



3 Recovery and care after surgery

Recovery from surgery

It takes several weeks to heal from surgery. It is normal to feel some discomfort from the incision(s) and to have some pain at the implant site for 2 to 6 weeks.

Your doctor may also prescribe physical therapy or medication to help manage your pain. Always follow your doctor's instructions.

 **Warning:** DO NOT use the recharger on an unhealed wound. The recharging system is not sterile, and contact with the wound can cause an infection.

Activities

Some movements can cause changes in stimulation. For example, leaning back may cause the lead to move closer to your spinal cord; this can increase the sensation of stimulation.

Other movements may cause the lead to move further away from your spinal cord and decrease the stimulation sensation. Sudden

changes in stimulation are most common while you are recovering from surgery.

- Avoid activities where you must bend, stretch, or twist your body; these movements can move your leads, which affects your stimulation.
- Avoid lying on your stomach.
- Avoid reaching over your head.
- Avoid turning from side to side.
- Avoid bending forward, backward, or from side to side.
- Avoid lifting more than 2 kilograms (5 pounds).

As you begin to feel better, you should be able to perform activities such as:

- Bathing or showering
- Sexual activity
- Working at home or at your business
- Hobbies or activities, such as walking, gardening, cycling, or swimming

- Traveling

Remember, returning to your daily activities should make you feel better, not worse.

Note: As you adjust to life with better pain management, you may want to try activities that you could not perform before your surgery. Discuss your activity level with your doctor.

When to call your clinician

Contact your clinician if any of the following events occur:

- You have pain, redness, or swelling at the incision(s) later than 6 weeks after surgery.
- You feel discomfort or pain during stimulation. Turn your stimulation off and call your clinician.
- Your system is not working properly.
- You cannot turn stimulation on or off.
- You cannot adjust stimulation using your controller.

Care schedule

Your clinician will schedule follow-up visits to make sure you are receiving the most appropriate therapy.

Recovery and care after surgery 3

56 English 97745 2013-04



4 Using your controller

How your controller works

The controller communicates wirelessly with your neurostimulator by sending signals to and receiving signals from the neurostimulator. Your neurostimulator only accepts communications from the controller or clinician programmer. Sending information from the neurostimulator to the controller will only occur after the controller and neurostimulator are "paired".

Your neurostimulator will not be able to send information to anything except for the controller that it is paired with. Your doctor will pair your controller and neurostimulator. If you receive a new controller or for some other reason it is not paired with your neurostimulator, see "Setting up a new controller" on page 208, for information about how to pair the controller and the neurostimulator.

Note: Make sure to keep your controller with you at all times in the event that you need to adjust or turn your stimulation off.

Use the controller to:

- Turn your stimulation on or off.
- Check the neurostimulator and controller battery status.
- Change stimulation settings.

Notes:

- The controller can be used with all the neurostimulator models referenced in this manual; however, the available functions will be different for each model. Be sure to note when a specific neurostimulator is referenced to determine if the information is applicable for your neurostimulator.
- The controller is an electronic device that should be used in accordance with any restrictions while traveling (eg, airplane takeoffs).

Controller screen and keys

Your controller has a touchscreen, a display screen that reacts to your touch and allows you to press buttons and functions that are displayed on the screen. Use one finger when

pressing buttons or functions. Having multiple fingers at once on the front face of the controller may not allow the function or task to be performed. There are 3 different ways to use the touchscreen depending on the function or task:

- Short, light presses for a button selection.
- Pressing and holding to unlock a screen.
- Pressing lightly and dragging a slider bar to view additional selections.

In addition to these on-screen buttons and functions, your controller also has a number of keys (Table 4.1).

Table 4.1 Controller keys

Key	Function
 Stimulation On/Off	<ul style="list-style-type: none">• Turns stimulation on or off.

Table 4.1 Controller keys (continued)

Key	Function
	<ul style="list-style-type: none">• Adjust stimulation.• Select and navigate settings displayed on the screen.• Wake up the controller. <p>Note: To perform most functions on the controller, you must first press the Increase/Decrease key to wake up the controller.</p>

There is a charging port on the bottom of the controller and a recharging light above the touchscreen. The charging port and recharging light are used with rechargeable neurostimulators (Figure 4.1).

