
Carb grams ÷ Carb ratio = Units of insulin

**Note:** When the current BG is below the Low BG Target, an active insulin amount is not considered in the Bolus Wizard feature calculations.

Total bolus estimate = Food estimate

4. If you do not enter a BG, the total bolus estimate is based only on the food estimate.

Following are some notes about using the Bolus Wizard:

- If a Dual Wave bolus is less than the estimate due to the Max Bolus limit or a change that you make, the Square portion is reduced first.

- Based on the Active Insulin Time setting you choose, your pump keeps track of how much insulin is still active in your body. This is shown as Active Insulin or Act. Ins. on the Home screen, Bolus screen, Manual Bolus screen, Preset Bolus, and Daily History screens. This prevents stacking of insulin, and lowers the chances of hypoglycemia.

- The Bolus Wizard feature may utilize your current BG measurement, carbohydrate consumption, and active insulin to calculate your estimated bolus.
The following Active Insulin Curve represents how long a bolus of insulin lowers your glucose after the bolus is given. The percentage of insulin remaining lowers at varying rates depending on how long the insulin is active in your body.

Graph adapted from Mudaliar and colleagues, Diabetes Care, Volume 22, Number 9, Sept. 1999, page 1501.

**Carb ratios**

<table>
<thead>
<tr>
<th>Maximum ratio settings</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>1 to 200 g/U</td>
</tr>
</tbody>
</table>

**Delivery accuracy**

- For a basal rate of 1.0 U/hr, the delivery accuracy is ±5%.
  
  For a basal rate of 0.025 U/hr, the delivery accuracy is ±10%.
  
  Delivery accuracy for bolus volumes < 0.1 unit is ±20% and delivery accuracy for bolus volumes ≥ 0.1 unit is ±5%.
• All Normal boluses are delivered within 16 minutes, 41 seconds ±3 seconds at Standard rate (25 units, at 1.5 units per minute), and within 1 minute, 41 seconds ±3 seconds at Quick rate (25 units, at 15 units per minute).

• The maximum infusion pressure generated and the occlusion threshold pressure using a 3 mL reservoir is 13.15 psi (90.67 kPa). The average resulting bolus volume generated upon clearing the occlusion is 0.0112 mL (equivalent to 1.12 U of U-100 insulin).

• The following is a representative delivery accuracy curve. The Trumpet Curve represents the maximum percentage change from the expected insulin dosage for a given time interval, known as the observation window, during the infusion of insulin. The upper curve corresponds to positive changes, and the lower curve corresponds to negative changes.

![Trumpet Curve at intermediate rate of 1 U/hr](image)

**Easy Bolus**

Allows user to set up and deliver a Normal Bolus when the pump is in Sleep Mode. This is done using the ▲ and with the help of audio and vibration cues.
Audio mode range  
0 to 20 increments or Max Bolus limit, whichever comes first

Vibrate mode range  
0 to 20 increments or Max Bolus limit, whichever comes first

Default step size  
0.1 U

Adjustable step size  
0.1 to 2 U per increment up to Max Bolus limit

Environmental conditions

The MiniMed 670G insulin pump system is designed to withstand most conditions encountered in your daily life. For more details about environmental conditions, such as exposure to magnetic fields and radiation, waterproof capabilities, and extreme temperatures, see User safety, page 26.

• Pump storage temperature range is from -4 °F (-20 °C) to 122 °F (50 °C).
• Pump operating temperature range with insulin is from 41 °F (5 °C) to 98.6 °F (37 °C).
• Air pressure range is from 700 hPa to 1060 hPa (10.2 psi to 15.4 psi).
• Operating relative humidity (RH) range of the pump: 20% to 90%. This requirement exceeds IEC 60601-1, subclause 7.9.3.1 (30% to 75%).
• Non-operating relative humidity range of the pump: 5% to 95%

Essential performance

The insulin pump maintains insulin delivery accuracy in the specified environmental conditions.

Filling the infusion set and cannula

• The cannula can be filled from 0.025 units to 5.1 units, in increments of 0.025 units.
• The standard fill rate is 1.5 units per minute.
  The quick fill rate is 15 units per minute.
• When filling the tubing, a warning occurs at 30 U. A second warning occurs at 40 U instructing you to rewind the pump.
• Insulin used to fill the infusion set is recorded in the Daily History.
Infusion pressure
The maximum infusion pressure and occlusion pressure are 13.15 psi (90.67 kPa).

Insulin delivery default settings

Bolus settings

<table>
<thead>
<tr>
<th>Item</th>
<th>Default setting</th>
<th>Limits</th>
<th>Increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolus Wizard feature:</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Easy Bolus feature:</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Easy Bolus step size:</td>
<td>0.1 U</td>
<td>0.1 U to 2 U</td>
<td>-</td>
</tr>
<tr>
<td>Bolus increment:</td>
<td>0.10 U</td>
<td>0.025 U 0.05 U</td>
<td>-</td>
</tr>
<tr>
<td>Dual/Square bolus:</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Max bolus:</td>
<td>10 U</td>
<td>0 to 25 U (per single bolus)</td>
<td>-</td>
</tr>
<tr>
<td>Bolus BG Check Reminder:</td>
<td>Off</td>
<td>0:00 to 5:00</td>
<td>0:30</td>
</tr>
</tbody>
</table>

Basal settings

<table>
<thead>
<tr>
<th>Item</th>
<th>Default setting</th>
<th>Limits</th>
<th>Increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Basal Rate</td>
<td>2 U/hr</td>
<td>0–35 U/hr</td>
<td>0.025 U for 0.025–0.975 U/hr 0.05 U for 1.00–9.95 U/hr 0.1 U for rates of 10.0 U/hr or more</td>
</tr>
<tr>
<td>Basal Rate</td>
<td>0.000 U/hr</td>
<td>0.000 U/hr to Max Basal Rate setting</td>
<td>0.025 U for 0.025–0.975 U/hr 0.05 U for 1.00–9.95 U/hr 0.1 U</td>
</tr>
<tr>
<td>Item</td>
<td>Default setting</td>
<td>Limits</td>
<td>Increments</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------</td>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>for rates of 10.0 U/hr or more</td>
</tr>
<tr>
<td>Temp Basal Type</td>
<td>Percent</td>
<td>Percent, Rate</td>
<td>N/A</td>
</tr>
<tr>
<td>Temp Basal Percent</td>
<td>100%</td>
<td>0–200%</td>
<td>5%</td>
</tr>
<tr>
<td>Temp Basal Rate</td>
<td>Current basal rate</td>
<td>0.0 U/hr to Max Basal Rate</td>
<td>0.025 U for 0.025–0.975 U/hr 0.05 U for 1.00–9.95 U/hr 0.1 U for rates of 10.0 U/hr or more</td>
</tr>
</tbody>
</table>

**Insulin sensitivity factor**

<table>
<thead>
<tr>
<th>Maximum settings</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>None. Insulin sensitivity is set during Startup of the Bolus Wizard.</td>
</tr>
<tr>
<td>Range</td>
<td>5 to 400 mg/dL/U</td>
</tr>
</tbody>
</table>

**Note:** The insulin sensitivity factor only applies while the pump is in Manual Mode.

**Low Reservoir reminder**

The values are based on displayed amount, not actual amount.

