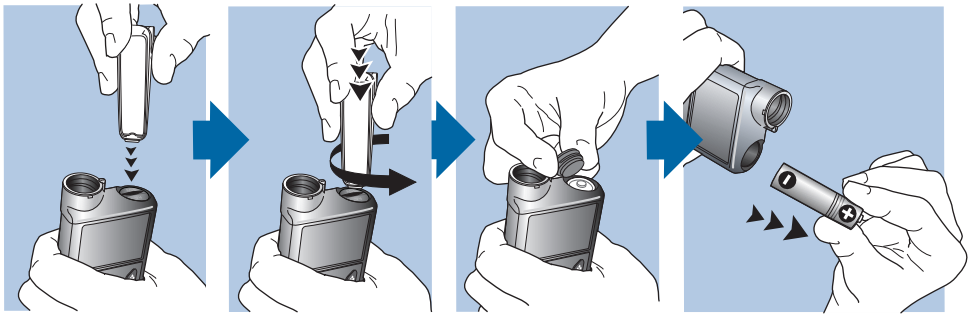
To remove the battery:

1. Before you remove 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 you remove your battery, wait until the Insert Battery screen appears before you insert a new battery.

   If you remove the battery to place your pump in storage, see *Storing your pump, on page 294* for more information.

Getting to know your pump

The following 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

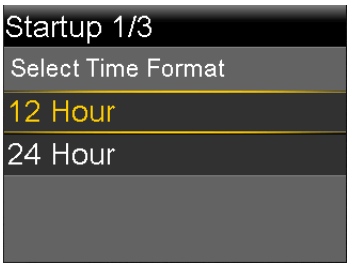
Your pump has a Startup Wizard that begins when you insert your battery for the first time. You set the language, time format, current time, and the current date in the Startup Wizard.

Note: Use this procedure when you enter your settings for the first time. If this is not the first time you enter your pump settings, and your pump is asking you to re-enter your settings, see *My pump is asking me to enter my settings, on page 286.*

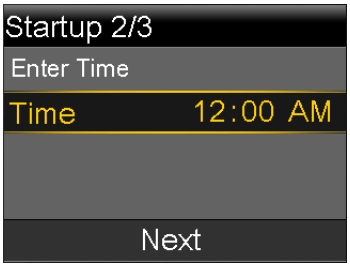
To use the Startup Wizard:

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

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 use a 12-hour clock, be sure to specify AM or PM. Select **Next**.



4. When the Enter Date screen appears, adjust the **Year**, **Month**, and **Day** to the current date. Select **Next**.

5. A "Rewinding" message appears. The piston returns to its start position in the reservoir compartment. This may take several seconds.

6. When rewinding is complete, a message appears to confirm the startup is complete. Select **OK** to go to the Home screen.

To become familiar with the buttons and screens on your pump, see the following sections in this chapter.

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 ◎, a screen appears and tells you to unlock your pump. Press the highlighted button to unlock your pump.

The selected screen appears after you press the correct button. If you press an incorrect button, the screen tells you to try again. If you press the ↩ button, the Home screen appears.

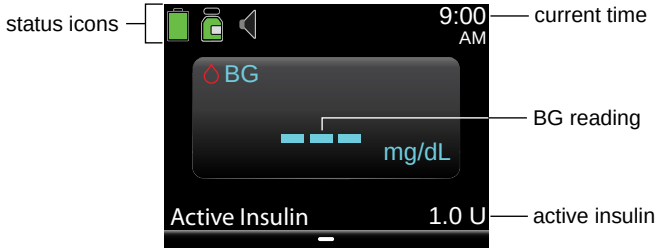
After your pump is unlocked, it remains unlocked until you re-enter sleep mode. For information about the different power modes, or to put your pump to sleep, see *Power modes, on page 58*.

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, on page 173*.

To see what your Home screen looks like when you are in Auto Mode, see *Home screen with SmartGuard Auto Mode, on page 225*.



The following items appear on your Home screen:

Item	Description
Status icons	The status icons show a quick status of your pump system. For more information, see *Status icons, on page 44*.
Current time	The current time of day is shown. For details on setting the time, see *Time and date, on page 168*.
BG meter readings	The pump shows the blood glucose (BG) meter readings from your Accu-Chek Guide Link meter or the BG meter readings you have entered manually. The pump only shows BG meter readings taken within the last 12 minutes. You can enter your BG meter reading manually using the Enter BG feature, Event Markers feature, or when you use the Bolus Wizard feature to deliver a bolus. For details on using the Bolus Wizard feature, see *Bolus Wizard feature, on page 90*.
Active insulin	The screen shows the amount of bolus insulin the pump estimates is still working to lower your BG levels. For more details on active insulin, see *About active insulin, on page 96*.