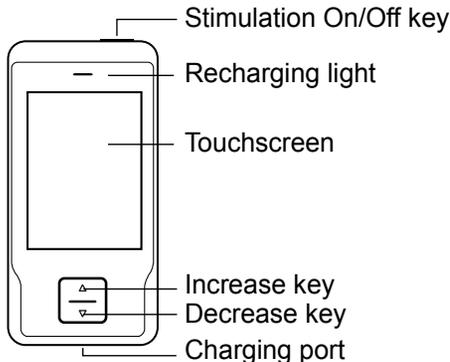


Figure 4.1 Controller keys.

Home screen

The **Home** screen is the first screen to appear after unlocking your controller. The **Home** screen provides an overview of your stimulation settings (Figure 4.2).

Note: The **Home** screen may look different for each patient depending on which mode your clinician has programmed for your neurostimulator. The modes are: **Single** and **Group** mode.

Details about what is displayed on the **Single** and **Group** mode **Home** screens are provided in "Programming modes" on page 100.

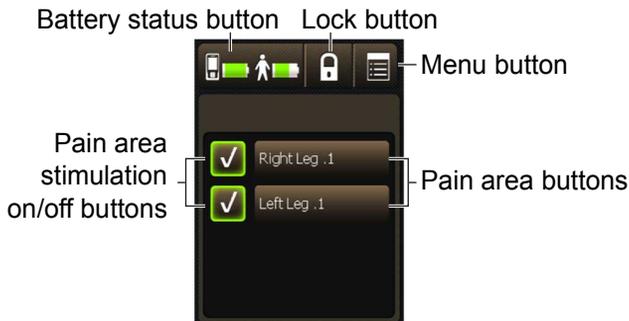


Figure 4.2 Home screen (**Single** mode shown).

The number of **Pain areas** displayed on the **Home** screen depends on how your clinician has programmed your neurostimulator. There can be up to 4 pain areas.

The buttons at the top of the **Home** screen allow you to perform the following tasks:

- Check the battery status of the controller.
- Check the battery status of the neurostimulator.

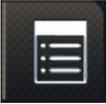
- Lock the controller.
- Access the **Menu** screen.

Refer to Table 4.2 for more information on these buttons.

Table 4.2 Home screen buttons

Icon	Description
	Battery status button The left icon on this button displays the controller battery status. The right icon on this button displays the neurostimulator battery status. Press this button to check the battery status in detail. For more information on checking batteries, see "Checking the battery status of the controller and neurostimulator" on page 75.
	Lock button Press this button to lock the controller.

Table 4.2 Home screen buttons (continued)

Icon	Description
	<p>Menu button Press this button to access the Menu screen.</p> <p>For more information about the Menu screen options. Refer to "Changing controller preferences using the Menu" on page 80.</p>

Unlocking and locking your controller

Unlocking your controller

When the **Increase/Decrease** key is pressed to wake up the controller, the **Unlock** screen appears (Figure 4.3).

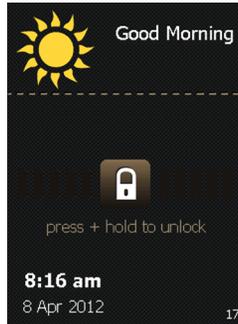


Figure 4.3 Unlock screen.

Notes:

- If the controller does not display the **Unlock** screen, the controller may not have been properly set up. Call your clinician if the **Unlock** screen does not appear.
 - When the controller is locked, pressing the **Stimulation On/Off** key will provide the option to bypass the **Unlock** screen and to turn stimulation on or off.
1. Press and hold the **Lock** () button on the **Unlock** screen.

As the **Lock** button is held, bars appear on the screen and move toward the **Lock** button (Figure 4.4).

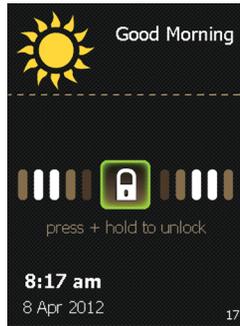


Figure 4.4 Unlocking the controller.

