Insert cover art here.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Product Warranty Registration:
Please register your Core:Tx with us so that we may continue to provide you with the highest quality products, offer technical support, and inform you about new software developments and updates. Your registration will also activate your warranty so that we may be able to provide service to you if necessary.

Register your product by filling out the card included with the product or by going online at http://www.performancehealth.com/coretx/registration.

Performance Health Technologies
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Model # MT01
U.S. Patents pending.
Assembled in USA.
Part number 40-C01-1004
Printed in USA.

Contents

Foreword

The Facts about Neuromuscular Reeducation (NMR)

Neuromuscular control is essential to maximizing a patient's functional outcome. In a healthy joint, proprioceptive information is relayed to the central nervous system triggering a coordinated muscular response.[1] This coordinated effort controls joint excursion and loading,[2] which enables dynamic joint stability and prevents injury.[3]

In an injured joint, proprioception may be compromised. As a result, muscle activity associated with the joint is not well synchronized, thereby reducing dynamic stability. This in turn increases the risk of further injury.[4] Clearly, improving joint stability is important in preventing reinjury in both early and late stages of the recovery period.[5] A complete rehabilitation or performance enhancement program should, therefore, address these neural deficits to maximize recovery and prevent injury recurrence.[6]

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1. S. M. Lephart, D. M. Pincivero, J. L. Giraldo, and F. H. Fu, "The Role of Proprioception in the Management and Rehabilitation of Athletic Injuries," American Journal of Sports Medicine, 25, no. 1 (1997): 130–37.
2. B. L. O'Connor and J.A. Vilensky, "Peripheral and Central Nervous System Mechanisms of Joint Protection," American Journal of Orthopedics, 32, no. 7 (2003): 330–36.
3. E. R. Laskowski, K. Newcomer-Aney, and Jay Smith, "Refining Rehabilitation with Proprioception Training: Expediting Return to Play," The Physician and Sportsmedicine, 25, no. 10 (1997): 89-97.
4. Laskowski et al., "Refining Rehabilitation."
5. Lephart et al., "The Role of Proprioception."
6. Laskowski et al., "Refining Rehabilitation."

Disclaimer Statement

Before operating this equipment, please read the instructions contained in this user's manual completely. Core:Tx™is an interactive tool that is intended to assist healthcare professionals in providing quality rehabilitation services to their patients. Core:Tx is intended for use only under the direction and supervision of a trained and qualified healthcare professional. Healthcare professionals should not use this interactive tool in connection with their patients until they are thoroughly familiar with how it operates.

The exercises described and illustrated in this manual have been provided as a resource to assist healthcare professionals in understanding how the Core:Tx product may be applied in the clinical setting. These exercises do not constitute advice applicable to any particular case, nor are they intended to be (nor should they be used as) a substitute for clinical judgment. Treatment decisions must be made by the professional in light of all available resources and circumstances presented by individual patients. It is the responsibility of the healthcare professional to individualize exercises to the specific characteristics of each patient and to use Core:Tx in a manner that is appropriate and safe for each patient. Performance Health Technologies does not guarantee the accuracy or appropriateness of any of the exercises contained herein. In no way will Performance Health Technologies or any persons associated with Performance Health Technologies be responsible for any injuries or problems resulting from poor clinical judgment or misuse.

All information presented in this user's manual is intended as a resource for trained healthcare professionals only and is not intended for use by the general public.

1:Getting Started

Core:Tx is a system that combines software and hardware you can use as a rehabilitation, preventative, or strengthening tool. The key hardware is a small transceiver that can be attached anywhere on the body with adjustable straps. Using Motion Track™technology, the transceiver senses limb motion relative to a joint and transmits that information wirelessly to proprietary software.

The software provides motivating and informational feedback for the patient by providing an entertaining and game-like interface. At the end of each session or activity, the software provides the patient with a score.

The system is particularly aimed at exercising neuromuscular control. In addition, you can set up exercises to emphasize gains in range of motion or strength. Core:Tx is a versatile tool that is compatible with and enhances existing rehabilitation, preventative, and strengthening protocols.

About This Guide

This guide tells you how to set up and use Core:Tx. It assumes that you have a basic understanding of how to use the Windows operating system.

Fonts and Symbols

This guide uses several fonts and symbols to help explain how to use Core:Tx.

Font or Symbol	Definition
Bold	Words in **bold** show items to select, click, or press, such as menu items, buttons, or keys on the keyboard.
 **Note**	This symbol means the following information is a note that gives you important information that may affect how you use Core:Tx.
 **Caution**	This symbol means the following information is a caution that warns you about actions that may delete data from your computer.

Core:Tx Overview

Your Core:Tx system has several components that work together to give you a versatile rehabilitation tool. The package contents include the following, as shown in Figure 1:

- Base station
- Transceiver
- Universal Serial Bus (USB) cable
- Three AAA batteries
- Six straps and one strap extension
- Software installation CD
- *Core:Tx User Guide* (this document)
- *Core:Tx Quick Start Guide*
- Product registration card

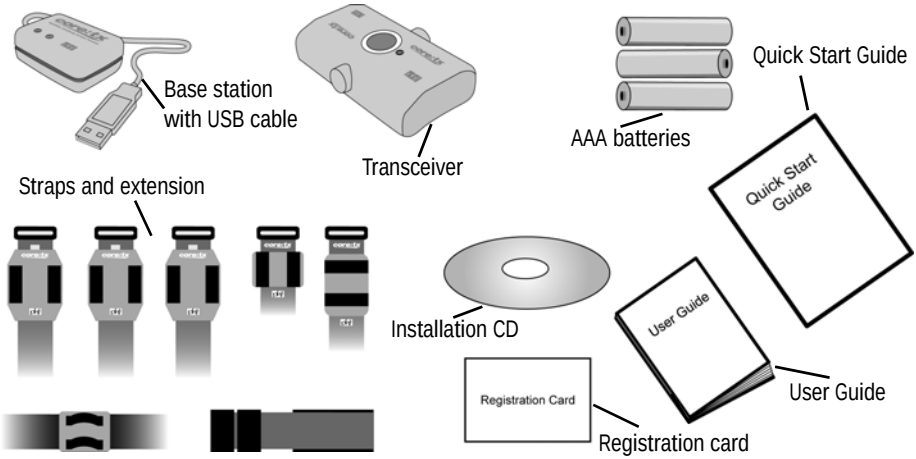


Figure 1: Package contents

Base Station

The base station connects to your personal computer or laptop using the provided USB cable. It collects information from the Core:Tx transceiver and communicates to your computer.

The base station has the following key parts, as shown in Figure 2:

- Two lights—show that the base station has power and that it has a connection to the transceiver.
- USB cable port—where you connect the provided USB cable into the base station.

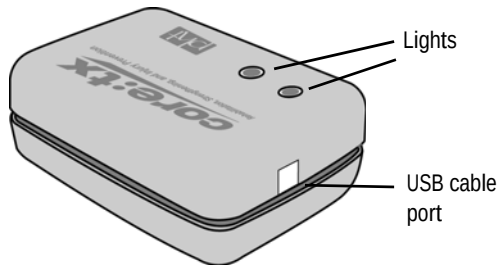


Figure 2: Base station

Transceiver

Position the transceiver on the patient before the patient starts an exercise. The transceiver has the following key parts, as shown in Figure 3:

- Orange button—press to turn on the transceiver and interact with the Core:Tx software.
- Light—shows communication to the base station, as well as showing that the batteries are low on power.
- Axis knobs—show the Core:Tx axis. The knobs represent the axis of motion the transceiver is able to detect. This gives you a visual reference for proper alignment of the transceiver.
- Battery door—on the underside of the transceiver where you install the batteries. For more information, see “Inserting the Batteries into the Transceiver” on page 8.

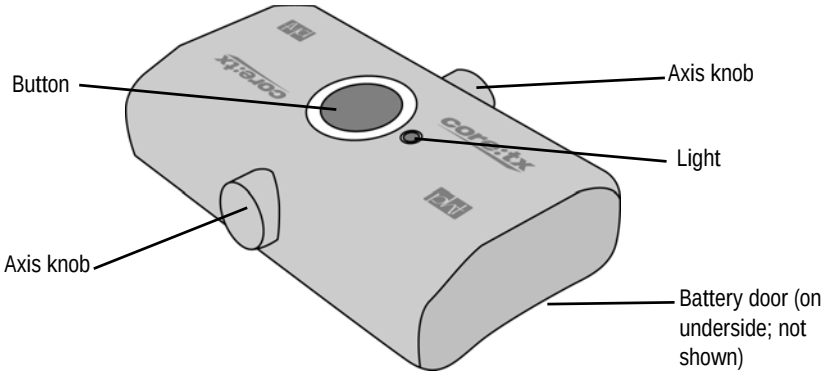


Figure 3: Transceiver

Note

The transceiver automatically turns off after three minutes of inactivity. This feature helps save battery power.

Straps

Core:Tx comes with a total of six straps and one strap extension. There are three main styles, with one strap provided in four color-coded sizes. Refer to the color tab on each strap to differentiate it from others. Use the strap extension to make a strap longer. You may need to use the extension when attaching the strap to pieces of equipment, such as a foam roller.

Use the straps to attach the transceiver to various locations on the body for specific exercises. To learn how to use the straps, see “Positioning the Transceiver” on page 40. The exercise section shows the proper transceiver location for each exercise. For more information, see “Chapter 7, Lumbar Stabilization in Sitting Position on Therapy Ball” on page 59.

The straps have the following key parts, as shown in Figure 4:

- Hook and loop strips—adheres to the other part of the strap to secure it during exercises.
- D-ring—loop the strap through to secure it.
- Elastic bands—where you place and secure the transceiver.

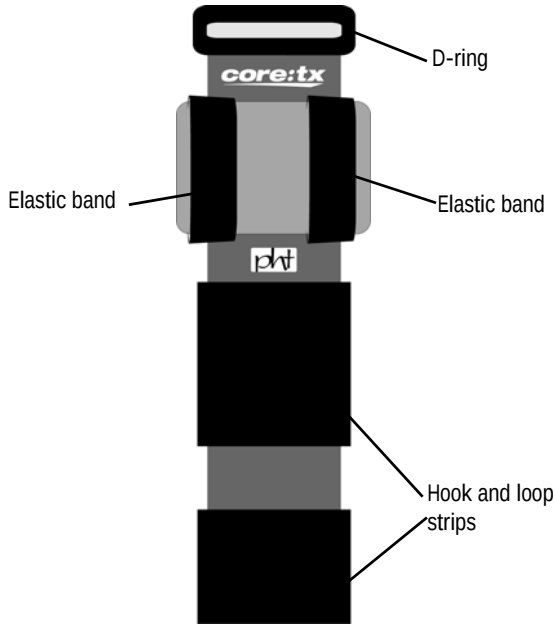


Figure 4: Strap example

Care and Storage

- Do not drop or subject the transceiver to strong mechanical shock.
- Do not dismantle or modify the transceiver or base station.
- Do not immerse the base station or transceiver in water or other liquid.
- Changes or modifications to Core:Tx equipment not expressly approved by Performance Health Technologies could void your authority to operate this equipment, as granted by the Federal Communications Commission (FCC).

To clean:

- Straps—When necessary, wipe down the back of the strap with mild detergent and hang dry. Hand wash entire strap in mild detergent if necessary. Do not use solvents to clean the straps.

- Base station and transceiver—Only use a soft, damp cloth to wipe down the transceiver and base station. Do not use solvents or abrasive cleaning agents to clean the base station or transceiver. Do not immerse in water for cleaning.

To store:

- Straps—Keep sharp objects away from the straps. Hang or fold and store in a dry location.
- Base station and transceiver—If the transceiver will not be used for an extended period of time, remove the batteries. Store the base station and transceiver in a cool, dry location and out of direct sunlight.

Installing the Software

Before installing the software, make sure that your computer meets the minimum system requirements. For best results, use a computer that meets the recommended system requirements.

Minimum system requirements:

- 500 MHz processor
- 128 MB RAM

Recommended system requirements:

- 800 MHz processor
- 256 MB RAM
- Video card capable of 3-D rendering

To install the software:

- Insert the Core:Tx installation CD into your computer.
  - The automated instructions will guide you through the setup process.
  - You will create a password for the Core:Tx software during installation. Be sure to remember the password and store it in a safe place.
  - If the installation does not automatically start, double-click the My Computer icon on your computer desktop, double-click the CD-ROM drive that contains the Core:Tx installation CD, then double-click the setup.exe file.

Setting Up the Hardware

You must perform the following tasks to set up the Core:Tx hardware:

1 Insert the batteries into the transceiver. (See page 8.)

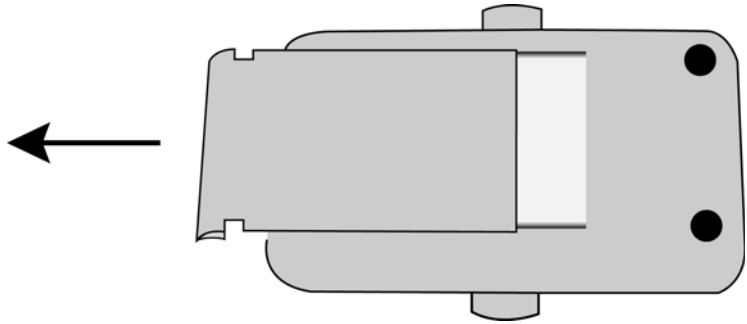
2 Connect the base station to your computer. (See page 10.)

Inserting the Batteries into the Transceiver

You must insert the three AAA batteries (included) into the transceiver.

