Medtronic

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Getting Started

with the MiniMed Paradigm® REAL-Time Revel™ Insulin Pump

PUMP Foundations

A Step-By-Step Guide to the MiniMed Paradigm® REAL-Time Revel™ Insulin Pump

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Welcome, and thank you for choosing Medtronic as a partner in managing your diabetes. You have made a great choice and have just purchased the latest advancement in insulin technology. We are pleased to be a part of your healthcare team.

Whether this is the first time you are using an insulin pump or you have "pumping" experience, you will want to learn how your new Paradigm® Insulin Pump works. This guide provides step-by-step instructions on the basic operations and programming of your pump.

Please use your pump to complete each practice exercise. Be sure you are not attached to your pump while you practice. The exercises are presented in a logical sequence. Completing them in order will help you build your pump skills and knowledge. Practicing these exercises will prepare you to use your pump with ease and confidence. Additional training will be provided during your pump start training session.

Please make sure you also complete *The Basics of Insulin Pump Therapy* workbook. Our objective is to provide you with a multi-faceted training program that will empower you to use your pump with confidence and success.

Here are some quick tips to keep in mind. It's okay if you make a mistake. Your pump automatically returns to the HOME screen (if you do not touch a button for 30 seconds). The (ESC) key allows you to backup to the previous screen if you push the wrong button. Have fun as you practice!

DID YOU KNOW?
An interactive version of this training is available on the instructional CD-ROM that was shipped with your pump and can also be found online.

DID YOU KNOW?
A complete explanation of the technical and operational aspects of your pump can be found in the *Paradigm Revel User Guide*.

i **IMPORTANT** Do not attach the insulin pump to your body or attempt to use insulin in the pump while learning to navigate the pump screens and understand the pump functions during your self-study (i.e., as you go through this workbook or the online courses). Using the pump, with either saline or insulin, should only be done when you receive formal training with a Certified Product Trainer.

Pump Mechanics and the Delivery of Insulin

Before we begin, let's make sure you know how insulin is delivered when using an insulin pump. The parts that make up the pump's delivery system are the infusion set, the reservoir, and the pump.

Infusion Set

The infusion set consists of tubing (1) that transports insulin from the pump to you. On one end of the tubing is the reservoir connector (2) that attaches to the reservoir. On the other end is the insertion site section (3) that attaches to you.

The insertion site section has a tiny tube (cannula) (4) that goes into your skin. Insulin is delivered through the cannula. A small piece of adhesive (5) surrounds the insertion site and holds the infusion set in place.

Reservoir

The reservoir is similar to a syringe and holds a 2- to 3-day supply of insulin. The reservoir fits into the pump's reservoir compartment (6). **You will change the infusion set and fill a new reservoir with insulin every 2 to 3 days.**
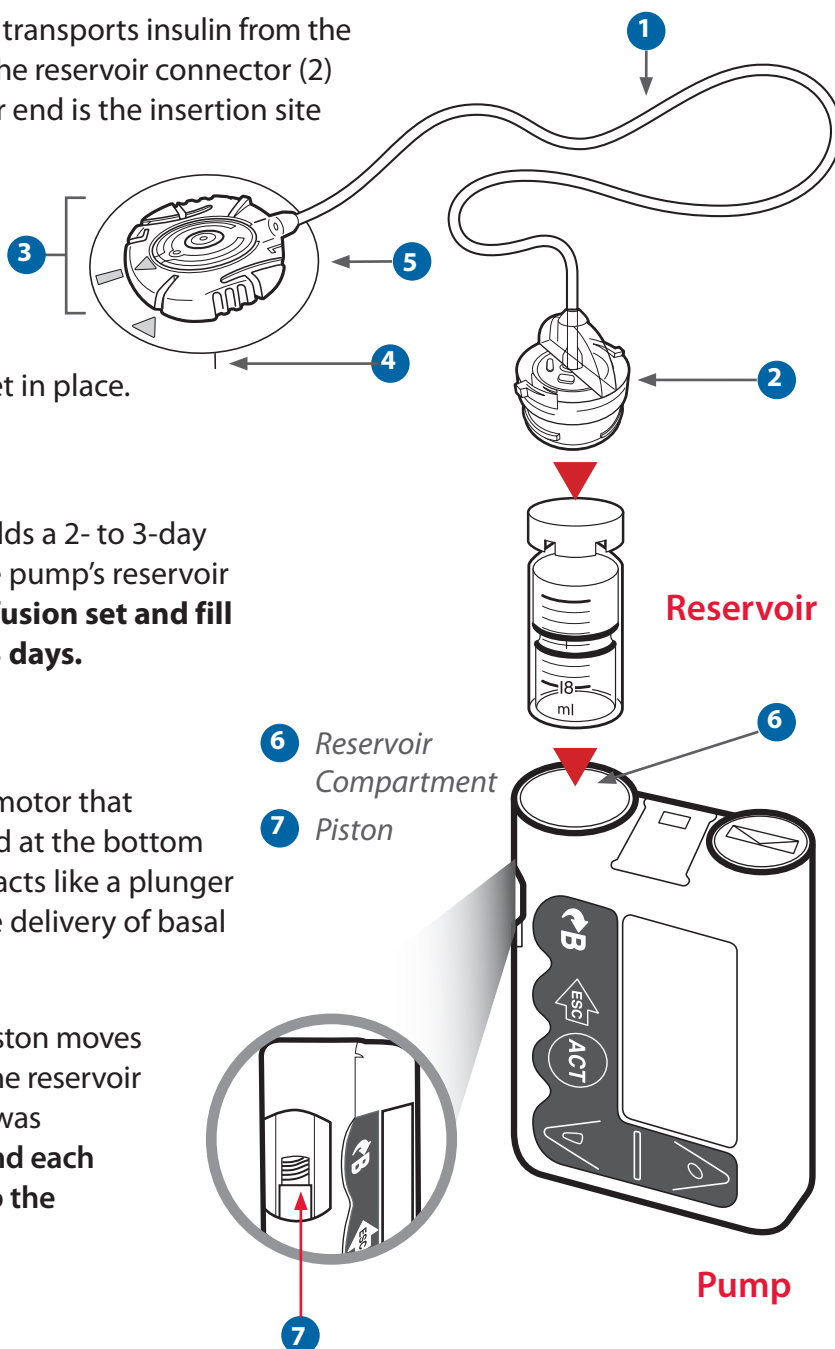
Pump

The pump contains a mini computer and motor that controls the movement of a piston, located at the bottom of the reservoir compartment. The piston acts like a plunger rod on a syringe and precisely controls the delivery of basal and bolus insulin.

Each time the pump delivers insulin, the piston moves forward and pushes up on the bottom of the reservoir to deliver the exact amount of insulin that was programmed. **The piston must be re-wound each time a newly-filled reservoir is placed into the reservoir compartment.**

Infusion Set*

1. Tubing
2. Reservoir Connector
3. Insertion Site Section
4. Cannula
5. Adhesive

Reservoir

6. Reservoir Compartment
7. Piston

Pump

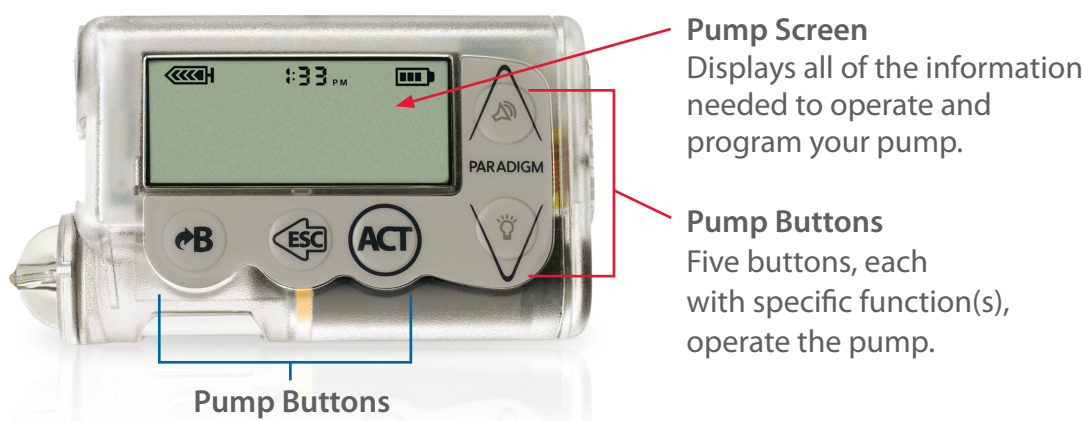*Quick-set® infusion set shown in illustration.
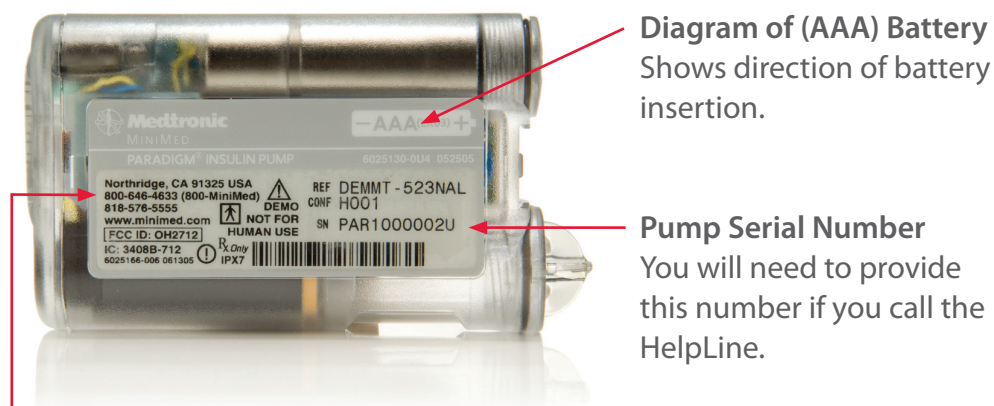
Section 1:

Pump Basics

What's on Your Insulin Pump

Before inserting the battery or pressing any buttons, let's take a closer look at your pump and become familiar with all of its features. Please use your pump and follow along.

The Front of Your Pump

Pump Screen
Displays all of the information needed to operate and program your pump.

Pump Buttons
Five buttons, each with specific function(s), operate the pump.

Pump Buttons

The Back of Your Pump

Diagram of (AAA) Battery
Shows direction of battery insertion.

Pump Serial Number
You will need to provide this number if you call the HelpLine.

Medtronic Diabetes 24-Hour HelpLine Telephone Number
Trained product experts are available to assist you 24 hours a day, 7 days a week.

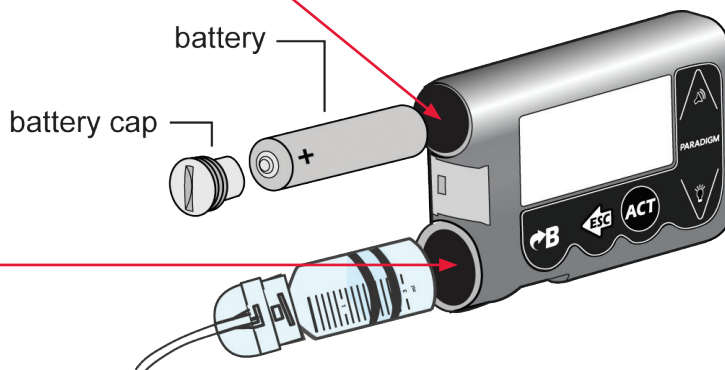**NOTE** Revel pumps can vary slightly in appearance

The Reservoir and Battery Compartments

Battery Compartment
The battery is inserted here.

battery

battery cap

Reservoir Compartment
A reservoir holding a
2- to 3-day supply of
insulin is inserted here.

The Reservoir Window and Piston

Reservoir Window
Provides a view of the insulin
remaining in your reservoir.

Piston
The piston is located inside
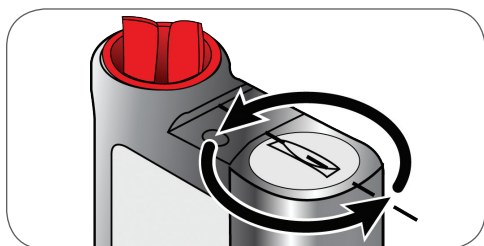the reservoir compartment

NOTE The pump ships with a red cap in the reservoir
compartment (not shown on this page). Leave the red
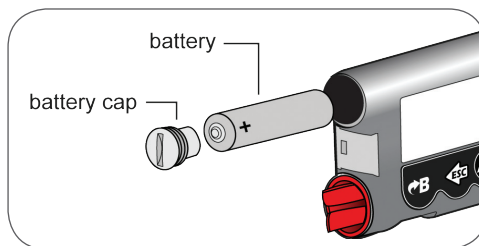cap in place for now.

Section 2:

Inserting the Battery

Your insulin pump is powered by a AAA battery. To insert a battery, you will need a thick coin (nickel or quarter).

Step 1. Place the edge of the coin in the slot of the battery cap. Turn the cap to the left (counter-clockwise) until it comes off.

Step 2. Place battery into the battery compartment with negative (flat) end of the battery in first and positive end facing out.
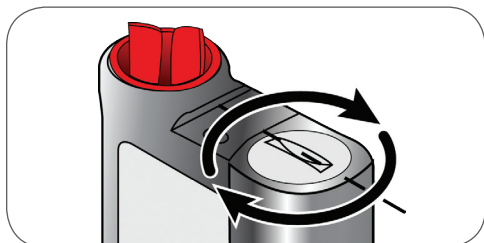
Step 3. Replace the cap. Use the coin to turn the cap to the right (clockwise) and tighten until the slot is horizontal.

Step 4. The pump should power-up. It will cycle through several screens and then display the HOME screen, as shown above. If the HOME screen displays, your battery is good, and it is inserted correctly. If the HOME screen does not display, follow the steps on the "Possible Battery Problems" page in the Appendix.

IMPORTANT
Be careful not to overtighten the battery cap!

DID YOU KNOW?
Energizer® Alkaline AAA batteries are recommended. Tests show they are the most reliable battery to use in the pump. Batteries should be stored at room temperature, not in the refrigerator or other cold locations.

NOTE Please do not set the time and date yet. We will explain how to do this later in the guide.

Section 3:

The HOME Screen

Everything Starts Here

When a working battery is inserted, the insulin pump is ON and the HOME screen will display. The HOME screen always displays the reservoir icon, the time, and the battery icon. All the other screens and menus are accessed from the HOME screen. The pump "rests" on the HOME screen.

The pump returns to the HOME screen if no buttons are pressed for 30 seconds.

① Reservoir Icon ② Time ③ Battery Icon
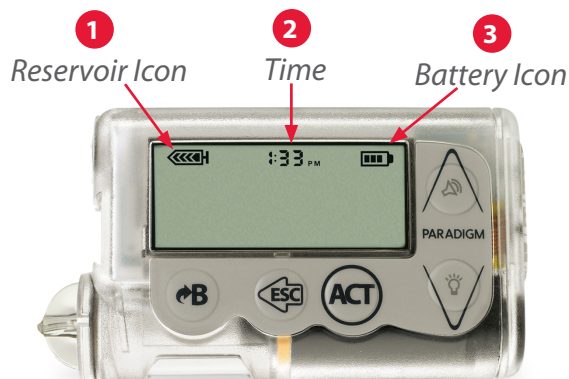
HOME SCREEN WITH TIME AND ICONS
The pump is ON and ready to be programmed if the HOME screen is displayed.

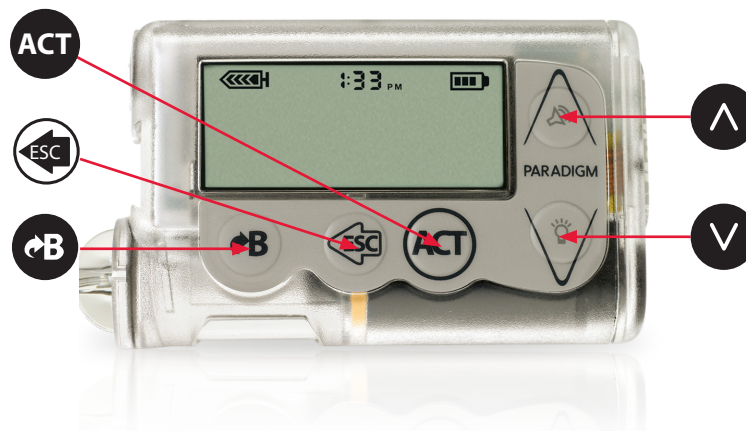| ① Reservoir Icon	② Time	③ Battery Icon
75% to 100% left	Time Display 12-Hr	75% to 100% left
Shows you approximately how much insulin is left in your reservoir.	Shows the time.	Shows you approximately how much battery life is left.
The icon is divided into four sections; each section represents about 25% of a full reservoir.		The icon is divided into four sections; each section represents about 25% of the battery life.