<table>
<thead>
<tr>
<th>Alert range</th>
<th>Increment</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 U</td>
<td>20 U</td>
</tr>
</tbody>
</table>

First reminder occurs at 5 to 50 U. Second reminder occurs at 50 percent of the remaining specified amount. The second reminder is automatic and cannot be changed by the user.
Max Bolus

Range 0 to 25 U
Default 10 U

Normal bolus

Range is 0.025 to 25 units of insulin, and limited by the Max Bolus setting.

Occlusion detection

When occlusion is detected, the Insulin flow blocked alarm occurs. The occlusion alarm is triggered by an average of 2.23 U of missed insulin (standard bolus) or 1.97 U of missed insulin (quick bolus). The MiniMed 670G insulin pump is intended for use with U100 insulin. This table shows occlusion detection for four different situations when using U100 insulin.

<table>
<thead>
<tr>
<th>Rate</th>
<th>Minimum time before alarm</th>
<th>Average time before alarm</th>
<th>Maximum time before alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>bolus delivery (10 U at standard speed)</td>
<td>71 seconds</td>
<td>95 seconds</td>
<td>136 seconds</td>
</tr>
<tr>
<td>bolus delivery (10 U at quick speed)</td>
<td>9 seconds</td>
<td>10 seconds</td>
<td>14 seconds</td>
</tr>
<tr>
<td>basal delivery (1.0 U/hr)</td>
<td>2.00 hours</td>
<td>2.50 hours</td>
<td>3.80 hours</td>
</tr>
<tr>
<td>basal delivery (0.025 U/hr)</td>
<td>123.38 hours</td>
<td>142.03 hours</td>
<td>178.33 hours</td>
</tr>
</tbody>
</table>

Percent temp basal

The default value is 100 percent of basal programming. For example, if you program six units of basal per day, the default temp basal will be six units per day.

<table>
<thead>
<tr>
<th>Range</th>
<th>0 to 200%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>100% of basal programming</td>
</tr>
<tr>
<td>Increment</td>
<td>5%</td>
</tr>
</tbody>
</table>
Program safety checks

A single fault condition will cause the pump to suspend insulin delivery. Maximum infusion with a single fault condition is 0.2 units.

Pump dimensions

The pump dimensions in inches are no greater than 3.81 length x 2.11 width x 0.98 depth.

The pump dimensions in centimeters are no greater than 9.68 length x 5.36 width x 2.49 depth.

Pump memory

User settings and pump history are stored in non-volatile memory which will retain data. The memory size will hold 90 days of pump history before it becomes full and has to be written over. This means that at any time the user can review a maximum of 90 days of history.

Pump weight

The mass of the insulin pump without battery and consumables is less than 106 grams.

Expected service life

The overall expected service life for the MiniMed 670G insulin pump is four years when used in accordance with this guide.

If there are concerns that the insulin pump may be damaged, contact 24-Hour Technical Support.

For additional information, see Troubleshooting, page 311.

For health-related questions or concerns, consult a healthcare professional.

Sensor default settings

<table>
<thead>
<tr>
<th>Item</th>
<th>Default setting</th>
<th>Limits</th>
<th>Increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>High SG alert limit</td>
<td>250 mg/dL</td>
<td>100 to 400 mg/dL</td>
<td>5 mg/dL</td>
</tr>
</tbody>
</table>
### High sensor settings

<table>
<thead>
<tr>
<th>Item</th>
<th>Default setting</th>
<th>Limits</th>
<th>Increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert before high</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alert on high</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Time before high</td>
<td>15 minutes</td>
<td>5 to 30 minutes</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Rise Alert</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rise Limit</td>
<td>Two up arrows</td>
<td>• 1 up arrow (1 mg/dL/min)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 2 up arrows (2 mg/dL/min)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 3 up arrows (3 mg/dL/min)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Custom limit (1.0 to 5.0 mg/dL/min)</td>
<td>-</td>
</tr>
<tr>
<td>High Snooze</td>
<td>1 hour</td>
<td>5 minutes to 3 hours</td>
<td>5 minutes</td>
</tr>
</tbody>
</table>

### Low sensor settings

<table>
<thead>
<tr>
<th>Item</th>
<th>Default setting</th>
<th>Limits</th>
<th>Increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low SG alert limit</td>
<td>60 mg/dL</td>
<td>50 to 90 mg/dL</td>
<td>5 mg/dL</td>
</tr>
<tr>
<td>Suspend before low</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Suspend on low</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alert before low</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alert on low</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Low Snooze</td>
<td>20 minutes</td>
<td>5 minutes to 1 hour</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Resume basal alert</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
### Auto Mode settings

<table>
<thead>
<tr>
<th>Item</th>
<th>Default setting</th>
<th>Limits</th>
<th>Increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Mode enable</td>
<td>Off</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Auto Mode BG alert</td>
<td>On</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Alert performance

CGM enables your device to display sensor glucose readings, glucose trend arrows, glucose trend graphs, and sensor glucose alerts (for example, High and Low Limit Threshold alerts, High and Low Predictive alerts, and Rise and Fall rate-of-change alerts).

The high and low limit alerts (Threshold alerts) let the user know when the sensor glucose is at or above the high limit or at or below the low limit. Using only a high or low limit alert may reduce the number of false alerts, but does not provide a warning before reaching a high or low limit.

**Predictive alerts** notify users that their sensor glucose level may soon reach a high or low limit setting. Users may select how early they would like to be notified before their sensor glucose level reaches a high limit setting. The earliest warning is 30 minutes before reaching a high, but users can reduce the amount of warning down to 5 minutes. Users will receive a warning approximately 30 minutes prior to when their sensor glucose level is predicted to reach their low limit setting. In general, the earlier the warning, the more time a user will have to react to a potential high or low, but this also increases the potential for false alerts.

A predictive alert is simply an estimation of a future sensor glucose level compared to the high or low limit setting. If the predicted sensor glucose value is above the high limit or below the low limit, then a predictive alert is sounded even though the current sensor glucose level has not crossed the high or low limit. The predicted sensor glucose level is calculated using the current sensor glucose level, the derivative of previous sensor glucose readings (the trend or slope of the sensor glucose readings) and the amount of early warning duration the user selects.
The device will always alert the user when the CGM reads that the user is below 50 mg/dL, regardless of the high/low threshold and/or predictive alerts that the user sets.

**Glucose TRUE Alert Rate**

The glucose true alert rate is the rate at which the blood glucose confirmed that the CGM alert was triggered correctly. For example:

1. **True Threshold Hypoglycemic alert rate** alerted when the CGM read that the user was below the low threshold and the user’s blood glucose was actually below that low threshold.

2. **True Threshold Hyperglycemic alert rate** alerted when the CGM read that the user was above the high threshold and the user’s blood glucose was actually above that high threshold.

3. **True Predictive Hypoglycemic alert rate** alerted when the CGM predicted that the user would reach below the low threshold and the user’s blood glucose was actually below that low threshold within 15 or 30 minutes.

4. **True Predictive Hyperglycemic alert rate** alerted when the CGM predicted that the user would reach above the high threshold and the user’s blood glucose was actually above that high threshold within 15 or 30 minutes.

The true alert rate is important because it is necessary that users be notified when their blood glucose is low (or high) so that they can correct the low (or high) blood glucose. A high true alert rate indicates that when the CGM says that their glucose values are, or will reach a specified threshold, the user’s blood glucose is likely to be at or approaching that threshold.