2. Stop pressing the **Lock** button when the screen changes to a circle of dots (Figure 4.5). The controller is searching for your neurostimulator.

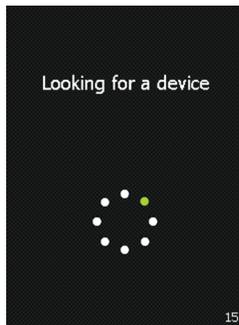


Figure 4.5 The controller searching for your neurostimulator.

After unlocking the controller, the first screen you see is the **Home** screen (Figure 4.6).

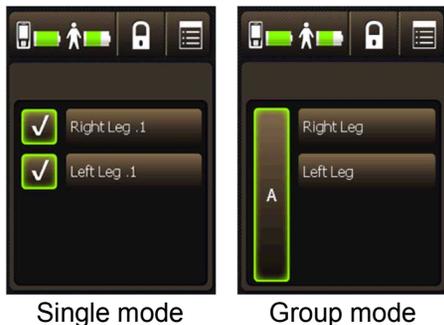


Figure 4.6 Home screen.

If the **Home** screen does not appear, see "Troubleshooting" on page 163.

Locking your controller

Your controller can be locked, so if buttons or keys are accidentally pressed, there will not be an unexpected change in your stimulation.

If you have stimulation on, locking your controller will not turn stimulation off. Stimulation will remain on even when the controller is locked.

Note: The controller screen will dim after 30 seconds of inactivity, and will automatically lock itself after 2 minutes of inactivity. You can also press the **Lock** button to lock the controller immediately.

1. From the **Home** screen, press the **Lock**  button to lock the controller.

Turning your stimulation on or off

You can turn stimulation on or off at any time. Follow these steps to turn your stimulation on or off for all pain areas.

To turn stimulation on or off for individual pain areas, refer to "Turning stimulation on or off for individual pain areas" on page 110.

Turning your stimulation on for all pain areas

1. To turn stimulation on, firmly press the **Stimulation On/Off** key, which is located on the top of your controller.

2. Press the **Stimulation On** button to turn stimulation on (Figure 4.7).

Note: If you do not wish to turn stimulation on or off, but want to access the **Home** screen, press the **Go To Unlock** button and unlock your controller.



Figure 4.7 Turning stimulation on.

3. The **Home** screen will appear to confirm that stimulation is on (Figure 4.8).
 - **Single mode:** The **Pain area stimulation on/off** buttons will display checkmarks highlighted in green when stimulation is turned on.

- **Group mode:** The **Group** button will be highlighted in green when stimulation is turned on.

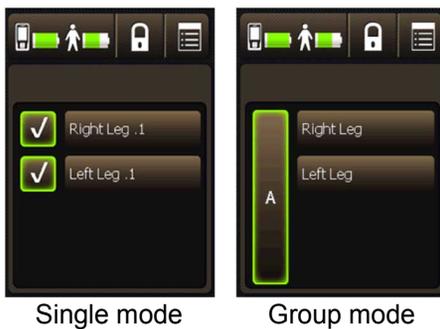


Figure 4.8 Home screen with stimulation turned on.

Turning your stimulation off for all pain areas

1. To turn stimulation off, firmly press the **Stimulation On/Off** key, which is located on the top of your controller.

2. Press the **Stimulation Off** button to turn stimulation off (Figure 4.9).

Notes:

- If you do not wish to turn stimulation off, but instead wish to access the **Home** screen, press the **Go To Unlock** button.
- If your controller was already on, instead of the **Go To Unlock** button, the **Lock Controller** button will be shown.



Figure 4.9 Turning stimulation off.

3. The **Home** screen will appear to confirm that stimulation is off (Figure 4.10).

- **Single mode:** The **Pain area stimulation on/off** buttons will display gray dashes when stimulation is turned off. An orange message will also be shown that reads "**Stimulation is off**".
- **Group mode:** The **Group** button will be shown in gray when stimulation is turned off. An orange message will also be shown that reads "**Stimulation is off**".