NOTE If the pump screen is blank, your pump is not ON. See the "Possible Battery Problems" page in the Appendix.

Section 4:

The Pump Buttons

Each button on your pump has a special function. Some buttons have more than one function. These additional functions depend on which screen or menu you are using.

UP arrow	DOWN arow	ACT button	ESC button	B button
∧	∨	ACT	ESC	↻B
• Used to scroll up through the items on a menu • Used to increase or change the value of flashing items	• Used to scroll down through the items on a menu • Used to decrease the value of a flashing number • Turns the screen backlight ON or OFF if pressed from the HOME screen	• Opens menus • Accepts, confirms, or activates menu selections	• Allows you to return to the previous screen or exit • Opens the STATUS screen if pressed from the HOME screen	• Also called the Express Bolus button • Shortcut to the SET BOLUS screen • Shortcut to Bolus Wizard® feature (when it is on) • Used with other keys to access certain features

✔ Practice Exercises

Use your pump to perform the following practice exercises.

In all practice exercises throughout this chapter, when you see the word:

- "Press": Push and release the button
- "Hold": Press and maintain pressure on the button

✔ Practice Exercise 1: Learning to Use the Pump Buttons

From the HOME screen:

1. Press **ACT** to open the MAIN MENU.

2. Press the **∨** and **∧** arrows to scroll through the menu.

3. Press **ESC** to return to the HOME screen.
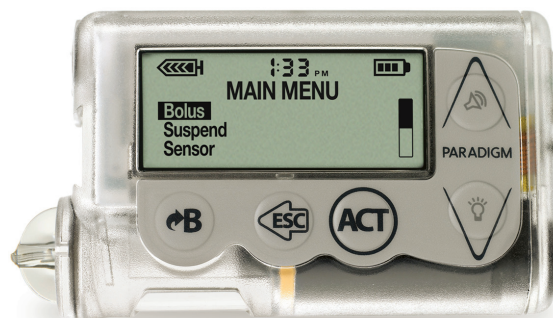
✔ Practice Exercise 2: Turning the Backlight ON and OFF

From the HOME screen:

1. Press the **∨** arrow. The backlight turns ON.

2. Press the **∨** arrow again. The backlight turns OFF.

> **NOTE** Do not use sharp objects like your fingernails, a pen, or a pencil to press the buttons on your pump. This can damage your keypad.

✔ Practice Exercise 3: Delivering a Practice Bolus

From the HOME screen:

1. Press ⊕B . The SET BOLUS screen appears with 0.0 flashing.
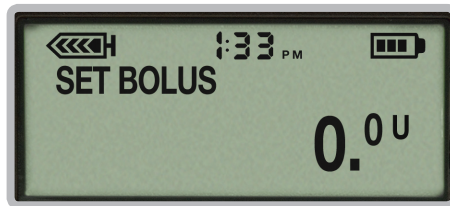
2. Press the ∧ arrow five times to set a 0.5 unit bolus.
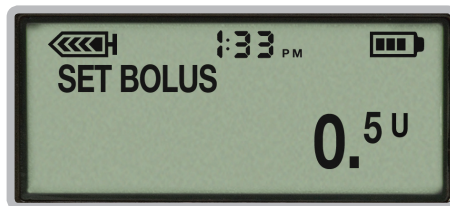
3. Press ACT to confirm. The pump will beep one time as it starts to deliver the bolus in 0.025 unit increments or amounts.

The pump will beep again when it has finished delivering the bolus. Then it will return to the HOME screen.

Congratulations! You have just delivered your first practice bolus. Keep in mind, you will normally deliver a bolus using the Bolus Wizard feature.

NOTE Each time the ∧ button is pressed, the bolus amount will increase by 0.1 units (unless the pump settings have been changed in the BOLUS MENU).

Section 5:

Modes of Operation

Your insulin pump runs or operates in one of three modes: Normal, Special, or Attention.

A circular icon is displayed on the screen if the pump is operating in any mode other than the normal mode. An example of the alert icon that displays during each mode of operation is shown below.

1 Normal	**2** Special	**3** Attention
No Circle Icon	**Open Circle Icon**	**Solid Black Circle Icon**
The pump is operating and delivering insulin as programmed. When the pump is operating in normal mode, it means there are no special features being used and there are no active alarms or alerts.	The pump is operating and delivering insulin using a special feature or under a special condition such as a temporary basal setting, low battery, or low reservoir volume.	The pump is not delivering insulin. This occurs if the pump is placed in SUSPEND or another condition has caused the pump to stop.
	The pump will sound a beep or vibrate to remind you that it is operating in the Special mode (the frequency of the alert will depend on the condition).	The pump will beep or vibrate periodically to notify you that you are not receiving insulin (the frequency of the alert will depend on the condition).

Section 6:

The STATUS Screen

This screen allows you to quickly view information about your insulin pump's operating status. It is continuously updated and shows the most current information about:

- U100 – The type of insulin used in your pump
- Current basal rate
- Reservoir start date
- Units left in reservoir
- Battery status (normal or low)
- Date
- Serial number
- Version of software your pump is using

The STATUS screen can be accessed by pressing ⬅ESC from the HOME screen.

✔ **Practice Exercise: Viewing the STATUS Screen**

From the HOME screen:

1. Press ⬅ESC. The STATUS screen appears.

2. Use the ⌄ and ⌃ arrows to scroll through and look at your STATUS screen.

To return to the HOME screen, ⬅ESC
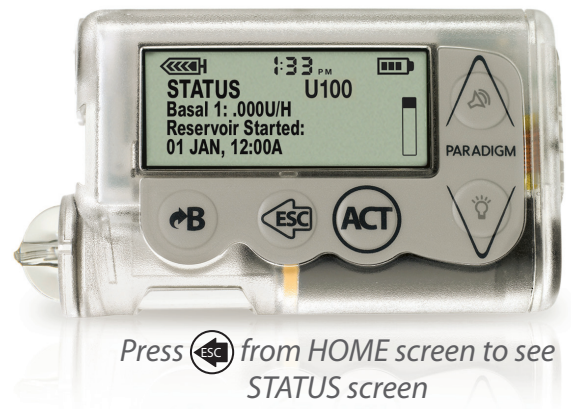
Press ⬅ESC from HOME screen to see STATUS screen

> **NOTE** Your pump is not fully programmed yet. Therefore, some of the information on your STATUS screen may be default information or may be missing.

Section 7:

Reading the Menus and Screens

There are six primary menus. Each menu contains the features and options that pertain to that menu. For example, if you are looking for a function related to bolus delivery, go to the BOLUS MENU; if you are looking for a basal rate function, go to the BASAL MENU. Each menu is set up so that the features that are used most often are closest to the top of the menu.

The Pump Screen

Your insulin pump screen can display up to five lines of information at one time.

- **Line 1:** Always displays the reservoir icon, time, and battery icon.

- **Line 2:** Always displays the name of the menu that you are currently viewing (MAIN, BOLUS, SUSPEND, SENSOR, etc.).

- **Lines 3, 4, and 5:** Shows first three selections on the menu.

Line 1
Line 2

Lines 3, 4, 5

MAIN MENU
Bolus
Suspend
Sensor

Scroll Bar

The Scroll Bar

When a screen or menu has more than five lines of information, a scroll bar appears on the right side of the screen to let you know there is more information available. When you see the scroll bar on your screen, use the ⱽ arrow to scroll down and view the remaining information.

More About The MAIN MENU

The MAIN MENU allows you to choose one of these six menus:

- **Bolus:** Contains the options and features related to boluses.

- **Suspend:** Allows you to interrupt insulin delivery. This is commonly used when disconnecting to take a shower, change clothes, or swim.

- **Sensor:** Contains selections that refer to our continuous glucose monitoring product (this information is not covered in this workbook).

- **Basal:** Contains all of the selections related to basal rate delivery.

- **Reservoir + Set:** Contains selections needed for changing the infusion set, reservoir, and insulin.

- **Utilities:** Contains a variety of other options.

Each menu (Bolus, Sensor, Basal, Reservoir + Set, and Utilities) has a sub-menu that contains additional options and features related to that menu.

Press V to Scroll down to see all options on MAIN MENU
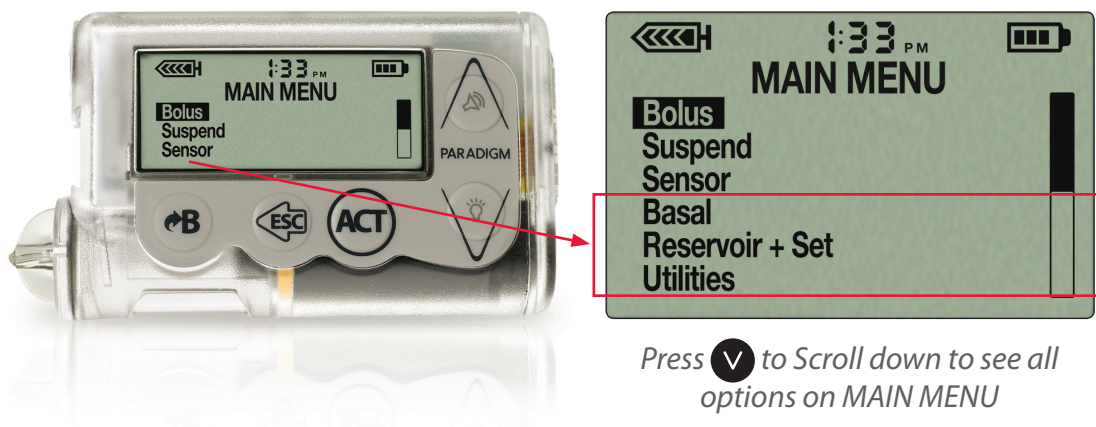
Now let's take a look at a map of the basic menu and then perform some practice exercises.

✔ **Practice Exercise 1: Viewing the MAIN MENU**

From the HOME screen:

1. Press ACT. The MAIN MENU appears. Notice the scroll bar on the right side of the screen.

2. Use the V arrow to view all of the options on the MAIN MENU.
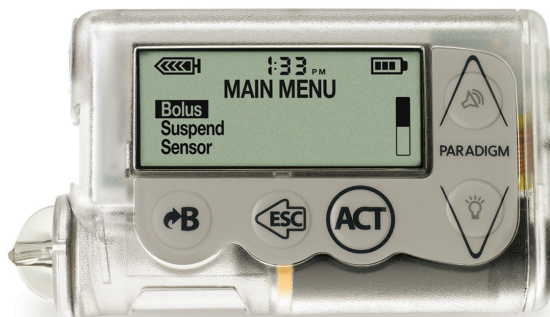
3. Press ESC to return to the HOME screen.

✔ **Practice Exercise 2: Accessing the BOLUS MENU**

From the HOME screen:

1. Press ACT. The MAIN MENU appears, and Bolus is highlighted.

2. Press ACT. The BOLUS MENU appears, and Set Bolus is highlighted. Notice that there is no scroll bar, as there are only three options in this menu.

3. Press ESC twice to return to the HOME screen.

✅ Practice Exercise 3: Accessing the BASAL MENU

From the HOME screen:

1. Press ⒜ᴄᴛ, and the MAIN MENU appears.

2. Use Ⓥ to highlight Basal.

3. Press ⒜ᴄᴛ, and the BASAL MENU appears. Notice that there is no scroll bar, as there are only three options in this menu.

4. Press ⓔˢᶜ twice to return to the HOME screen.


```
 ⟨⟨⟨H        1:33 PM      ▭
        MAIN MENU
  Sensor
  Basal
  Reservoir + Set
```

ⒶⒸⓉ ▶

```
 ⟨⟨⟨H        1:33 PM      ▭
        BASAL MENU
  Set/Edit Temp Basal
  Basal Review
  Basal Setup
```

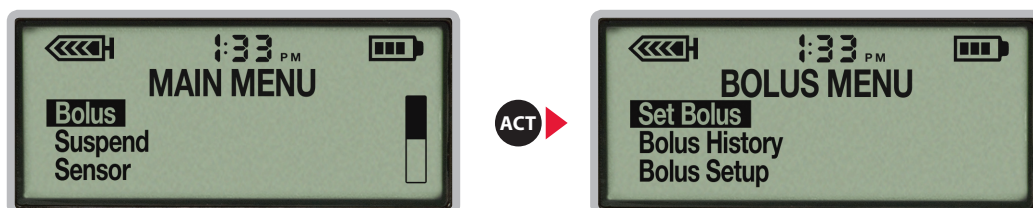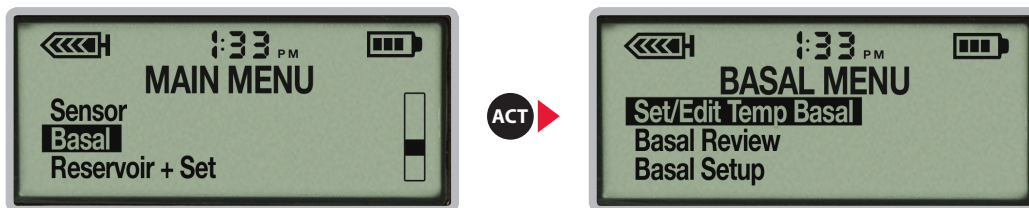*Here's a tip!* When you are viewing any screen other than the HOME screen, the Ⓥ arrow functions only as a down button and does not turn on the backlight. To turn the backlight on when you are in another screen or menu, you will need to use a new technique called the "dual press."

✅ Practice Exercise 4: Turning the backlight ON when NOT on the HOME screen

From the HOME screen:

1. Press ⒜ᴄᴛ. The MAIN MENU appears.

2. To turn the backlight on, hold the ⒝ button and press the Ⓥ arrow at the same time. The backlight should turn on.

3. Hold the ⒝ button and press the Ⓥ arrow to turn the backlight off.

> *Hold the* ⒝ *…then press* Ⓥ

Basic Menu Map

Navigation

Press **ACT** from the HOME screen to open the MAIN MENU.

Press **ACT** on item from the MAIN MENU to open the sub-menus.

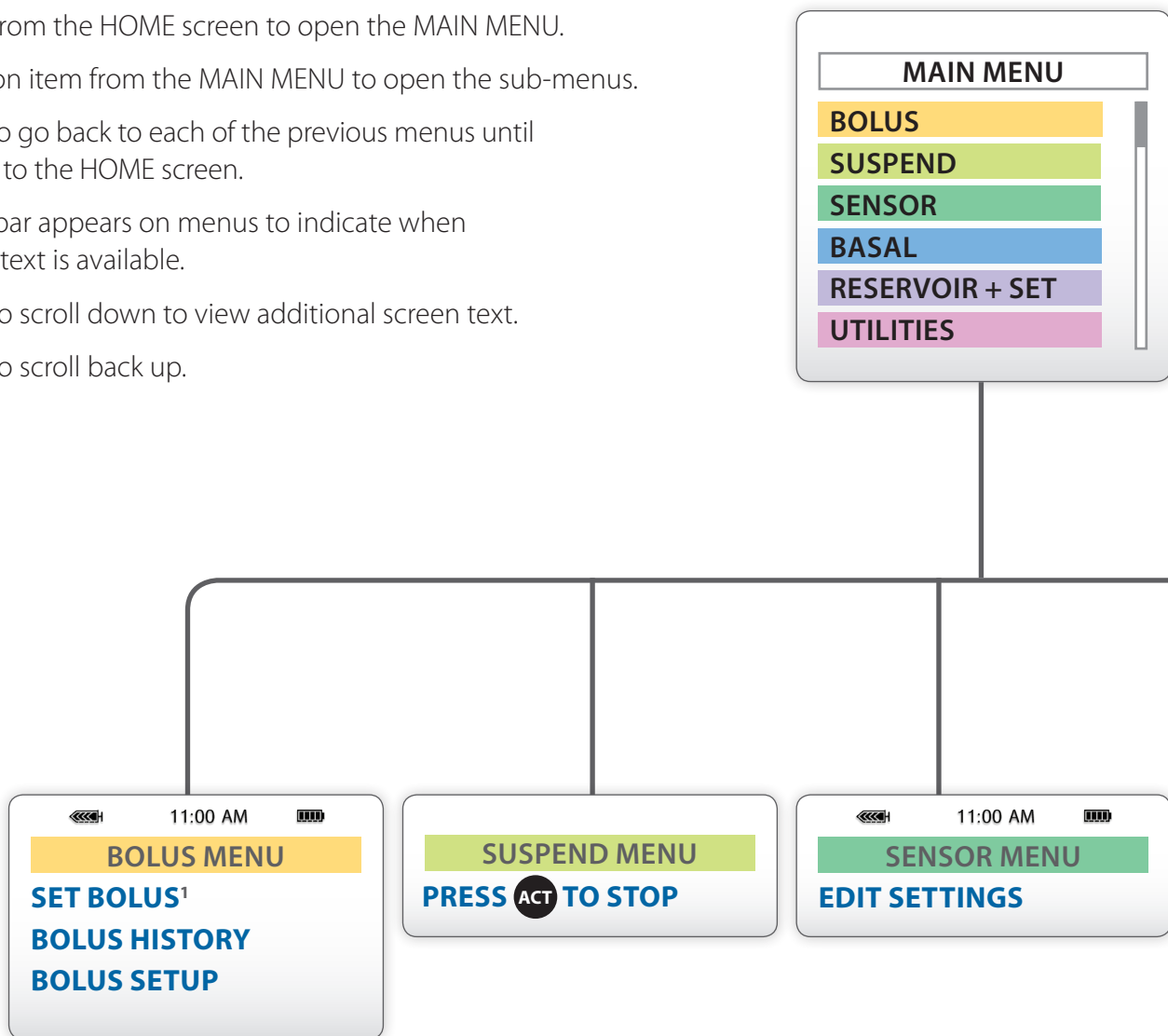Press **ESC** to go back to each of the previous menus until you return to the HOME screen.