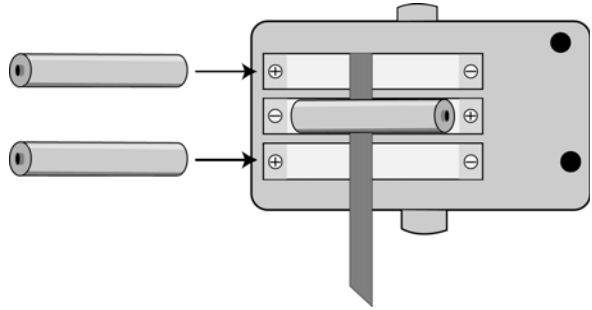
To insert the batteries:

1 Slide the battery door on the back of transceiver off in the direction of the arrow.



2 Leaving the battery removal ribbon in the bottom of the battery compartment, align and insert batteries as shown.

- Note the proper orientation of positive (+) and negative (-) terminals.



3 Replace the battery cover by sliding it back into position.

Note

If the transceiver light is blinking at a slow, steady pace, replace all three batteries. Alkaline batteries are recommended.

Connecting the Base Station

You must connect the base station to the computer that has the Core:Tx software installed on it.

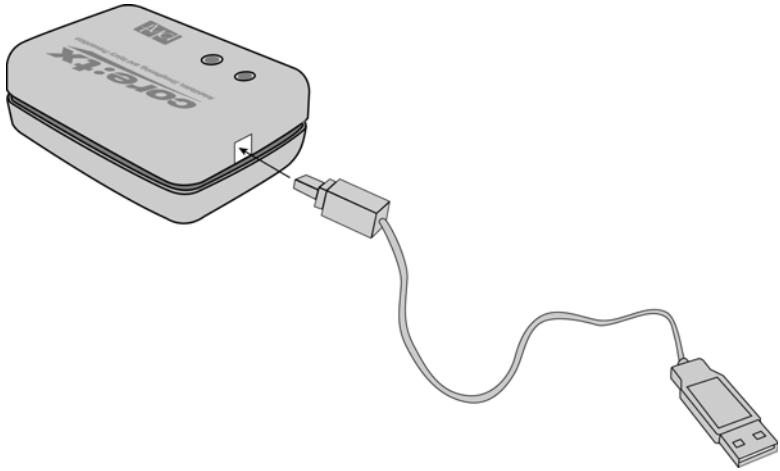
Note

The base station must be connected to your computer before you start the Core:Tx software.

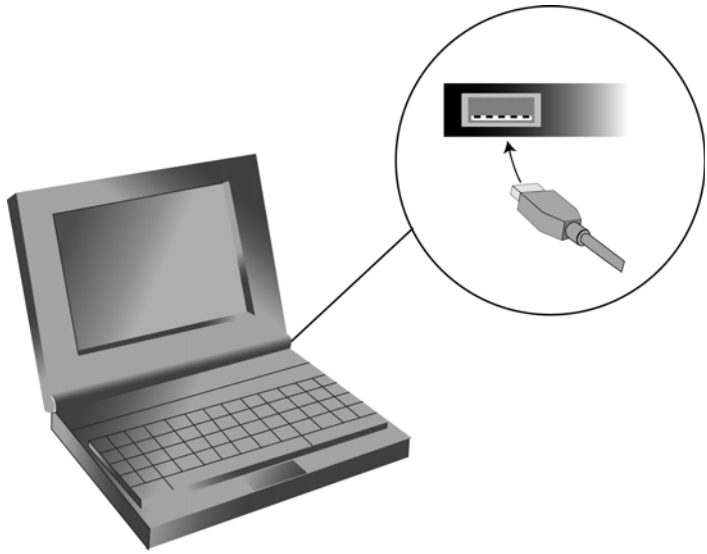
To connect the base station:

1 Turn on the computer that has the Core:Tx software installed.

2 Connect the small end of the USB cable to the USB port on the base station.



3 Connect the large end of the USB cable to a USB port on your computer.



- One base station light turns on or blinks slowly when it receives power from the computer.

Starting Core:Tx

You must use your Core:Tx password to access patient data and store activity information for a patient. You set your password when you first installed Core:Tx. If you do not remember your password, you must use the original installation CD to re-create your password.

Note

The base station must be connected to your computer before you start the Core:Tx software.

To start Core:Tx:

1 After you turn on your computer and connect the base station, place the transceiver on the table or desk next to the base station.

- For more information, see “Connecting the Base Station” on page 10.

2 Press the orange button on the transceiver to turn on the transceiver.

- The light on the transceiver starts blinking fast. The light will blink for several seconds until the transceiver initializes. This process typically takes less than 30 seconds, but may take as long as three minutes.
- Once the light stops blinking, you can continue with the next step. The light stays on as long as the transceiver is on and is communicating with the base station. The transceiver turns itself off after about three minutes of inactivity.
- If the light on the transceiver continues to blink slowly, replace the batteries in the transceiver. For more information, see “Inserting the Batteries into the Transceiver” on page 8.

3 Start the Core:Tx software by doing one of the following:

- From the Start menu, point to Programs, then to Performance Health Technologies, then click Core:Tx.
- From your computer desktop, double-click the Core:Tx shortcut icon  .
  - The startup window displays with two options for accessing the system:
  - Shortcut to Activity—This lets you set up and perform activities, but you cannot save results or access patient data.

– Login—This lets you set up and perform activities, as well as save results and access all patient data.

4 Select the option you want.

To use the shortcut to activity	To log in
1 Use the **arrow** keys to select **Shortcut to Activity** and press **space bar**. • The Activity screen displays. 2 Set up or start the activity as needed. • For more information, see “Setting Up an Activity” on page 31 or “Performing an Activity” on page 39.	1 Use the **arrow** keys to select **Login** and press **space bar**. • The Admin. Login panel displays. 2 Enter your password and press **space bar**. • The Admin panel displays. 3 Use the buttons at the top or side of the panel to access the function or patient data you want. • For more information, see “Working with Administrative Functions” on page 19, “Setting Up an Activity” on page 31, or “Performing an Activity” on page 39.

Understanding the Core:Tx Window

The Core:Tx window has three primary areas as shown in Figure 5.

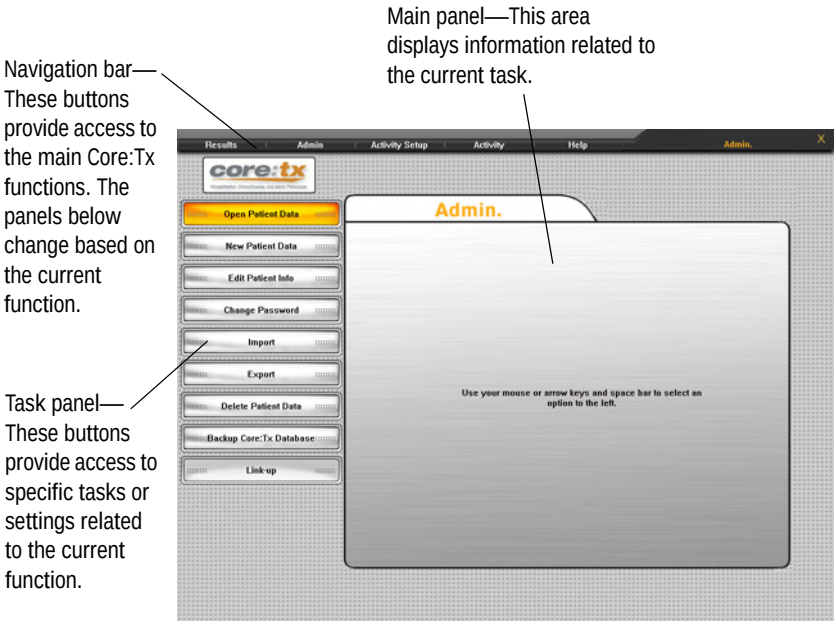


Figure 5: Core:Tx window (Admin panel shown)

Navigating in Core:Tx

You can navigate in Core:Tx using either your mouse, the keyboard, or any combination of the two. Table 1 describes the basic navigation techniques. The steps in this help use the keyboard method, but you can always use a mouse or touch pad.

Table 1: Navigation techniques

Task	Using the keyboard	Using the mouse
Selecting a function in the navigation bar at the top of the window.	1 Press the **up arrow** key until you select a button in the navigation bar. • You know the button is selected when it turns gray. 2 Press the **right arrow** or **left arrow key** to move through the buttons. 3 Press **space bar**. • This displays the tasks available for the selected function.	Click the button in the navigation bar.
Selecting tasks in the task panel and other functions represented by a button.	1 Press an **arrow** key until you select the button. • You know the button is selected when it turns orange. 2 Press **space bar**. • This performs the button's action.	Click the button.
Moving from one field to another in the main panel.	1 Press an **arrow** key until the cursor is in the field. 2 Press an **arrow** key again to move to the next field you want.	Click in the field.
Selecting an item in a list.	1 Press an **arrow** key until you select the item. • You know the item is selected when it is highlighted with a solid color or surrounded with a dotted box. 2 Press **space bar**.	Click the item.

Table 1: Navigation techniques (Continued)

Task	Using the keyboard	Using the mouse
Moving from one text box to another. Text boxes are where you enter text, such as a patient's name.	To move forward, press **Tab**. To move backward, hold down the **Shift** key and press **Tab**.	Click in the field.
Making selections in new windows that display, such as when you export, import, or back up data.	Use only to enter file names and other text.	Click to select items from lists and click buttons.

Understanding Core:Tx Terminology

We use specific terms in Core:Tx and in this guide to describe how to use and set up Core:Tx:

- Activity—An activity is the selected movement, mode, and other options in Core:Tx that you set up for a patient. The Activity panel in Core:Tx shows these settings, guides the patient's actions, and displays the patient's score for the activity.
- Exercise—An exercise is the specific motion you have the patient perform for the activity. For example, if you are working on knee flexion/extension, the exercise may be squats.
- Mode—You can set an activity in Core:Tx to one of two modes:
  - Monitor—Monitor Mode requires the patient to perform a tracking exercise or to maintain a static joint position. When you set the speed to greater than zero, the patient must move through the selected range of motion. When you set the speed to zero, the patient must maintain the selected join position.
  - Challenge—Challenge Mode requires the patient to keep a ball on the screen balanced between two opposing forces. When you set the speed to greater than zero, the balance

point moves through the selected range of motion. When you set the speed to zero, the balance point does not move.

- Movement—A movement is a set of motions of a particular joint of the body. For example, knee flexion/extension and hip abduction/adduction are examples of movements. You select the movement in Core:Tx as the first step to setting up an activity.

Key Steps for Using Core:Tx

You should complete the following steps to properly set up and use the Core:Tx hardware and software for an activity. These steps assume that you want to work with information for a specific patient and save the patient's results.

To use Core:Tx:

1 Connect the base station to your computer.

- For more information, see “Connecting the Base Station” on page 10.

2 Start Core:Tx and log in.

- For more information, see “Starting Core:Tx” on page 11.

3 Create patient data or open patient data.

- For more information, see “Creating New Patient Data” on page 20 or “Opening Patient Data” on page 20.

4 Set up an activity.

- For more information, see “Setting Up an Activity” on page 31.

5 Position the transceiver on the patient and have the patient perform the activity.

- For more information, see “Performing an Activity” on page 39.

6 View results.

- For more information, see “Viewing Results” on page 51.

Exiting Core:Tx

You can exit Core:Tx at any time.

To exit Core:Tx:

- Click the X in the upper right corner of the Core:Tx window.

Technical Support

You can contact technical support for Core:Tx in the following ways:

- Phone: 1.800.722.4749
- E-mail: support@performancehealth.com

2:Working with Administrative Functions

Core:Tx stores information about patient activity settings and results in a database that contains all patient data.

You can perform the following tasks related to Core:Tx patient data:

- Open patient data (See page 20.)
- Create new patient data (See page 20.)
- Edit patient data (See page 22.)
- Change the Core:Tx password (See page 23.)
- Export patient data (See page 24.)
- Import patient data (See page 26.)
- Back up the Core:Tx database (See page 28.)
- Delete patient data (See page 29.)

To perform any of the patient data tasks, you must enter the Core:Tx password. Each time you return to one of these functions using the Admin button in the navigation bar, the Admin. Login panel displays and you must enter the password. If you do not know the password, use the Cancel button to activate the buttons in the navigation bar.

Opening Patient Data

You can open existing patient data that contains the activity settings and results from previous Core:Tx sessions.

To open patient data:

1 Use the arrow keys to select Admin in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Admin. Login panel displays.

2 Enter your password and press space bar.

- The Admin panel displays.

3 Use the arrow keys to select Open Patient Data and press space bar.

- The Open Patient Data window displays, showing a list of patients whose data is stored in your Core:Tx database.

4 Use your mouse to select the patient you want and click OK.

- The system populates Core:Tx with the patient's last activity settings and returns to the Admin panel.

Creating New Patient Data

You can create new patient data to store activity settings and results for a new patient.

To create new patient data:

1 Use the arrow keys to select Admin in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Admin. Login panel displays.

2 Enter your password and press space bar.

- The Admin panel displays.

3 Use the arrow keys to select New Patient Data and press space bar.

- The New Patient Info. panel displays.

4 In the First Name text box, enter the patient's first name.

5 In the Last Name text box, enter the patient's last name.

6 In the Notes text box, enter any additional information you want to store about the patient.

7 Use the arrow keys to select Save Name and press space bar.

- The Save Patient Info? window displays, with the information you entered.