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, on page 50*.

Icon	Icon name	What it means
	Battery	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 . This indicates that approximately 100% of your battery capacity remains. In most cases, you can expect at least seven 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 needs to be replaced soon. 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 . This indicates 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 . This indicates you have less than 30 minutes of use remaining.

Icon	Icon name	What it means
	Reservoir	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 reservoir MMT-332A, 3.0 mL (300-unit). 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. For more information about your reservoir, see *Reservoir and infusion set* on *Setting up the reservoir and infusion set, on page 117*. • Approximately 85%–100% of the reservoir remains. • Approximately 71%–84% of the reservoir remains. • Approximately 57%–70% of the reservoir remains. • Approximately 43%–56% of the reservoir remains. • Approximately 29%–42% of the reservoir remains. • Approximately 15%–28% of the reservoir remains. • Approximately 1%–14% of the reservoir remains. • The reservoir remaining amount is unknown.
	Audio	The audio mode you are using: vibrate only, audio only, or vibrate and audio. When the Alert Silence option is turned on, the audio icons appear as follows: vibrate only, audio only, or vibrate and audio.

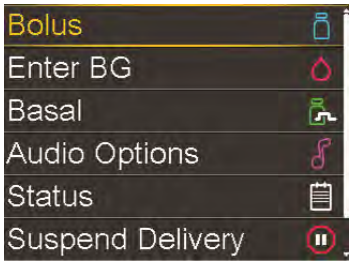
Icon	Icon name	What it means
	Connection	The connection icon appears green when the Sensor feature is on and your transmitter is successfully communicating with your pump. The connection icon appears with a red X when the Sensor feature is turned on, but the transmitter is not connected or communication with your pump has been lost. For more information about the Sensor feature, see *Understanding CGM, on page 171*.
	Temporary network connection	The temporary network connection icon replaces the connection icon while you are temporarily connected to a remote upload device.

Icon	Icon name	What it means
	Calibration	The calibration icon indicates the approximate time left until your next sensor calibration is due. The calibration icon 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 *Calibrating your sensor, on page 204*. • 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.

Icon	Icon name	What it means
	Sensor life	The number in the center of the sensor life icon indicates the number of days that remain until the sensor expires. 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 remains until the sensor expires, the icon color turns red. If the number of days that remain until the sensor expires is unavailable, the sensor life icon appears with three dots . When the system is waiting for the sensor to be started, the sensor life icon appears with a question mark .
	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 *SmartGuard Auto Mode Readiness, on page 223*.
	Block Mode	The Block Mode icon 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, on page 160*.

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:

Select this	Menu Indicators	To do this
Bolus		Set up and deliver your bolus insulin delivery.
Enter BG		Enter your BG value.
Basal		Set up your basal insulin delivery.
Audio Options		Set your audio, vibrate, and volume options for the notifications you receive.
Status		View information about your pump, any notifications you have received, your current settings, and optional sensor.
Suspend Delivery		Stop your current basal and bolus insulin delivery.
Options		Set your SmartGuard settings, reminders, delivery settings, enter event markers, view your history, and access the Utilities menu.

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:

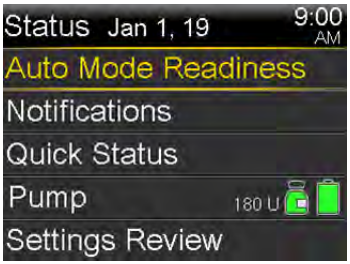
Status screen	Displays this information
Auto Mode Readiness	A list of conditions your pump has to meet before it can enter Auto Mode. For more information on Auto Mode, see the *SmartGuard Auto Mode* chapter.

Status screen	Displays this information
Notifications	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 the *Alarms, alerts, and messages* chapter.
Quick Status	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 status of the SmartGuard features.
Pump	The pump screen provides a detailed view of your pump status, including whether your pump is in a specific mode, the reservoir status, battery status, pump serial number, pump name, model number, and other details about your pump.
Sensor	The Sensor screen is available only if your sensor feature is turned on. The Sensor 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 status of the SmartGuard features.
Settings Review	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.

Viewing the Status screens

1. From the Home screen, press ◎ and select **Status** from the menu.

   The Status screen appears.



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

The MiniMed 770G insulin pump includes SmartGuard technology that automatically adjusts insulin delivery based on sensor glucose (SG) values. These glucose sensor-enabled features include SmartGuard Suspend on low, SmartGuard Suspend before low, and SmartGuard Auto Mode. The following tables show the differences between each mode and the delivery and suspend options available.