The scroll bar appears on menus to indicate when additional text is available.

Press **V** to scroll down to view additional screen text.

Press **∧** to scroll back up.

```
┌─────────────────────────────┐
│        MAIN MENU            │
│  BOLUS                      │
│  SUSPEND                    │
│  SENSOR                     │
│  BASAL                      │
│  RESERVOIR + SET            │
│  UTILITIES                  │
└─────────────────────────────┘
```

```
┌──────────────────────────────┐
│ ◀◀◀H      11:00 AM     ▥▥▥  │
│        BOLUS MENU            │
│  SET BOLUS¹                  │
│  BOLUS HISTORY               │
│  BOLUS SETUP                 │
└──────────────────────────────┘
```

```
┌──────────────────────────────┐
│       SUSPEND MENU           │
│  PRESS ACT TO STOP           │
└──────────────────────────────┘
```

```
┌──────────────────────────────┐
│ ◀◀◀H      11:00 AM     ▥▥▥  │
│        SENSOR MENU           │
│  EDIT SETTINGS               │
└──────────────────────────────┘
```

NOTE: This diagram shows the basic options that are available on each menu when the pump is shipped from the factory.
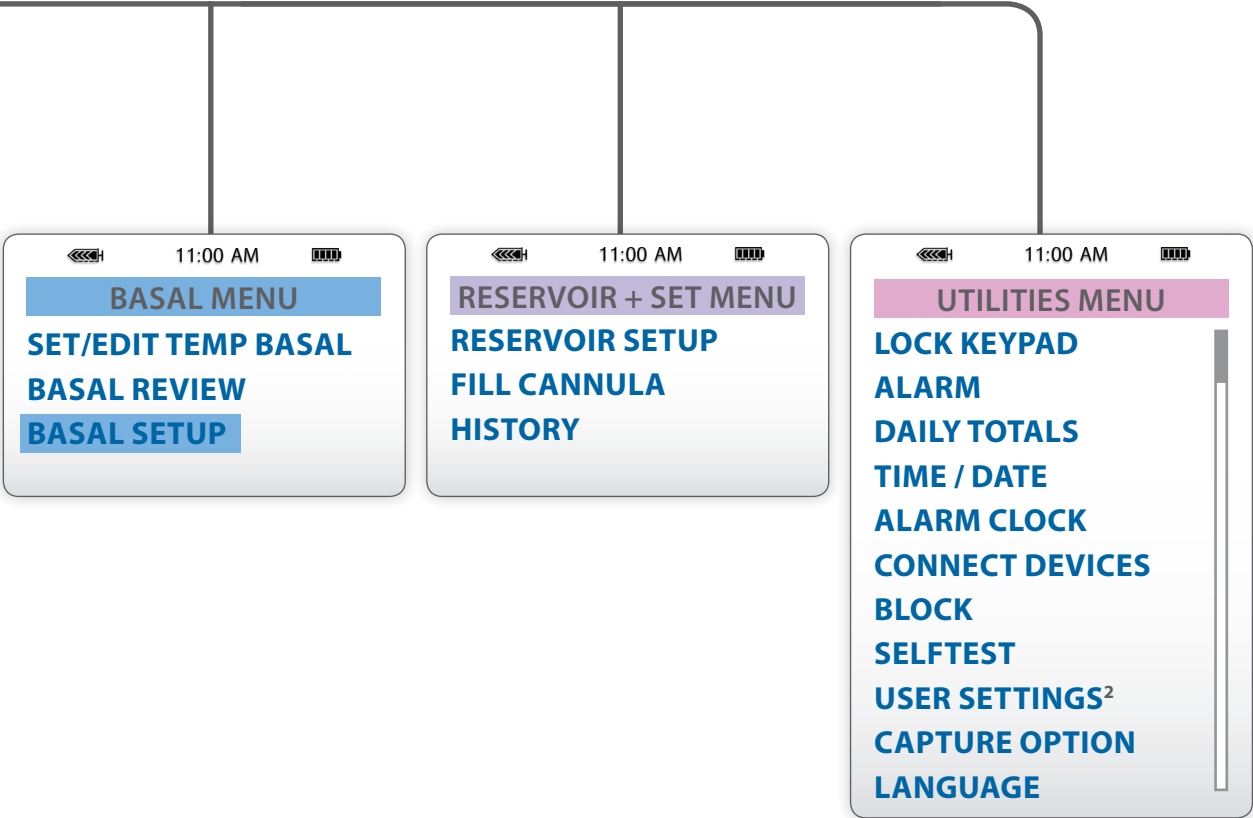
An expanded menu that shows all features and options can be found in the Appendix.

¹ Displays only when the Bolus Wizard® feature is off.

Status Screen

Press ⊛ from the HOME screen to access the STATUS MENU.

STATUS U100

**Basal 1: .000U/H
Reservoir Started:
12JAN, 12:00A
Units left: 176.2U
Time left: --:--
Battery: Normal
Mon 01 JAN 2007
S/N# 123456
Paradigm 523
VER 2.2A 1.1 OB OB**

11:00 AM

BASAL MENU

**SET/EDIT TEMP BASAL
BASAL REVIEW
BASAL SETUP**

11:00 AM

RESERVOIR + SET MENU

**RESERVOIR SETUP
FILL CANNULA
HISTORY**

11:00 AM

UTILITIES MENU

**LOCK KEYPAD
ALARM
DAILY TOTALS
TIME / DATE
ALARM CLOCK
CONNECT DEVICES
BLOCK
SELFTEST
USER SETTINGS[2]
CAPTURE OPTION
LANGUAGE**

---

[2] Displays only when you hold ⊛ and press ⊛ .

Section 8:

Learning to Program Your Pump

Now you are ready to program some basic features on your insulin pump. This will help you learn more about how your pump works and let you practice using the buttons.

The UTILITIES MENU

Scroll ⌄ to find the UTILITIES MENU. It is the last option on the MAIN MENU. We will start here.

The UTILITIES MENU has many options that allow you to customize your pump. You will learn which features are best for you to use immediately and which features you may want to use later

First, we will scroll through and view the options that are available on the UTILITIES MENU. Then we will select and program some of the features.

✓ **Practice Exercise: Viewing the UTILITIES MENU**

From the HOME screen:

1. Press **ACT**, and the MAIN MENU appears.

2. Press ⌄ and scroll to Utilities.

3. Press **ACT**, and the UTILITIES MENU appears.

4. Use ⌄ and ⌃ to scroll through the UTILITIES MENU.

5. Press **ESC** twice to return to the HOME screen.

At the beginning of each exercise you will see the following "shorthand" used. This is a quick way to list the steps you need to follow to reach each menu.

HOME Screen > MAIN MENU > Utilities

Scroll to view all options on the UTILITIES MENU

Additional menu options available when you scroll down with ⌄

IMPORTANT
Most alerts and alarms on your pump can be silenced and cleared by pressing (ESC) and then (ACT).

Selecting and Setting Alerts

Your insulin pump is easy to use and very safe. The pump constantly performs a series of safety checks to ensure that it is working properly.
If it detects any condition that requires your attention, it will beep or vibrate to alert you of the situation.

Examples of common alerts you will receive include:

- **Low Battery Alert:** Alerts when only 10% of battery life remains
- **Low Reservoir Alert:** Alerts when the insulin reservoir is low
- **Suspend:** Alerts every 15 minutes when the pump is in suspend

> **NOTE** Your pump is shipped with the audible beep alert activated, but you can choose to set it to vibrate if you prefer.

Practice Exercise: Setting the Alert Type

HOME Screen > MAIN MENU > Utilities

From the UTILITIES menu:

1. Scroll (V) to Alarm and press (ACT). Alarm menu appears.

2. Scroll (V) to Alert Type and press (ACT). Alert Type appears.

3. Scroll (∧) or (V) to listen to the alerts.

4. Select the alert you prefer: Beep (long, medium, short) or Vibrate.

5. Press (ACT) to confirm your choice. Your alert type is now set!

6. Press (ESC) three times to return to the HOME screen.

Select Alert Type on ALARM MENU
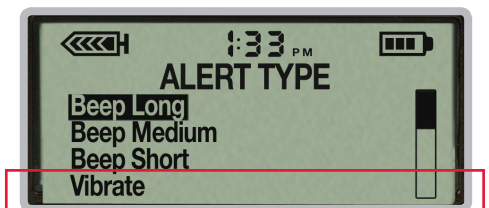
Vibrate option available when you scroll down with (V)

Setting the Time and Date

Setting the correct time and date on your insulin pump is important.

Let's set the time and date on your pump now.

✓ Practice Exercise: Setting the Time and Date

The pump will go through a series of screens as you set the time and the date. Use the ⌄ and ⌃ arrows to set the flashing values and then press ACT to confirm each selection.

HOME Screen > MAIN MENU > Utilities

From the UTILITIES menu:

1. Scroll ⌄ to Time/Date and press ACT.

```
⫷⫷⫷H        1:33 PM       ▭▭
      UTILITIES MENU
  Daily Totals                  ▯
  Time/Date                     █
  Alarm Clock                   ▯
```
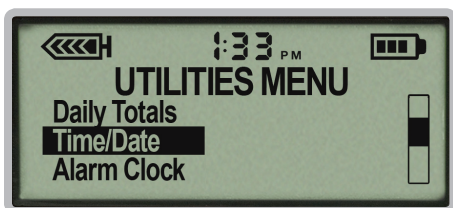
2. Select 12-hour (AM/PM) or 24-hour (military time) and press ACT.

```
⫷⫷⫷H        1:33 PM       ▭▭
      TIME DATE SETUP
  12 Hour Setup
  24 Hour Setup
```

ⓘ IMPORTANT

Setting the right time and date ensures that basal insulin will be delivered at the correct time and that the data entered into your pump will be recorded accurately.

Always check to make sure the date and time
• include AM or PM
• are set correctly

Setting the Time and Date

3. Press **ACT** to change the Time/Date.

4. Use **V** and **^** to set the hour. Make sure you scroll through the hours until AM or PM time is set correctly.

5. Press **ACT** to set.

6. Repeat steps 4 and 5 to set the minutes, year, month, and day.

The first time you set the time and date, the following prompt will appear: "If time and date are correct, highlight Yes and press ACT."

```
 ((((H        1:33 PM      (III)
         TIME DATE SET
   12:00A
   23Jan2007
   Press ACT to Change
```

A CHECK SETTINGS alarm will also sound; clear the alarm by pressing **ESC** and then **ACT**.

The BASAL MENU

In the BASAL MENU, you can program basal rates, change and review basal rates, set a temporary basal rate, and set the maximum basal amount.

When you program a basal rate into your pump, that exact amount will automatically deliver each hour.

When you first start on your insulin pump, you will most likely start with just one basal rate. The pump will deliver that exact basal amount evenly, over each hour, 24 hours a day. For example, if your starting basal rate is 0.500 units (½ unit) an hour, your pump will deliver a ½ unit each hour, 24 hours a day. This means you would receive a total of 12 units of basal insulin each day.

Your healthcare provider will determine your starting basal rate. When you check your BG as instructed, your BG readings will help you and your healthcare provider determine if the basal rate amount is correct, if it needs to be adjusted, or if you need more than one basal rate.

If your BG readings indicate that you need more than one basal rate, additional rates can easily be added.

The first example on the next page shows how a single basal rate might be written and how it would deliver each hour.

The second example shows how multiple basal rates might be written and how they would be delivered each hour.

For basal insulin...

Jill always had to remember to take her shot at bedtime prior to having her insulin pump. Taking a shot at the same time every night as instructed by her doctor was difficult to do. Jill is in college and some nights she would go to bed early, other nights she would be studying at the library until late. Now with her pump, she doesn't have to worry about when she takes her shot. She receives her basal insulin automatically, 24 hours a day.

Single Basal Rate

Basal Rates

1. 12 AM 0.75 u/h
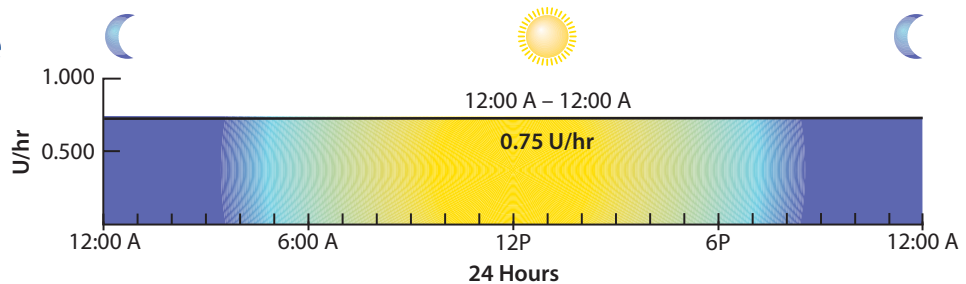
The hourly basal rate of 0.75 u/h delivers evenly over each hour 24 hours a day

Multiple Basal Rates

Basal Rates

1. 12 AM 0.900 u/h

2. 8 AM   0.650 u/h

3. 6 PM   0.900 u/h

The pump automatically changes the basal rate based on the time and amount programmed

Setting a Single Basal Rate

The Start Time for the first basal rate is pre-set at midnight and cannot be changed. As soon as Basal Rate 1 is programmed into the pump, it begins to deliver each hour from midnight to midnight.
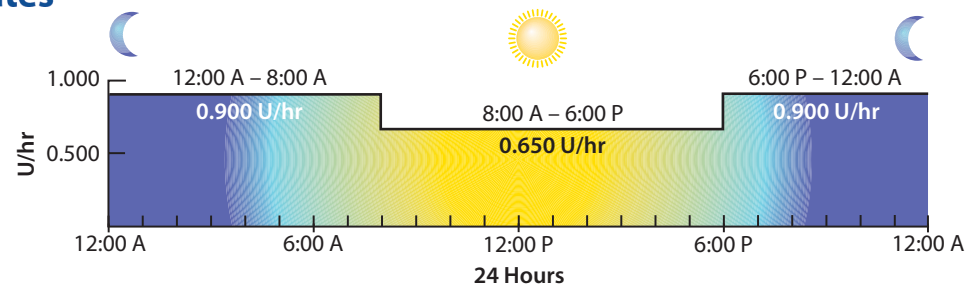
✔ Practice Exercise: Setting a Single Basal Rate

HOME Screen > MAIN MENU > Basal

From the BASAL MENU:

1. Scroll to Basal Setup. Press **ACT**.

2. Set/Edit Basal is highlighted. Press **ACT**.

3. SET BASAL RATE 1 appears with the time preset at 12:00 A and the rate 0.000 flashing.
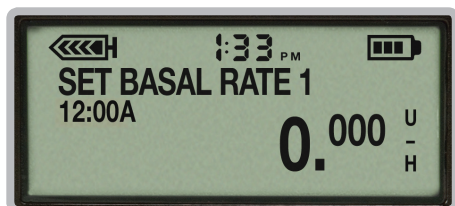
4. Press and hold **∧** to set the first basal rate amount to 0.500 u/h. If you go past 0.500 units, use the **∨** arrow take you back to 0.500 units. The basal rate will increase by 0.025 units with each press.

5. Press **ACT** to confirm your Basal Rate at 0.500 u/h.

6. SET START TIME 2 screen displays. (In this exercise you are only setting one basal rate, so you do not need to set a start time for the second basal rate.)

