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Introduction

Various features are available for adjusting your stimulation. Each type or model of neurostimulator provides a unique set of stimulation features.

Stimulation features

Using the basic neurostimulation features, you can adjust the intensity, pulse width, and rate settings for your stimulation. For complete information, see "Changing parameter and stimulation settings" on page 101.

For information about **Single** and **Group** mode, refer to "Programming modes" on page 100.

For information about AdaptiveStim, refer to "Using AdaptiveStim" on page 117.

Adjusting stimulation settings

As your activities vary throughout the day, your therapy needs may change. The controller allows you to turn stimulation on and off, switch from one programmed stimulation option to

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another, and adjust the intensity, pulse width, and rate of the stimulation. Talk to your clinician about the settings that apply to your therapy.

Your clinician programs the available functions and specifies the settings you can adjust with your controller. Discuss this with your clinician.

There is often more than one way to change stimulation settings. These instructions describe the most common ways.

Note: When a stimulation setting is changed, you will see the change when accessing a **Pain area** through the **Home** screen.

To receive the most effective therapy, some days you may need to adjust your stimulation several times; other days you may not need to adjust it at all. Your clinician will provide complete guidelines about when you may want to adjust your stimulation.

Table 5.1 provides general guidelines for adjusting your stimulation. For additional adjustment guidelines, refer to the sections on

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the specific features associated with your
neurostimulator.

Table 5.1 General stimulation adjustment guidelines

Situation	Action
Stimulation is too strong	Decrease intensities or pulse width(s).
Stimulation is not strong enough	Increase intensities or pulse width(s).
Stimulation covers too much area	Decrease intensities or pulse width(s) or change to a different program or group.
Stimulation does not cover painful area	Increase intensities or pulse width(s) or change to a different program or group.
The pulses (tapping sensations) feel too slow	Increase rate.
The pulses (tapping sensations) feel too fast	Decrease rate.

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Table 5.1 General stimulation adjustment guidelines (continued)

Situation	Action
You have unexpected changes in stimulation	**1.** Turn off the neurostimulator.
	2. Decrease intensities, turn on the neurostimulator, adjust parameters, and slowly increase intensities to the desired level.
	or
	Change to a different program or group and turn on the neurostimulator.
You have tried adjusting stimulation but are unable to find an effective setting.	Contact your clinician.

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Table 5.1 **General stimulation adjustment guidelines (continued)**

Situation	Action
You will be passing through a theft detector or security device	Before engaging in these activities, consult "Appendix A: Electromagnetic interference (EMI)" on page 225 for details.
You will be using potentially dangerous equipment	
You will be having a medical procedure	

Programming modes

Your clinician will choose one of two programming modes, **Single** or **Group** mode in order to best meet your stimulation needs.

- **Single mode**–This programming mode allows you to adjust stimulation settings for individual pain areas.

- **Group mode**–This programming mode allows you to adjust stimulation settings for a group of pain areas.

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The programming mode selected by your clinician determines what is displayed on the **Home** screen (Figure 5.1).
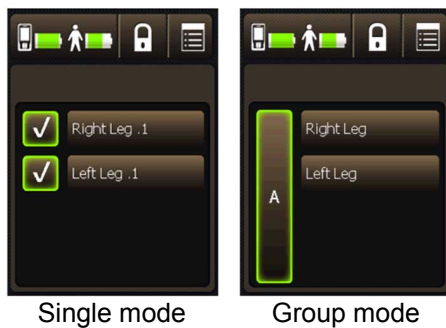

Single mode   Group mode

Figure 5.1 Programming modes displayed on the **Home** screen.

Changing parameter and stimulation settings

The **Home** screen displays the **Pain areas** that your clinician has programmed for stimulation (Figure 5.2). You may be able to adjust certain parameters and stimulation settings set up by your clinician.