For example, per the following table, the low glucose alerts would have correctly indicated that the user was below (i.e. threshold only), or predicted to reach below the threshold (i.e. predictive only) or both (predictive and threshold) 66.9%, 52.7%, or 58.3% of the time within 30 minutes (or 66.9%, 47.7% or 55.2% of the time within 15 minutes) when the user had blood glucose values lower than 70 mg/dL for a sensor inserted in the abdomen.
<table>
<thead>
<tr>
<th>mg/dL</th>
<th>Insertion Site</th>
<th>Glucose TRUE Alert Rate</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Threshold Only</td>
<td>Predictive Only</td>
<td>Threshold &amp; Predictive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 min</td>
<td>15 min</td>
<td>30 min</td>
<td>15 min</td>
<td>30 min</td>
<td>15 min</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Abdomen</td>
<td>25.0%</td>
<td>25.0%</td>
<td>15.2%</td>
<td>12.3%</td>
<td>18.2%</td>
<td>16.2%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>36.8%</td>
<td>36.8%</td>
<td>21.9%</td>
<td>16.7%</td>
<td>26.1%</td>
<td>22.4%</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Abdomen</td>
<td>53.5%</td>
<td>51.9%</td>
<td>40.7%</td>
<td>37.1%</td>
<td>46.2%</td>
<td>43.4%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>69.0%</td>
<td>67.8%</td>
<td>47.5%</td>
<td>45.6%</td>
<td>55.1%</td>
<td>53.5%</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Abdomen</td>
<td>66.9%</td>
<td>66.9%</td>
<td>52.7%</td>
<td>47.7%</td>
<td>58.3%</td>
<td>55.2%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>77.4%</td>
<td>75.3%</td>
<td>57.4%</td>
<td>54.5%</td>
<td>65.6%</td>
<td>63.0%</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>Abdomen</td>
<td>69.3%</td>
<td>69.3%</td>
<td>57.8%</td>
<td>51.1%</td>
<td>62.2%</td>
<td>58.2%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>77.5%</td>
<td>76.4%</td>
<td>59.9%</td>
<td>53.0%</td>
<td>66.5%</td>
<td>61.9%</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>Abdomen</td>
<td>75.1%</td>
<td>74.4%</td>
<td>64.0%</td>
<td>58.5%</td>
<td>67.9%</td>
<td>64.3%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>74.9%</td>
<td>74.9%</td>
<td>69.0%</td>
<td>63.2%</td>
<td>71.3%</td>
<td>68.0%</td>
<td></td>
</tr>
<tr>
<td>180</td>
<td>Abdomen</td>
<td>93.7%</td>
<td>92.8%</td>
<td>70.5%</td>
<td>66.9%</td>
<td>78.0%</td>
<td>75.4%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>92.9%</td>
<td>92.9%</td>
<td>68.0%</td>
<td>63.2%</td>
<td>76.5%</td>
<td>73.7%</td>
<td></td>
</tr>
<tr>
<td>220</td>
<td>Abdomen</td>
<td>91.9%</td>
<td>91.9%</td>
<td>68.9%</td>
<td>66.3%</td>
<td>76.6%</td>
<td>74.8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>92.2%</td>
<td>92.2%</td>
<td>65.7%</td>
<td>62.2%</td>
<td>74.5%</td>
<td>72.2%</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>Abdomen</td>
<td>90.2%</td>
<td>90.2%</td>
<td>64.0%</td>
<td>60.1%</td>
<td>72.5%</td>
<td>69.8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>91.4%</td>
<td>91.4%</td>
<td>62.0%</td>
<td>59.8%</td>
<td>71.1%</td>
<td>69.6%</td>
<td></td>
</tr>
<tr>
<td>mg/dL</td>
<td>Insertion Site</td>
<td>Threshold Only</td>
<td>Predictive Only</td>
<td>Threshold &amp; Predictive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>---------------</td>
<td>----------------</td>
<td>-----------------</td>
<td>----------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30 min 15 min</td>
<td>30 min 15 min</td>
<td>30 min 15 min</td>
<td>30 min 15 min</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>Abdomen</td>
<td>81.3% 81.3%</td>
<td>57.8% 54.0%</td>
<td>65.4% 62.7%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>81.9% 80.6%</td>
<td>51.7% 49.7%</td>
<td>61.2% 59.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Glucose FALSE Alert Rate**

The glucose false alert rate is the rate at which the blood glucose did not confirm that the CGM alert was triggered correctly. For example:

1. **False Threshold Hypoglycemic alert rate** the alarm alerted when the CGM read that the user was below the low threshold but the user’s blood glucose was actually above that low threshold; or

2. **False Threshold Hyperglycemic alert rate** the alarm alerted when the CGM read that the user was above the high threshold but the user’s blood glucose was actually below that high threshold; or

3. **False Predictive Hypoglycemic alert rate** the alarm alerted when the CGM predicted that the user would be below the low threshold but the user’s blood glucose was actually above that low threshold within 15 or 30 minutes.

4. **False Predictive Hyperglycemic alert rate** the alarm alerted when the CGM predicted that the user would be above the high threshold but the user’s blood glucose was actually below the high threshold within 15 or 30 minutes.

The false alert rate is important because it is necessary that users be correctly notified when their blood glucose is low (or high) so that they can correct the low (or high) blood glucose. A low false alert rate indicates that when the CGM says that their glucose values are, or will reach a specified threshold, the user’s blood glucose is likely to be at or approaching that threshold.

For example, per the following table, the high glucose threshold alerts would have incorrectly indicated that the user was above (i.e. threshold only), or predicted to reach
above the threshold (i.e. predictive only), or both (threshold and predictive) 6.30%, 29.5% or 22.0% of the time within 30 minutes (or 7.2%, 33.1%, or 24.6% of the time within 15 minutes) when the user had blood glucose less than 180 mg/dL for a sensor inserted in the abdomen.

**Table 2. Glucose FALSE Alert Performance using Calibration every 12 hours**

<table>
<thead>
<tr>
<th>mg/dL</th>
<th>Insertion Site</th>
<th>Glucose FALSE Alert Rate</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Threshold Only</td>
<td>30 min</td>
<td>15 min</td>
<td></td>
<td>Predictive Only</td>
<td>30 min</td>
<td>15 min</td>
</tr>
<tr>
<td>50</td>
<td>Abdomen</td>
<td>75.0%</td>
<td>75.0%</td>
<td>84.8%</td>
<td>87.7%</td>
<td>81.8%</td>
<td>83.8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>63.2%</td>
<td>63.2%</td>
<td>78.1%</td>
<td>83.3%</td>
<td>73.9%</td>
<td>77.6%</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Abdomen</td>
<td>46.5%</td>
<td>48.1%</td>
<td>59.3%</td>
<td>62.9%</td>
<td>53.8%</td>
<td>56.6%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>31.0%</td>
<td>32.2%</td>
<td>52.5%</td>
<td>54.4%</td>
<td>44.9%</td>
<td>46.5%</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Abdomen</td>
<td>33.1%</td>
<td>33.1%</td>
<td>47.3%</td>
<td>52.3%</td>
<td>41.7%</td>
<td>44.8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>22.6%</td>
<td>24.7%</td>
<td>42.6%</td>
<td>45.5%</td>
<td>34.4%</td>
<td>37.0%</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>Abdomen</td>
<td>30.7%</td>
<td>30.7%</td>
<td>42.2%</td>
<td>48.9%</td>
<td>37.8%</td>
<td>41.8%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>22.5%</td>
<td>23.6%</td>
<td>40.1%</td>
<td>47.0%</td>
<td>33.5%</td>
<td>38.1%</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>Abdomen</td>
<td>24.9%</td>
<td>25.6%</td>
<td>36.0%</td>
<td>41.5%</td>
<td>32.1%</td>
<td>35.7%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>25.1%</td>
<td>25.1%</td>
<td>31.0%</td>
<td>36.8%</td>
<td>28.7%</td>
<td>32.0%</td>
<td></td>
</tr>
<tr>
<td>180</td>
<td>Abdomen</td>
<td>6.30%</td>
<td>7.20%</td>
<td>29.5%</td>
<td>33.1%</td>
<td>22.0%</td>
<td>24.6%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>7.10%</td>
<td>7.10%</td>
<td>32.0%</td>
<td>36.8%</td>
<td>23.5%</td>
<td>26.3%</td>
<td></td>
</tr>
<tr>
<td>220</td>
<td>Abdomen</td>
<td>8.10%</td>
<td>8.10%</td>
<td>31.1%</td>
<td>33.7%</td>
<td>23.4%</td>
<td>25.2%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>7.80%</td>
<td>7.80%</td>
<td>34.3%</td>
<td>37.8%</td>
<td>25.5%</td>
<td>27.8%</td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Glucose FALSE Alert Performance using Calibration every 12 hours