8 Click OK to save the patient data.

- The system saves the patient's data and returns to the Admin panel.
- If the patient's name already exists in the Core:Tx database, a message displays telling you that the patient already exists. If this is the same patient, click Cancel and open the patient's information. For more information see "Opening Patient Data" on page 20. If this is a different patient with the same name, enter a middle initial in the First Name text box or some other character in the First Name or Last Name text box to distinguish the two patients.
- To cancel the new data, click Cancel.

Editing Patient Data

You can edit the patient data to change the patient name or add notes, as needed.

To edit patient data:

1 Use the arrow keys to select Admin in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Admin. Login panel displays.

2 Enter your password and press space bar.

- The Admin panel displays.

3 Use the arrow keys to select Edit Patient Info and press space bar.

- The Edit Patient Info. panel displays.

4 Use the Tab key until the cursor is in the text box you want to edit.

5 Edit the information as needed.

6 Use the arrow keys to select Save Name and press space bar.

- The Save Patient Info? window displays, with the information you entered.

7 Click OK to save the patient data.

- The system saves the patient's data and returns to the Admin panel.
- To cancel the edits, click Cancel.

Changing the Core:Tx Password

You can change the Core:Tx password. Core:Tx uses one password for access to all patient data. If you change the password, be sure that you write it down and store it in a safe place.

To change the Core:Tx password:

1 Use the arrow keys to select Admin in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Admin. Login panel displays.

2 Enter your password and press space bar.

- The Admin panel displays.

3 Use the arrow keys to select Change Password and press space bar.

- The Change Password panel displays.

4 In the Old Password field, enter your current Core:Tx password.

5 In the New Password field, enter a new password.

6 In the Verify New Password field, enter the new password again.

7 Use the arrow keys to select Save Password and press space bar.

- The system confirms that it saved your new password.
- To cancel the new password, select Cancel and press space bar. This exits the Change Password panel and does not save your new password.

8 Press space bar.

- The system returns to the Admin panel.

Exporting Core:Tx Patient Data

Core:Tx stores patient data in a database. You can export Core:Tx data for one or more patients from the database. You may want to do this if you need to share Core:Tx data with another Core:Tx user or with the patient, or if you are moving Core:Tx to another computer.

After you export the patient data, you can import it into Core:Tx on another computer. For more information, see “Importing Core:Tx Patient Data” on page 26.

To export patient data:

1 Use the arrow keys to select Admin in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Admin. Login panel displays.

2 Enter your password and press space bar.

- The Admin panel displays.

3 Use the arrow keys to select Export and press space bar.

- The Core:Tx Export Patient Data window displays.

4 Select the option you want.

To create a new data file	To add to an existing data file
1 Use the **arrow** keys to select **New External Data** and press **space bar**. • The Save As window displays. 2 From the Save In drop-down list, select the drive where you want to store the exported data. • The folders on the drive display below. 3 Navigate the list of folders and open the folder where you want to store the data. 4 In the File Name field, enter a name for the file. • The file will automatically be assigned the .pht extension. 5 Click **Save**. • The Core:Tx - Export window displays, with a list of patients whose data you can export.	1 Use the **arrow** keys to select **Existing External Data** and press **space bar**. • The Open window displays. 2 From the Look In drop-down list, select the drive where the existing file is. • The folders on the drive display below. 3 Navigate the list of folders and open the folder where the existing file is. 4 Select the existing data file. 5 Click **Open**. • The Core:Tx - Export window display, with a list of patients whose data you can export.

5 From the list on the left, select the patient whose data you want to export.

- You can select more than one patient by holding down the Ctrl key while clicking each patient name. You can select a range of contiguous names by holding down the Shift key and clicking the first name in the range, then clicking the last name in the range.

6 Click Export.

- The selected patient names move to the list on the right.

7 Click Done.

- Core:Tx exports the selected data to the file.
- If you export to an existing data file and the same patient name appears in the existing data file and the data you are exporting, Core:Tx merges the data.

Note

Core:Tx assumes that patients with the exact same name are the same patient. The merged data contains both the data you exported and the data that already existed in the data file.

Importing Core:Tx Patient Data

Core:Tx stores patient data in a database. You can import Core:Tx patient data that has previously been exported from Core:Tx or that you backed up from Core:Tx. You may want to do this if you need to share Core:Tx data with another Core:Tx user or with the patient, or if you are moving Core:Tx to another computer.

The import process adds the patients to the current database. It does *not* overwrite (delete) existing data in the database.

You must first export patient data from Core:Tx on another computer or create a backup, then you can import it into Core:Tx on your computer. For more information, see “Exporting Core:Tx Patient Data” on page 24 and “Backing Up the Core:Tx Database” on page 28.

To import patient data:

1 Use the arrow keys to select Admin in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Admin. Login panel displays.

2 Enter your password and press space bar.

- The Admin panel displays.

3 Use the arrow keys to select Import and press space bar.

- The Open window displays.

4 From the Look In drop-down list, select the drive where you stored the exported or backup data file that you want.

- The folders on the drive display below.

5 Navigate the list of folders and open the folder where the data is.

6 Select the exported or backup file that has the data you want.

7 Click Open.

- The Import/Export window displays, showing a list of patients whose data is stored in the file.

8 From the list on the right, select the patient whose data you want to import.

- You can select more than one patient by holding down the Ctrl key while clicking each patient name. You can select a range of contiguous names by holding down the Shift key and clicking the first name in the range, then clicking the last name in the range.

9 Click Import.

- The selected patient names move to the list on the left.

10 Click Done.

- The system adds the patients to your current Core:Tx database and returns to the Admin panel.

Backing Up the Core:Tx Database

Core:Tx stores patient data in a database. You can back up the database to removable media such as a floppy disk, compact disc (CD), or flash drive (a small storage device that connects to a USB port). This lets you store the data in another location for safe keeping or move the entire database to another computer where you want to use Core:Tx. We recommend backing up your data regularly.

After you back up the Core:Tx database, you can import the backup file into Core:Tx. You may want to import the database from a backup file if you lost your original database because of a hardware failure, or if you want to move the database to another computer. For more information, see “Importing Core:Tx Patient Data” on page 26.

To back up the Core:Tx database:

1 Use the arrow keys to select Admin in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Admin. Login panel displays.

2 Enter your password and press space bar.

- The Admin panel displays.

3 Use the arrow keys to select Backup Core:Tx Database and press space bar.

- The Save As window displays.

4 From the Save In drop-down list, select the drive where you want to store the backup.

5 If necessary, navigate to the folder where you want to store the backup.

6 In the File Name field, enter a name for the backup file.

7 Click Save.

- The system saves a copy of your Core:Tx database to the selected location and returns to the Admin panel.

Deleting Patient Data

You can delete all of a patient's data from the database if you no longer need that patient's data.

To delete patient data:

1 Use the arrow keys to select Admin in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see "Navigating in Core:Tx" on page 14.
- The Admin. Login panel displays.

2 Enter your password and press space bar.

- The Admin panel displays.

3 Use the arrow keys to select Delete Patient Data and press space bar.

- The Delete Patient Data window displays, showing a list of patients whose data is stored in your Core:Tx database.

4 Use the arrow keys to select the patient whose data you want to delete.

5 Click Delete.

6 Click OK.

- The system deletes the patient's data from the Core:Tx database and returns to the Admin panel.

3:Setting Up an Activity

After you start Core:Tx and open or create patient data, you are ready to set up an activity. When you open patient data, the activity settings default to the last settings you used for that patient.

You can configure the following settings related to a Core:Tx activity:

- Movement—Make this selection first, because it sets defaults for the other settings. (See “Selecting a Movement” on page 31.)
- Mode (See “Selecting the Activity Mode” on page 32.)
- Audio (See “Turning the Audio On or Off” on page 33.)
- Angle (See “Selecting the Activity Angle” on page 34.)
- Speed/Time/Repetitions (See “Selecting the Speed and Total Time or Repetitions” on page 35.)
- Difficulty (See “Setting the Difficulty” on page 37.)

You can also save an activity's settings as the default for the system. For more information, see “Saving Activity Settings as the Default” on page 38.

Selecting a Movement

A movement is a set of motions of a particular joint of the body. For example, knee flexion/extension and hip abduction/adduction are examples of movements.

You should select the movement in Core:Tx as the first step to setting up an activity, because it sets defaults for the other activity settings. You can change those default settings as needed.

To select a movement:

1 Use the arrow keys to select Activity Setup in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Activity Setup panel displays.

2 Use the arrow keys to select Movement and press space bar.

- The Movement panel displays showing a list of movements.

3 Use the arrow keys to select the movement you want and press space bar.

- The movement shows it is selected and the OK button becomes active (turns orange).

4 Press space bar.

- The system saves your selection and returns to the Activity Setup panel.

Selecting the Activity Mode

The mode in Core:Tx controls the type of activity. You can set an activity in Core:Tx to one of two modes:

- Monitor—Monitor Mode requires the patient to perform a tracking exercise or to maintain a static position. When you set the speed to greater than zero, the patient must move through the selected range of motion. When you set the speed to zero, the patient must maintain the selected joint position. This mode shows the patient an eyepiece to keep over a disc. This is the default mode for each movement.
- Challenge—Challenge Mode requires the patient to keep a ball on the screen balanced between two opposing forces. When you set the speed to greater than zero, the balance point moves through the selected range of motion. When you set the speed to zero, the balance point does not move.

To select the Activity Mode:

1 Use the arrow keys to select Activity Setup in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Activity Setup panel displays.

2 Use the arrow keys to select Mode and press space bar.

- The Mode panel displays showing the two modes.

3 Use the arrow keys to select the mode you want and press space bar.

- The mode shows it is selected and the OK button becomes active (turns orange).

4 Press space bar.

- The system saves your selection and returns to the Activity Setup panel.

Turning the Audio On or Off

You can turn the audio on or off depending on your preference and environment. When on, the audio provides feedback to the patient about the activity status. For example, the sound grows louder as the amount of error increases and softer as the amount of error decreases. The sound also changes pitch depending on which side of the disc the eyepiece is (Monitor Mode) or on which side of the target the ball is (Challenge Mode).

To turn audio on or off:

1 Use the arrow keys to select Activity Setup in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Activity Setup panel displays.

2 Use the arrow keys to select Audio and press space bar.

- The Audio panel displays.

3 Use the arrow keys to select the option you want and press space bar.

- The option shows it is selected and the OK button becomes active (turns orange).

4 Press space bar.

- The system saves your selection and returns to the Activity Setup panel.

Selecting the Activity Angle

You can select the angle for the activity. You can set the angle to any setting you need for the exercise the patient will do.

To select the activity angle:

1 Use the arrow keys to select Activity Setup in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Activity Setup panel displays.

2 Use the arrow keys to select the Angle and press space bar.

- The Activity Angle panel displays, showing a graphic of the angle and arrow buttons to adjust the angle. The graphic has a vertical orientation when the angle is set to 0°. The graphic has a horizontal orientation when the angle is set to 90°.

3 Use the arrow keys to select the arrow button you want and press space bar until the angle is set.

- The graphic shows the selected angle and the OK button becomes active (turns orange).

4 Press space bar.

- The system saves your selection and returns to the Activity Setup panel.

Selecting the Speed and Total Time or Repetitions

The speed setting determines how fast the disc (Monitor Mode) or target (Challenge Mode) moves. A low number is slow; a high number is fast.

You can set up a static activity by setting the speed to zero. This means the disc (Monitor Mode) or target (Challenge Mode) on the screen does not move.

A static monitor activity measures how well the patient maintains a specific joint position while performing a selected activity. For example, the activity can show how well the patient maintains the lumbar spine in a neutral position while doing spinal stabilization exercises. When you set up a static activity, you must establish a “set position” after calibration. For more information, see “Calibrating the Range of Motion and Starting the Activity” on page 42.

A static challenge activity requires the patient to perform an exercise while keeping the ball centered over a stationary target.

You determine the duration of an activity by selecting either the total time or the number of repetitions. If you select a time, Core:Tx calculates the number of repetitions. If you select the number of repetitions, Core:Tx calculates the total time.

The conversion from repetitions to time or vice versa depends on the selected speed. For example, for a given total time, a faster speed will result in more repetitions. For a given number of repetitions, a slower speed will result in a longer total time.

Note

Remember that the transceiver senses rotation, not vertical or horizontal movement.

To select the speed and total time or repetitions:

1 Use the arrow keys to select Activity Setup in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Activity Setup panel displays.

2 Use the arrow keys to select Speed/Time/Reps and press space bar.

- The Activity Speed/Time/Reps panel displays showing a slider to adjust the speed and spin buttons to adjust the time or repetitions.

3 Use the right and left arrow keys to move the slider to the speed you want and press space bar.

- The Time or Repetitions option becomes active (surrounded by a dotted box).

4 Use the arrow keys to select Time or Repetitions and press space bar.

- The option shows it is selected and the corresponding spin button becomes active (turns orange).

5 Use the arrow keys to set the amount of time or number of repetitions and press space bar.

- The OK button becomes active (turns orange).

6 Press space bar.

- The system saves your selection and returns to the Activity Setup panel.

Setting the Difficulty

The difficulty setting applies only when you are using the Challenge Mode. For more information, see “Selecting the Activity Mode” on page 32.

You can set the difficulty for an activity. This controls how difficult it is to balance the ball and keep it over the target. We recommend starting with low difficulty and working toward higher difficulty.

To set the difficulty:

1 Use the arrow keys to select Activity Setup in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Activity Setup panel displays.