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Pain area buttons

Single mode　　　　Group mode
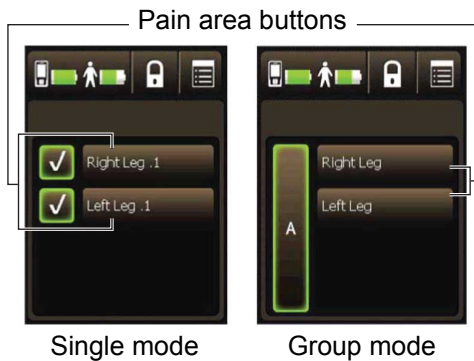
Figure 5.2 **Pain area** buttons on the **Home** screen.

Note: If you have only 1 pain area and no additional parameter or stimulation settings, you may not be able to access pain area settings through the **Home** screen.

After pressing a **Pain area** button on the **Home** screen, the **Pain area** will display the available settings (Figure 5.3).

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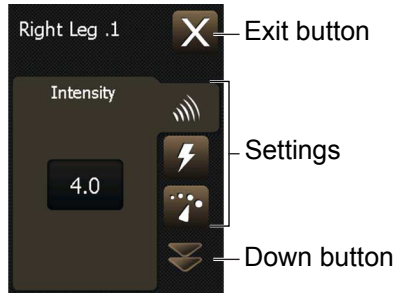
Figure 5.3 Pain area settings.

Refer to Table 5.2 for a description of parameter and stimulation settings and where to find information for those settings.

Note: Some settings may not be available depending on what your clinician has programmed for your neurostimulator.

Table 5.2 Parameter and stimulation settings

Button	Description
	Intensity—Controls the strength of the stimulation. Refer to "Increasing or decreasing a parameter (intensity, pulse width, or rate)" on page 106.

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Table 5.2 Parameter and stimulation settings (continued)

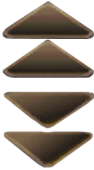| Button	Description
	Stimulation—On or off setting for stimulation. Refer to "Turning stimulation on or off for individual pain areas" on page 110.
	Rate—Sets the speed of the stimulation pulses. Refer to "Increasing or decreasing a parameter (intensity, pulse width, or rate)" on page 106.
	AdaptiveStim—Turns AdaptiveStim on or off. This feature is only available for the implanted neurostimulator. Refer to "Turning AdaptiveStim on or off" on page 124.
	Pulse width—Sets the length of the stimulation pulse. It affects the strength and coverage area of the stimulation. Refer to "Increasing or decreasing a parameter (intensity, pulse width, or rate)" on page 106.

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Table 5.2 Parameter and stimulation settings (continued)

Button	Description
	Cycling—Turns stimulation on and off at preset times as programmed by your clinician. Refer to "Turning cycling on or off" on page 112.
	Program—A custom combination of stimulation settings programmed by your clinician. Refer to "Changing a program for individual pain areas" on page 114. **Note:** If your neurostimulator is using **Group** mode, the **Program** setting is not available. Refer to "Viewing and changing a group" on page 115.
	Up/Down buttons— Press to view additional parameter and stimulation settings for a pain area. These buttons may not appear depending on how your clinician has programmed your neurostimulator.

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Increasing or decreasing a parameter (intensity, pulse width, or rate)

Complete the following steps to adjust a parameter.

Notes:

- To increase a parameter, the neurostimulator must be on.

- To decrease a parameter, the neurostimulator may be on or off.

1. Press the **Pain area** button on the **Home** screen for the pain area you want to adjust.

2. Select the parameter setting button that you want to change. If applicable, use the **Up/Down** buttons to view additional parameter settings. Buttons that may be available include:

    – **Intensity** ()

    – **Pulse width** ()

    – **Rate** ()

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Notes:

– You may not see every parameter setting displayed on your controller. Only the parameter settings that were set up by your clinician will appear on the controller screen.

– Adjusting the **Rate** for 1 pain area will affect the rate of all other pain areas.