<table>
<thead>
<tr>
<th>Glucose FALSE Alert Rate</th>
<th>Inser‐tion Site</th>
<th>Threshold Only</th>
<th>Predictive Only</th>
<th>Threshold &amp; Pre‐dictive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>30 min</td>
<td>15 min</td>
<td>30 min</td>
</tr>
<tr>
<td>250</td>
<td>Ab‐domen</td>
<td>9.80%</td>
<td>9.80%</td>
<td>36.0%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>8.60%</td>
<td>8.60%</td>
<td>38.0%</td>
</tr>
<tr>
<td>300</td>
<td>Ab‐domen</td>
<td>18.8%</td>
<td>18.8%</td>
<td>42.2%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>18.1%</td>
<td>19.4%</td>
<td>48.3%</td>
</tr>
</tbody>
</table>

**Glucose Correct Detection Rate**

Glucose Correct Detection Rate is the rate that the device alerted when it should have alerted. For example, the blood glucose was below the hypoglycemic threshold, or above the hyperglycemic threshold, and the device sounded an alert.

Glucose detection rates are important because it is necessary that users be notified when their blood glucose is low (or high) so that they can correct the low (or high) blood glucose. A high glucose correct detection rate indicates that users can have confidence that they will be notified by the device if their blood glucose is low or high.

For example, per the following table, the threshold alert, the predictive alert, or both (threshold and predictive) notified the user 64%, 76% or 76% of the time within 30 minutes (or 64%, 68%, or 68% within 15 minutes) when the user had blood glucose less than 50 mg/dL for a sensor inserted in the abdomen.
<table>
<thead>
<tr>
<th>mg/dL</th>
<th>Insertion Site</th>
<th>Glucose Correct Detection Rate</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Threshold Only</td>
<td>Predictive Only</td>
<td>Threshold &amp; Predictive</td>
<td>30 min</td>
<td>15 min</td>
</tr>
<tr>
<td>50</td>
<td>Abdomen</td>
<td>64.0%</td>
<td>76.0%</td>
<td>76.0%</td>
<td>64.0%</td>
<td>76.0%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>66.7%</td>
<td>95.2%</td>
<td>95.2%</td>
<td>66.7%</td>
<td>95.2%</td>
</tr>
<tr>
<td>60</td>
<td>Abdomen</td>
<td>83.3%</td>
<td>94.0%</td>
<td>94.0%</td>
<td>82.1%</td>
<td>94.0%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>86.3%</td>
<td>98.6%</td>
<td>98.6%</td>
<td>83.6%</td>
<td>98.6%</td>
</tr>
<tr>
<td>70</td>
<td>Abdomen</td>
<td>90.5%</td>
<td>94.2%</td>
<td>94.2%</td>
<td>90.5%</td>
<td>94.2%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>90.2%</td>
<td>92.7%</td>
<td>92.7%</td>
<td>88.6%</td>
<td>92.7%</td>
</tr>
<tr>
<td>80</td>
<td>Abdomen</td>
<td>87.2%</td>
<td>93.6%</td>
<td>93.6%</td>
<td>87.2%</td>
<td>93.6%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>89.0%</td>
<td>94.8%</td>
<td>94.8%</td>
<td>88.4%</td>
<td>94.8%</td>
</tr>
<tr>
<td>90</td>
<td>Abdomen</td>
<td>91.1%</td>
<td>94.6%</td>
<td>94.6%</td>
<td>88.7%</td>
<td>94.6%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>91.7%</td>
<td>96.9%</td>
<td>96.9%</td>
<td>90.4%</td>
<td>96.9%</td>
</tr>
<tr>
<td>180</td>
<td>Abdomen</td>
<td>93.1%</td>
<td>96.6%</td>
<td>96.6%</td>
<td>91.4%</td>
<td>96.6%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>93.2%</td>
<td>98.1%</td>
<td>98.1%</td>
<td>92.2%</td>
<td>98.1%</td>
</tr>
<tr>
<td>220</td>
<td>Abdomen</td>
<td>90.1%</td>
<td>94.8%</td>
<td>94.8%</td>
<td>89.2%</td>
<td>94.8%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>90.1%</td>
<td>96.1%</td>
<td>96.1%</td>
<td>89.2%</td>
<td>96.1%</td>
</tr>
<tr>
<td>250</td>
<td>Abdomen</td>
<td>81.5%</td>
<td>96.5%</td>
<td>96.5%</td>
<td>80.9%</td>
<td>96.5%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>80.9%</td>
<td>96.7%</td>
<td>96.7%</td>
<td>79.6%</td>
<td>96.7%</td>
</tr>
</tbody>
</table>
Table 3. Glucose Correct Detection Alert Performance using Calibration every 12 hours

<table>
<thead>
<tr>
<th>Glucose Correct Detection Rate</th>
<th>Threshold Only</th>
<th>Predictive Only</th>
<th>Threshold &amp; Predictive</th>
</tr>
</thead>
<tbody>
<tr>
<td>mg/dL</td>
<td>Abdomen</td>
<td>Arm</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>75.3%</td>
<td>95.3%</td>
<td>95.3%</td>
</tr>
<tr>
<td></td>
<td>75.3%</td>
<td>92.9%</td>
<td>94.1%</td>
</tr>
</tbody>
</table>

**Glucose Missed Detection Rate**

The Missed Detection Rate is the rate that the device did not alert when it should have. For example, the blood glucose was below the hypoglycemic threshold, or above the hyperglycemic threshold, and the device did not sound a threshold or predictive alert.

Missed detection rates are important because it is necessary that users be notified when their blood glucose is low (or high), so that they can correct the low (or high) blood glucose. A low missed detection rate indicates that users can have confidence that they will be notified by the device if their blood glucose is low or high.

For example, per the following table, the threshold alert, predictive alert, or both alerts (threshold and predictive) did not sound 36%, 24% or 24% of the time within 30 minutes (or 36%, 32% or 32% within 15 minutes) when the user had blood glucose less than 50 mg/dL for a sensor inserted in the abdomen.