2 Use the arrow keys to select Difficulty and press space bar.

- The Activity Difficulty panel displays showing a slider to adjust the difficulty.

3 Use the right and left arrow keys to move the slider to the difficulty you want and press space bar.

- The OK button becomes active (turns orange).

4 Press space bar.

- The system saves your selection and returns to the Activity Setup panel.

Saving Activity Settings as the Default

You can save the current activity settings as the default for the system when patient data is not open. This means that anytime you go to the Activity panel without patient data open, these are the settings you will see. This lets you quickly set up similar patients in sequence, without having to open each patient's data.

You can change the settings for the activity or save a new default at any time.

When you open patient data, the activity settings default to the last settings you used for that patient.

To save the activity settings as the default:

1 Use the arrow keys to select Activity Setup in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Activity Setup panel displays.

2 Use the arrow keys to select Save as Default and press space bar.

- A confirmation window displays asking you to confirm that you want to save the current settings as your default setting.

3 Press space bar.

- The system saves your selection and returns to the Activity Setup panel.

4:Performing an Activity

Once you set up the activity, you are ready to have the patient perform the activity.

Note

Be sure that you have the Core:Tx transceiver turned on and in the proper location. For more information, see “Positioning the Transceiver” on page 40.

For information about working with the Activity panel, see the following topics:

- “Starting the Activity” on page 39
- “Understanding the Monitor Activity Screen” on page 44 or “Understanding the Challenge Activity Screen” on page 46
- “Understanding the Audio Feedback” on page 48
- “Calibrating the Range of Motion and Starting the Activity” on page 42
- “Understanding the Score” on page 48
- “Adjusting the Activity Settings” on page 49
- “Recalibrating the Range of Motion” on page 49

Core:Tx stores the activity results in the Core:Tx database. For more information, see “Viewing Results” on page 51.

Starting the Activity

After you set up the activity the way you want it, you are ready to start the activity. For more information about setting up an activity, see “Chapter 3, Setting Up an Activity” on page 31.

You must perform the following tasks to start an activity:

1 Position the transceiver on the appropriate part of the patient's body. (See page 40.)

2 Calibrate the range of motion and start the activity in the Core:Tx software. (See page 42.)

Positioning the Transceiver

The transceiver must be securely placed in the proper position before the patient starts the exercise. Use the straps that came with the Core:Tx to position the transceiver.

The knobs on the transceiver represent the axis of motion the transceiver is able to detect. This gives you a visual reference for proper alignment of the transceiver.

The axis should always be in parallel with the targeted joint axis. For example, knee joint flexion/extension occurs around a coronal axis. The transceiver should be placed so that its axis is oriented along a coronal axis as well.

To position the transceiver:

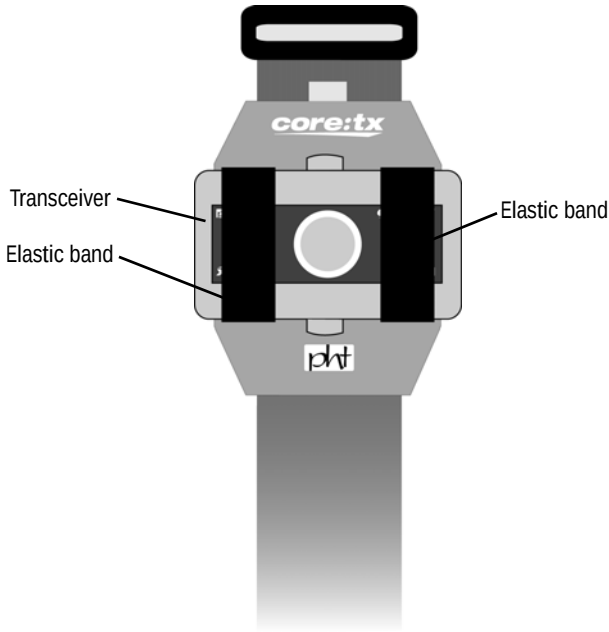
1 Make sure that the light on the transceiver is on.

- For information about turning on the transceiver, see “Starting Core:Tx” on page 11, steps 1 and 2.

2 Place the transceiver between the elastic bands of the appropriate strap.

- For information about which strap to use, see the appropriate exercise section in “Chapter 7, Lumbar Stabilization in Sitting Position on Therapy Ball” on page 59.

3 Pull the elastic bands around each end of the transceiver, one band at a time, centering the transceiver button between the elastic bands and facing outward.



Note

Make sure the transceiver is secure before starting the exercise.

4 Wrap the strap around the limb and put the free end through the D-ring.

- For information about where to position the strap, see the appropriate exercise section in “Chapter 7, Lumbar Stabilization in Sitting Position on Therapy Ball” on page 59.
- To extend the length of a strap, use the strap extension. Loop the end of the extension marked “PHT” through the D-ring of the strap and fasten the hook and loop. Secure

the other end of the extension to the hook and loop of the strap.

5 Pull the strap back and secure it on the hook and loop material.

- The strap should fit comfortably but snugly around the limb. Loose-fitting straps will affect reliability of the scoring and feedback.
- You are now ready to calibrate the range of motion and start the activity. For more information, see “Calibrating the Range of Motion and Starting the Activity” on page 42.

Calibrating the Range of Motion and Starting the Activity

After you position the transceiver, you must calibrate the range of motion before you start the activity. This maps the range of motion to what you see on the Core:Tx screen. You must calibrate the range of motion at least once when you set up an activity.

For static activities (speed set to zero), you must also tell Core:Tx the “set position.” This is the position of the joint that you want the patient to maintain during the activity. For example, the activity can show how well the patient maintains the lumbar spine in a neutral position while doing spinal stabilization exercises.

If Core:Tx is not responding to motion or you find that you have to recalibrate repeatedly while performing an activity, see “Motion Does Not Display Properly on the Computer Screen” on page 55, specifically the solutions listed for “Core:Tx does not respond to motion.”

To start the activity and calibrate the range of motion:

1 In the Core:Tx software, use the arrow keys to select Activity in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Activity Panel displays, showing your settings on the left side and the word Calibration in the center. The eyepiece or ball is positioned at one end of the activity graphic. For more information about the Activity panel, see “Understanding the Monitor Activity Screen” on page 44 or “Understanding the Challenge Activity Screen” on page 46.

2 Have the patient move to one extreme of the range of motion.

- Typically, you want the patient's movement to correspond to the position of the eyepiece or ball. For example, on a vertical activity (angle set to 0°), the patient should be at the highest position when the eyepiece or ball is at the top of the activity graphic.

3 Press the button on the transceiver or press space bar.

- The eyepiece or ball moves to the opposite position.

4 Have the patient move to the other extreme of the range of motion.

- Typically, you want the patient's movement to correspond to the position of the eyepiece or ball. For example, on a vertical activity (angle set to 0°), the patient should be at the lowest position when the eyepiece or ball is at the bottom of the activity graphic.

5 Press the button on the transceiver or press space bar.

6 If the speed is set to zero (a static activity), have the patient move to the joint position you want maintained and press the button on the transceiver or use the Set Position button in the Core:Tx software.

- After you set the position, the Set Position button changes to Start.

7 When the patient is ready to start the activity, use the Start button.

- After you start an activity, the Start button changes to Pause. If you need to pause the activity for any reason, use the Pause button.
- When you pause, everything stops at its current level, including the eyepiece and disc position (Monitor Mode) or the ball and target (Challenge Mode), time or repetition countdown, and the score.
- When you are ready to resume, have the patient position the eyepiece over the disc (Monitor Mode) or the ball over the target (Challenge Mode), then use the Start button to continue where you left off. After you pause the activity, the Pause button changes back to Start.

Understanding the Monitor Activity Screen

After you configure the activity settings, you can start the activity. For more information, see “Setting Up an Activity” on page 31. Be sure to position the transceiver on the patient correctly. For more information, see “Positioning the Transceiver” on page 40.

For a Monitor Activity, the patient tries to keep the eyepiece centered over the disc:

- For nonstatic activities, the disc moves along the rails based on the speed and range of motion you set up. The patient must perform the exercise you choose at a rate that keeps the eyepiece centered over the disc through the full range of motion.
- For a static activity, the patient performs an exercise keeping the eyepiece over the disc, which does not move. A static activity encourages the patient to maintain the proper joint position while performing a selected exercise. For example, the activity can show how well the patient maintains the lumbar

spine in a neutral position while doing spinal stabilization exercises.

Figure 6 shows the Monitor Activity screen and identifies its parts.

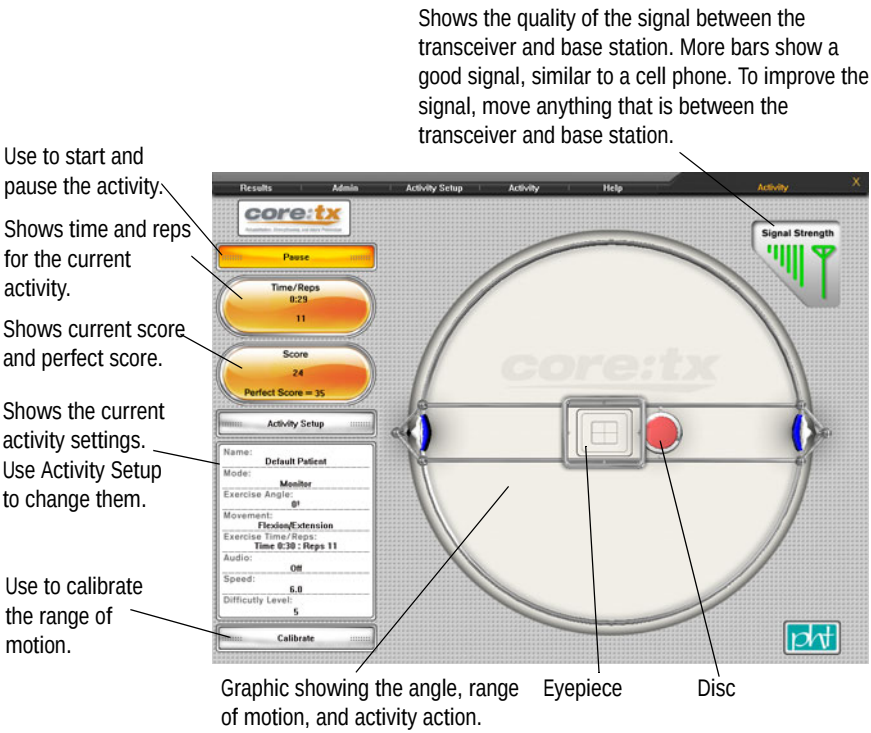


Figure 6: Monitor Activity screen

Understanding the Challenge Activity Screen

After you configure the activity settings, you can start the activity. For more information, see “Setting Up an Activity” on page 31. Be sure to position the transceiver on the patient correctly. For more information, see “Positioning the Transceiver” on page 40.

For a Challenge Activity, the ball does not directly represent the patient's position. The patient is essentially balancing the ball between the magnets on the screen, and the ball is under the influence of the magnetic force. The patient's movement also influences the movement of the ball. The patient must respond to the ball's movement away from the target, counteracting this movement in a controlled manner.

Another analogy is balancing a broom in your hand. In this analogy, the ball represents the bristles of broom that you are trying to keep aligned with the target.

- For nonstatic activities, the target moves along the rails based on the speed and range of motion you set up. The patient must perform the exercise you choose and keep the ball centered over the target through the selected range of motion.
- For a static activity, the patient performs an exercise keeping the ball over the target, which does not move.

Figure 7 shows the Challenge Activity screen and identifies its parts.

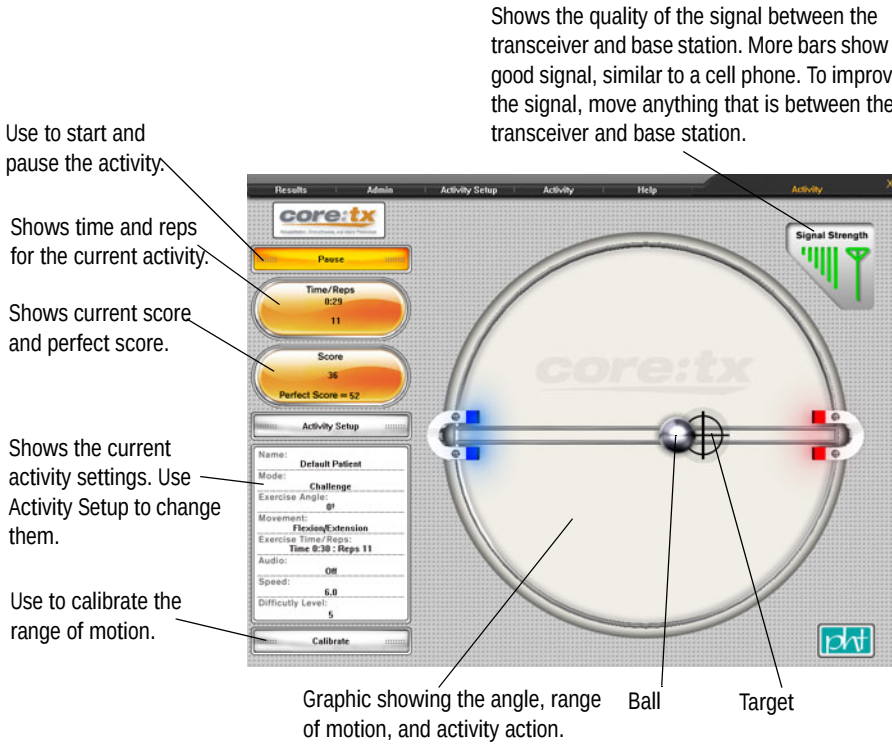


Figure 7: Challenge Activity screen

Understanding the Audio Feedback

The audio feedback gives patients cues about how well they are doing, in addition to the visual feedback. When on, the audio provides feedback to the patient about the activity status. For example, the sound grows louder as the amount of error increases and softer as the amount of error decreases. The sound also changes pitch depending on which side of the disc the eyepiece is (Monitor Mode) or on which side of the target the ball is (Challenge Mode).