7. Press **ACT**, and the BASAL RATE screen appears, showing:
   • Current Rate .500 U/H
   • Started #1 – 12:00A
   • 24 Hr. Total 12.00 U
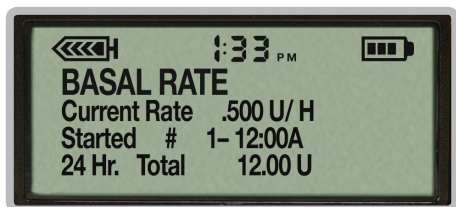
In this example, the 24-hour total is 12.00 u. This is the total amount of basal insulin that your pump will deliver over 24 hours when the basal rate is set at 0.500 units per hour.

Setting Multiple Basal Rates

Now that you have learned to set one basal rate, let's learn how to program multiple basal rates.

✔ Practice Exercise: Setting Multiple Basal Rates
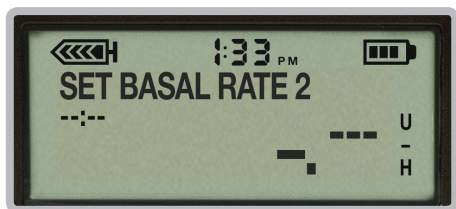
HOME Screen > MAIN MENU > Basal

From the BASAL MENU:

1. Scroll to Basal Setup and press **ACT**.

2. Set/Edit Basal is highlighted. Press **ACT**.

3. SET BASAL RATE 1 appears.

4. Press **ACT** to confirm that the 0.500 rate is correct and that you do not want to change the amount of that rate.

5. SET START TIME 2 appears with dashes flashing in the upper left corner. The flashing dashes indicate that the START-TIME for the 2nd basal rate needs to be programmed here.

6. Set the following start times and basal rates using the ∧ and ∨ arrows. Press **ACT**, to confirm each time and rate:

    a. Start Time 2:   3:00 AM   Rate: 0.800 u/h
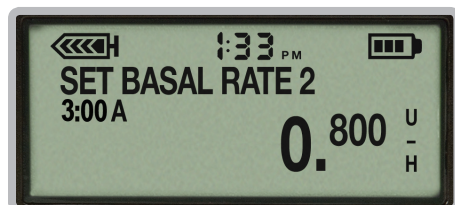
b. Start Time 3:   7:00 AM   Rate: 0.650 u/h

```
┌─────────────────────────────────┐
│ ‹‹‹‹H          1:33 PM      ▭▭▭▯ │
│ SET BASAL RATE 3                │
│ 7:00 A                          │
│                    0.650   U    │
│                          ‒      │
│                            H    │
└─────────────────────────────────┘
```

7. When the dashes for START TIME 4 appear, press (ACT).

8. The BASAL RATE screen appears, showing the current rate, the time the current rate started
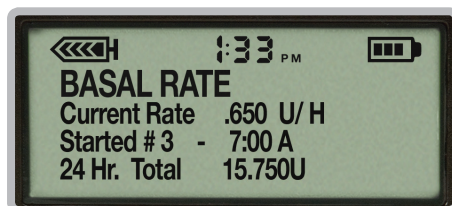   delivering, and the 24 Hr. Total, which in this example is 15.750U.

```
┌─────────────────────────────────┐
│ ‹‹‹‹H          1:33 PM      ▭▭▭▯ │
│ BASAL RATE                      │
│ Current Rate    .650  U/ H      │
│ Started # 3   -   7:00 A        │
│ 24 Hr.  Total     15.750U       │
└─────────────────────────────────┘
```

Needing more than one basal rate...

When Matt was on insulin shots, he would wake up in the morning with low BGs. However, if he decreased his insulin to prevent these overnight/early morning lows, he would have higher BGs later in the day. Now that Matt has his insulin pump, it is programmed to deliver less insulin when he is sleeping and more insulin during the day so that his BGs aren't low when he wakes up and his BGs aren't high during the day when he needs it.

Helpful hint: Most people need more than one basal rate to get the best control with their pump. Work with your healthcare provider to get your basal rates adjusted correctly when you start on pump therapy.

Looking at the Basal Review Screen

Your insulin pump has another great feature that allows you to review the basal rates you have set in your pump. Basal Review is found on the BASAL MENU.

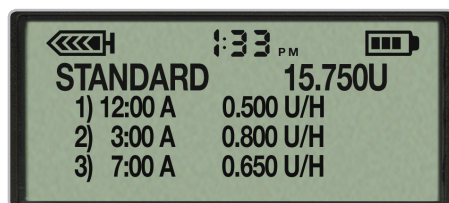Let's review the basal rates you just entered.

✔️ **Practice Exercise: Looking at the Basal Review Screen**

HOME Screen > MAIN MENU > Basal

From the BASAL MENU:

1. Scroll to Basal Review and press **ACT**.

2. STANDARD (basal review) appears, showing the 24-hour total and each basal rate:


```
    ««H          1:33 PM          ▯▯▯▯
   STANDARD            15.750U
     1) 12:00 A      0.500 U/H
     2)  3:00 A      0.800 U/H
     3)  7:00 A      0.650 U/H
```

3. Press **ESC** three times to return the HOME screen.

You can also look at your STATUS screen to see which basal rate is currently being delivered. To do this:

1. Press **ESC** from the HOME screen to view the STATUS screen.

2. Scroll **V** to see which basal rate is currently running and the amount that is being delivered each hour.

Erasing Basal Rates

If you would like additional practice setting basal rates, you can erase the basal rate you just set. Once erased, you can repeat the practice exercises or make up other basal rates to review programming your pump.

✔️ **Practice Exercise: Erasing Basal Rates**

HOME Screen > MAIN MENU > Basal

From the BASAL MENU:

1. Scroll to Basal Setup and press ACT.

2. Set/Edit Basal is highlighted.

3. Press ACT and SET BASAL RATE 1 appears.

4. Press ∨ until the rate is set to 0.000 u/h.

5. Press ACT.

6. When SET START TIME 2 appears, press ∨ to set the time to (--:--) and press ACT.

7. BASAL RATE: Current Rate screen appears.

The 24-hour total should now read: 24 Hr. Total 0.000U. Your basal rates have been erased.

Section 9:

Delivering Boluses

A bolus is given for two reasons: to cover food that contains carbohydrate or to correct glucose levels that are above your target range.

The insulin pump allows you to access the bolus feature in a number of different ways. This section covers how to deliver a bolus using the Set Bolus feature found in the Bolus Menu and the Express Bolus button.

✔️ **Practice Exercise 1: Delivering a 0.5 u Bolus**

HOME Screen > MAIN MENU > Bolus

From the BOLUS MENU:

1. Set Bolus is highlighted. Press **ACT**.

2. SET BOLUS screen appears with 0.0 u flashing.

3. Press **∧** 5 times to set a bolus amount of 0.5 u (½ of a unit).

4. Press **ACT** to confirm the amount and deliver the bolus.

Please note: Your pump delivers insulin in 0.025 unit increments. Watch as the screen counts up in 0.025 increments (i.e., 0.025; 0.050; 0.075; 0.100, etc.) until the half-unit bolus of insulin is delivered.

Your pump will beep once when it has finished delivering a bolus. It will then return to the HOME screen.
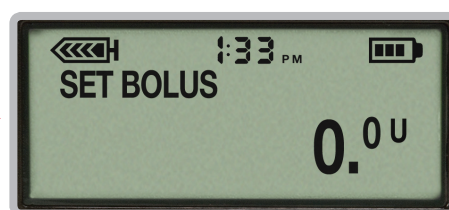
DID YOU KNOW?

As you deliver boluses, the amount of active insulin that is being tracked by your pump is displayed on the lower left corner of the screen.

1:33 PM	1:33 PM
BOLUS MENU	**SET BOLUS**
Set Bolus	
Bolus History	
Bolus Setup	0.0 U
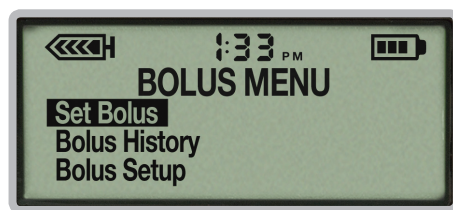
SET BOLUS is highlighted, press **ACT**

SET BOLUS screen appears, 0.0u flashing

📋 **NOTE** The pump beeps once when it begins to deliver a bolus and beeps again when it has finished. It then returns to the HOME screen.
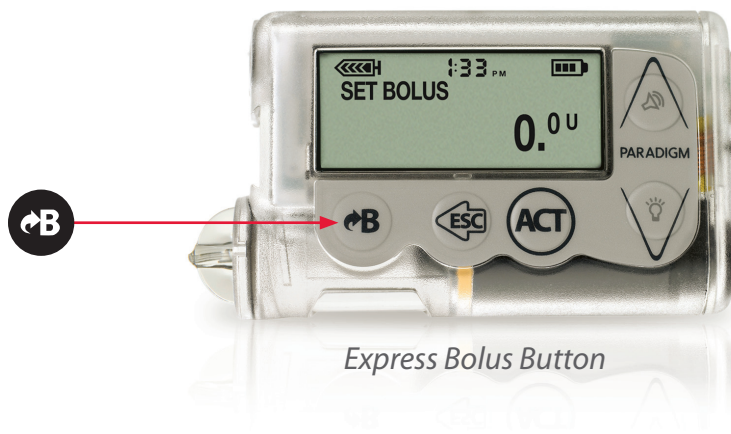
Express Bolus Button

The Express Bolus or ⟲B button, is the method you will probably use most frequently when giving a bolus. It is easy and convenient to use because the button is located on the front of your insulin pump.

When the Express Bolus button is pressed from the HOME screen, the SET BOLUS screen immediately opens with 0.0 u flashing, ready for you to enter the bolus amount. Once the Bolus Wizard® feature is turned on you will use the ⟲B button to access the Bolus Wizard calculator.

Express Bolus Button

DID YOU KNOW?
Once the Bolus Wizard® feature is programmed and turned on, you will not need to enter the amount of insulin to be delivered. You will simply enter your BG and the number of grams of carbohydrate you plan to eat. The Bolus Wizard® feature will calculate the amount of insulin to be delivered for you.

✓ Practice Exercise 1:
Using the ⟲B Button to Deliver a Bolus

From the HOME screen:

1. Press ⟲B. The SET BOLUS screen appears with 0.0 u flashing.

2. Use the ∧ arrow to set a 1.0 unit bolus (1 unit).

3. Press ACT to confirm and deliver the one-unit bolus.

4. Watch as your pump delivers the bolus. It will beep once and return to the HOME screen when it has finished.

The Bolus Wizard

The Bolus Wizard is a feature that calculates the amount of bolus insulin you need when you enter your current BG reading and the number of carbs you are about to eat. The Bolus Wizard uses your individualized settings provided by your healthcare provider to estimate your bolus insulin amount. These settings include your Carb Ratio, Insulin Sensitivity Factor, BG Target Range, and Active Insulin Time.

By counting carbs and using the Bolus Wizard, you are able to give the right amount of insulin for your food and correction bolus. This can help to keep your glucose levels better controlled.
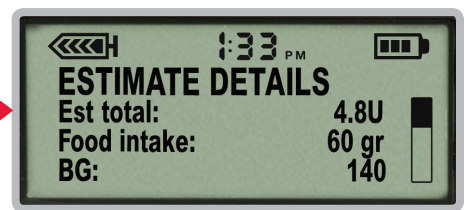
Using the Bolus Wizard:

ENTER BG 1:33 PM	**ENTER FOOD** 1:33 PM	**ESTIMATE DETAILS** 1:33 PM
140 mg/dL	**60** grams	Est total: 4.8U Food intake: 60 gr BG: 140
Test and enter BG.	*Enter grams of carbohydrates to be eaten.*	*Displays estimated amount of insulin to be delivered.*

You will learn more about using the Bolus Wizard when you meet with your trainer.

Using the Bolus Wizard...

Larry is so excited that his insulin pump has made his glucose management easier. Before his pump he had to try to calculate on his own how much insulin he needed. Now, his meter sends his BG to his pump, he enters his carbs, and the pump delivers the bolus.

Helpful hint: After you begin pump therapy, testing your BG two hours after meals will help you determine if your Bolus Wizard settings are correct. If your BG is too high or too low, your healthcare provider can help you adjust your settings to help you achieve better glucose control.

BOLUS HISTORY Screen

The BOLUS HISTORY screen is a great record keeping feature. It records the date, time, amount, and type of every bolus delivered. The last 24 boluses can be viewed in the BOLUS HISTORY screen. The most recent bolus is displayed first.

Let's look at the BOLUS HISTORY screen and review the boluses that you have given.
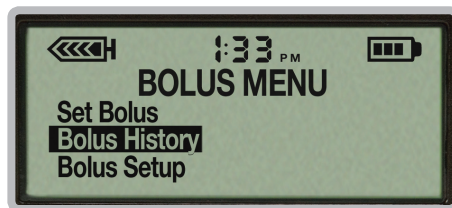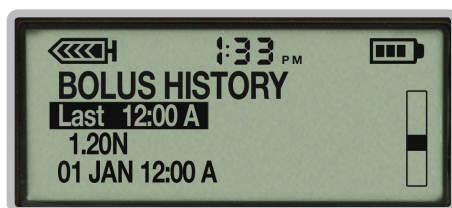
✔ Practice Exercise 1: Viewing the Bolus History

HOME Screen > MAIN MENU > Bolus

From the BOLUS MENU:

1. Press ⌄ to highlight Bolus History and press **ACT**.

2. The BOLUS HISTORY screen appears.

Shows the last 24 boluses delivered

3. Use ⌄ and ⌃ to scroll through and review the boluses that you have given.

DID YOU KNOW?
Your pump also keeps the most recent bolus that was given on the STATUS screen. This makes it easy for you to quickly check the time and amount of your last bolus.

To view the last bolus that was given on your pump, press **ESC** from the HOME screen to go to the STATUS screen.

35

DID YOU KNOW?
The last 250 boluses given on your insulin pump can be seen by uploading your pump's information into a computer. Special online software called CareLink™ Personal Therapy Management Software for Diabetes organizes all of the pump's information into reports that can be reviewed by you and your healthcare provider.

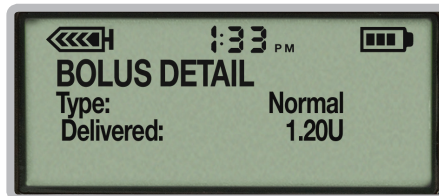You can see the details of the last 24 boluses by viewing the BOLUS DETAIL screen.

Practice Exercise 2: Viewing Bolus History Details

1. Follow the steps on the preceding page to access the BOLUS HISTORY screen.

2. Highlight the bolus you want to review and press **ACT**.

```
          1:33 PM        ▭
  BOLUS HISTORY
  Last  12:00 A
   1.20N
  01 JAN 12:00 A
```
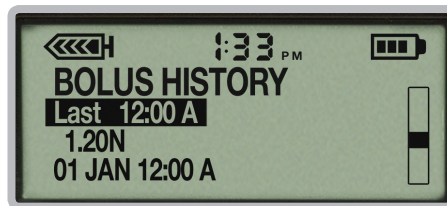
3. The details of that bolus will be displayed.

```
          1:33 PM        ▭
  BOLUS DETAIL
  Type:            Normal
   Delivered:        1.20U
```

4. Press **ESC** to return to the BOLUS HISTORY screen. To see the details on other boluses, simply highlight the bolus and press **ACT**.

5. Press **ESC** (4 times) to return to the HOME screen.

Section 10:

Suspending Insulin Delivery on Your Pump

The SUSPEND Feature

Although you should never interrupt or stop the insulin delivery on your pump for more than an hour or so, there will be times when you will want to set your pump in SUSPEND and disconnect it from your infusion site. There are several reasons you might suspend and disconnect from your pump which include the following:

- **Bathing or Swimming**

Suspending the basal rate and removing your pump is commonly done for bathing and water activities. Infusion sets are designed so you can easily disconnect from your pump and tubing and leave it in a safe, dry place.

Suspending the pump...

Danielle disconnects her pump when she goes swimming. She always suspends her pump so that insulin isn't delivered while the pump is not attached to her.

Helpful hint: While the pump is suspended, it will beep or vibrate every 15 minutes.

- **Interrupting or Stopping a Bolus**

There may be times when you want to stop or interrupt a bolus. The pump is designed to allow you to easily interrupt the delivery of a bolus by setting the pump in SUSPEND.

Interrupting or Stopping a Bolus

Sam programs a bolus for lunch, but before she can begin eating the phone rings. It's her cousin calling long distance so Sam knows this phone call will take a while. So she programs the pump to SUSPEND and cancels the delivery of the bolus so that she does not experience a low blood sugar.

More About SUSPEND

When the pump is in SUSPEND, all insulin delivery stops.