Table 4. Glucose Missed Detection Alert Performance using Calibration every 12 hours

<table>
<thead>
<tr>
<th>Glucose Missed Detection Rate</th>
<th>Threshold Only</th>
<th>Predictive Only</th>
<th>Threshold &amp; Predictive</th>
</tr>
</thead>
<tbody>
<tr>
<td>mg/dL</td>
<td>Abdomen</td>
<td>Arm</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>36.0%</td>
<td>24.0%</td>
<td>24.0%</td>
</tr>
<tr>
<td></td>
<td>36.0%</td>
<td>32.0%</td>
<td>32.0%</td>
</tr>
<tr>
<td>Arm</td>
<td>33.3%</td>
<td>4.8%</td>
<td>4.8%</td>
</tr>
<tr>
<td></td>
<td>33.3%</td>
<td>28.6%</td>
<td>23.8%</td>
</tr>
</tbody>
</table>
Table 4. Glucose Missed Detection Alert Performance using Calibration every 12 hours

<table>
<thead>
<tr>
<th>mg/dL</th>
<th>Insertion Site</th>
<th>Glucose Missed Detection Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Threshold Only</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 min 15 min</td>
</tr>
<tr>
<td>60</td>
<td>Abdomen</td>
<td>16.7% 17.9%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>13.7% 16.4%</td>
</tr>
<tr>
<td>70</td>
<td>Abdomen</td>
<td>9.5% 9.5%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>9.8% 11.4%</td>
</tr>
<tr>
<td>80</td>
<td>Abdomen</td>
<td>12.8% 12.8%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>11.0% 11.6%</td>
</tr>
<tr>
<td>90</td>
<td>Abdomen</td>
<td>8.9% 11.3%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>8.3% 9.6%</td>
</tr>
<tr>
<td>180</td>
<td>Abdomen</td>
<td>6.9% 8.6%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>6.8% 7.8%</td>
</tr>
<tr>
<td>220</td>
<td>Abdomen</td>
<td>9.9% 10.8%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>9.9% 10.8%</td>
</tr>
<tr>
<td>250</td>
<td>Abdomen</td>
<td>18.5% 19.1%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>19.1% 20.4%</td>
</tr>
<tr>
<td>300</td>
<td>Abdomen</td>
<td>24.7% 24.7%</td>
</tr>
<tr>
<td></td>
<td>Arm</td>
<td>25.6% 28.2%</td>
</tr>
</tbody>
</table>
**IEC 60601-1**

**IEC 60601-1-2, Special EMC Precautions for Medical Electrical Equipment**

1. Special Precautions regarding Electromagnetic Compatibility (EMC): This body worn device is intended to be operated within a reasonable residential, domestic, public or work environment, where common levels of radiated “E” (V/m) or “H” fields (A/m) exist; such as cellular phones, WiFi™*, Bluetooth electric can openers, microwave and induction ovens. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the provided instructions, may cause harmful interference to radio communications.

2. Portable and mobile RF communications equipment can affect Medical Electrical Equipment as well. If RF interference from a mobile or stationary RF transmitter is encountered, move away from the RF transmitter that is causing the interference.

**IEC 60601-1**

The MiniMed 670G system should not be used adjacent to other electrical equipment. If adjacent use becomes necessary, the MiniMed 670G system should be observed to confirm normal system operation.

**IEC 60601-1-10: PCLCS**

The MiniMed 670G is a Physiological Closed-Loop Controlled system (PCLCS).

Auto Mode manages basal delivery using a closed loop control algorithm based on a Proportional Integral Derivative controller with insulin feedback (PID-IFB). The PID-IFB monitors the Rate Of Change (ROC) of SG and calculates the insulin volume using the Insulin On Board (IOB) and the reported Carbs. The closed loop controller uses continual feedback of SG values to calculate the insulin delivery rate for basal insulin control. The control algorithm is part of the pump application code. SG values are received by the pump via RF from the CGM sensor. This theory of operation is described in the following block diagram.
Guidance and manufacturer’s declaration

| Guidance and Manufacturer’s Declaration - Electromagnetic Emissions |  |
|---|---|---|
| The MiniMed 670G insulin pump is intended for use in the electromagnetic environment specified below. The customer or the user of the MiniMed insulin pump should make sure that it is used in such an environment. |  |

<table>
<thead>
<tr>
<th>Emissions Test</th>
<th>Compliance</th>
<th>Electromagnetic Environment - Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Maximum Output Power: Pass</td>
<td></td>
</tr>
</tbody>
</table>
### Guidance and Manufacturer’s Declaration - Electromagnetic Emissions

<table>
<thead>
<tr>
<th></th>
<th>TX Spurious Emissions: Pass</th>
<th>Power Spectral Density: Pass</th>
<th>The MiniMed insulin pump is suitable for use in aircraft (in Airplane Mode) and in all establishments, including domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF emissions</td>
<td>Class B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN55011 (2009)+A1</td>
<td>Class B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTCA DO 160G</td>
<td>Complies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2010) 20.5 and 21.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARIB STD-T66</td>
<td>Complies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Guidance and Manufacturer’s Declaration - Electromagnetic Immunity

The MiniMed 670G insulin pump is intended for use in the electromagnetic environment specified below. The customer or the user of the MiniMed insulin pump should assure that it is used in such an environment.

<table>
<thead>
<tr>
<th>Immunity Test</th>
<th>IEC 60601 Test Level</th>
<th>Compliance Level</th>
<th>Electromagnetic Environment - Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrostatic discharge (ESD)</td>
<td>±8 kV contact ±15 kV air @ (30-60% Relative Humidity)</td>
<td>±8 kV contact ±15 kV air @ (30-60% Relative Humidity)</td>
<td>For use in a typical domestic, commercial, or hospital environment.</td>
</tr>
<tr>
<td>IEC 61000-4-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical fast transient/burst</td>
<td>±2 kV for power supply lines ±1 kV for input/output lines</td>
<td>Not applicable</td>
<td>Requirement does not apply to this battery powered device.</td>
</tr>
<tr>
<td>IEC 61000-4-4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Guidance and Manufacturer’s Declaration - Electromagnetic Immunity

**Surge**
- **IEC 61000-4-5**
  - ±1 kV line(s) to line(s)
  - ±2 kV line(s) to earth
- **Compliance Level**: Not applicable
- **Electromagnetic Environment Guidance**: Requirement does not apply to this battery powered device.

**Voltage dips, short interruptions and voltage variations on power supply lines**
- **IEC 61000-4-11**
  - <5% \(U_T\) (\(>95\%\) dip in \(U_T\)) for 0.5 cycle
- **Compliance Level**: Not applicable
- **Electromagnetic Environment Guidance**: Requirement does not apply to this battery powered device.

**Power frequency (50/60 Hz) magnetic field**
- **IEC 61000-4-8**
  - 400 A/m (continuous field at 60 seconds)
- **Compliance Level**: 400 A/m
- **Electromagnetic Environment Guidance**: Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

**Note:** \(U_T\) is the a.c. mains voltage prior to application of the test level.

---

### Guidance and Manufacturer’s Declaration - Electromagnetic Immunity

**The MiniMed 670G insulin pump is intended for use in the electromagnetic environment specified below. The customer or user of the MiniMed insulin pump should assure that it is used in such an electromagnetic environment.**

<table>
<thead>
<tr>
<th>Immunity Test</th>
<th>IEC 60601 Test Level</th>
<th>Compliance Level</th>
<th>Electromagnetic Environment Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiated RF</td>
<td>IEC 61000-4-3</td>
<td>10 V/m 80 MHz to 2.5 GHz</td>
<td>Portable and mobile RF communications equipment should be used no closer to any part of the MiniMed insulin pump, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance:</td>
</tr>
</tbody>
</table>
The MiniMed 670G insulin pump is intended for use in the electromagnetic environment specified below. The customer or user of the MiniMed insulin pump should assure that it is used in such an electromagnetic environment.