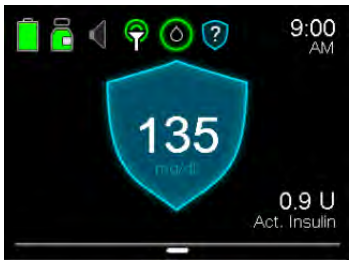
Manual Mode

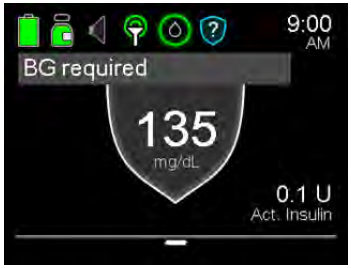
Mode CGM options	Bolus delivery options	Basal delivery	Suspend options
Pump without CGM 	• Bolus Wizard feature, which uses programmed carb ratio, insulin sensitivity, BG target, and active insulin time settings. • Normal bolus • Square Wave bolus • Dual Wave bolus • Preset bolus • Easy Bolus feature For more information, see the *Bolus* chapter.	• Programmed basal delivery settings—For more information, see *Basal insulin settings, on page 64*. • Temporary basal rates—For more information, see *Temp basal rates, on page 71*. • Preset temporary basal rates—For more information, see *Preset temp basal rates, on page 74*.	Manual suspend—For more information, see *Stopping and resuming your insulin delivery, on page 78*.

Mode CGM options	Bolus delivery options	Basal delivery	Suspend options
Pump with CGM 	• Bolus Wizard feature, which 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 feature For more information, see the *Bolus* chapter.	• Programmed basal delivery settings—For more information, see *Basal insulin settings, on page 64*. • Temporary basal rates—For more information, see *Temp basal rates, on page 71*. • Preset temporary basal rates—For more information, see *Preset temp basal rates, on page 74*.	Manual suspend—For more information, see *Stopping and resuming your insulin delivery, on page 78*.

Mode CGM options	Bolus delivery options	Basal delivery	Suspend options
Pump with CGM and with SmartGuard features enabled: Suspend before low or Suspend on low 	• Bolus Wizard feature, which 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 feature For more information, see the *Bolus* chapter.	• Programmed basal delivery settings—For more information, see *Basal insulin settings, on page 64*. • Temporary basal rates—For more information, see *Temp basal rates, on page 71*. • Preset temporary basal rates—For more information, see *Preset temp basal rates, on page 74*.	• Manual suspend—For more information, see *Stopping and resuming your insulin delivery, on page 78*. • SmartGuard Suspend before low—For more information, see *SmartGuard Suspend before low, on page 179*. • SmartGuard Suspend on low—For more information, see *SmartGuard Suspend on low, on page 183*.

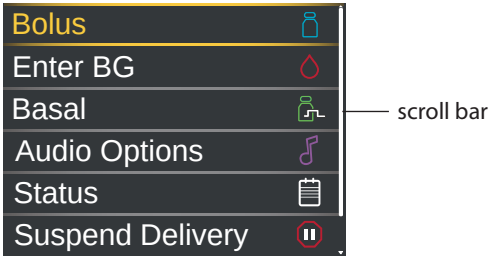
SmartGuard Auto Mode

	Bolus delivery options	Basal delivery	Suspend options
SmartGuard Auto Mode (Auto Basal delivery)  	• Auto Mode Bolus impacted by Carb Ratio and Active Insulin Time settings • 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 the *SmartGuard Auto Mode* chapter.	• Automatic delivery of basal insulin based on recent insulin delivery needs and SG values to target of 120 mg/dL • May set a temporary target of 150 mg/dL for up to 12 hours For more information, see the *SmartGuard Auto Mode* chapter.	Manual suspend—For more information, see *Stopping and resuming your insulin delivery, on page 78*.

	Bolus delivery options	Basal delivery	Suspend options
SmartGuard Auto Mode (Safe Basal delivery)  	• Auto Mode Bolus impacted by Carb Ratio and Active Insulin Time settings • 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 the *SmartGuard Auto Mode* chapter.	• Automatic delivery of basal insulin at a fixed rate • Does not use SG values to adjust rate For more information, see the *SmartGuard Auto Mode* chapter.	Manual suspend—For more information, see *Stopping and resuming your insulin delivery, on page 78.*

Scroll bar

The scroll bar is located on the right side of the screen, 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.