You turn the audio feedback on or off based on the patient's preference. Use Activity Setup to change the setting. For more information, see “Turning the Audio On or Off” on page 33.

Understanding the Score

The score gives you and the patient a measure of how well the patient is doing. The score measures how close the center of the eyepiece stays to the center of the disc (Monitor Mode) or how close the ball stays to the center of the target (Challenge Mode). The higher the score, the better the patient performed.

The following factors increase the score:

- Total time—Performing the activity for a longer time.
- Performance level—Performing the activity better, that is, more consistently keeping the ball or eyepiece centered.
- Difficulty (Challenge Activity only)—Performing an activity at a higher difficulty setting.

The activity panel shows both the patient's score and possible maximum score, giving the patient a goal to work toward.

Adjusting the Activity Settings

You can adjust any of the settings for an activity whenever you want to vary the activity. You may find that the settings are too difficult or too easy, or you may want to change to a different type of activity.

To adjust the activity settings:

- Use the arrow keys to select Activity Setup on the left side of the Activity panel or in the navigation bar and press space bar.
    - For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
    - The Activity Setup panel displays with all of the available setting buttons. For information about setting up an activity, see “Setting Up an Activity” on page 31.

Recalibrating the Range of Motion

You can recalibrate the range of motion if you adjust the transceiver's location or you want to change the range of motion. If Core:Tx is not responding to motion or you find that you have to recalibrate repeatedly while performing an activity, see “Motion Does Not Display Properly on the Computer Screen” on page 55, specifically the solutions listed for “Core:Tx does not respond to motion.”

To recalibrate the range of motion:

- Use the arrow keys to select Calibrate on the left side of the Activity panel and press space bar.
    - For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
    - The Calibration panel displays. For information about calibrating the range of motion, see “Calibrating the Range of Motion and Starting the Activity” on page 42.

5:Viewing Results

You can view the activity results for the current patient as a table or trend chart. You can also print the results.

When you view results, the table or chart automatically displays all of the patient's results, starting with the first activity the patient performed and ending with the last activity. If you want to display results for a specific period of time, use the Start Date and End Date buttons as described below.

To view results:

1 Use the arrow keys to select Results in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see "Navigating in Core:Tx" on page 14.
- The Results panel displays.

2 Use the arrow keys to select Start Date and press space bar.

- A calendar window displays.

3 Using your mouse, select the month, year, and day you want the data to start.

4 Click OK.

5 Use the arrow keys to select End Date and press space bar.

- A calendar window displays.

6 Using your mouse, select the month, year, and day you want the data to end.

7 Click OK.

8 Use the arrow keys to select Results Table or Trend Chart and press space bar.

- The chart or table of results displays.

9 If you want to print the results displayed, use the arrow keys to select Print and press space bar, then select the printer you want and click Print.

6:Troubleshooting

The following sections describe some of the issues that may arise as you use Core:Tx, along with solutions.

If you cannot find a solution using this information, you can contact technical support for Core:Tx in the following ways:

- Phone: 1.800.722.4749
- E-mail: support@performancehealth.com

Installation and Password Issues

Problem or symptom	Solution
I put the installation CD in my computer's drive and nothing happened.	Double-click the **My Computer** icon on your computer desktop, double-click the **CD-ROM drive** that contains the Core:Tx installation CD, then double-click the **setup.exe** file.
A message displays during installation that says my computer does not meet the minimum system requirements.	Your computer is currently unable to run Core:Tx. You must upgrade your computer's memory, video card, disk space, or screen resolution as indicated in the message
I have forgotten my Core:Tx password.	Use the original Core:Tx installation CD to re-create your password.

Transceiver Light Blinks or Does Not Come On

Problem or symptom	Solution
Transceiver light blinks at a fast, steady rate.	1 Ensure that the base station is connected to the computer with the USB cable. 2 Place the transceiver on a solid, flat surface near the base station. 3 Do not move it until the light is on, without blinking. • This typically takes less than 30 seconds, but may take as long as three minutes. For more information, see “Starting Core:Tx” on page 11, steps 1 and 2.
Transceiver light blinks at a slow, steady rate.	Replace the batteries in the transceiver. For more information, see “Inserting the Batteries into the Transceiver” on page 8.
Transceiver does not come on when I push the button.	Check that the three AAA batteries in the transceiver are charged and installed properly. For more information, see “Inserting the Batteries into the Transceiver” on page 8.

Motion Does Not Display Properly on the Computer Screen

Problem or symptom	Solution
Core:Tx does not respond to motion.	1 Make sure the transceiver is properly oriented so that its axis of motion, shown by the knobs, is aligned with the joint's axis of motion, as described in "Positioning the Transceiver" on page 40. 2 Make sure the base station is connected to the computer's USB port. • If it is not connected, close the Core:Tx software, connect the base station, then restart the Core:Tx software. • For more information, see "Connecting the Base Station" on page 10. 3 Make sure the transceiver light is on and not blinking. • If it is not on or it is blinking, see the appropriate solution in "Transceiver Light Blinks or Does Not Come On" on page 54. 4 Ensure that the base station lights are both on. • If both are off, it is not powered by the computer. Connect the base station to the computer's USB port. For more information, see "Connecting the Base Station" on page 10. • If one is on and one is off, it is not receiving a signal from the transceiver. Check the transceiver and see the appropriate solution in "Transceiver Light Blinks or Does Not Come On" on page 54. • If the problem remains, perform the link-up process as described in "Linking Up the Transceiver and Base Station" on page 56.

Problem or symptom	Solution
Activity graphics are jerky or do not have good detail.	Your computer may not have a graphics card that is able to display the graphics that Core:Tx uses. The system will work properly, but the display on your screen will not look as good as it can.
Movements on the screen do not match your transceiver's movements	Your Core:Tx base station may be picking up signals from a transceiver being used by another person. Ensure that the transceiver and base station you are using are linked to each other as described in "Linking Up the Transceiver and Base Station" on page 56.

Linking Up the Transceiver and Base Station

If you have received a replacement transceiver or base station, you must perform the link-up process the first time you use the new component. This process ensures that the transceiver and base station "speak the same language" to each other. We call this process linking up.

You may also need to perform this process if technical support personnel tell you to do so.

To link up the transceiver and base station:

1 Be sure that the base station is connected to your computer.

- For more information, see "Connecting the Base Station" on page 10.

2 Start the Core:Tx software.

- For more information, see "Starting Core:Tx" on page 11, starting with step 3.

3 In the Core:Tx software, use the arrow keys to select Admin in the navigation bar and press space bar.

- For information about navigating in Core:Tx, see “Navigating in Core:Tx” on page 14.
- The Admin. Login panel displays.

4 Enter your password and press space bar.

- The Admin panel displays.

5 On the transceiver, press and hold the orange button for 5 seconds or until the light on the transceiver starts blinking 3 times with a pause and repeating.

6 Release the orange button.

7 Use the arrow keys to select Link-up and press space bar.

- The Link-up panel displays. While the base station and transceiver attempt to link up, the signal strength icon will be yellow.
- When the signal strength icon turns green, the link-up process is complete.
- If the signal strength icon turns red, replace the batteries in the transceiver, then repeat steps 5 through 7. For more information, see “Inserting the Batteries into the Transceiver” on page 8.

8 If the signal strength icon remains red, contact technical support.

- For more information, see “Technical Support” on page 18.

7:Core:Tx Exercise Instructions

Introduction

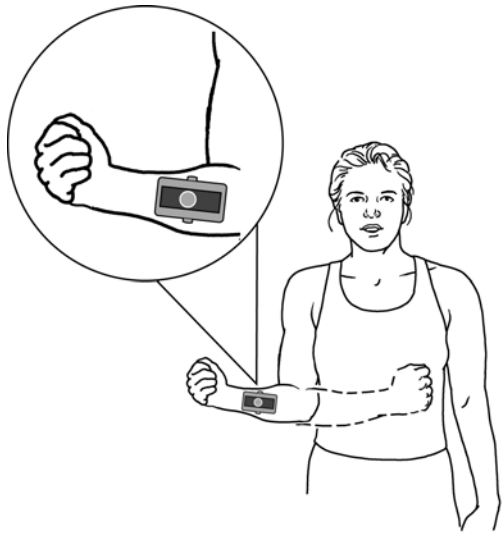
This section includes many exercises that you can easily incorporate into your current treatment plans. The exercises are presented with charts and illustrations for quick setup. In addition, the exercises are organized by body part for quick and easy reference.

The uses of Core:Tx listed in this section represent only a portion of the possible applications. Use the templates starting on page 162 to document your own ideas for using Core:Tx. In addition, you can submit your Core:Tx solutions to Performance Health Technologies via e-mail at support@performancehealth.com.

Explanation of Setup Tables

Each exercise in this section has a setup table that suggests typical Core:Tx settings. You can view and change the settings listed in the table in either the Activity Setup screen or the Activity screen, as listed in the table.

Shoulder Internal/External Rotation in 0 Degrees Abduction



Purpose of Exercise: To promote neuromuscular control of the rotator cuff. Gravity-neutral positioning may be appropriate for acute or weak patients.

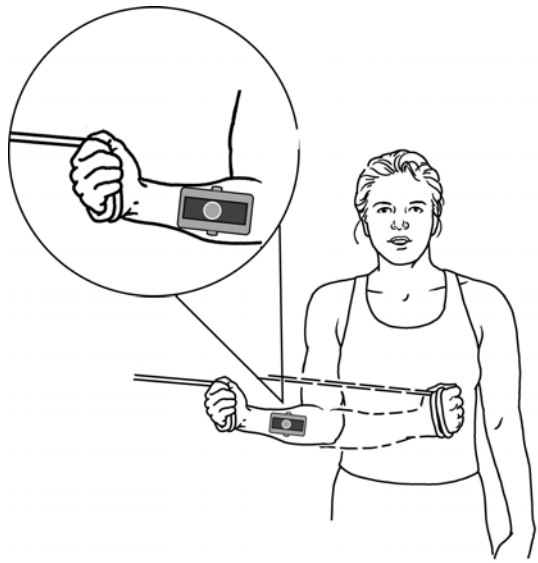
Preparation/Positioning: The patient may be seated or standing. Apply the Core:Tx transceiver to the patient's distal forearm, as shown above, with a dark gray strap. Instruct the patient in the desired movement and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Shoulder IR/ER	Shoulder IR/ER
Mode	Monitor	Challenge
Audio	On	On
Angle	90º	90º

Activity Setup Screen		
Setting	Monitor	Challenge
Speed	5	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibration	To available ROM	To available ROM
Set Position	--	To preference

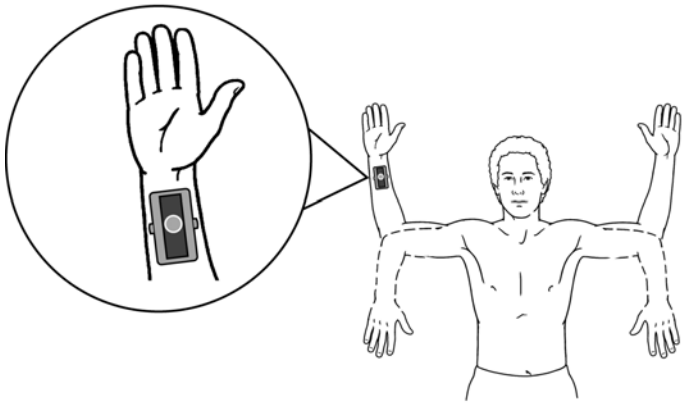
Variations:

- Use a weighted pulley system or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback to promote controlled movement during resisted exercise.



- Use progressive increases in calibrated range in Monitor Mode to emphasize increased ROM. Begin by having patients work in their comfortable range, then recalibrate and repeat the activity with slightly larger ROM.
- Increase Challenge Mode speed to 5 to have the patient work on neuromuscular training through a larger ROM.

Shoulder Internal/External in Abducted Position



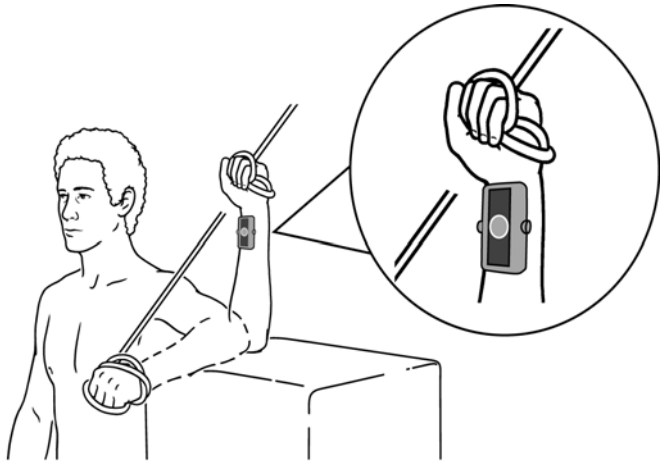
Purpose of Exercise: To promote neuromuscular control of the rotator cuff. This exercise activates the rotator cuff in a more challenging position of abduction.