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 MHz to 800 MHz</td>
<td>( d = 1.2 \sqrt{P} )</td>
</tr>
<tr>
<td>800 MHz to 6 GHz</td>
<td>( d = 2.3 \sqrt{P} )</td>
</tr>
</tbody>
</table>

Where \( P \) is the maximum output power rating of the transmitter in Watts (W) according to the transmitter manufacturer and \( d \) is the recommended separation distance in meters (m).

Field strength from fixed RF transmitters should be less than the compliance level in each frequency range\(^a\). The field strength values could be determined by an electromagnetic site survey\(^b\).

Interference may occur in the vicinity of equipment marked with the following symbol:

Note: At 80 MHz and 800 MHz, the higher frequency range applies.

Note: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption, and reflection from structures, objects and people.

Note: The table is per IEC (EN) 60601-1-2 Edition 3.

\(^a\) Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

\(^b\) Field strength from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcasts and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic
environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the MiniMed insulin pump is used exceeds the applicable RF compliance level above, the insulin pump should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the MiniMed insulin pump.

<table>
<thead>
<tr>
<th>Household RF Transmitter</th>
<th>Frequency</th>
<th>Recommended Separation Distance (meter)</th>
<th>Recommended Separation Distance (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Telephones</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cordless Household</td>
<td>2.4 GHz</td>
<td>0.3</td>
<td>12</td>
</tr>
<tr>
<td>Cordless Household</td>
<td>5.8 GHz</td>
<td>0.3</td>
<td>12</td>
</tr>
<tr>
<td>TDMA-50 Hz (cell phone)</td>
<td>1.9 GHz</td>
<td>0.3</td>
<td>12</td>
</tr>
<tr>
<td>TDMA-50 Hz (cell phone)</td>
<td>800 MHz</td>
<td>0.3</td>
<td>12</td>
</tr>
<tr>
<td>PCS (cell phone)</td>
<td>1.9 MHz</td>
<td>0.3</td>
<td>12</td>
</tr>
<tr>
<td>DCS (cell phone)</td>
<td>1.8 MHz</td>
<td>0.3</td>
<td>12</td>
</tr>
<tr>
<td>GSM (cell phone)</td>
<td>900 MHz</td>
<td>0.3</td>
<td>12</td>
</tr>
<tr>
<td>GSM (cell phone)</td>
<td>850 MHz</td>
<td>0.3</td>
<td>12</td>
</tr>
<tr>
<td>CDMA (cell phone)</td>
<td>800 MHz</td>
<td>0.3</td>
<td>12</td>
</tr>
<tr>
<td>Analog (cell phone)</td>
<td>824 MHz</td>
<td>0.3</td>
<td>12</td>
</tr>
<tr>
<td>CDMA (cell phone)</td>
<td>1.9 MHz</td>
<td>0.3</td>
<td>12</td>
</tr>
<tr>
<td><em><em>Wi-Fi™</em> Networks</em>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>802.11b</td>
<td>2.4 GHz</td>
<td>1</td>
<td>39.5</td>
</tr>
<tr>
<td>802.11g</td>
<td>2.4 GHz</td>
<td>1</td>
<td>39.5</td>
</tr>
<tr>
<td>802.11n</td>
<td>2.4 GHz</td>
<td>1</td>
<td>39.5</td>
</tr>
<tr>
<td>Bluetooth™* wireless tech-nology 500 kb/s</td>
<td>2.4 GHz</td>
<td>0.1</td>
<td>3.93</td>
</tr>
<tr>
<td>ZigBee™* 250 kb/s</td>
<td>2.4 GHz</td>
<td>0.1</td>
<td>3.93</td>
</tr>
</tbody>
</table>
The MiniMed insulin pump is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or user of the MiniMed insulin pump can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the MiniMed insulin pump as recommended below, according to the maximum output power of the communications equipment.

<table>
<thead>
<tr>
<th>Rated maximum output power of transmitter (W)</th>
<th>Separation distance according to the frequency of transmitter (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>80 MHz to 800 MHz</td>
</tr>
<tr>
<td></td>
<td>$d=1.2\sqrt{P}$</td>
</tr>
<tr>
<td>0.01</td>
<td>0.12</td>
</tr>
<tr>
<td>0.1</td>
<td>0.38</td>
</tr>
<tr>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>10</td>
<td>3.8</td>
</tr>
<tr>
<td>100</td>
<td>12</td>
</tr>
</tbody>
</table>

For transmitters rated at a maximum output power not listed above, the recommended separation distance $d$ in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where $p$ is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

**Note:** At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

**Note:** These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.
**Wireless communication**

**Quality of service**

The CGM transmitter and MiniMed insulin pump are associated as part of an 802.15.4 network for which the pump functions as the coordinator and the CGM transmitter as an end node. In an adverse RF environment the MMT-1580/1780 pump will assess channel changing needs based on “noise” levels detected during an energy scan. The pump will perform the energy scan if after 10 minutes no CGM transmitter signal has been received. If the channel change occurs the pump will send beacons on the new channel.

The CGM transmitter will initiate a channel search when beacon detection fails on the associated channel. The search will be conducted across all five channels. When the beacon is located the transmitter will rejoin on the identified channel. Upon re-association any missed packets (up to 10 hours) will be transmitted from the CGM transmitter to the pump.

In normal operation the CGM transmitter will transmit a packet every 5 minutes and retransmit the packet if the data is corrupted or missed.

**Radio frequency (RF) communications specifications**

Utilizes the IEEE 802.15.4 protocol with the proprietary data format.

<table>
<thead>
<tr>
<th>Pump frequency</th>
<th>2.4 GHz; proprietary Medtronic protocol; range up to 6 feet (1.8 meters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum output power (EIRP)</td>
<td>-4 dB m (.398 mW)</td>
</tr>
<tr>
<td>Operating frequencies</td>
<td>2420 MHz, 2435 MHz, 2450 MHz, 2465 MHz, 2480 MHz</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>5 MHz which is allocated channel bandwidth per the IEEE protocol</td>
</tr>
</tbody>
</table>

**FCC notice**

This device complies with the United States Federal Communications Commission (FCC) and international standards for electromagnetic compatibility. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must
accept any interference received, including interference that may cause undesired
operation. These standards are designed to provide reasonable protection against
excessive radio frequency interference, and prevent undesirable operation of the
devices from unwanted electromagnetic interference.

Note: This equipment has been tested and found to comply with the limits for a Class
B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to
provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses, and can radiate radio frequency energy and, if not
installed and used in accordance with the instructions, may cause harmful interference
to radio communications. However, there is no guarantee that interference will not
occur in a particular installation. If this equipment does cause harmful interference to
radio or television reception, which can be determined by turning the equipment off
and on, the user is encouraged to try to correct the interference by one or more of the
following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Decrease the distance between the transmitter and the insulin pump to 6 feet (1.8
  meters) or less.
• Decrease the distance between the meter and the insulin pump to 6 feet (1.8
  meters) or less.
• Increase the separation between the transmitter and the device that is
  receiving/ emitting interference.