Basal Insulin

When you take the pump out of SUSPEND and have it RESUME, basal insulin will begin to deliver again. **Any basal insulin that was missed while the pump was in SUSPEND will not be delivered.**

Bolus Insulin

When you interrupt a bolus, the bolus insulin that has already been delivered prior to setting the pump in SUSPEND is the only insulin that will be delivered for that bolus. **When you RESUME insulin delivery, the amount of bolus insulin that was not delivered before the pump was placed into SUSPEND will not be delivered.**

## ✔ Practice Exercise 1: Setting the Pump in SUSPEND

From the HOME screen:

1. Press **ACT** to access the MAIN MENU.

2. Press **V** to highlight Suspend.

3. Press **ACT**; the screen flashes SUSPEND.

4. Press **ACT** to confirm you want to place the pump in Suspend.

5. SUSPEND appears on the pump screen. The time your pump was stopped is shown directly above SUSPEND, and the alarm icon (solid black circle) is displayed between the reservoir icon and the time. After 30 seconds (to conserve battery power), the pump returns to the HOME screen.

Pump in SUSPEND; notice the alarm icon

6. Press **ESC** to look at your Status screen. Notice that the first information on your Status screen tells you that the pump is in suspend and shows the time the pump was placed in suspend.

7. Press **ESC** to return to your HOME screen.
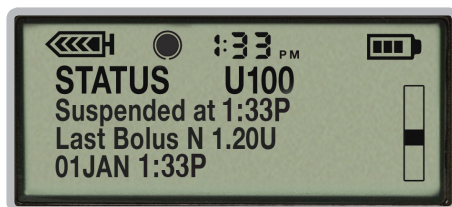
STATUS screen shows when pump was suspended

✔️ **Practice Exercise 2: Resuming Basal Insulin Delivery**

1. Press **ACT** from the HOME screen.

2. RESUME flashes on the screen.

```
⫷⫷⫷H    ●    1:33 PM      🔋
        Stopped at 1:33P
            RESUME
        ACT - Restart Basal
```

Press **ACT** *when pump is in SUSPEND*

3. Press **ACT** to confirm that you want to resume basal delivery.

4. Your pump will return to the HOME screen, and the pump will begin to deliver basal insulin as programmed.

```
⫷⫷⫷H         1:33 PM      🔋
```

Pump will return to HOME screen

Congratulations! You have successfully used the SUSPEND and RESUME functions. Notice the alarm icon (solid black circle) is no longer displayed on your pump screen.

> **NOTE** Any time the pump is in SUSPEND, the alarm icon will remain on the front of the screen as a visual reminder. The pump will also beep or vibrate every 15 minutes as an audible reminder that your pump is in SUSPEND and that you are not receiving insulin.

✓ Practice Exercise 3: Suspending Your Pump While a Bolus Is Delivering

From the HOME screen:

1. Press the ⟲B to display the SET BOLUS screen.

2. Press ∧ to set a bolus of 5.0 u (5 units).

3. Press ACT.

4. Allow the bolus to begin to deliver, then press ACT again.

5. Suspend is highlighted on the MAIN MENU.

6. Press ACT. SUSPEND flashes on the screen.

7. Press ACT again.

8. The pump is in SUSPEND, and the bolus delivery has been cancelled.

To see the exact amount of insulin that was delivered before the bolus was suspended, RESUME delivery and then look at the STATUS screen or go to Bolus History in the BOLUS MENU.

Congratulations! You have successfully completed your introductory training on your new Paradigm® REAL-Time Revel™ insulin pump.

For additional practice and training, please review the Instructional CD-ROM or visit *my*Learning at www.medtronicdiabetes.com

Notes

Introduction to CareLink Therapy Management Software

CareLink Personal Therapy Management Software is a web-based program that is provided free of charge by Medtronic. This software allows you to upload the data from your pump and glucose meter to a secure website and organizes it into easy-to-read reports and charts. These reports provide an overview of how insulin, food intake and exercise affect you glucose control.

When you use the Bolus Wizard® feature on your pump, the pump tracks and records:

- Your BG meter readings
- Your carbohydrate intake
- The amount of insulin that was given for each bolus
- The time each bolus was given

Reviewing the data on these reports, allows you and your healthcare provider to identify glucose patterns and trends so you can determine if any pump settings need to be adjusted.

Set up your CareLink Personal account so you can upload your pump and meter every 2 to 3 days after you start using your pump. You and your healthcare provider will be able to review your information and adjust and fine-tune your pump settings as needed.

To set up your CareLink Personal account go to:

www.medtronicdiabetes.com/carelinksetup

To learn more about using CareLink Personal software you can take the myLearning course, Exploring CareLink Software and Reports. You can access this course at **www.medtronicdiabetes.com** and clicking on myLearning. You will need to sign in to your account (or register for an account if you do not have one) and then click on the Exploring CareLink Software and Reports course.

Notes

Frequently Asked Questions

As with learning anything new, you typically have questions. Here is a list of commonly asked questions. You may wish to make a note of any additional questions you may have to ask your Certified Product Trainer.

Where should I wear my pump?

Where and how to wear the pump is a commonly asked question among new pump users. Most individuals find that wearing an insulin pump presents no problem and that it can be worn in a variety of ways. It typically takes only a day or two to find the ways that work best for you. Below are just a few ideas to help get you started.

- Use the clip that comes with your pump and clip it to a waist band or belt

- Place the pump (with or without the clip) into the pocket of your pants

- Keep it in your shirt pocket

- Slip it into your bra

- Use the longer tubing lengths and place the pump in your sock

Where can I put the pump when I sleep?

- Clip it to the waist of your pajama pants

- Clip it onto your pajama top or in a pocket

- Place it next to you in the bed, under your pillow, or on the bedside table

Medtronic Diabetes offers accessories that can add to the convenience of wearing, protecting and concealing your pump. Refer to the accessories catalog or to the accessories information found on our web site at www.medtronicdiabetes.com.

What about intimacy?

What to do with the pump during intimate moments is another question that is frequently asked. An open discussion with your partner usually resolves any concerns you may have. Some individuals simply choose to leave the pump in place. Others choose to use the longer tubing which allows them to place the pump well out of reach. Another idea is to temporarily disconnect from the pump and tubing. Just remember that disconnecting from the pump for long periods of time can result in high glucose levels that could lead to DKA. So, always be sure you reconnect the pump afterwards.

Should the pump be removed for X-Rays, CT Scans, and MRIs?

Any time you have an X-ray, CT scan, MRI or any procedure involving exposure to radiation or magnetic fields, remove your pump prior to entering the radiation area or magnetic field.

Cannula infusion sets such as the Quick-Set,® Silhouette® and mio™ can be left in place during the procedure. However, infusion sets that use a needle instead of a cannula to infuse insulin (such as the Sure-T® and the Polyfin®) must be removed prior to the procedure.

If your insulin pump is inadvertently exposed to a strong magnetic field like an MRI, discontinue use and contact our 24-Hour HelpLine at 800.646.4633.
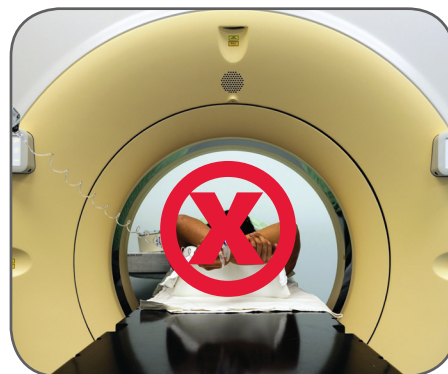
Can the pump be worn when going through airport security?

You can wear your insulin pump while going through common security systems such as an airport metal detector. Do not send your devices through the x-ray machine. Medtronic has conducted official testing on the effects of the full body scanners at airports with Medtronic medical devices and have found that some scanners may include x-ray. To avoid removing your devices, you may request an alternative screening process. If you choose to go through an airport body scanner, you must remove your insulin pump and CGM (sensor and transmitter).

Print and complete the information on an airport emergency card to carry with you.

Notify security screeners that you have diabetes, that you are wearing an insulin pump and are carrying supplies with you. Because travel rules are subject to change, it is advisable to check with the Transportation Safety Administration (TSA) before traveling. International passengers should consult their individual air carriers for international regulations. Some helpful tips regarding travel within the United States are listed on the next page.

Tips about traveling with Insulin Pumps and Supplies

- Notify security that you have diabetes and are wearing an insulin pump. Let them know you are carrying insulin and other supplies with you.

- There is no need to remove your pump. The pump will not trigger metal detectors and the detectors will not harm your pump.

- Do not send your pump through any x-ray equipment.

- If there is any question, ask that they visually inspect the pump ratherthan removing it from your body. (Remember, you may ask for a private screening, if removal or lifting of clothing is required to display your pump.)

- A doctor's letter is no longer sufficient proof of medical necessity when carrying syringes. To board with syringes and other insulin delivery devices, you must produce an insulin vial with a professional, pharmaceutical, pre-printed label that clearly identifies the medication.

- Never store insulin in checked luggage, as it may be exposed to extreme temperatures. Extreme heat or cold can cause insulin to lose its effectiveness.

- Boarding with lancets is allowed if the lancets are capped and carried along with a glucose meter that has the manufacturer's name embossed on it.

If you encounter difficulty, ask to speak with the TSA ground security commissioner or their international equivalent. The American Diabetes Association (ADA) asks that you contact them at **1.703.549.1500 ext. 1768** should you encounter any problems.

General Travel Tips

- Pack extra supplies including reservoirs, infusion sets, batteries and ketone strips. Keep your supplies, insulin and a prescription with you, just in case your luggage is lost or your insulin becomes denatured.

- Pack glucose tablets or carbohydrate for treatment of low glucose. In case flights are delayed or canceled, pack extra food that is easy to carry, such as nutrition bars.

- If you travel outside the United States, you may want to take advantage of Medtronic's travel loaner plan. This program allows you to take a "back-up" insulin pump with you when you travel. For more information or to request your travel loaner today go to **www.medtronicdiabetes.com/travelloaner**.

When Should I Call the 24-Hour HelpLine?

Medtronic Diabetes provides a 24-Hour HelpLine that is staffed with highly trained and skilled service technicians. These technicians are available to assist you with any technical issues or questions that you may have regarding the operation of your pump.

Examples of when you may need to call the HelpLine are:

- You are concerned that the pump is not functioning properly.

- You are reading about a pump function in the User Guide that you do not understand and need assistance.

- Your pump has alarmed and you have followed the instructions to clear the alarm and it alarms again.

The number for the HelpLine is located on the back of your pump.

When Should I Call My Healthcare Provider?

Consult your healthcare provider about when, how often, and under what circumstances you should contact them. Typically, providers review your glucose information more frequently when you first start on pump therapy. This allows them to adjust and fine-tune your pump settings. Once adjusted, most healthcare providers ask that you maintain a routine follow-up schedule. Examples of other situations that you should notify your healthcare provider about are:

Hypoglycemia (BG less than 70mg/dL)

- Any severe hypoglycemic event that requires another person's assistance to treat the low; or any event that results in loss of consciousness.

- Frequent hypoglycemia

- Hypoglycemia that occurs around the same time each day or that routinely occurs after certain activities (such as vacuuming or washing the car)

- Hypoglycemia that occurs after or during exercise

Hyperglycemia (BGs above your maximum target range or above 250 mg/dL)

- Hyperglycemia that is frequent or persistent

- Hyperglycemia that is accompanied by nausea or vomiting

- Hyperglycemia and positive ketones

- Hyperglycemia that occurs around the same time each day or routinely after a certain event (such as eating).

As always, when low or high blood sugars occur, follow the guidelines provided in the "Safety Guidelines" chapter of "The Basics of Insulin Pump Therapy" workbook.

Training Handouts

This section contains information that will be covered in your pump start training. This content is intended for post-training review only.

> **IMPORTANT** Please **DO NOT** perform the steps provided in this section until after you have met with your healthcare provider or certified pump trainer.

Notes

To Set a Single Basal Rate :

1. From **MAIN MENU**, scroll to **Basal**. Press ACT.

2. Select **Basal Setup**. Press ACT.

BASAL MENU
Set/Edit Temp Basal
Basal Review
Basal Setup
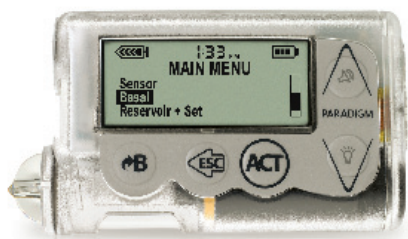
3. **Set/Edit Basal** is highlighted. Press ACT.

BASAL SETUP
Set/Edit Basal
Max Basal Rate
Patterns
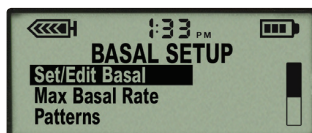
4. Use ∧ to set the basal rate amount. Press ACT.
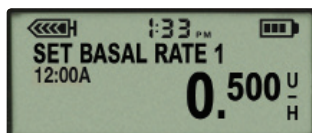
SET BASAL RATE 1
12:00A
0.500 U/H

5. Press ACT again to skip **SET START TIME 2**.

6. **BASAL RATE** screen appears showing the current rate (u/h); start time of rate and 24 hr. basal total.

BASAL RATE
Current Rate .500 U/H
Started # 1 – 12:00A
24 Hr. Total 12.000U
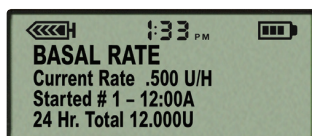
To Change a Basal Rate :

1. From **MAIN MENU**, scroll to **Basal**. Press ACT.

2. Select **Basal Setup**. Press ACT.

3. **Set/Edit Basal** is highlighted. Press ACT.

4. Use arrows to change the basal rate amount. Press ACT.

SET BASAL RATE 1
12:00A
0.650 U/H
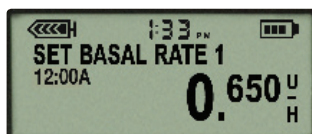
5. Press ACT again to skip **SET START TIME 2**.

6. **BASAL RATE** screen appears showing the new current rate (u/h); start time of rate and 24 hr. basal total.

BASAL RATE
Current Rate .650 U/H
Started # 1 – 12:00A
24 Hr. Total 15.600U
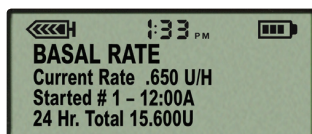
To Add a Basal Rate:

1. From **MAIN MENU**, scroll to **Basal**. Press ACT.

2. Select **Basal Setup**. Press ACT.

3. **Set/Edit Basal** is highlighted. Press ACT.

4. Press ACT to confirm **BASAL RATE 1**.

SET BASAL RATE 1
12:00A
0.650 U/H
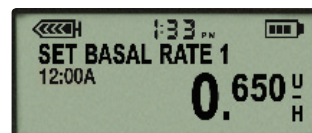
5. Use arrows to **SET START TIME 2**. Press ACT.

SET START TIME 2
3:00A
—.—— U/H
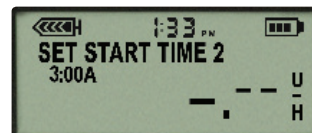
6. Use arrows to **SET BASAL RATE 2**. Press ACT.

SET BASAL RATE 2
3:00A
0.800 U/H
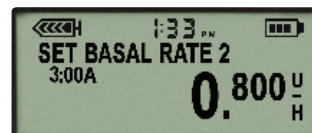
7. Repeat steps 5 and 6 as needed. Press ACT to skip final **START TIME**.

8. **BASAL RATE** screen appears showing the current rate (u/h); start time and 24 hr. basal total.

BASAL RATE
Current Rate .800 U/H
Started # 2 – 3:00A
24 Hr. Total 18.750U
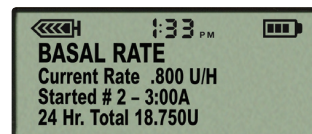
To Review Basal Rate(s):

1. From **MAIN MENU**, scroll to **Basal**. Press ACT.

2. Highlight **Basal Review**. Press ACT.

BASAL MENU
Set/Edit Temp Basal
Basal Review
Basal Setup

3. **STANDARD** and the 24 hour total appear on the top line. Below are the programmed basal rates, showing the start time and units per hour for each.
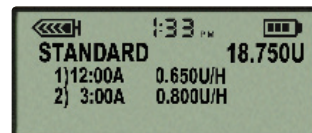
STANDARD   18.750U
1)12:00A   0.650U/H
2) 3:00A   0.800U/H

Note: *The settings shown are for illustration purposes only — your settings will be different.*

Temporary Basal Rate

This feature allows you to immediately increase or decrease your basal rate, for the temporary period of time you set. It is used primarily for exercise and sick days.

To Set the Temporary Basal Type:

1. From **MAIN MENU**, scroll to **Basal**. Press ACT.

2. Select **Basal Setup**. Press ACT.

3. Scroll down to **Temp Basal Type**. Press ACT.

   BASAL SETUP
   Max Basal Rate
   Patterns
   Temp Basal Type
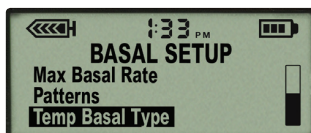
4. Select **Insulin Rate (U/H)** or **Percent of Basal**. Press ACT.