Preparation/Positioning: The patient may be seated or standing. Apply the Core:Tx transceiver to the patient's distal forearm, as shown above, with a dark gray strap. Instruct the patient in the desired position and movement and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Shoulder IR/ER	Shoulder IR/ER
Mode	Monitor	Challenge
Audio	On	On
Angle	0^{o}	0^{o}
Speed	5	0 (static)
Time/Reps	1 minute	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

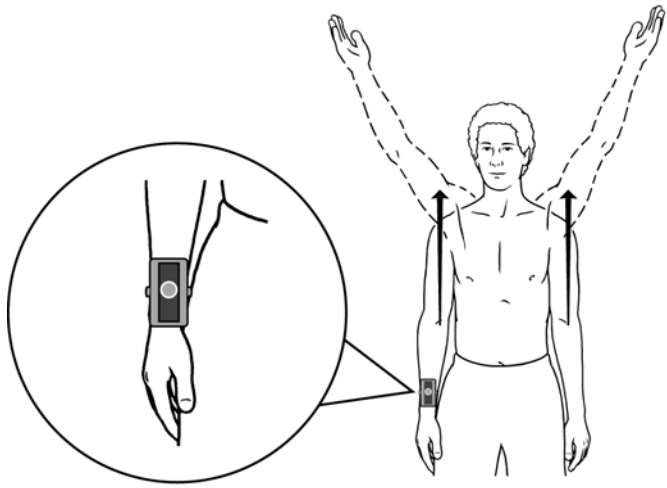
Variations:

- Use a weighted pulley system or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback to promote controlled movement during resisted exercise.



- Use weighted balls.
- Increase Challenge speed to 5 to have the patient work on advanced neuromuscular training throughout a larger ROM.

Shoulder Flexion/Extension



Purpose of Exercise: To promote neuromuscular control during shoulder flexion. Exercise variations allow you to emphasize gains in strength or motion as well.

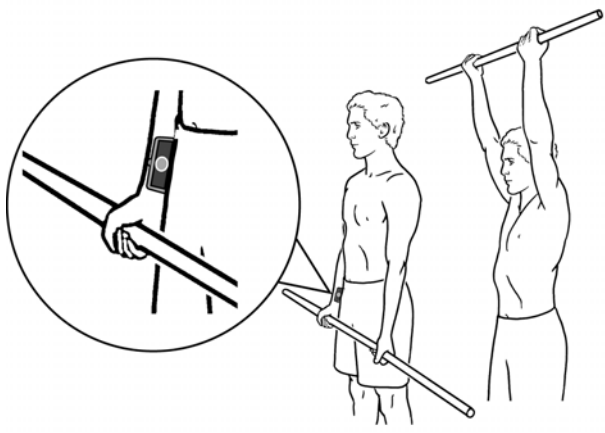
Preparation/Positioning: The patient may be seated or standing. Apply the Core:Tx transceiver to the patient's distal forearm, as shown above, with a dark gray strap. Instruct the patient in the desired movement and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Shoulder flex/ext	Shoulder flex/ext
Mode	Monitor	Challenge
Audio	On	On
Angle	0^{o}	0^{o}
Speed	6	0 (static)

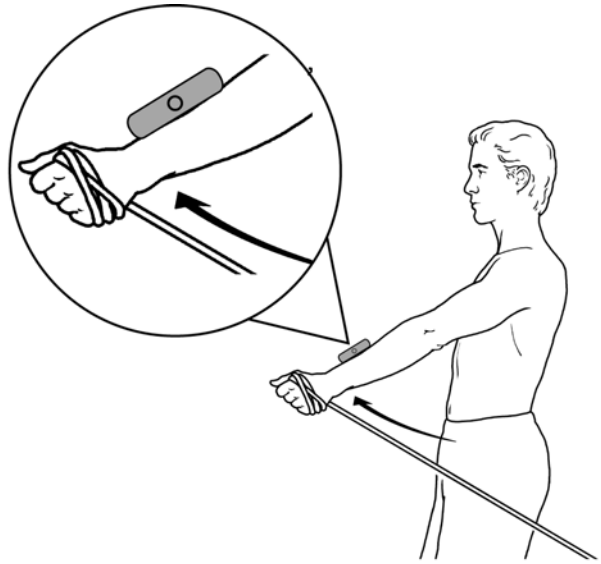
Activity Setup Screen		
Setting	Monitor	Challenge
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

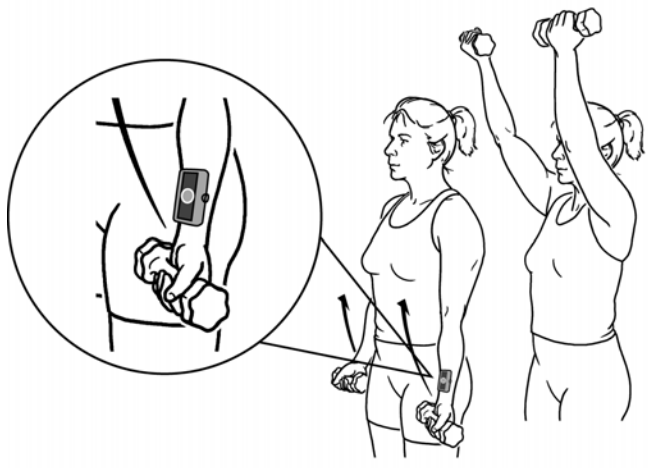
Variations:

- Use Core:Tx for rhythmic stabilization. Have the patient perform Monitor Mode with the speed at 0 (static.) Begin the activity with the patient in the desired position, and have them stabilize as you apply manual perturbation. Have advanced patients hold a weight in their hand during the exercise.
- Perform this exercise with a dowel rod for self-assisted ROM. To emphasize increased ROM, use progressive increases in the calibrated range in Monitor Mode. Begin by having patients work in their comfortable range, then recalibrate and repeat the activity with a slightly larger ROM.

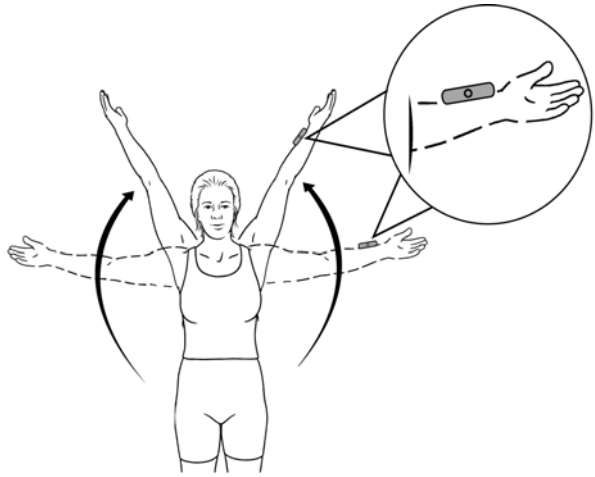


- Use hand weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback to promote controlled movement during resisted exercise.





Shoulder Abduction/Adduction



Purpose of Exercise: To promote neuromuscular control during shoulder abduction. Exercise variations allow you to emphasize gains in strength or motion as well.

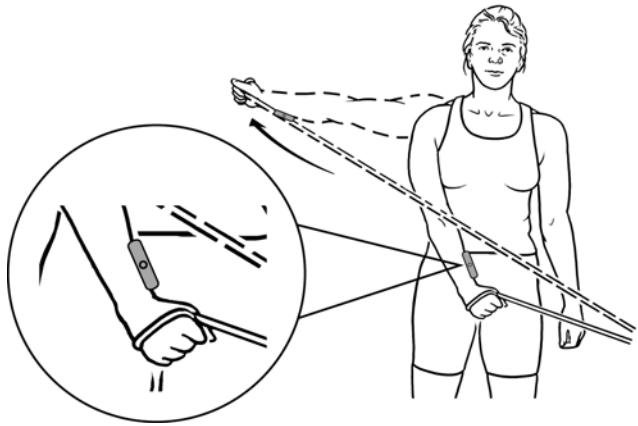
Preparation/Positioning: The patient may be seated or standing. Secure the Core:Tx transceiver to the patient's distal forearm, as shown above, with a dark gray strap. Instruct the patient in the desired movement and set up the activity as shown below.

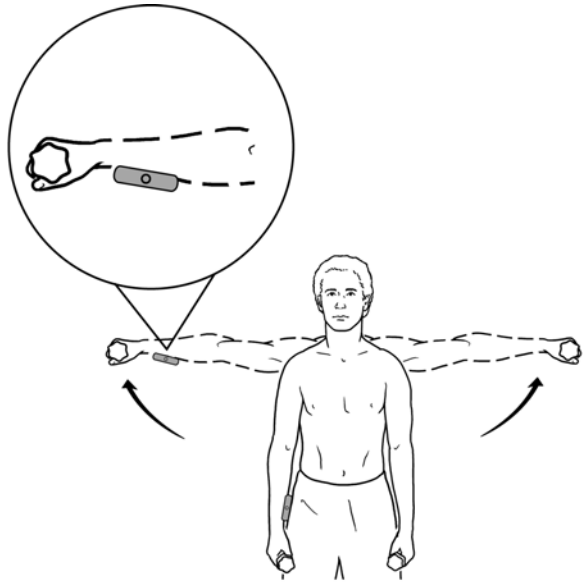
Activity Setup Screen Setting	Monitor	Challenge
Movement	Shoulder abd/add	Shoulder abd/add
Mode	Monitor	Challenge
Audio	On	On
Angle	90^{o}	90^{o}
Speed	6	0 (static)

Activity Setup Screen		
Setting	Monitor	Challenge
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

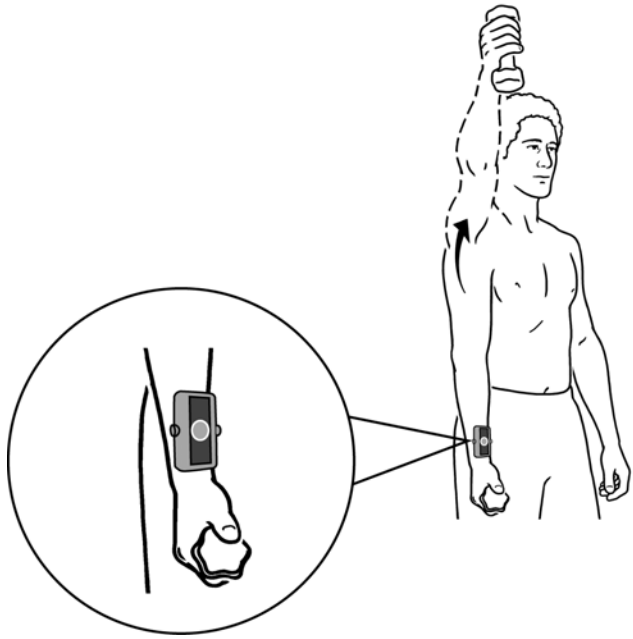
Variations:

- Use hand weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback to promote controlled movement during resisted exercise.



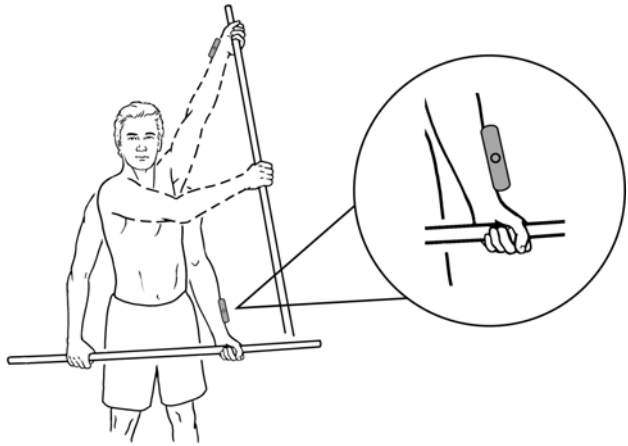


- Use the calibration function of Monitor Mode to address a specific portion of the patient's ROM.
- Work in the scapular plane instead of the frontal plane.

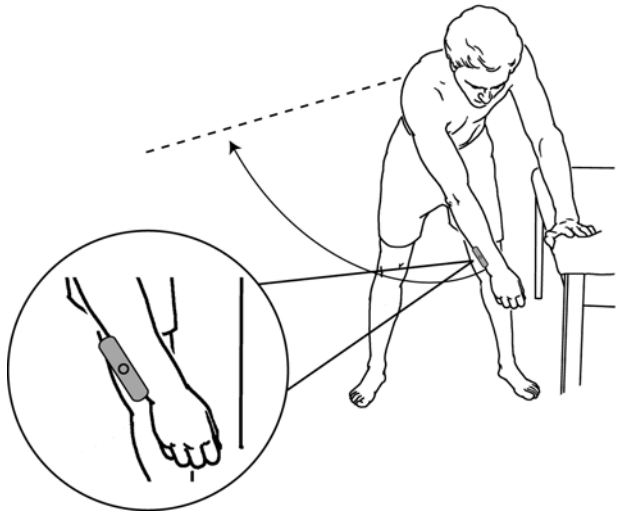


- Perform in the “empty can” position.
- Use Core:Tx for rhythmic stabilization. Have the patient perform Monitor Mode with the speed at 0 (static.) Begin the activity with the patient in the desired position, and have them stabilize as you apply manual perturbation. Have advanced patients hold a weight in their hand during the exercise.

- Use a cane or dowel rod for self-assisted ROM. To emphasize increased ROM, use progressive increases in the calibrated range in Monitor Mode. Begin by having patients work in their comfortable range, then recalibrate and repeat the activity with a slightly larger ROM.