In this mode	Your pump behaves like this
Awake	Your pump screen is on. Unless you are actively using another screen, your Home screen appears. 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, on page 43*.
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 with the Backlight setting. For more information, see *Display Options, on page 161*. 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. When you press ◎, a screen appears and tells you to unlock your pump. Press the highlighted button to unlock your pump. For details, see *Unlocking your pump, on page 43*. 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, on page 162* for more information.
- Remove the battery. See *Storing your pump, on page 294* 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.

3

Basal

3 Basal

Basal insulin is the "background" insulin that you need throughout the day and night to maintain your target blood glucose (BG) values 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 SmartGuard Auto Mode, insulin is delivered based on sensor values and your recent insulin delivery needs. For more information on Manual Mode, see *Manual Mode, on page 220*. For more information on Auto Mode, see *SmartGuard Auto Mode, on page 219*.

Your basal insulin is delivered according to a basal pattern. Basal patterns and other basal settings are described in the following sections.

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, on page 66*.

Basal insulin settings

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

Setting	Description	Purpose
Basal Pattern	A basal pattern is a set of one or more basal rates that cover a 24-hour period.	A basal pattern lets you vary your basal rate according to your needs. You can set up to eight basal patterns. To set up basal patterns, see *Adding a new basal pattern, on page 67*. To start a basal pattern, see *Changing from one basal pattern to another, on page 70*.
Temp Basal	A temp basal is a basal rate that you use in place of your scheduled basal rate for short-term situations.	A temp basal lets you temporarily change your current basal rate for a duration of time that you specify. To start a temp basal rate, see *Starting a temp basal rate, on page 73*.
Preset Temp	A preset temp is a temporary basal rate that you can define ahead of time.	A preset temp lets you 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. To set up a preset temp basal rate, see *Preset temp basal rates, on page 74*. To start a preset temp basal rate, see *Starting a preset temp basal rate, on page 75*.
Max Basal rate	The max basal rate is the maximum amount of basal insulin that your pump can deliver per hour.	The max basal is a safety feature that limits the total amount of basal insulin your pump can deliver per hour. To set your Max Basal rate, see *Max Basal rate, on page 65*.

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 units per hour. Set your max basal rate as prescribed by your healthcare professional.

Note: If you set 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 Max Basal alert appears any time you enter the screen to change the value.

3. Select **Continue**.
4. In the Max Basal Rate screen, select **Max Basal** to set the maximum units per hour.
5. 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

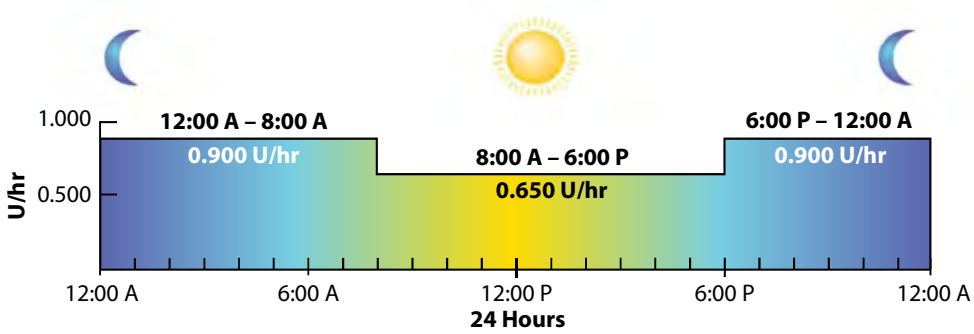
Rusty needs large amounts of insulin to control his BG levels. His new pump was delivered from the factory with a max basal rate of 2.00 units per hour, but he needs 2.80 units per hour in the early morning. Rusty plans to consult his healthcare professional about increasing his max basal rate to 3.00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



Your healthcare professional will determine what rates are right for you.

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, on page 70*.

Adding a new basal pattern

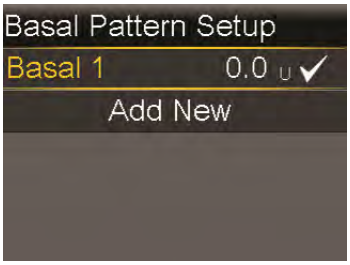
This procedure shows you how to add a new basal pattern.

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.



2. If this is your first time setting up a basal pattern, the unit amount is 0.0. Select **Basal 1** and go to step 5.

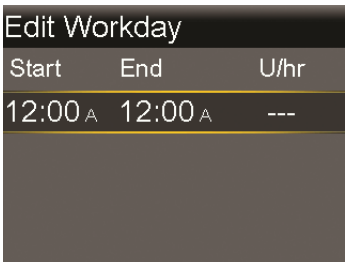
   If this is not your first time setting up a basal pattern, go to step 3 to add a new pattern.