   SET TEMP BASAL AS
   Insulin Rate (U/H)
   Percent of Basal
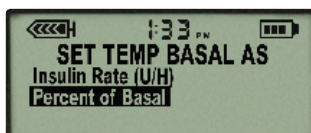
To Set a Temporary Basal Rate:

1. From **MAIN MENU**, scroll to **Basal**. Press ACT.

2. **Set/Edit Temp Basal** is highlighted. Press ACT.

   BASAL MENU
   Set/Edit Temp Basal
   Basal Review
   Basal Setup

3. Use ∧ to set duration of time. Press ACT.

   SET DURATION
   Temp   **1:30**

4. Use arrows to **SET TEMP BASAL U/H** or **SET TEMP BASAL %**. Press ACT to start temp basal rate.

   SET TEMP BASAL %
   1:30   **50%**

5. An open circle at top of screen and an hourly alert indicate temp basal is running.
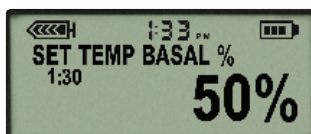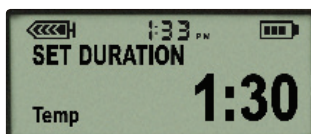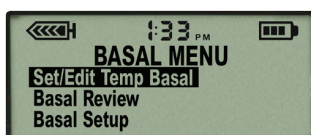
To Cancel a Temporary Basal Rate:

1. From **MAIN MENU**, scroll to **Basal**. Press ACT.

2. Select **Cancel Temp Basal**. Press ACT.

   BASAL MENU
   Set/Edit Temp Basal
   Cancel Temp Basal
   Basal Review

3. The open circle will disappear when temp basal has been cancelled.
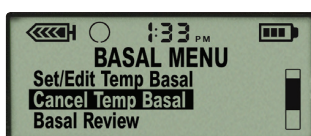
Patterns

This feature allows you to pre-program up to three different sets of basal rates so you can easily accommodate routine schedule changes (example: weekday vs. weekend; day vs. night shift, etc.).

To Turn Patterns On:

1. From **MAIN MENU**, scroll to **Basal**. Press ACT.

2. Select **Basal Setup**. Press ACT.

3. Select **Patterns**. Press ACT.

   BASAL SETUP
   Max Basal Rate
   Patterns
   Temp Basal Type
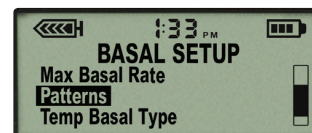
4. Select **On**. Press ACT.

   PATTERNS OPTION
   Off
   On
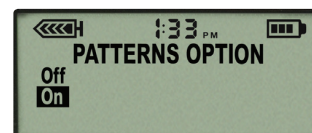
To Program Basal Patterns:

1. From **MAIN MENU**, scroll to **Basal**. Press ACT.

2. Scroll down to **Basal Setup**. Press ACT.

3. **Set/Edit Basal** is highlighted. Press ACT.

4. Highlight **Pattern A**. Press ACT.

   EDIT BASAL
   Standard   18.750 U
   Pattern A   - - - . - - - U
   Pattern B   - - - . - - - U

5. Use ∧ to **SET BASAL RATE 1**. Press ACT.

6. Set other times and rates as needed OR press ACT.

7. **BASAL RATE A** screen appears. The open circle at top of screen indicates **Pattern A** is now running. Press ESC.

   BASAL RATE A
   Current Rate .600 U/H
   Started # 1 – 12:00A
   24 Hr. Total 14.400U

8. To set **Pattern B**, repeat steps 3–7.
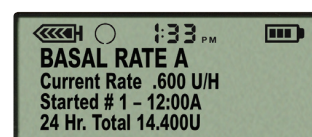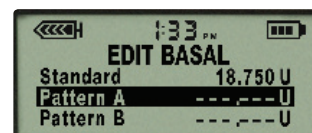
To Choose Basal Pattern:

1. From **MAIN MENU**, scroll to **Basal**. Press ACT.

2. Scroll to **Select Patterns**. Press ACT.

3. Highlight the pattern you want to start. Press ACT.
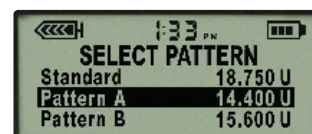
   SELECT PATTERN
   Standard   18.750 U
   Pattern A   14.400 U
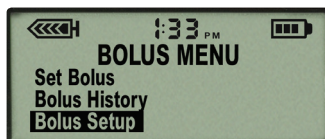   Pattern B   15.600 U

Note: The settings shown are for illustration purposes only — your settings will be different.
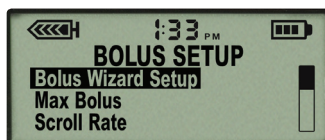
To Turn the Bolus Wizard On:
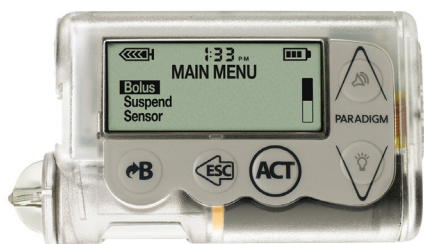
1. From the MAIN MENU, select **Bolus**. Press **ACT**.

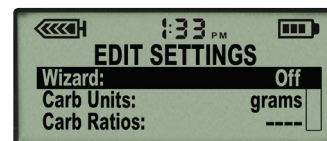2. Select **Bolus Setup**. Press **ACT**.
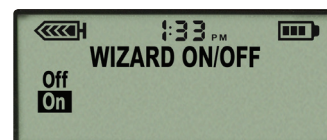
3. Select **Bolus Wizard Setup**. Press **ACT**.

4. Select **Edit Settings**. Press **ACT**.
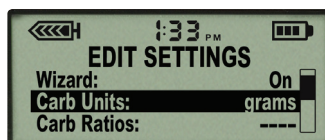
5. **EDIT SETTINGS** screen appears. Press **ACT**.
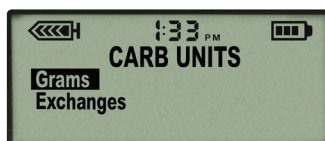
6. Select **On**. Press **ACT**.

Continue to next section to program settings.
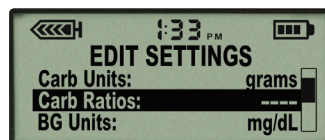
To Program Settings:

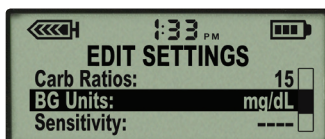1. Highlight **Carb Units**. Press **ACT**.
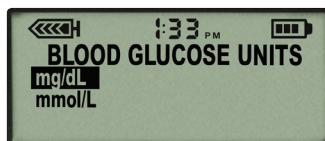
   Select **Grams**. Press **ACT**.

2. Highlight **Carb Ratios**. Press **ACT**.

   Use arrows to set Ratio. Press **ACT**. Press **ACT** again to skip **SET START TIME 2.**

3. Highlight **BG Units**. Press **ACT**.

   Select **mg/dL**. Press **ACT**.

4. Highlight **Sensitivity**. Press **ACT**.
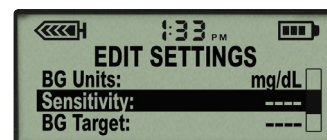
   Use arrows to set **Sensitivity**. Press **ACT**. Press **ACT** again to skip **SET START TIME 2.**
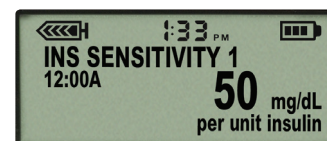
5. Highlight **BG Target**. Press **ACT**.
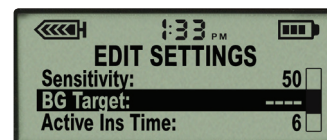
   Use arrows to set Low and High Target. Press **ACT** after each one. Press **ACT** again to skip **SET START TIME 2.**
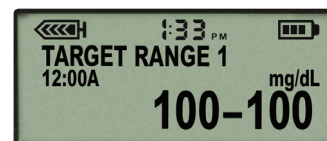
6. Highlight **Active Ins Time**. Press **ACT**.

   Use arrows to set **Time**. Press **ACT**. Press **ESC**.
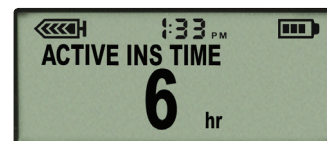
   Bolus Wizard Setup is complete.

Note: *The settings shown are for illustration purposes only — your settings will be different.*
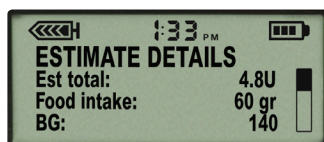
To Deliver a Food and Correction Bolus:

1. Press ⏻B. Test BG. If using linked meter press ACT. **Or**, use arrows to enter BG. Press ACT.

ENTER BG
140 mg/dL
1:33 PM

2. Use ∧ to enter grams of carb. Press ACT.

ENTER FOOD
60 grams
1:33 PM

3. Review details. Press ACT.

4. Confirm bolus amount (change if necessary). Press ACT to deliver.

ESTIMATE DETAILS
Est total: 4.8U
Food intake: 60 gr
BG: 140
1:33 PM

To Deliver a Correction Bolus (no food):

1. Press ⏻B. Test BG. If using linked meter press ACT. **Or**, use arrows to enter BG. Press ACT.

ENTER BG
140 mg/dL
1:33 PM

2. Leave grams of carbohydrates at zero. Press ACT.
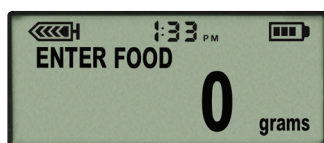
ENTER FOOD
0 grams
1:33 PM

3. Review details. Press ACT.

4. Confirm bolus amount (change if necessary). Press ACT to deliver.

ESTIMATE DETAILS
Est total: 0.8U
Food intake: 0 gr
BG: 140
1:33 PM
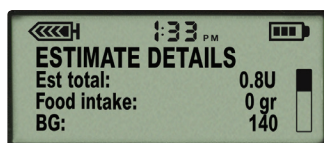
To Deliver a Food Bolus (no BG):

1. Press ⏻B. Leave the Enter BG screen as dashes. Press ACT.
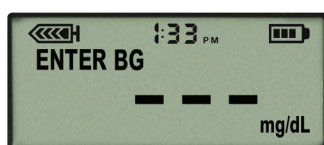
ENTER BG
– – – mg/dL
1:33 PM

2. Use ∧ to enter grams of carb. Press ACT.

ENTER FOOD
60 grams
1:33 PM

3. Review details. Press ACT.

4. Confirm bolus amount (change if necessary). Press ACT to deliver.

ESTIMATE DETAILS
Est total: 4.0U
Food intake: 60 gr
BG: ----
1:33 PM
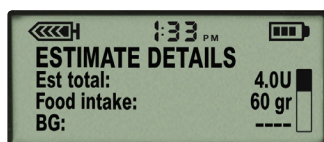
To Review Bolus History:

1. Press ACT. Select **Bolus**. Press ACT.

MAIN MENU
Bolus
Suspend
Sensor
1:33 PM
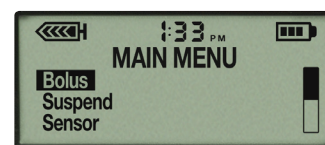
2. Select **Bolus History**. Press ACT.

BOLUS MENU
Manual Bolus
Bolus History
Bolus Setup
1:33 PM
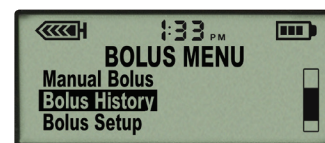
3. Use arrows to review boluses given.
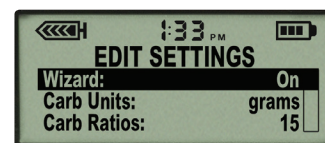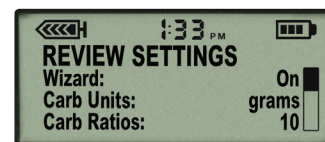
BOLUS HISTORY
Last 12:00 A
1.20N
01 JAN 12:00 A
1:33 PM
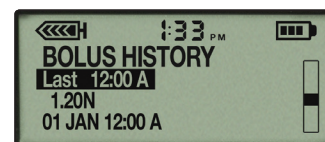
To Edit Bolus Wizard Settings:

1. Press ACT. Select **Bolus**. Press ACT.
2. Scroll to **Bolus Setup**. Press ACT.
3. Highlight **Bolus Wizard Setup**. Press ACT.
4. Highlight **Edit Settings**. Press ACT.

WIZARD SETUP
Edit Settings
Review Settings
1:33 PM

5. Select the setting to be changed. Press ACT.
6. Change value. Press ACT.

EDIT SETTINGS
Wizard: On
Carb Units: grams
Carb Ratios: 15
1:33 PM

To Review Bolus Wizard Settings:

1. Press ACT. Select **Bolus**. Press ACT.
2. Scroll to **Bolus Setup**. Press ACT.
3. Highlight **Bolus Wizard Setup**. Press ACT.
4. Highlight **Review Settings**. Press ACT.

WIZARD SETUP
Edit Settings
Review Settings
1:33 PM

5. Scroll down to review.

REVIEW SETTINGS
Wizard: On
Carb Units: grams
Carb Ratios: 10
1:33 PM

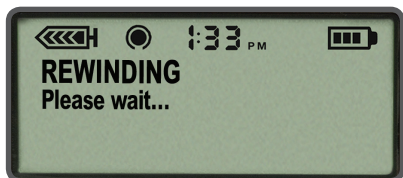*Note:* The settings shown are for illustration purposes only — your settings will be different.

To Rewind the Piston in Pump:
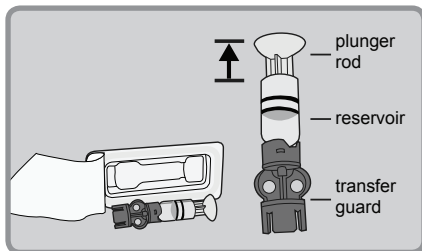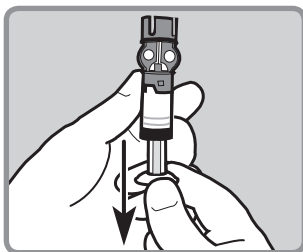

REWINDING
Please wait...