IMPORTANT: Do not change or modify the internal RF transmitter or antenna unless
expressly approved by Medtronic Diabetes. Doing so could interfere with your ability
to operate the equipment.

Note: Harmful interference is defined by the FCC as follows. Any
emission, radiation or induction that endangers the functioning of a
radio navigation service or of other safety services or seriously degrades,
observes or repeatedly interrupts a radio communications service
operating in accordance with FCC rules.
Data security

The MiniMed 670G insulin pump is designed to only accept radio frequency (RF) communications from recognized and linked devices (you must program your pump to accept information from a specific device).

The MiniMed 670G system ensures data security via encryption and proprietary means and ensures data integrity using error checking processes, such as cyclic redundancy checks.
Appendix A: End user software license agreement

End user software license agreement

NOTICE TO USER: Certain portions of software contained in this product may be covered by the GNU General Public License, Version 2 or Version 3 (“Open Source”), which can be obtained through the GNU web site at www.gnu.org/copyleft/gpl.html. The source code for any Open Source can be obtained, for a nominal fee to cover the cost of shipping and media, by contacting Medtronic MiniMed, Inc., Director of Software Development, 18000 Devonshire Street, Northridge, CA 91325-1219, USA, tel: +1-866-948-6633.
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>active insulin</td>
<td>Bolus insulin that has been delivered by the pump and is still working to lower your blood glucose levels.</td>
</tr>
<tr>
<td>active insulin adjustment</td>
<td>The amount of insulin that is subtracted from your BG correction bolus to account for the active insulin that is tracked by the Bolus Wizard.</td>
</tr>
<tr>
<td>Active Insulin Time</td>
<td>A Bolus Wizard setting that lets you set the length of time that bolus insulin is tracked as active insulin.</td>
</tr>
<tr>
<td>Activity Guard</td>
<td>An attachment that can be used to ensure that the reservoir stays secure during activity, or when the pump is worn by a child.</td>
</tr>
<tr>
<td>Airplane Mode</td>
<td>A feature that temporarily stops your device from communicating wirelessly.</td>
</tr>
<tr>
<td>alarm</td>
<td>An audible beep or vibration with a message to inform you that the pump is no longer delivering insulin. Alarms require immediate action.</td>
</tr>
<tr>
<td>Alarm History</td>
<td>A feature that stores information about recent alarms and alerts.</td>
</tr>
<tr>
<td>alert</td>
<td>An audible beep or vibration with a message to inform you of a situation that may require your attention.</td>
</tr>
<tr>
<td>Alert before low</td>
<td>An alert that occurs when you are approaching your low sensor glucose value.</td>
</tr>
<tr>
<td>Alert Limits</td>
<td>The values that you set to determine when low and high glucose alerts are triggered.</td>
</tr>
<tr>
<td>Alert on low</td>
<td>An alert that occurs when your sensor glucose value reaches or falls below your low limit.</td>
</tr>
<tr>
<td>Auto Basal</td>
<td>The automatically adjusted basal insulin delivered by Auto Mode based on your sensor glucose values.</td>
</tr>
<tr>
<td><strong>Auto Mode</strong></td>
<td>Auto Mode is an insulin delivery feature that automatically controls basal insulin delivery to regulate blood glucose (BG) levels to a target sensor glucose (SG) value.</td>
</tr>
<tr>
<td><strong>Auto Suspend</strong></td>
<td>An alarm that you set to suspend insulin delivery and trigger an alarm if no buttons are pressed for a specified period of time. Clearing the alarm resumes basal insulin delivery.</td>
</tr>
<tr>
<td><strong>Awake mode</strong></td>
<td>A state in which the pump screen is on. Unless you are actively using another screen, your Home screen appears.</td>
</tr>
<tr>
<td><strong>basal insulin</strong></td>
<td>Insulin that is continuously delivered by the pump to meet your individual insulin needs between meals and during sleep.</td>
</tr>
<tr>
<td><strong>basal pattern</strong></td>
<td>A set of one or more basal rates that covers a 24-hour period.</td>
</tr>
<tr>
<td><strong>basal rate</strong></td>
<td>The amount of continuous basal insulin that you program your pump to automatically deliver per hour.</td>
</tr>
<tr>
<td><strong>BG</strong></td>
<td>Abbreviation for blood glucose. See blood glucose.</td>
</tr>
<tr>
<td><strong>BG Targets</strong></td>
<td>The high and low values to which your blood glucose is corrected when using the Bolus Wizard.</td>
</tr>
<tr>
<td><strong>Block Mode</strong></td>
<td>A feature that restricts the ability to change all settings. You can still perform certain functions, such as suspending insulin delivery, reviewing history, testing your pump, or clearing alarms and alerts.</td>
</tr>
<tr>
<td><strong>blood glucose (BG)</strong></td>
<td>Refers to glucose (sugar) that is present in the blood, commonly measured by a blood glucose meter.</td>
</tr>
<tr>
<td><strong>blood glucose meter</strong></td>
<td>A device that measures glucose levels in the blood.</td>
</tr>
<tr>
<td><strong>Bolus BG Check reminder</strong></td>
<td>A reminder that you set just after you program a bolus. The reminder notifies you to check your blood glucose when the time period that you specified has passed.</td>
</tr>
</tbody>
</table>
**Bolus Entry function**
The Bolus Entry function in Auto Mode assists the user in calculating a recommended bolus amount based on optional carbohydrate intake and optional BG measurement. The user may enter one or both of the two optional inputs. This function utilizes the Carb Ratio setting to compute the bolus.

**bolus insulin**
Insulin used to cover an expected rise in glucose levels from carbohydrates, or to lower a high blood glucose value down to your target range.

**Bolus Speed**
A feature that lets you choose the speed at which your device delivers bolus insulin.

**Bolus Wizard**
A feature that uses your individual Bolus Wizard settings to calculate an estimated bolus amount based on the BG values and carbs that you enter. These settings include Carb Ratio, Insulin Sensitivity Factor, BG Target Range, and Active Insulin Time.

**calibrate**
The process of using a meter blood glucose reading to calculate sensor glucose values.

**Calibration reminder**
A reminder you can set to let you know when your next calibration is due.

**cannula**
Short, thin, and flexible tube placed in the tissue below the skin. Insulin is delivered through the cannula into the body.

**carb ratio**
The number of grams of carbohydrates covered by one unit of insulin. The carb ratio is used to calculate bolus amounts.

**CGM**
Abbreviation for continuous glucose monitoring. See *continuous glucose monitoring*.

**continuous glucose monitoring (CGM)**
A monitoring tool that uses a glucose sensor placed below the skin to continuously measure the amount of glucose in your interstitial fluid.