3. To add a new basal pattern, select **Add New**.

   The Select Name screen appears.

Note: The Workday, Day Off, and Sick Day patterns are available so that you can match a basal pattern name to your insulin needs on those particular days.

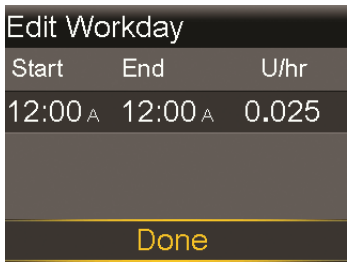
4. Select a basal pattern. An edit screen appears for the pattern you selected. The following example shows the Edit Workday screen.



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, go 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.

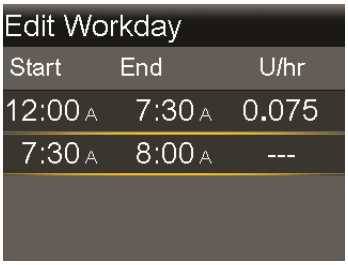


   c. Go to Step 7.

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.

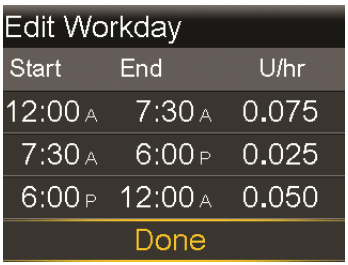
      If you set the End time to anything other than 12:00 AM, a second basal rate setting appears.



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, press ⌃ to scroll up to the rate and adjust the End time or Rate values.
>
> Press ⌃ or ⌄ when a field is selected to adjust the value of that field. When there is no field selected, press ⌃ or ⌄ to scroll up or down the list of basal rates.

b. Continue to set rates for different time periods as needed. The End time for your last rate must be 12:00 AM, as shown in the example that follows.



7. Select **Done**. The Done option appears only when the last End time in your basal pattern is set to 12:00 AM.

   A screen appears that lets you review your basal pattern. If you need to make any changes, press ↩ to return to the previous screen.

> **Note:** If you do not select **Done** and press ↩ to return to the previous screen, your changes are not saved or implemented.

8. Select **Save**.

To activate your basal pattern, see *Changing from one basal pattern to another, on page 70*.

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 shows all of your existing basal patterns.
2. Select the desired basal pattern.
3. Select **Options**.
4. Do any 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 ◎ 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 desired basal pattern.

   The Basal screen shows the details for the selected basal pattern.
3. Select **Begin**.

Example 1: Basal patterns

Ken has had his insulin pump for about a month. He tests his BG four to six 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 BG 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 BG at a safe level. Cynthia has also noticed that a few days prior to menstruation, her BG levels seem to rise, requiring more insulin. She has programmed a Basal 3 pattern on her pump with higher basal rates for this time.

Temp basal rates

The Temp Basal feature and Preset Temp feature allow you to set temporary basal rates to manage BG 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 to a value up to your max basal rate. The period of time of your temporary basal rate can range from 30 minutes to 24 hours.

Note: SmartGuard Auto Mode is not available if a temp basal is active. To switch your pump to Auto Mode, you must first cancel the temp basal. For more information on canceling a temp basal, see *Canceling a temp basal or preset temp basal rate, on page 77*.

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 canceled.

The Temp Basal feature lets you set and start a temporary basal rate immediately. The Preset Temp feature lets you 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.

This temp basal type:	Works like this:
Percent	Percent 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 units if your basal rate is set at less than 1 unit per hour, or to the next 0.05 units if your basal rate is set at more than 1 unit 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 is based on the largest basal rate scheduled during the temp basal duration and is limited by your max basal rate.
Rate	Rate delivers a fixed basal insulin rate in units per hour for the duration of your temporary basal. The amount you can set is limited by your max basal rate.

To use the Temp Basal feature, see *Starting a temp basal rate, on page 73*. To use the Preset Temp Basal feature, see *Preset temp basal rates, on page 74*.

Example 1: Temp basal rates

Jessica enjoys her exercise classes, but finds that her glucose levels drop after she attends them. Jessica works 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 she exercises.