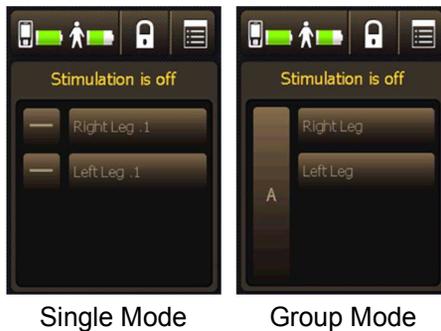


Figure 4.10 Home screen with stimulation turned off.

How to maintain neurostimulator batteries

It is very important that you maintain your neurostimulator batteries, whether you have an external or an implanted rechargeable neurostimulator.

△ **Caution:** Check battery status and charge the battery regularly. Battery capacity will continue to slowly drain, even when the neurostimulator is off. If the battery becomes completely discharged, therapy will be lost.

Though you will not need to recharge the external neurostimulator, you should check the battery status regularly and report any low battery messages to your clinician.

Checking the battery status of the controller and neurostimulator

Check the status of the batteries in your controller and your neurostimulator every day. You can check the status of the batteries at any time.

Note: The battery levels of the controller and the neurostimulator are shown on the **Battery status** (🔋👤🔋) button on the **Home** screen. For further detail about battery levels, follow the steps below.

1. If necessary, unlock the controller by pressing and holding down the **Lock** (🔒) button on the **Unlock** screen.
2. From the **Home** screen, press the **Battery status** (🔋👤🔋) button. Two battery figures appear (Figure 4.11).

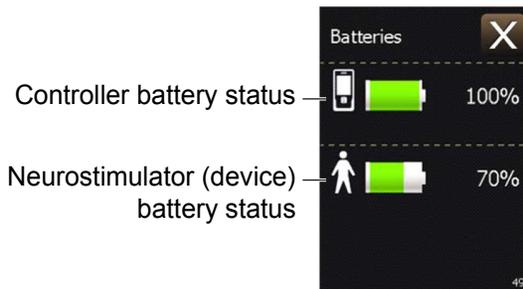


Figure 4.11 Batteries screen.

3. Press the **Exit** (X) button at the top right corner of the touchscreen to exit.

Table 4.3 lists the different battery indicators.

Table 4.3 Battery indicators

Indicator icon	Description
	Controller battery.
	Neurostimulator (device) battery: <ul style="list-style-type: none"> • External neurostimulator. • Implanted neurostimulator.

Table 4.4 lists several battery level definitions and whether action is needed.

Table 4.4 Battery level definitions

Battery icon	Definitions
	Battery icon is green. Battery level is full. No action is needed.
	Battery icon is green. Battery level is half full. No action is needed.

Table 4.4 Battery level definitions (continued)

Battery icon	Definitions
	<p>Battery icon is orange. Battery level is low. Action is needed soon.</p> <p>If you have an external neurostimulator. Replace the controller batteries soon. See "Replacing the type AA controller batteries" on page 206.</p> <p>If you have an implanted neurostimulator:</p> <ul style="list-style-type: none">• Recharge the controller battery pack. See "Recharging the controller battery pack" on page 158.• Recharge the neurostimulator battery. See "Recharging the implanted neurostimulator battery" on page 146.

Table 4.4 Battery level definitions (continued)

Battery icon	Definitions
	<p>Battery icon is red. Battery level is nearly depleted. Action is needed now.</p> <p>If you have an external neurostimulator:</p> <ul style="list-style-type: none">• Replace the controller batteries. See "Replacing the type AA controller batteries" on page 206.• Stimulation may not be available, the external neurostimulator batteries will need to be replaced. Do not replace the external neurostimulator batteries by yourself. Call your clinician. <p>If you have an implanted neurostimulator:</p> <ul style="list-style-type: none">• Recharge the controller battery pack. See "Recharging the controller battery pack" on page 158.• Stimulation may not be available. Recharge the neurostimulator battery. See "Recharging the implanted neurostimulator battery" on page 146.

"Controller screens" on page 164 lists the warning and alert screens associated with the

batteries for the controller and neurostimulators.

Changing controller preferences using the Menu

Controller preferences affect the way information displays on the screen or the way alert/vibration tones sound or are felt. These controller preferences include audio/vibration, brightness, date, time, language, and number format. Other features can also be accessed from **Menu** screen. Table 4.5 on page 81 lists the preferences associated with the **Menu** screen and where to find information for other features.