**correction bolus**
Insulin used to lower a high blood glucose value down to your target range.
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<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
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<td>Daily History</td>
<td>A feature that displays the actions that you performed using your device.</td>
</tr>
<tr>
<td>Diabetic Ketoacidosis (DKA)</td>
<td>A serious condition that occurs when the insulin levels are low, blood glucose level are elevated, and the body uses fat for energy. This process produces ketones which upset the body’s acid-base balance leading to a potentially life threatening situation.</td>
</tr>
<tr>
<td>Dual Wave Bolus</td>
<td>A type of bolus that provides a dose of insulin delivered as a combination of a Normal Bolus followed by a Square Wave Bolus.</td>
</tr>
<tr>
<td>Easy Bolus</td>
<td>A feature that lets you deliver a Normal Bolus in preset increments using only audio or vibrate confirmation.</td>
</tr>
<tr>
<td>Event Marker</td>
<td>A feature that allows you to record events, such as blood glucose readings, injections, carbohydrates, and exercise.</td>
</tr>
<tr>
<td>food bolus</td>
<td>A dose of insulin you give to cover an expected rise in glucose levels from carbohydrates.</td>
</tr>
<tr>
<td>High limit</td>
<td>The value you set to determine when the pump will alert you of a high sensor glucose condition.</td>
</tr>
<tr>
<td>infusion set</td>
<td>Tubing that connects to the reservoir on one end, and has a needle or cannula on the other end, that you insert into your body. Insulin travels from the pump through the infusion set into your body.</td>
</tr>
<tr>
<td>infusion site</td>
<td>The location on the body where the infusion set is inserted.</td>
</tr>
<tr>
<td>insulin sensitivity factor</td>
<td>The amount that blood glucose is reduced by one unit of insulin. The insulin sensitivity factor is used to calculate correction bolus amounts.</td>
</tr>
<tr>
<td>interstitial fluid</td>
<td>The fluid that surrounds the cells in the body.</td>
</tr>
<tr>
<td>ISIG</td>
<td>The signal created by the sensor that is used to calculate your sensor glucose value. Typically used by Medtronic technical support representatives when troubleshooting.</td>
</tr>
<tr>
<td>lock</td>
<td>A pump feature that prevents accidental button presses.</td>
</tr>
<tr>
<td>Term</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Low limit</td>
<td>The value you set to determine when the pump will alert you of a low sensor glucose condition, and also used for determining if insulin delivery should be suspended.</td>
</tr>
<tr>
<td>Low management</td>
<td>Low management features include Suspend before low and Suspend on low.</td>
</tr>
<tr>
<td>Manual Bolus</td>
<td>A feature that allows you to enter and deliver a dose of insulin in the amount that you have determined is necessary.</td>
</tr>
<tr>
<td>Manual Mode</td>
<td>Manual Mode refers to system functions other than Auto Mode. In other words, if Auto Mode is not functioning, the system is in Manual Mode.</td>
</tr>
<tr>
<td>Max Basal Rate</td>
<td>A feature that allows you to set the maximum amount of basal insulin that can be delivered per hour.</td>
</tr>
<tr>
<td>Max Bolus</td>
<td>A feature that allows you to set the maximum bolus amount that can be delivered in one dose.</td>
</tr>
<tr>
<td>meter</td>
<td>A term for any blood glucose meter.</td>
</tr>
<tr>
<td>Missed Meal Bolus</td>
<td>A reminder that a bolus was not delivered during time periods that you specify, often set around your meal times.</td>
</tr>
<tr>
<td>reminder</td>
<td></td>
</tr>
<tr>
<td>Normal Bolus</td>
<td>A type of bolus that provides an entire dose of insulin immediately.</td>
</tr>
<tr>
<td>notifications</td>
<td>All notifications are designed to get your attention and convey different types of information. They include alarms, alerts, reminders, and messages.</td>
</tr>
<tr>
<td>occlusion</td>
<td>A blockage or crimp of the cannula or tubing that prevents proper insulin flow.</td>
</tr>
<tr>
<td>piston</td>
<td>The part of the insulin pump that engages the reservoir and moves insulin through the tubing.</td>
</tr>
<tr>
<td>Power save mode</td>
<td>A state in which your pump is fully functional, but the screen goes dark to save power. You can set how long it takes for your screen to enter power save mode by changing the Backlight setting.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
</tr>
<tr>
<td><strong>Preset Bolus</strong></td>
<td>A feature that allows you to set up and save a bolus for specific meals or snacks that you frequently eat or drink.</td>
</tr>
<tr>
<td><strong>Preset Temp Basal</strong></td>
<td>A feature that allows you to set up and save temporary basal rates for repeated use.</td>
</tr>
<tr>
<td><strong>Rate alert</strong></td>
<td>An alert that notifies you if your sensor glucose value has been rising or falling faster than the Rise Limit or Fall Limit that you have set.</td>
</tr>
<tr>
<td><strong>reminder</strong></td>
<td>A type of notification that you can set to help you remember to do something.</td>
</tr>
<tr>
<td><strong>reservoir</strong></td>
<td>The small container that you fill with insulin and insert into your delivery device.</td>
</tr>
<tr>
<td><strong>Resume basal alert</strong></td>
<td>An alert that can be set to occur when your pump has automatically resumed basal insulin delivery after a Suspend before low or Suspend on low event because your sensor glucose values have met the necessary criteria. This alert will always occur if basal insulin delivery has resumed because the two hour maximum suspend time has elapsed.</td>
</tr>
<tr>
<td><strong>Rewind</strong></td>
<td>A feature used when changing a reservoir. It returns the piston to its starting position and allows a new reservoir to be placed into the pump.</td>
</tr>
<tr>
<td><strong>sensitivity</strong></td>
<td>See <strong>insulin sensitivity factor</strong>.</td>
</tr>
<tr>
<td><strong>sensor (glucose sensor)</strong></td>
<td>The small part of the continuous glucose monitoring system that you insert just below your skin to measure glucose levels in your interstitial fluid.</td>
</tr>
<tr>
<td><strong>sensor glucose (SG)</strong></td>
<td>Refers to glucose (sugar) that is present in the interstitial fluid and is measured by a glucose sensor.</td>
</tr>
<tr>
<td><strong>Set Change reminder</strong></td>
<td>A reminder that you can set to change your infusion set.</td>
</tr>
<tr>
<td><strong>SG</strong></td>
<td>Abbreviation for sensor glucose. See <strong>sensor glucose</strong>.</td>
</tr>
<tr>
<td><strong>Sleep mode</strong></td>
<td>A state in which your pump is fully functional, but the screen is dark. Your pump automatically enters sleep mode when you have not pressed any buttons for about two minutes.</td>
</tr>
<tr>
<td><strong>SmartGuard</strong></td>
<td>A feature that can automatically stop and resume insulin delivery based on your sensor glucose values and low limit. In Auto Mode, SmartGuard can automatically adjust basal insulin delivery based on SG inputs.</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Square Wave Bolus</strong></td>
<td>A bolus delivered evenly over a specified time period.</td>
</tr>
<tr>
<td><strong>Suspend before low</strong></td>
<td>A feature that suspends insulin delivery when the sensor predicts sensor glucose value is approaching your low limit.</td>
</tr>
<tr>
<td><strong>Suspend Delivery</strong></td>
<td>This feature stops all insulin delivery until you resume it. Only the basal insulin restarts when delivery is resumed.</td>
</tr>
<tr>
<td><strong>Suspend on low</strong></td>
<td>A feature that suspends insulin delivery when your sensor glucose value reaches or falls below your low limit.</td>
</tr>
<tr>
<td><strong>Temp Basal Rate</strong> (temporary basal rate)</td>
<td>A feature that allows you to temporarily increase or decrease your current basal rate for a duration of time that you specify.</td>
</tr>
<tr>
<td><strong>transfer guard</strong></td>
<td>The plastic piece that comes attached to the reservoir. It is used to connect the reservoir to the insulin vial while filling the reservoir with insulin.</td>
</tr>
<tr>
<td><strong>transmitter</strong></td>
<td>A device that connects to a glucose sensor. The transmitter collects data measured by the sensor and wirelessly sends this data to monitoring devices.</td>
</tr>
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