Starting a temp basal rate

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

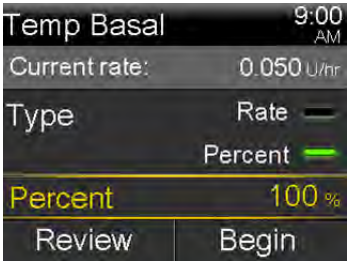
To start a temp basal rate:

1. Press ◎ and go to the Temp Basal screen.

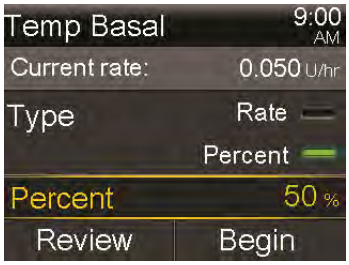
   Basal > Temp Basal

2. Set the **Duration**. The duration can be set in 15-minute increments from 30 minutes to 24 hours.

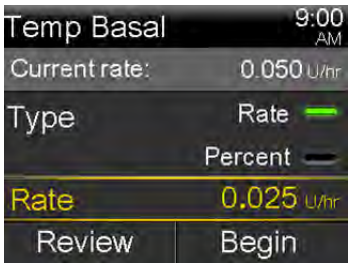
3. Select **Next**.
4. Select **Type** to select Percent or Rate.



5. Depending on the Type you selected, do one of the following:
   - Enter a percentage:



- Enter a basal rate. You cannot 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 lets you 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, on page 75*.

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. For example, Temp 1, High Activity, Moderate Activity, Low Activity, or Sick.
4. Select **Type** to select Percent or Rate.
5. If you use Percent, enter a percentage. If you use Rate, enter the rate in units per hour. You cannot exceed your max basal rate.
6. Set the **Duration** for the preset temp basal to be active. The duration can be set in 15-minute increments from 30 minutes to 24 hours.
7. Select **Save**.

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

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

   Options > Delivery Settings > Preset Temp Setup

   The Preset Temp Setup screen appears. This screen shows the settings for any existing preset temp.
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 any of the following:
   - Select **Edit** to adjust the Type (Percent or Rate), the Percentage or Rate amount, and the Duration for the preset temp basal rate.
   - Select **Rename** to assign a different name to the preset temp basal rate. When the Select Name screen appears, select any available name from the list.
   - Select **Delete** to delete the preset temp basal rate.

Starting a preset temp basal rate

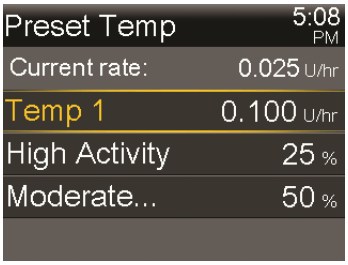
You must set up preset temp basal rates before you can use the Preset Temp feature. For more information, see *Preset temp basal rates, on page 74*.

To start a preset temp basal rate:

1. Press ◎ and go to the Preset Temp screen. The Preset Temp feature only appears if you have set up preset temp basal rates.

   Basal > Preset Temp

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



> **Note:** Depending on your active basal pattern, it is possible for a percentage preset temp basal rate to exceed your max basal limit. You cannot use a preset temp basal rate that exceeds your max basal limit. These rates appear grayed out in the list.

2. Select the preset temp basal rate you want to start.
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.

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 Temp Basal screen.

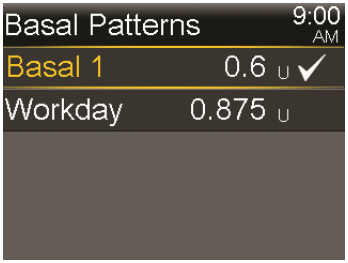
   Cancel Temp Basal > Temp Basal

   The Temp Basal screen shows 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.

To do this:	Do this:
View your current basal rate	From the Quick Status, you can view your current basal rate. Press ◎ and go to the Quick Status screen. Status > Quick Status
View your basal patterns	Press ◎ and go to the Basal Patterns screen: Basal > Basal Patterns The Basal Patterns 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.  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 does not occur until 15 minutes after your pump display times out again. To adjust your timeout setting, see *Display Options, on page 161*.

To continue your basal insulin delivery, use the Resume Delivery 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, on page 112*.

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. Failure to resume insulin delivery can result in hyperglycemia and ketoacidosis.

WARNING: Do not rely solely on the audio or vibration notifications when using the Audio or Vibrate options. 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 24-Hour Technical Support 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 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, on page 143* for details about using the Daily History screen.

4

Bolus

4 Bolus

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 BG 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 SmartGuard Auto Mode, you can only deliver a Normal bolus.