1. Wash your hands. Remove old infusion set from your body and the reservoir from pump.

2. Go to **Reservoir + Set** in **MAIN MENU,** then select **Reservoir Setup** to open **REWIND** screen. Press **ACT** to rewind.
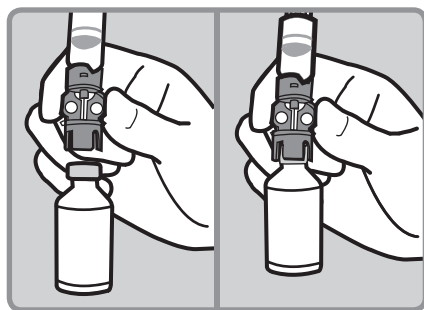
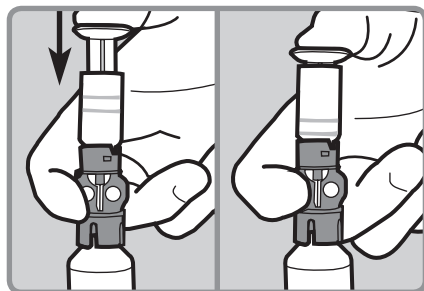## To Fill the Reservoir:

1. Remove reservoir from package.

— plunger rod
— reservoir
— transfer guard

2. Pull plunger rod down to fill reservoir with air

3. After wiping top of insulin vial with alcohol, hold blue transfer guard and press it down onto insulin vial.


4. Use thumb to push air from reservoir into vial. Continue to hold plunger rod down.

5. Continue to hold plunger rod down as you turn vial over (vial should now be on top and reservoir on bottom). Release plunger. Then slowly pull plunger rod down to fill reservoir with insulin.
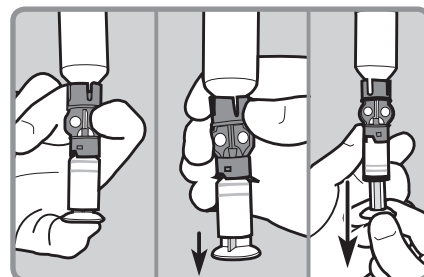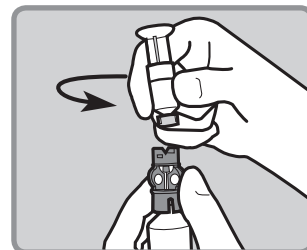

6. Check reservoir for air bubbles. Tap side of reservoir to force bubbles to rise to top of reservoir. Push plunger rod up to move air bubbles into insulin vial.
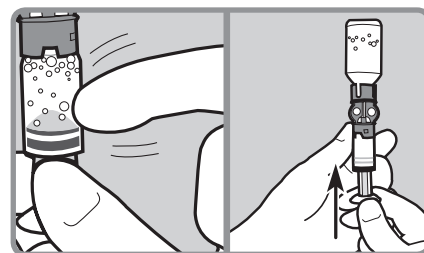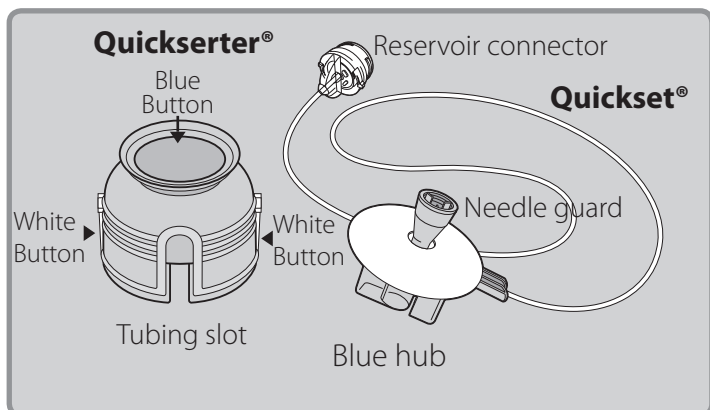

7. After air bubbles are removed, pull plunger rod back down to fill reservoir with enough insulin to last 2-3 days.
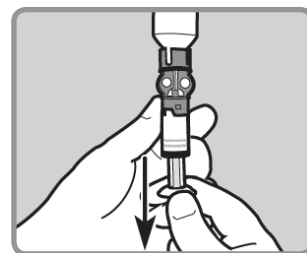

8. Flip vial over so it is now on bottom. Hold blue transfer guard with one hand. With other hand turn reservoir counter-clockwise and pull it straight up until disconnected from blue transfer guard. Disconnect blue transfer guard and dispose into a sharps container.

To Connect the Tubing:

Quickserter®
Blue Button

Reservoir connector

Quickset®

White Button White Button

Needle guard

Tubing slot

Blue hub

1. Remove Quickset from package. Hold reservoir in one hand. With other hand gently push connector onto top of reservoir and turn clockwise until it slides and locks into place.
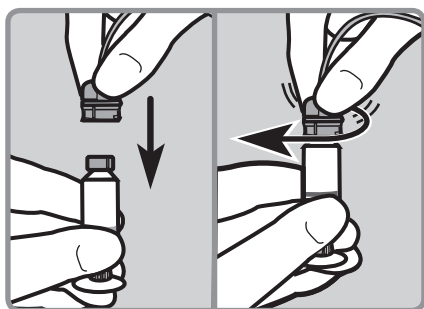
2. Tap side of reservoir to force any remaining air bubbles to rise to top. Push up on plunger rod until bubbles are out and some insulin is in tubing.
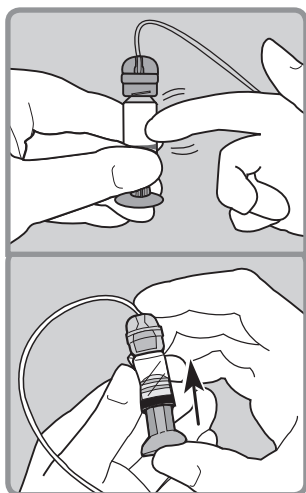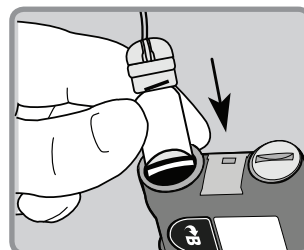
3. Turn plunger rod counter-clockwise until it unscrews from reservoir. Be careful not to pull out plunger rod from reservoir or insulin will spill out.
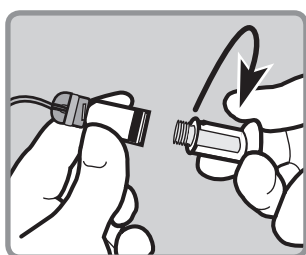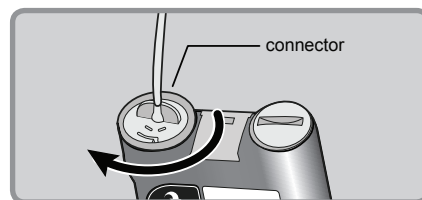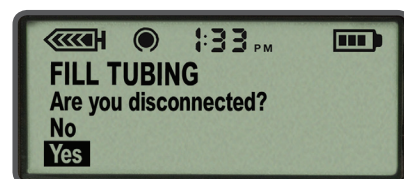
To Fill the Tubing:

1. Press **ACT** so that **REWIND COMPLETE** appears. Insert newly filled reservoir into pump's reservoir compartment.

REWIND COMPLETE
Place and Lock
Reservoir in Pump.
Then press ACT

2. Turn reservoir clockwise until it locks into place.

connector

3. Press **ACT** to go to **FILL TUBING** screen. Be sure infusion set is **NOT** connected to your body. Then select **Yes** and press **ACT**.

FILL TUBING
Are you disconnected?
No
Yes

4. Press and hold **ACT** to fill tubing. The pump will beep as tubing fills. Release **ACT** when you see drops at tip of connector needle. Then press **ESC** once.

FILL TUBING
Hold ACT to
fill tubing
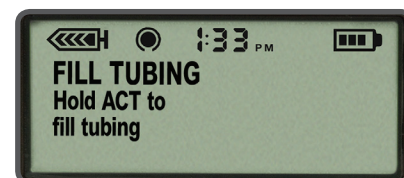
5. If you see drops at end of Quickset® needle and there are no air bubbles in the tubing, select **Yes** and press **ACT**.

DO YOU SEE DROPS AT END OF TUBING?
No
Yes
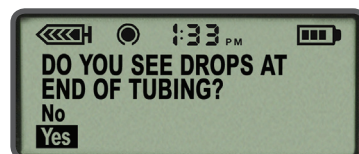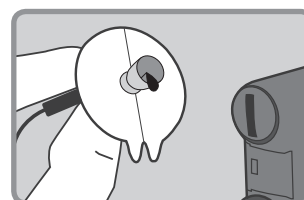
6. When the **FILL CANNULA** screen appears, you are ready to insert the Quickset® infusion set.

FILL CANNULA
Connect set to body.
ACT to fill
ESC to skip
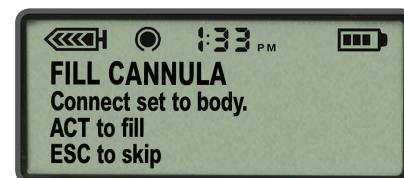
To Prepare Quickserter®:

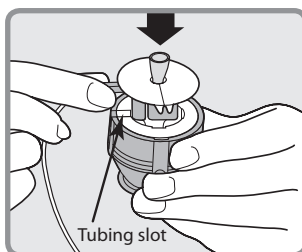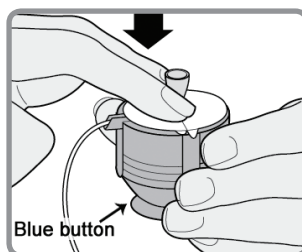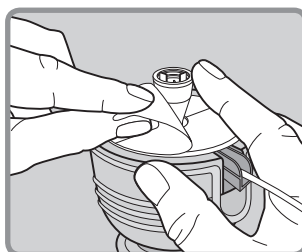1. Place blue hub of Quickset® into Quickserter® insertion device. The handle and tubing should be lined up with tubing slot on Quickserter®.
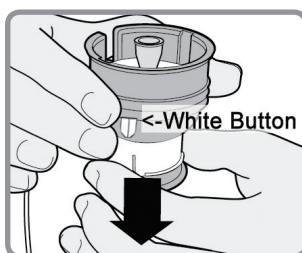

Tubing slot

2. Use two fingers to seat the Quickset® inside serter securely, but do not push it all the way down. Be careful not to press blue button or Quickset® will not lock inside serter.
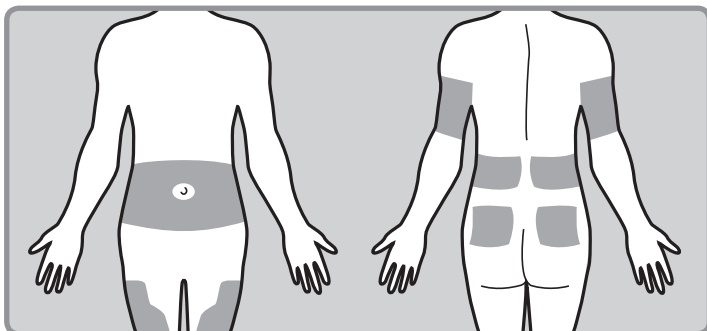

Blue button

3. Peel paper from adhesive.

4. Pull blue button down until you hear it click. Be careful not to press white buttons on either side of serter.

<-White Button

Choose Insertion Site:

The best areas of the body to insert infusion set are shown in shaded areas of this drawing.

To Insert the Quickset® Infusion Set:

1. Wipe the selected insertion site with alcohol or other antiseptic wipe.
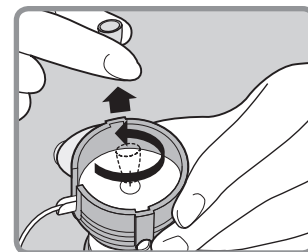
2. Carefully remove needle guard by turning it to loosen and lifting it away to expose needle of Quickset®.

3. Hold serter against prepared site on body and locate the two white buttons on the serter.
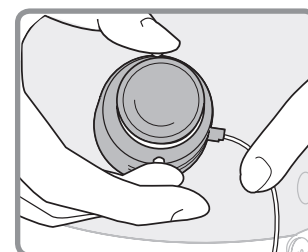
4. Press the two white buttons at the same time. If they are not pressed at the same time the Quickset® will not insert properly.
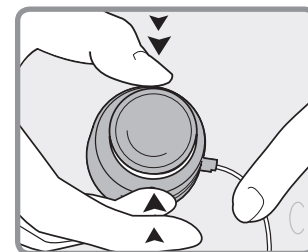
5. Press down on the top of the blue button of serter to release the Quickset® from the serter.
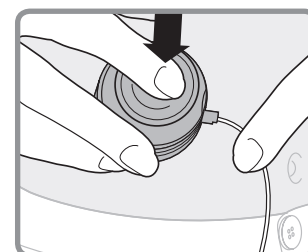
6. Pull serter away from body. Press adhesive securely against skin.
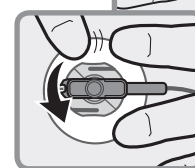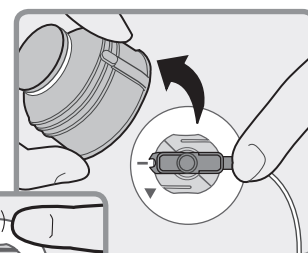
To Insert the Quickset® Infusion Set:

7. With one hand, place fingers on Quickset®. With other hand hold blue handle and pull straight out to remove needle
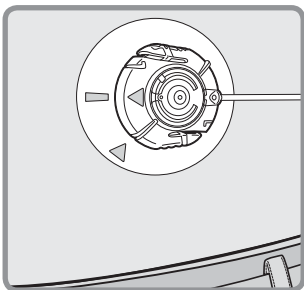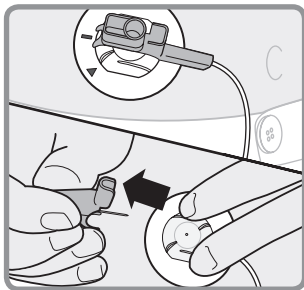
8. Fold blue handle in half until it locks into place. Dispose into sharps container.
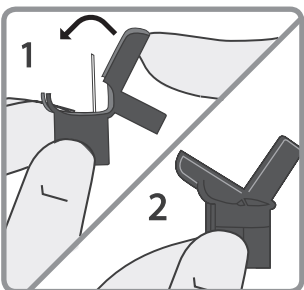
To Fill Cannula:

1. If pump has returned to HOME screen, press ACT. At **FILL CANNULA** screen, press ACT.


```
FILL CANNULA
Connect set to body.
ACT to fill
ESC to skip
```

2. In order to fill empty cannula under skin press ∧ to enter 0.3 units of insulin (if you are using a 6mm cannula) or 0.5 units (for 9mm cannula) Press ACT.


```
FILL CANNULA
               0.3 U
```

OR

```
FILL CANNULA
               0.5 U
```
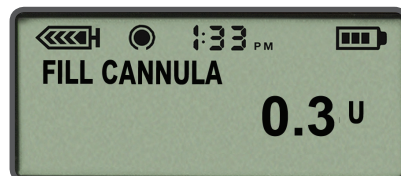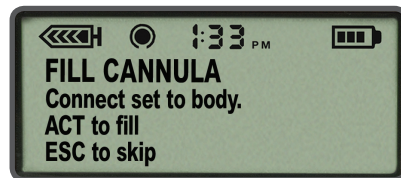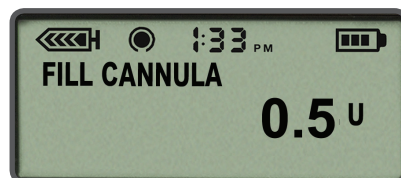
Glucose Monitoring

Schedule for Adjusting Pump Settings

When first starting pump therapy or any time pump settings need adjusting:

- Check your glucose (BG)
    - **When you wake up**
    - **Before each meal**
    - **2 hours after each meal**
    - **Bedtime**
    - **Mid-sleep or every 3–4 hours during sleep**
- Do not eat between meals.

Checking BGs at these times provides the information needed to adjust and fine-tune pump settings.

Schedule for Routine Monitoring

Once your pump settings are adjusted correctly and your glucose levels are stable, establish a routine that includes always checking your BG:

- **When you wake up**
- **Before each meal**
- **Bedtime**
- **Occasionally mid-sleep**
- **Test more frequently during travel, times of stress, and illness**

Treating Low Blood Glucose Levels

How to Treat Mild/Moderate Lows

15–15 Rule

If BG drops below 70 mg/dL:

1. Eat 15 grams of fast-acting carbohydrate
2. Re-check BG in 15 minutes
3. If BG is still below 70 mg/dL, repeat Steps 1 & 2 every 15 minutes until BG is within range.

Items that contain 15 grams:

- 3 to 4 glucose tablets
- 5 jelly beans
- 4 oz juice or soda (not diet)
- 8 oz milk (low or non-fat)
- 1 Tbsp sugar or honey

If BG is lower than 50 mg/dL, start treatment by eating 20 to 30 grams of carbohydrate.

How to Treat a Severe Low

Keep a Glucagon Emergency Kit on hand in case a severe low occurs. Glucagon can be given by injection to raise glucose levels if you are unable to eat or drink to treat a low, or if you are unconscious.

A family member, co-worker, or friend should be instructed on how to give glucagon.

Treating High Blood Glucose Levels

Most highs can be easily lowered simply by giving a correction bolus.

If High BG is lower than 250mg/dL

1. Enter the BG reading into your pump.
2. Allow the Bolus Wizard® feature to calculate the correction bolus amount.
3. Confirm the bolus amount and press the ACT button to deliver.
4. Recheck your BG in one hour to make sure your BG is back within target range.

Never ignore high BG readings. Always consult the Bolus Wizard to see if a correction bolus should be taken.

If BG is Higher than 250 mg/dL — CHECK FOR KETONES

If ketone test is negative:
1. Enter BG into pump/consult Bolus Wizard to see if correction dose is needed
   - Use pump to give correction dose
2 Recheck BG in 1 hour
   - If BG is starting to decrease, continue to monitor until normal.
   - If BG is same or higher:
     – Give correction dose using a syringe.
     – Change infusion site, infusion set, reservoir, and insulin.
     – Continue to check BG every hour until BG returns to normal.

If ketone test is positive:
1. Take correction dose using a syringe.
2. Change infusion site, infusion set, reservoir, and insulin.
3. Troubleshoot pump.
4. Check BG every 1 to 2 hours. Give correction boluses as needed.
5. Drink non-carbohydrate fluids.
6. If BG continues to rise or if you have moderate to high ketones, nausea, vomiting, or difficulty breathing, notify physician or go to the nearest emergency room.

DKA Prevention

Sick Day Guidelines

Illness and/or infection usually cause BGs to run higher than normal. Therefore, the risk of developing DKA is increased when you are ill.