Shoulder Horizontal Abduction/ Adduction



Purpose of Exercise: To promote neuromuscular control during horizontal abduction. Exercise variations allow you to emphasize gains in strength as well.

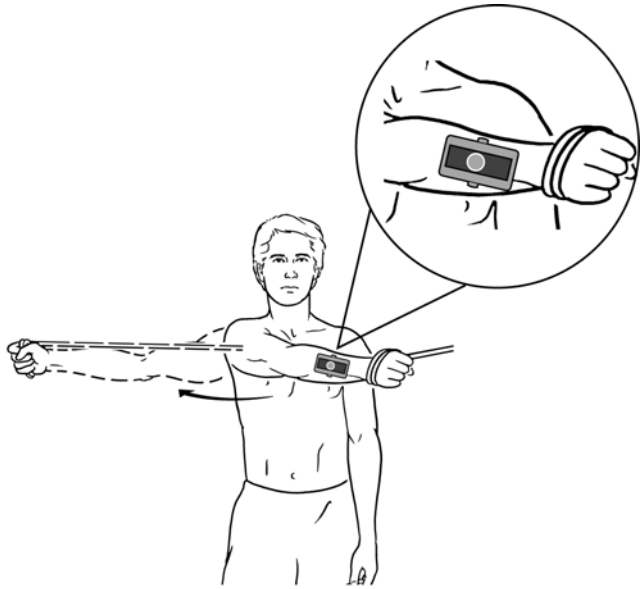
Preparation/Positioning: Position the patient so the patient is bent at the waist with proper alignment of the spine. A prone position may be substituted if necessary. Apply the Core:Tx transceiver to the distal forearm, as shown above, with a dark gray strap. Ensure that the transceiver axis is parallel to the targeted joint axis. Instruct the patient in the required movement and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Shoulder horizontal abd/add	Shoulder horizontal abd/add
Mode	Monitor	Challenge

Activity Setup Screen		
Setting	Monitor	Challenge
Audio	On	On
Angle	0^{o}	0^{o}
Speed	5	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

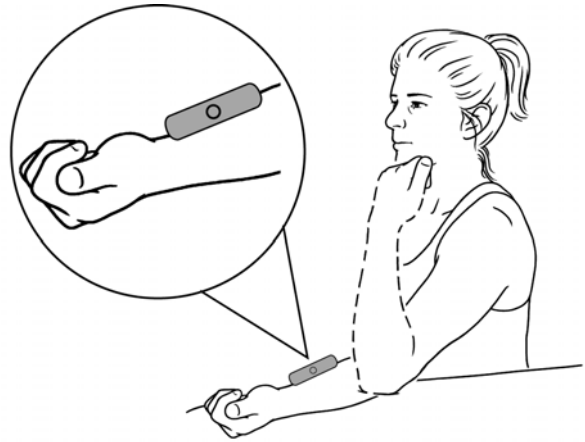
Variations:

- Use hand weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback to promote controlled movement during resisted exercises.



- Have the patient perform active scapular retraction prior to performing horizontal abduction/adduction.
- Perform with bilateral upper extremities in a standing position with tubing for resistance.

Elbow Flexion/Extension



Purpose of Exercise: To promote neuromuscular control during elbow flexion/extension. Exercise variations allow you to emphasize gains in strength or motion as well.

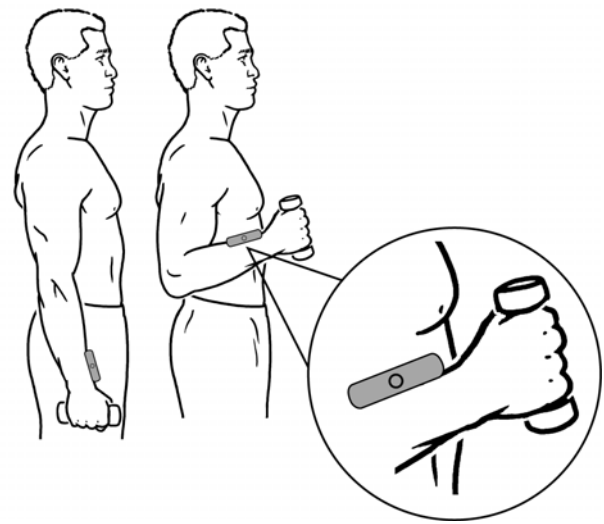
Preparation/Positioning: The patient may be seated or standing. Apply the Core:Tx transceiver to the distal forearm, as shown above, with a dark gray strap. Instruct the patient in the desired movement and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Elbow flex/ext	Elbow flex/ext
Mode	Monitor	Challenge
Audio	On	On
Angle	0^o	0^o
Speed	5	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)

Activity Screen Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

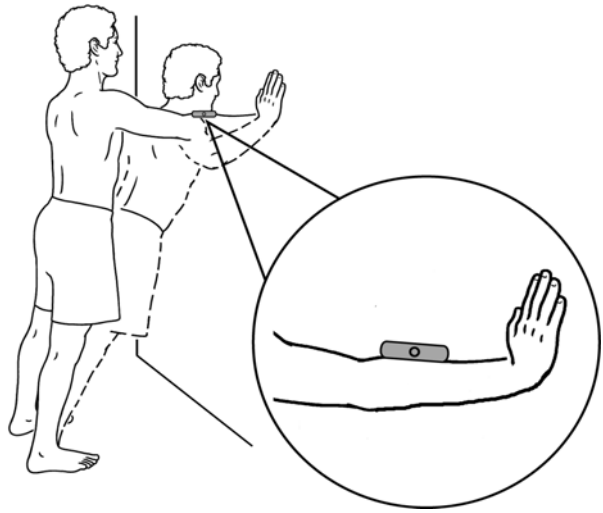
Variations:

- Use hand weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback to promote controlled movement during resisted exercises.

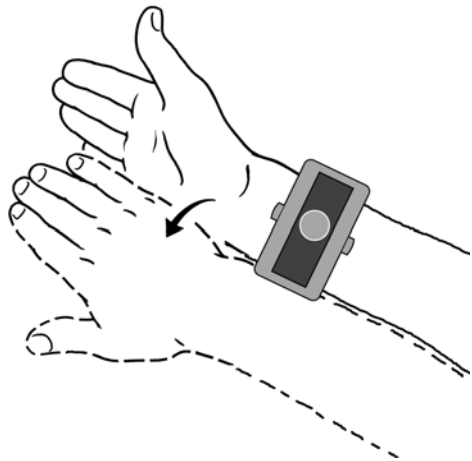


- To emphasize increased ROM, use progressive increases in calibration range in Monitor Mode. Begin by having patients work in their comfortable range, then recalibrate and repeat the activity with slightly larger ROM. Use this technique as a warm-up prior to manual stretching and mobilizations.

- Perform elbow flexion/extension in closed-chain, wall push-up position. For this application place the Core:Tx transceiver on the proximal forearm as shown below.



Forearm Pronation/Supination



Purpose of Exercise: To promote neuromuscular control during forearm pronation and supination. Exercise variations allow you to emphasize gains in strength or motion as well.

Preparation/Positioning: The patient may be seated or standing. Apply the Core:Tx transceiver to the distal forearm, as shown above, with the light gray strap. Instruct the patient in the desired movement and set up the activity as shown below.

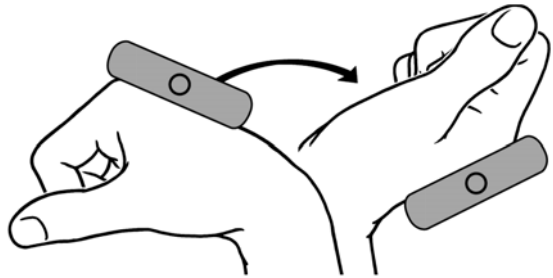
Activity Setup Screen Setting	Monitor	Challenge
Movement	Forearm pro/sup	Forearm pro/sup
Mode	Monitor	Challenge
Audio	On	On
Angle	90^{o}	90^{o}
Speed	6	0 (static)

Activity Setup Screen		
Setting	Monitor	Challenge
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

Variations:

- Use hand weights, resistive bands, or hand tools for advanced patients. Core:Tx can provide the patient with constant feedback so that the patient uses controlled movement during resisted exercises.
- To emphasize increased ROM, use progressive increases in calibration range in Monitor Mode. Begin by having patients work in their comfortable range, then recalibrate and repeat the activity with slightly larger ROM. Use this technique as a warm-up prior to manual stretching and mobilizations.

Wrist Flexion/Extension



Purpose of Exercise: To promote neuromuscular control during wrist flexion and extension. Exercise variations allow you to emphasize gains in strength or motion as well.

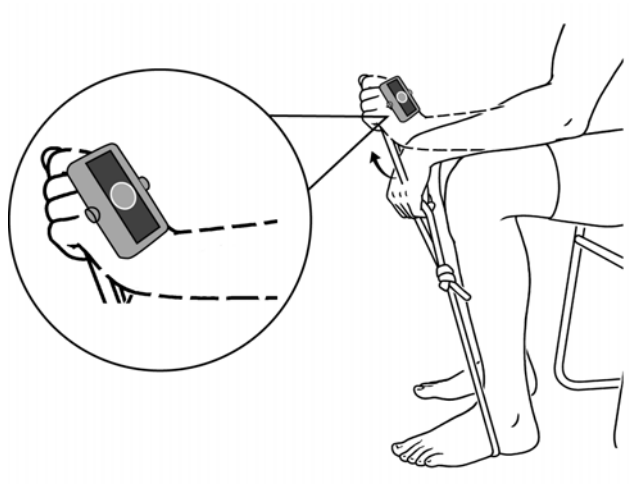
Preparation/Positioning: The patient may be seated or standing with the forearm supported. Apply the Core:Tx transceiver to the dorsum of the hand, as shown above, with a dark gray strap. Instruct the patient in the desired movement and set up the activity as shown below.

Activity Setup Screen Setting	Monitor	Challenge
Movement	Wrist flex/ext	Wrist flex/ext
Mode	Monitor	Challenge
Audio	On	On
Angle	0^o	0^o
Speed	5	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)

Activity Screen Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

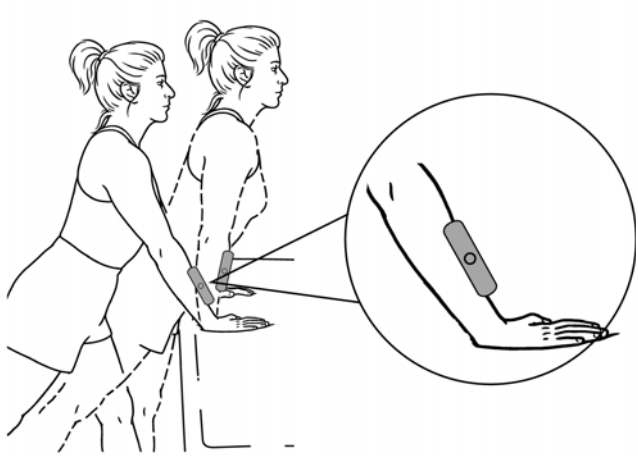
Variations:

- Use hand weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback so that the patient uses controlled movement during resisted exercises.

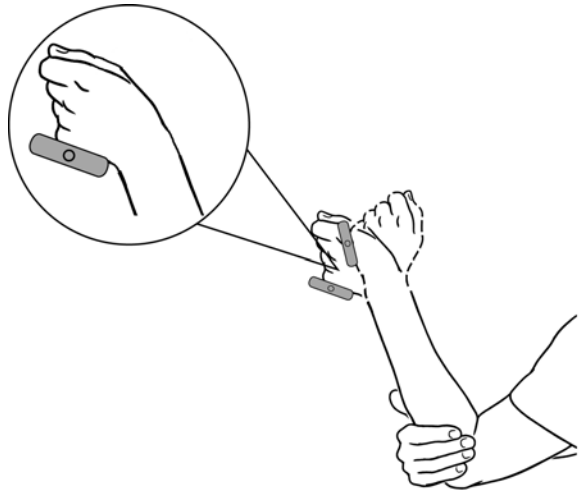


- To emphasize increased ROM, use progressive increases in calibration range in Monitor Mode. Begin by having patients work in their comfortable range, then recalibrate and repeat the activity with slightly larger ROM. Use this technique as a warm-up prior to manual stretching and mobilizations.

- Limited wrist extension can be addressed in a closed-chain position. Place the Core:Tx transceiver on the distal forearm and place the patient's palm on a table. By moving patient's forearm over a fixed hand, the patient can achieve a localized stretch into wrist extension.



Wrist Radial/Ulnar Deviation



Purpose of Exercise: To promote neuromuscular control during radial and ulnar deviation. Exercise variations allow you to emphasize gains in strength or motion as well.