To access the Menu screen

1. Press the **Menu**  button on the **Home** screen.
2. Drag the slider bar, or use the **Increase/Decrease** key to view other preferences on the **Menu** screen (Figure 4.12).

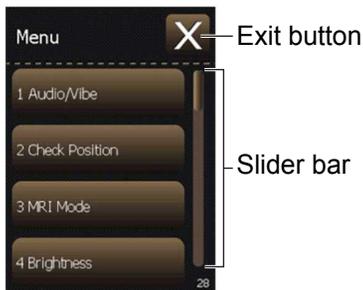


Figure 4.12 Menu screen.

3. Select the **Menu** preference. Refer to Table 4.5 for preferences and instructions.

Table 4.5 Controller preferences on the Menu screen

Menu preference	Description
Audio/Vibe	This option is used to adjust the audio and vibration settings. Refer to "Changing the audio and vibration settings" on page 84.

Table 4.5 Controller preferences on the Menu screen (continued)

Menu preference	Description
Check Position	<p>This feature is only used with the implanted neurostimulator. It is used to check your current body position if your physician has enabled the AdaptiveStim feature.</p> <p>Refer to "Checking your body position" on page 121.</p>
MRI Mode	<p>This feature is only used with the implanted neurostimulator. It is used to turn stimulation off to prepare for an MRI examination.</p> <p>Refer to "Placing your neurostimulation system in MRI mode for the MRI scan" on page 133.</p>
Brightness	<p>This option is used to adjust the brightness of the touchscreen.</p> <p>Refer to "Changing the brightness of the controller display" on page 86.</p>
Date	<p>This option is used to change the date displayed on your controller.</p> <p>Refer to "Changing the date" on page 87.</p>

Table 4.5 Controller preferences on the Menu screen (continued)

Menu preference	Description
Time	This option is used to change the time and format displayed on the controller. Refer to "Changing the time" on page 88.
Language	This option is used to change the language displayed on the controller. Refer to "Changing the language" on page 90.
Numbers	This option is used to change how numbers are displayed on the controller. Refer to "Changing the number format" on page 91.
About	This option is used to review technical information about your neurostimulation system. Refer to "Viewing information about the controller and the neurostimulator" on page 92.

Table 4.5 Controller preferences on the Menu screen (continued)

Menu preference	Description
Recharging	This feature is only used with the implanted neurostimulator. It is used to change the battery recharging speed and temperature while recharging. Refer to "Changing the recharging temperature and speed" on page 155.

Changing the audio and vibration settings

The controller will play an audio tone to alert you of any problems during recharging of the implanted neurostimulator. The **Audio** option can be set to off, low, or high.

The controller will vibrate every time you press a key or screen button to confirm your press. The **Vibration** option can be set to off or on.

1. Select the **Audio/Vibe** button from the **Menu** screen. The **Audio/Vibe** screen appears (Figure 4.13).

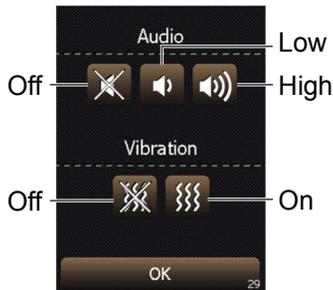


Figure 4.13 Audio/Vibe screen.

2. To change audio settings, press the desired button for **Audio Off**, **Low**, or **High**.
3. To change vibration settings, press the desired button for **Vibration Off** or **On**.
4. Press the **OK** button to return to the **Menu** screen.
5. Press the **Exit** (⊗) button to return to the **Home** screen.

Changing the brightness of the controller display

1. Select the **Brightness** button from the **Menu** screen. The **Brightness** screen appears (Figure 4.14).

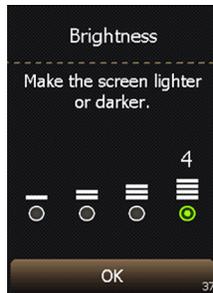


Figure 4.14 Brightness screen.