Because DKA symptoms are similar to flu and stomach virus symptoms, check your BG and monitor for ketones often during illness.
- Check BG every 2 hours
- Check urine for ketones each time you urinate
- Nausea or vomiting: <u>Immediately</u> check ketones
- Notify doctor if ketones are moderate or high

Also, consider using a temporary basal rate to temporarily increase your basal insulin. Increasing basal insulin slightly can help to keep your BG in better control when you are ill.

How to Check for Ketones

Ketones are a waste product made when the body is forced to use fat instead of glucose as its main fuel (due to a lack of insulin).
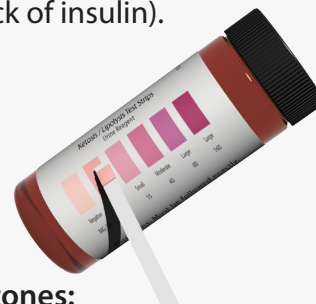
To check for ketones:
1. Collect a urine sample
2. Dip ketone strip into your urine
3. Compare color indicator on strip to color guide on bottle.

Unexplained highs that do not decrease with a correction bolus may be caused by a dislodged or kinked infusion set or a weak vial of insulin. See the Appendix in "The Basics of Insulin Pump Therapy" to troubleshoot.

Medtronic

Notes

Alerts

If the pump is operating and delivering insulin using a special feature or condition such as a temporary basal setting, low battery, or low reservoir volume, it will beep or vibrate to remind you that it is operating in the Special mode (an open circle will appear on the pump screen).

LOW RESERVOIR

Low Reservoir
INSULIN REMAINING IN RESERVOIR IS LOW. Change as soon as possible.

LOW BATTERY

Low Battery
LESS THAN 10% BATTERY LIFE LEFT. Replace as soon as possible, always before going to sleep.

Alarms

Your pump has a sophisticated network of safety checks and systems. If the pump is not delivering insulin because it has been placed in suspend or another condition has caused the pump to stop, the pump will sound an alarm or vibrate periodically to notify you that you are not receiving insulin. A closed black circle will appear on the screen as a reminder of this condition.

WEAK BATTERY

Weak Battery
BATTERY NOT FULLY CHARGED. Pump will operate, but battery life will be shorter than normal.

EMPTY RESERVOIR

Empty Reservoir
CHANGE THE RESERVOIR immediately.

FAILED BATT TEST

Failed Battery Test
BATTERY TOO WEAK TO OPERATE PUMP. Install a new battery.
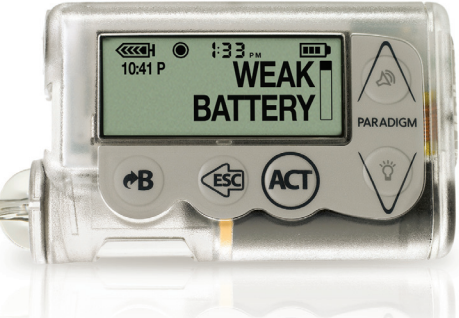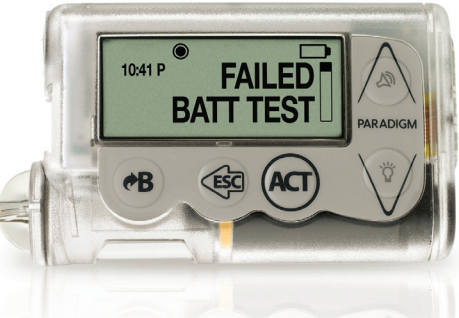
NO DELIVERY

No Delivery
BLOCKAGE DETECTED: insulin delivery stopped. Check blood glucose and ketones.

Clearing Alerts and Alarms

When your pump beeps or vibrates notifying you that an alert condition exists, read and follow the instructions on the screen. Press ⏎, then ACT to silence an alert. Check the STATUS screen to determine what caused the alert.

Possible Battery Problems

Problem	Solution
Blank Screen 	Check and make sure that the battery is inserted correctly. *Remember, the negative (flat) end must be facing down in the pump.*
Weak Battery 	• You may have inserted a battery that has been used for a short time. • You can clear this message and continue, but the battery may not last as long as a new battery. • Clear the alert by pressing the ESC button, and then the ACT button. • The HOME screen should appear. *Remember, if this occurs, the pump will operate normally but the battery life may be shorter than expected.*
Failed Battery Test 	Replace the battery. Occasionally new batteries are damaged. If you still do not see the HOME screen, call Medtronic's 24-Hour HelpLine (800.646.4633) for assistance. We are available to assist you 24 hours a day. *Remember, you will need to provide your pump's serial number. Your pump's serial number can be found in the pump's STATUS screen or on the back of your pump.*

Appendix: Expanded Menu Map

MAIN MENU — 11:00 AM

- BOLUS
- SUSPEND
- SENSOR
- CAPTURE EVENT
- BASAL
- RESERVOIR + SET
- UTILITIES
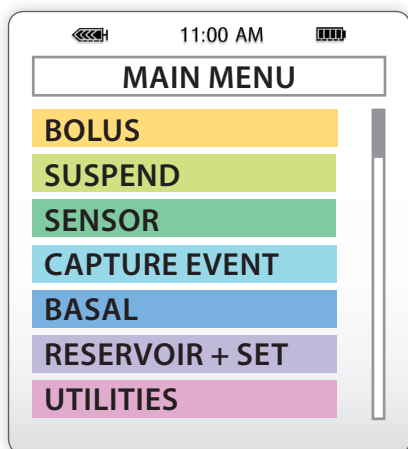
NOTE All screens are samples only. Actual screens depend on the current active functions. Blue Arrows (▶) indicate submenus.

BOLUS MENU — 11:00 AM

- SET BOLUS[1]
- USE BOLUS WIZARD[2]
- MANUAL BOLUS[2]
  - ▶ Set Bolus
- BOLUS HISTORY
- BOLUS SETUP
  - ▶ Bolus Wizard Setup
    - ▶ Edit Settings
      - ▶ Wizard
      - ▶ Carb Units
      - ▶ Carb Ratios
      - ▶ BG Units
      - ▶ Sensitivity
      - ▶ BG Target
      - ▶ Active Ins Time
    - ▶ Review Settings
  - ▶ Max Bolus
    - ▶ Max Bolus Setup
  - ▶ Scroll Rate
    - ▶ Scroll Rate Setup
  - ▶ Dual/Square Bolus
    - ▶ Off
    - ▶ On
  - ▶ Easy Bolus
    - ▶ Off
    - ▶ On/Set
  - ▶ BG Reminder
    - ▶ Off
    - ▶ On
  - ▶ Missed Bolus Reminder
    - ▶ Off
    - ▶ On/Set

SUSPEND MENU — 11:00 AM

PRESS ACT TO STOP

SENSOR MENU — 11:00 AM

- CALIBRATE[3]
  - ▶ Enter BG
- ALERT SILENCE[4]
  - ▶ Off
  - ▶ Hi Alerts
  - ▶ Lo Alerts
  - ▶ Hi and Lo Alerts
  - ▶ All Sensor Alerts
- LINK TO SENSOR[4]
  - ▶ New Sensor
  - ▶ Reconnect Old Sensor
  - ▶ Find Lost Sensor
  - ▶ Turn Off Sensor
  - ▶ Transmtr ID
- EDIT SETTINGS
  - ▶ Sensor
  - ▶ Glucose Alerts
  - ▶ Glucose Limits
  - ▶ Hi Repeat[5]
  - ▶ Lo Repeat[5]
  - ▶ Predict Alert
  - ▶ Rate Alerts
  - ▶ Cal Repeat
  - ▶ Cal Reminder
  - ▶ BG Units
  - ▶ Transmtr ID
  - ▶ Weak Signal
  - ▶ Graph Timeout
  - ▶ Sensor Demo
- CALIBRATION HIST[4]
- SENSOR ALERT HIST[4]
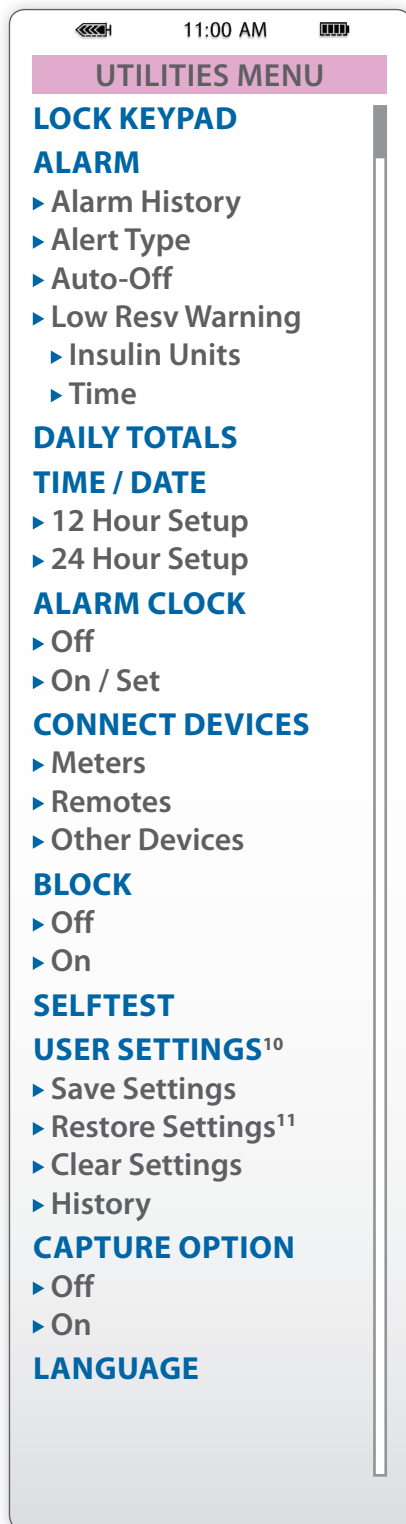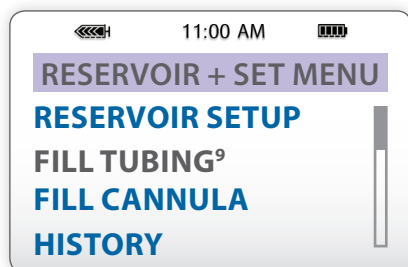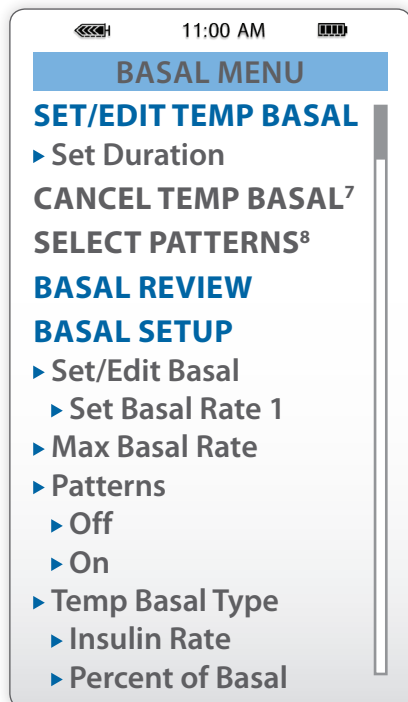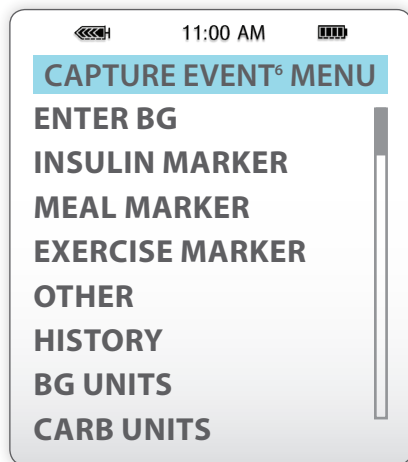- REVIEW SETTINGS[4]
- TURN OFF SENSOR[4]

[1] Displays only when the Bolus Wizard® feature is off.
[2] Displays only when the Bolus Wizard® feature is on.
[3] Displays only when the sensor is communicating with the pump.
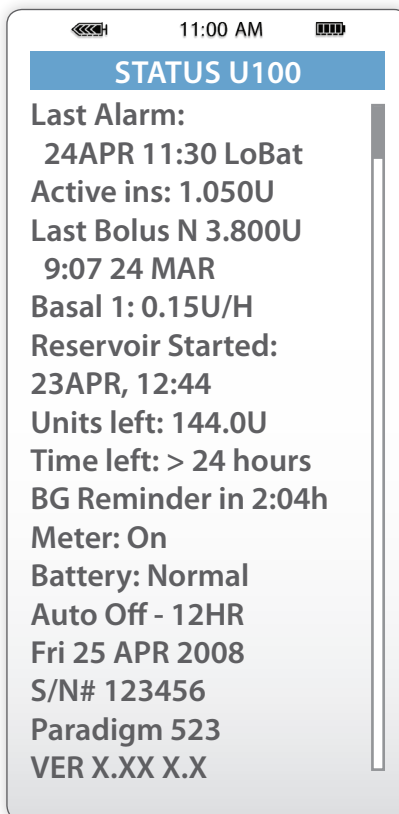[4] Displays if Sensor is on.
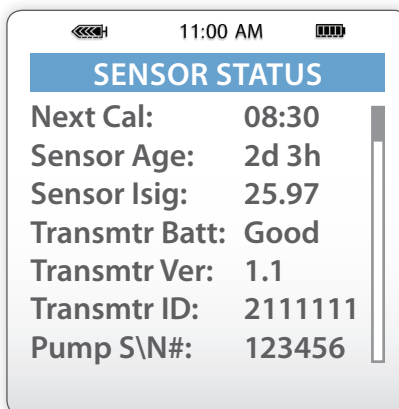[5] Displays if Glucose Alerts feature is on.

CAPTURE EVENT[6] MENU

```
        11:00 AM      🔋

  CAPTURE EVENT⁶ MENU
ENTER BG
INSULIN MARKER
MEAL MARKER
EXERCISE MARKER
OTHER
HISTORY
BG UNITS
CARB UNITS
```

BASAL MENU

```
        11:00 AM      🔋

       BASAL MENU
SET/EDIT TEMP BASAL
▸ Set Duration
CANCEL TEMP BASAL⁷
SELECT PATTERNS⁸
BASAL REVIEW
BASAL SETUP
▸ Set/Edit Basal
  ▸ Set Basal Rate 1
▸ Max Basal Rate
▸ Patterns
  ▸ Off
  ▸ On
▸ Temp Basal Type
  ▸ Insulin Rate
  ▸ Percent of Basal
```

RESERVOIR + SET MENU

```
        11:00 AM      🔋

  RESERVOIR + SET MENU
RESERVOIR SETUP
FILL TUBING⁹
FILL CANNULA
HISTORY
```

⁶ Displays if Capture Option is turned on in Utilities Menu.

⁷ Displays only after setting Temp Basal.

⁸ Displays only when the Patterns feature is on.

⁹ Displays only after a rewind.

UTILITIES MENU

```
        11:00 AM      🔋

     UTILITIES MENU
LOCK KEYPAD
ALARM
▸ Alarm History
▸ Alert Type
▸ Auto-Off
▸ Low Resv Warning
  ▸ Insulin Units
  ▸ Time
DAILY TOTALS
TIME / DATE
▸ 12 Hour Setup
▸ 24 Hour Setup
ALARM CLOCK
▸ Off
▸ On / Set
CONNECT DEVICES
▸ Meters
▸ Remotes
▸ Other Devices
BLOCK
▸ Off
▸ On
SELFTEST
USER SETTINGS¹⁰
▸ Save Settings
▸ Restore Settings¹¹
▸ Clear Settings
▸ History
CAPTURE OPTION
▸ Off
▸ On
LANGUAGE
```

¹⁰ Displays only when you hold ⊙B and press ACT .

¹¹ Displays only after the patient settings have been saved.

Status Screens

Press the (ESC) button to go to the **SENSOR STATUS** screen.

Pump Status Screen

```
        11:00 AM      🔋

       STATUS U100
Last Alarm:
  24APR 11:30 LoBat
Active ins: 1.050U
Last Bolus N 3.800U
  9:07 24 MAR
Basal 1: 0.15U/H
Reservoir Started:
23APR, 12:44
Units left: 144.0U
Time left: > 24 hours
BG Reminder in 2:04h
Meter: On
Battery: Normal
Auto Off - 12HR
Fri 25 APR 2008
S/N# 123456
Paradigm 523
VER X.XX X.X
```

Sensor Status Screen

```
        11:00 AM      🔋

      SENSOR STATUS
Next Cal:        08:30
Sensor Age:      2d 3h
Sensor Isig:     25.97
Transmtr Batt:   Good
Transmtr Ver:    1.1
Transmtr ID:     2111111
Pump S\N#:       123456
```

Notes