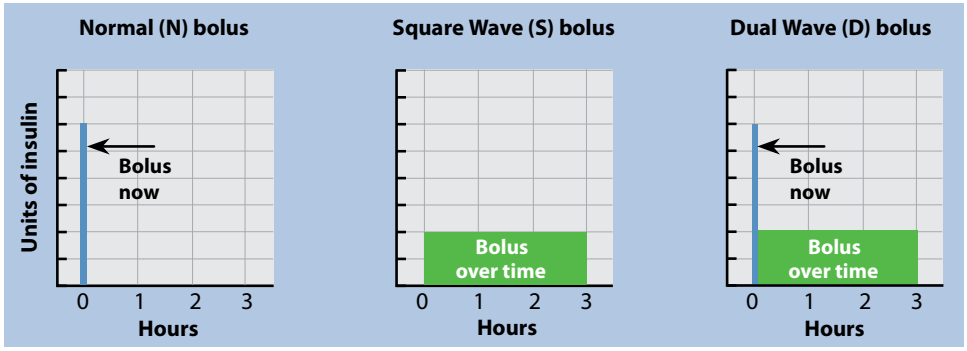
The following table provides general information about the available bolus types.

Bolus type	Description	Purpose
Normal	Normal bolus provides a single immediate dose of insulin.	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 *Normal bolus, on page 98*.

Bolus type	Description	Purpose
Square Wave bolus	Square Wave bolus delivers a single bolus evenly over an extended period of time from 30 minutes up to 8 hours.	You might use a Square Wave bolus for the following reasons: • You have delayed food digestion due to gastroparesis or meals high in fat. • When you snack over an extended period of time. • A Normal bolus drops your BG too rapidly. For details about using the Square Wave bolus feature, see *Square Wave bolus, on page 101*.
Dual Wave bolus	Dual Wave bolus delivers a combination of an immediate Normal bolus followed by a Square Wave bolus.	You might use a Dual Wave bolus for the following reasons: • 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 BG. For details about using a Dual Wave bolus, see *Dual Wave bolus, on page 104*.

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, on page 52*.

Delivery method	Bolus types	How it works
Bolus Wizard feature	Normal bolus, Square Wave bolus, Dual Wave bolus	You enter your BG meter reading or the carbs you plan to eat, or both. Then the Bolus Wizard feature 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 feature, on page 90*. Refer to the corresponding section to deliver one of the following bolus types: • Normal bolus using the Bolus Wizard feature, see *Delivering a Normal bolus with the Bolus Wizard feature, on page 98*. • Square Wave bolus using the Bolus Wizard feature, see *Delivering a Square Wave bolus with the Bolus Wizard feature, on page 102*. • Dual Wave bolus using the Bolus Wizard feature, see *Delivering a Dual Wave bolus with the Bolus Wizard feature, on page 105*.

Delivery method	Bolus types	How it works
Auto Mode Bolus	Normal bolus	You enter your BG meter reading or the 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. For details about using the Auto Mode Bolus feature, see *SmartGuard Auto Mode Bolus, on page 232*.
Manual	Normal bolus, Square Wave bolus, Dual Wave bolus	You do your own calculation and manually enter your bolus amount. Refer to the corresponding section to deliver one of the following bolus types: • Normal bolus, see *Delivering a Normal bolus using Manual Bolus, on page 101* • Square Wave bolus, see *Delivering a Square Wave bolus using Manual Bolus, on page 104* • Dual Wave bolus, see *Delivering a Dual Wave Bolus using Manual Bolus, on page 106*
Preset Bolus	Normal bolus, Square Wave bolus, Dual Wave bolus	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, on page 110*.

Delivery method	Bolus types	How it works
Easy Bolus feature	Normal bolus	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 feature, on page 107*.

Bolus settings

The following table describes some bolus settings that you may need to change before you use your bolus options. Consult with your healthcare professional for the settings that are right for you.

Note: Additional settings are required to use the Bolus Wizard feature. These are described in the section, *Bolus Wizard feature, on page 90*.

Setting	What it is	What it does for you
Max bolus	Max bolus is the maximum amount of bolus insulin in units your pump can deliver in a single bolus.	Max bolus provides a safety feature that limits the total amount of bolus insulin you can program for a single bolus delivery. To set the max bolus amount, see *Max bolus, on page 88*.

Setting	What it is	What it does for you
Bolus Increment	The amount of insulin in units that is increased or decreased with each button press when adjusting your bolus amount. The Bolus Wizard feature and Auto Mode Bolus also uses the increment to display the total amount and the adjustment amount of the bolus. This setting does not apply to the Easy Bolus feature.	You can set your increment value according to your typical bolus amounts. To set the bolus increment, see *Bolus increment, on page 89*.
Bolus Speed	The speed that your pump delivers your bolus insulin.	You can set your bolus insulin delivery speed to Standard or Quick. To set your bolus speed, see *Bolus speed, on page 90*.

Max bolus

The Max Bolus setting 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 units. Set your max bolus as prescribed by your healthcare professional.

If you set 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 Max Bolus alert 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 units.