3. Press the **Increase/Decrease** key to adjust parameter settings.

– Press and release the **Increase/Decrease** key to slowly increase or decrease parameter settings.

– Press and hold the **Increase/Decrease** key to quickly increase or decrease parameter settings.

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

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Adjusting intensity for all pain areas together

If your clinician has enabled the option to adjust intensity for all pain areas together, then you can quickly increase or decrease intensity on the **Home** screen. Discuss this option with your clinician.

Notes:

- To increase intensity for all pain areas together, the neurostimulator must be on.

- To decrease intensity for all pain areas together, the neurostimulator may be on or off.

1. From the **Home** screen, press the **Increase/Decrease** key to adjust your stimulation intensity (Figure 5.4).

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Figure 5.4 Pressing the **Increase/Decrease** key.

— All pain areas will change at the same time when you press the **Increase/Decrease** key.

— The names of the pain areas will be replaced with the intensity values when you press the **Increase/Decrease** key.

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— Press and release the **Increase/ Decrease** key to slowly increase or decrease the intensity setting.

— Press and hold the **Increase/Decrease** key to quickly increase or decrease the intensity setting.

2. When you are finished adjusting intensity, press the **Lock** (🔒) button to lock the controller.

Turning stimulation on or off for individual pain areas

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

To turn stimulation on or off for all pain areas, refer to "Turning your stimulation on or off" on page 70.

1. If you are using **Single** mode, press the **Pain area stimulation on/off** button on the **Home** screen (Figure 5.5).
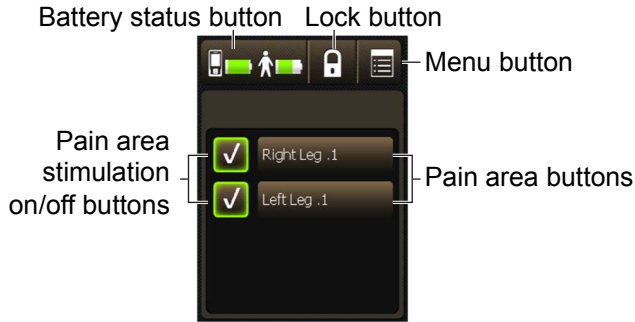
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Battery status button   Lock button

Menu button

Pain area
stimulation
on/off buttons

Pain area buttons

Figure 5.5 Pain area stimulation on/off button
on the **Home** screen.

2. Or, refer to steps 3–5.

3. Press the **Pain area** button on the **Home**
screen for the pain area you want to
adjust.

4. Press the **Stimulation** (⚡) button. The
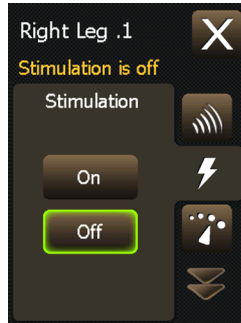**Stimulation** screen is shown (Figure 5.6).

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Figure 5.6 **Stimulation** screen.

5. Press the **On** or **Off** button to turn stimulation on or off for the selected pain area.

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

Turning cycling on or off

1. Press the **Pain area** button on the **Home** screen for the pain area you want to adjust.

2. If applicable, use the **Up/Down** buttons to view additional stimulation settings.

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3. Press the **Cycling** (⊓⊓) button. The **Cycling** screen is shown (Figure 5.7).
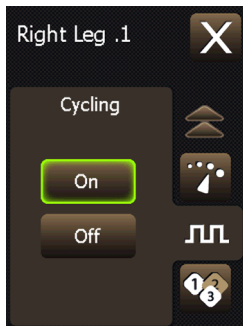

Figure 5.7 Cycling screen.

4. Press the **On** or **Off** button to turn cycling on or off.

Note: When you turn off cycling for one pain area, it will be off for all pain areas.