2. Using the touchscreen or the **Increase/Decrease** key, select the circle below the desired brightness level.
3. Press the **OK** button to return to the **Menu** screen.
4. Press the **Exit** (⊗) button to return to the **Home** screen.

Changing the date

Note: Date settings cannot be changed while recharging the implanted neurostimulator.

1. Drag the slider bar, or use the **Increase/Decrease** key to view additional preferences on the **Menu** screen.
2. Select the **Date** button from the **Menu** screen. The **Date** screen appears (Figure 4.15).



Figure 4.15 Date screen.

3. To change the **Day**, **Month**, or **Year**, press the touchscreen button with the incorrect value, then use the **Increase/Decrease** key to change the value.

4. Press the **OK** button to return to the **Menu** screen.
5. Press the **Exit** (ⓧ) button to return to the **Home** screen.

Changing the time

Note: Time settings cannot be changed while recharging the implanted neurostimulator.

1. Drag the slider bar, or use the **Increase/Decrease** key to view additional preferences on the **Menu** screen.
2. Select the **Time** button from the **Menu** screen. The **Time** screen appears (Figure 4.16).



Figure 4.16 Time screen.

3. To change the **Hour**, **Minute**, or **Time format**, press the touchscreen button with the incorrect value or format, then use the **Increase/Decrease** key to change the value or format.

Note: **Time format** selections include: **AM/PM** and **24-hour**.

4. Press the **OK** button to return to the **Menu** screen.
5. Press the **Exit** (ⓧ) button to return to the **Home** screen.

Changing the language

1. Drag the slider bar, or use the **Increase/Decrease** key to view additional preferences on the **Menu** screen.
2. Select the **Language** button from the **Menu** screen. The **Language** screen appears (Figure 4.17).



Figure 4.17 Language screen.

3. Select the desired language from the options available. Drag the slider bar, or use the **Increase/Decrease** key to view more language options.

4. Press the **OK** button to return to the **Menu** screen.
5. Press the **Exit** (ⓧ) button to return to the **Home** screen.

Changing the number format

1. Drag the slider bar, or use the **Increase/Decrease** key to view additional preferences on the **Menu** screen.
2. Select the **Numbers** button from the **Menu** screen. The **Numbers** screen appears (Figure 4.18).



Figure 4.18 Numbers screen.

3. Using the touchscreen or the **Increase/Decrease** key, select the circle next to the desired number format for the controller.
4. Press the **OK** button to return to the **Menu** screen.
5. Press the **Exit** (⊗) button to return to the **Home** screen.

Viewing information about the controller and the neurostimulator

1. Drag the slider bar, or use the **Increase/Decrease** key to view additional preferences on the **Menu** screen.
2. Select the **About** button from the **Menu** screen. The **About** screen appears (Figure 4.19).

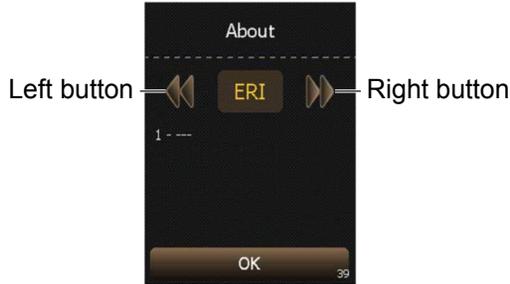


Figure 4.19 About screen.

3. Use the **Left/Right** button or **Increase/Decrease** key to view information about the controller and neurostimulator.

Note: The following information may be available through the **About** screen. Information shown may be different depending on the type of neurostimulator that is paired with the controller.

- **ERI (Elective Replacement Indicator):** The estimated date that the implanted neurostimulator may be replaced.

- **INS (Implanted Neurostimulator):**
The model number, serial number, and system information for the implanted neurostimulator.
- **ENS (External Neurostimulator):** The model number, serial number, and system information for the external neurostimulator.
- **! (Last Error):** The date that the last warning or alert screen was displayed on the controller.
- **PTM (Controller):** The software version that your controller is using. This screen may also show the recharger compatibility for the implanted neurostimulator.

Using your controller 4

4. Press the **OK** button to return to the **Menu** screen.
5. Press the **Exit** (ⓧ) button to return to the **Home** screen.