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 units 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 units, 0.05 units, or 0.025 units.

Note: The Easy Bolus feature uses a setting called Step Size to determine the number of insulin units for each button press. See *Setting up the Easy Bolus feature, on page 108* for more information.

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

The Bolus Speed setting 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 feature

The Bolus Wizard feature 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 feature.

After you set up the Bolus Wizard feature, 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 feature, on page 98*), Square Wave bolus (see *Delivering a Square Wave bolus with the Bolus Wizard feature, on page 102*), or Dual Wave bolus (see *Delivering a Dual Wave bolus with the Bolus Wizard feature, on page 105*).

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

Understanding your Bolus Wizard settings

Your pump tells you to enter 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 you change your settings. The setup procedure begins on *page 91*.

Setting	Description
Carb Ratio	The carb ratio setting is used for food bolus calculations. The number of carb grams that are covered by 1 unit of insulin.
Insulin Sensitivity Factor	The insulin sensitivity factor setting is used to calculate correction bolus amounts. Your insulin sensitivity factor is the amount that BG is reduced by one unit of insulin.
BG Target	The Bolus Wizard feature calculates your estimated bolus based on your BG target range. The high and low values you set are the values to which your BG is corrected. To use a single target value rather than a range, set the same value for the high and low value of your BG target. 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.
Active Insulin Time	Active insulin is the bolus insulin that has been delivered by the pump and is still working to lower your BG 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. For more information about how the Bolus Wizard feature uses your active insulin amount, see *About active insulin, on page 96*.

Setting up the Bolus Wizard feature

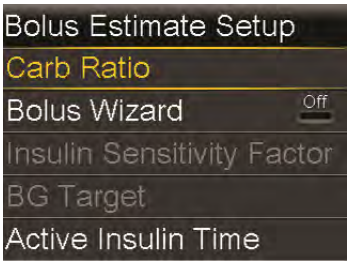
Before you can use the Bolus Wizard feature to calculate a bolus, you must turn on the Bolus Wizard feature and enter your Bolus Wizard settings.

To set up the Bolus Wizard feature:

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

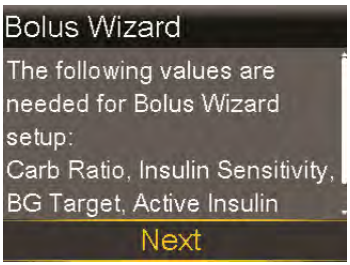
Options > Delivery Settings > Bolus Estimate Setup

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



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.



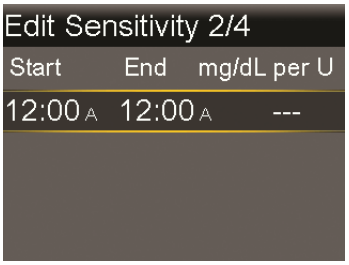
   Make sure you have the values you need, and then select **Next** to continue.

   Note: As you enter your personal settings, your pump displays information about each setting. Select **Next** to continue when you have read each explanation.

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.

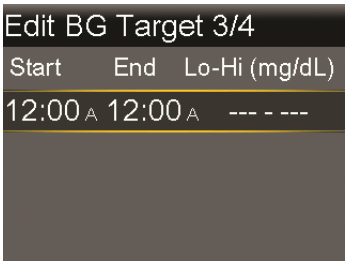
If your ratio value is outside the range of 5 to 50 grams per unit, a message appears asking you to confirm your setting.

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.



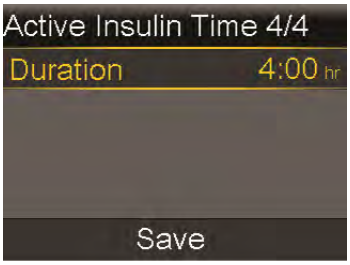
If the value you enter is outside the range of 20 to 100 mg/dL per U, a message appears asking you to confirm your setting.

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 four hours.



7. Select **Save**.

   A message appears letting you know the Bolus Wizard setup is complete.

   You can now use the Bolus Wizard feature 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 feature. Except for the carb ratio setting, these settings are available only if the Bolus Wizard feature is turned on. Always consult with your healthcare professional before you make changes to your personal settings.

Changing your carb ratio

The carb ratio setting is always available whether or not you have the Bolus Wizard feature 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 grams per unit, a screen appears and tells you to confirm your setting.

4. Select **Save** after you make your changes.

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 insulin 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 screen appears and tells you to confirm your setting.

4. Select **Save** after you make your changes.

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 screen appears and tells you to confirm your setting.

4. Select **Save** after you make your changes.