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

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Changing a program for individual pain areas

1. Press the **Pain area** button on the **Home** screen for the pain area you want to adjust.

2. If applicable, use the **Up/Down** buttons to view additional stimulation settings.
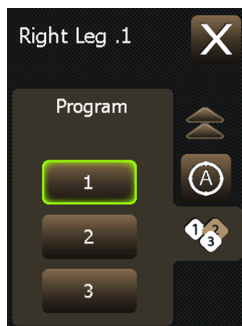
3. Press the **Program** () button. The **Program** screen is shown (Figure 5.8).

Figure 5.8 Program screen.

4. Press the **1**, **2**, or **3** button for the program you want to select.

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

Viewing and changing a group

If your clinician has programmed your neurostimulator to use **Group** mode, you may be able to adjust your stimulation settings by selecting a different group from the **Home** screen. Up to 3 different groups may be available. Groups are viewed by the letters: **A**, **B**, and **C**.

Your clinician will explain how your groups are set up to deliver stimulation and when you may want to change groups.

Complete the following steps to change to a new group. To turn stimulation on or off for a group, refer to "Turning your stimulation on or off" on page 70.

1. Press the **Group** button on the **Home** screen (Figure 5.9).

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Group button

Figure 5.9 **Home** screen (group **A** shown).

2. Using the touchscreen or the **Increase/ Decrease** key, select the circle next to the desired group. (Figure 5.10).
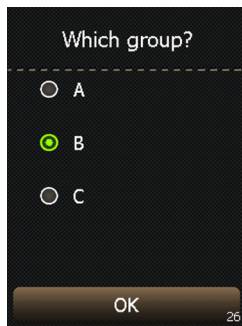

Figure 5.10 **Which group?** screen.

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3. Press the **OK** button. The **Home** screen will display showing the selected group (Figure 5.11).
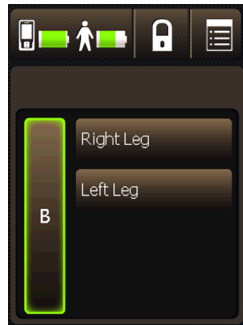
Figure 5.11 **Home** screen (group **B** shown).

Using AdaptiveStim

If your clinician has programmed the AdaptiveStim feature, and AdaptiveStim is turned on, the implanted neurostimulator can automatically sense your body position and adjust the intensity of the stimulation based on your body position. Your clinician may program a maximum intensity setting based on your stimulation needs.

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Note: AdaptiveStim must be turned on to view or change AdaptiveStim settings. Refer to "Turning AdaptiveStim on or off" on page 124 to confirm that AdaptiveStim is turned on.

When you are adjusting your settings for a specific position, you may need to make sure that your body is in the desired position before you make the adjustments. Discuss AdaptiveStim adjustment settings with your clinician.

- As you make adjustments to the intensity setting, the new setting is recorded for that position.

- You may need to stay in this position for up to 5 minutes before the new intensity is recorded. Your clinician can adjust this length of time, confirm the length of time with your clinician.

- The next time you return to this position, the stimulation intensity automatically changes to the recorded setting.

For example, if you want to decrease the intensity of your stimulation when you are lying

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down on your back and your clinician has programmed AdaptiveStim settings so that you must be in the desired position before making adjustments, first turn off stimulation. Then get into the position, use the controller to adjust intensity to 0.0. Next, turn on stimulation and then slowly increase intensity to the desired setting for that position. Be sure to discuss your AdaptiveStim settings with your clinician.

Note: When the AdaptiveStim setting is turned on, the intensity of the stimulation may not change immediately when you change positions. This delay is intentional and keeps the neurostimulator from making unnecessary adjustments based on temporary changes in your position. Your clinician can adjust the length of this delay.

AdaptiveStim groups and positions

Your clinician can program specific intensities for each of 7 positions or your clinician can program AdaptiveStim to adapt the intensity settings based on the adjustments you make to your stimulation while in one of the positions.

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Refer to Table 5.3 for an overview of the 7 different positions recognized by AdaptiveStim.

Table 5.3 Positions recognized by AdaptiveStim

Position graphic	Description
	Lying Back
	Lying Front
	Lying Left
	Lying Right
	Standing
	Mobile

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Table 5.3 Positions recognized by AdaptiveStim (continued)

Position graphic	Description
	Reclining
	Unrecognized position

Checking your body position

If you want to check to make sure that the neurostimulator recognizes your body position, use the **Check Position** feature.

1. Press the **Menu** (⊞) button on the **Home** screen.

2. Select the **Check Position** button. The **Check Position** screen is shown and will display your current position and program intensities (Figure 5.12).
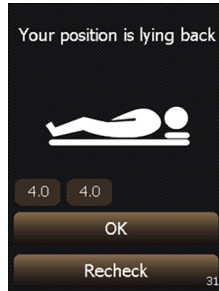
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Figure 5.12 **Check Position** screen (lying back position shown).

Note: If the **Check Position** button is not available, check to make sure AdaptiveStim is turned on. Refer to "Turning AdaptiveStim on or off" on page 124.

3. To check a different position, move your body into the next position.

4. Press the **Recheck** button. The **Check Position** screen is shown and will display your new position and program intensities (Figure 5.13).
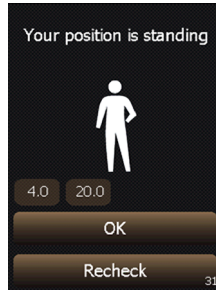
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Figure 5.13 **Check Position** screen (standing position shown).

Note: If your new position is not displayed, press the **Recheck** button again. It may require up to 1 minute to recognize a **Mobile** position. If you are still having problems with this feature, contact your clinician.

5. Press the **OK** button to return to the **Menu** screen.

6. Press the **Exit** (☒) button to return to the **Home** screen.

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Turning AdaptiveStim on or off

1. Press the **Pain area** button on the **Home** screen for the pain area you want to adjust.

2. If applicable, use the **Up/Down** buttons to view additional stimulation settings.

3. Press the **AdaptiveStim** (Ⓐ) button. The **AdaptiveStim** screen is shown (Figure 5.14).
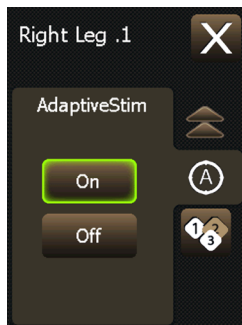

Figure 5.14 AdaptiveStim screen.

4. Press the **On** or **Off** button to turn AdaptiveStim on or off.

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Note: When you turn off AdaptiveStim for one pain area, it will be off for all pain areas.

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

Making adjustments to AdaptiveStim

If you make an adjustment to your stimulation and want to have that adjustment remembered for your current position, you may have to stay in your current position for up to 5 minutes. Your clinician can adjust this length of time, confirm the length of time with your clinician.

Even with AdaptiveStim enabled, you may need to make adjustments to your stimulation. Table 5.4 provides general guidelines for adjusting your stimulation when using AdaptiveStim.

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Table 5.4 AdaptiveStim adjustment guidelines

Situation	Action
AdaptiveStim stimulation for a specific position is uncomfortable.	While in the applicable position, decrease intensities and remain in that position for the duration programmed by your clinician.
You are unable to adjust AdaptiveStim stimulation while in a specific position.	Make the desired stimulation adjustment, then get in the desired position within the time programmed by your clinician and stay there for the duration programmed by your clinician.
Stimulation becomes uncomfortable while riding in a car or another type of transportation.	Turn AdaptiveStim off.
Stimulation becomes uncomfortable while moving in an elevator, escalator, etc.	Turn AdaptiveStim off.
You want AdaptiveStim to turn your therapy off when in a certain position.	Adjust your intensity to 0.0 to turn your therapy off instead of turning the neurostimulator off.

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