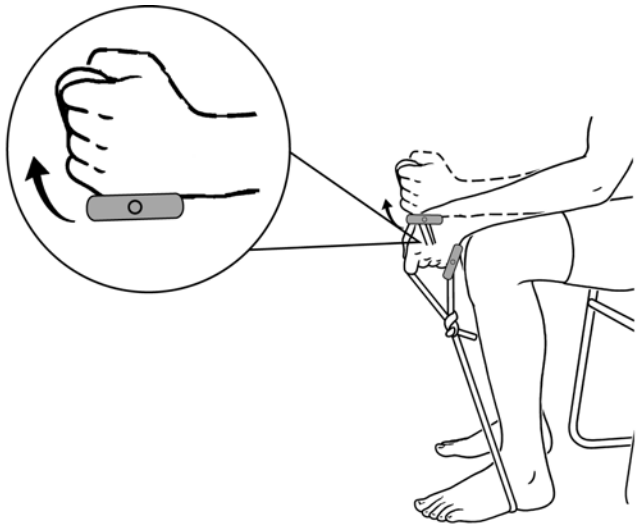
Preparation/Positioning: The patient may be seated or standing with the forearm supported. Apply the Core:Tx transceiver to the ulnar aspect of the hand, as shown above, with a dark gray strap. Instruct the patient in the desired movement and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Wrist radial/ulnar deviation	Wrist radial/ulnar deviation
Mode	Monitor	Challenge
Audio	On	On
Angle	90^{o}	90^{o}
Speed	4	0 (static)
Time/Reps	2 minutes	1 minute

Activity Setup Screen		
Setting	Monitor	Challenge
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

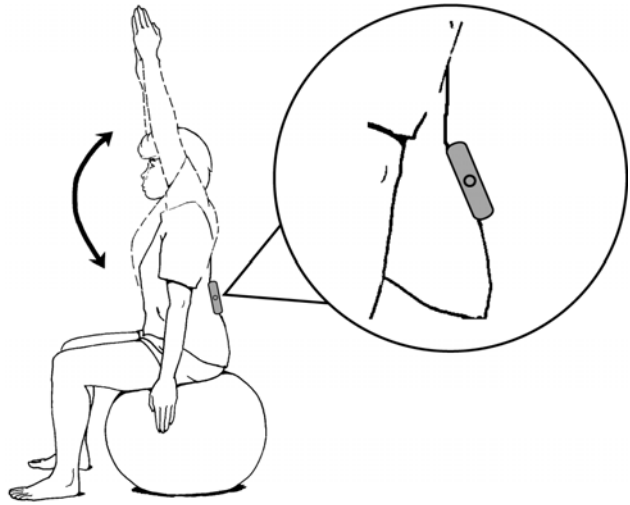
Variations:

- Use hand weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback so that the patient uses controlled movement during resisted exercises.



- To emphasize increased ROM, use progressive increases in calibration range in Monitor Mode. Begin by having patients work in their comfortable range, then recalibrate and repeat the activity with slightly larger ROM. Use this technique as a warm-up prior to manual stretching and mobilizations.

Lumbar Stabilization in Sitting Position on Therapy Ball



Purpose of Exercise: To address neuromuscular control of the muscles stabilizing the lower back.

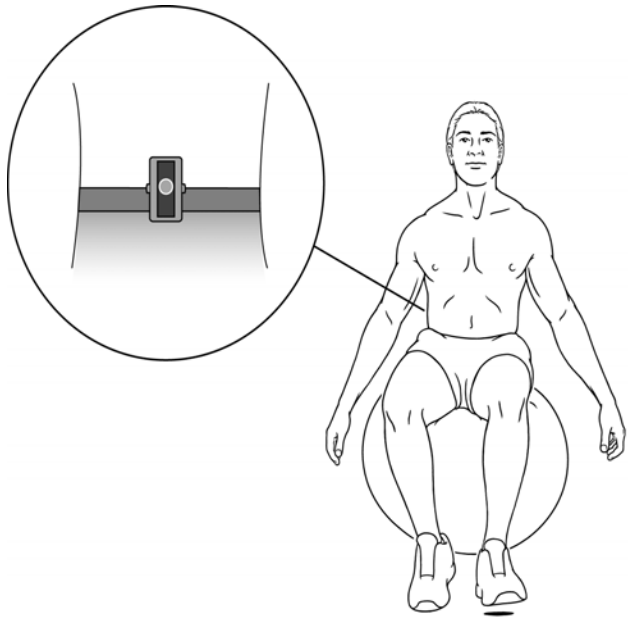
Preparation/Positioning: Apply the Core:Tx transceiver to the patient's lower back at the level of L4-5 using the lumbar strap as shown above. Assist the patient into a seated position on the ball and instruct the patient in bilateral arm lifts. After setting up the activity, as shown below, assist the patient in finding a neutral position of the spine prior to starting the activity.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Lumbar APT/PPT	--
Mode	Monitor	--
Audio	On	--
Angle	0^{o}	--

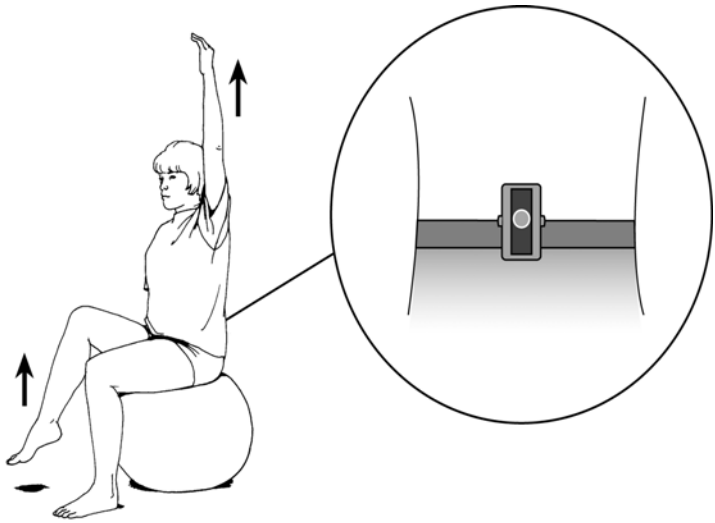
Activity Setup Screen		
Setting	Monitor	Challenge
Speed	0 (static)	--
Time/Reps	1 minute	--
Difficulty	--	--
Activity Screen		
Setting	Monitor	Challenge
Calibration	To available ROM	--
Set Position	Neutral Spine	--

Variations:

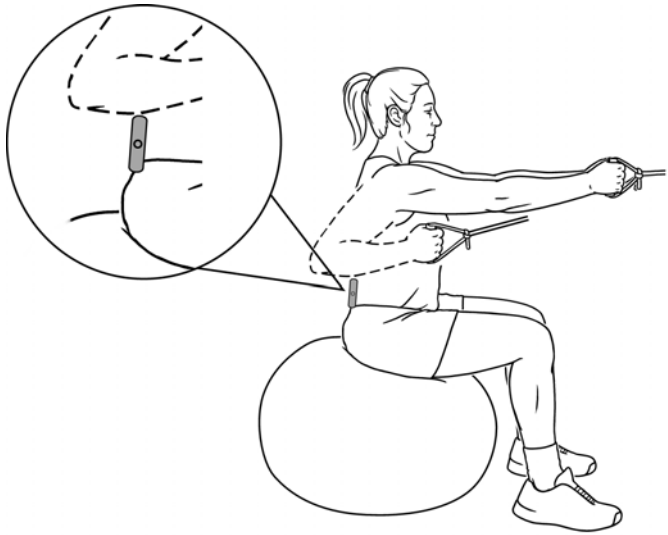
- Have the patient perform alternating seated hip flexion.



- Have the patient perform alternating contralateral hip and shoulder flexion.

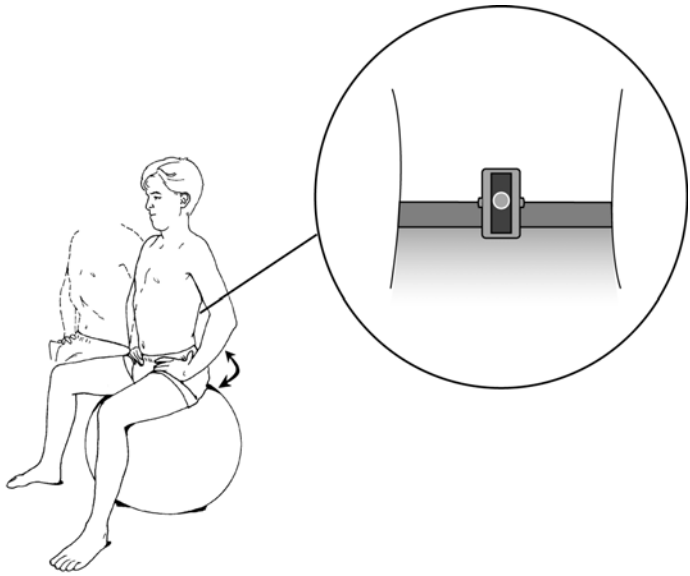


- Use small hand weights, ankle weights, or tubing to resist UE/LE movement while performing this exercise.
- Have the patient maintain lumbar positioning while performing scapular retraction bilaterally with resistive bands.



- Have the patient sit on the therapy ball and maintain proper positioning while you apply manual perturbation to the patient or the ball.

Lumbar Mobility



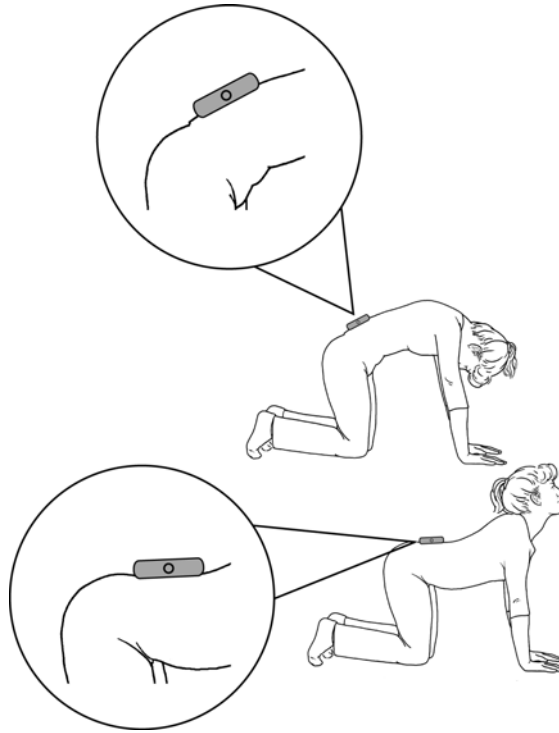
Purpose of Exercise: To address decreased lumbar mobility.

Preparation/Positioning: Apply the Core:Tx transceiver to the lower back at the level of L4-5 using the lumbar strap as shown above. Assist the patient into a seated position on the therapy ball and instruct the patient in the pelvic tilt motion. Set up the activity, as shown below, and calibrate through a range of motion to promote lumbar mobility.

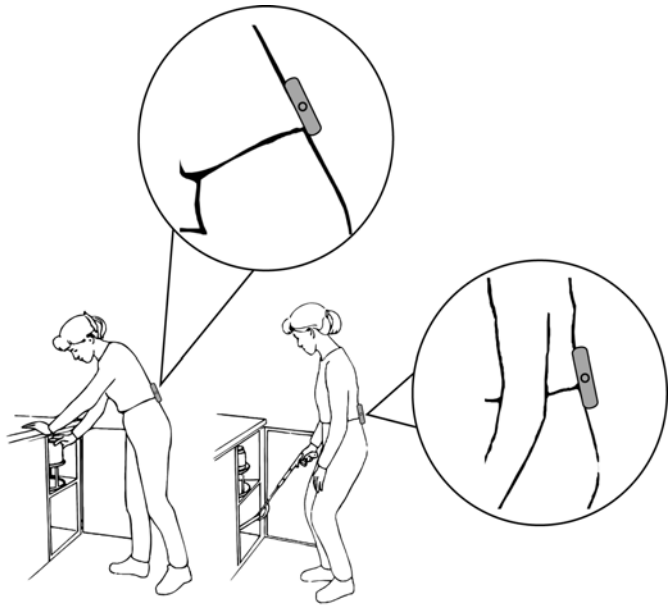
Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Lumbar APT/PPT	--
Mode	Monitor	--
Audio	On	--
Angle	0º	--
Speed	4	--
Time/Reps	1 minute	--
Difficulty	--	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	Neutral Spine	--

Variations:

- Have the patient perform this activity in a quadruped position.



Body Mechanics Instruction



Purpose of Exercise: To emphasize the correct use of body mechanics during selected activities.

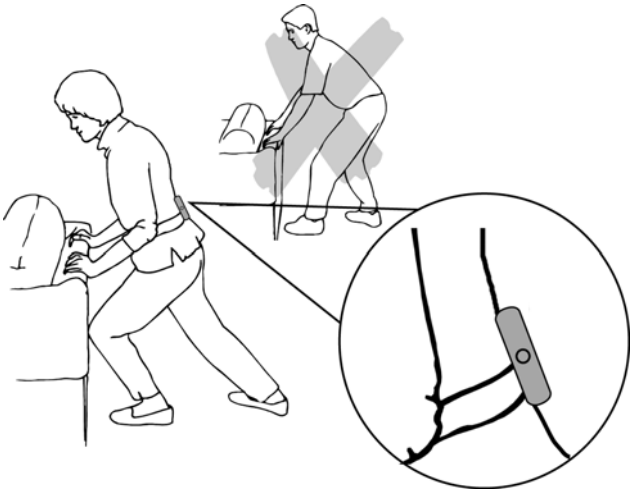
Preparation/Positioning: Begin with a thorough explanation of the principles of body mechanics using demonstration, discussion, and any available visual aids. Apply the Core:Tx transceiver to the lower back at the level of L4-5 using the lumbar strap. Instruct the patient in the selected functional activity. Perform the activity setup below, and assist the patient in finding a neutral position of the spine prior to starting the activity. The patient will try to maintain the preset position of a neutral spine while performing the selected task.

Limitations: The Core:Tx cannot disassociate angular changes occurring at the hip from the lumbar spine. Core:Tx is best used with activities that do not include significant hip flexion in a closed-chain environment, such as a deep squat.

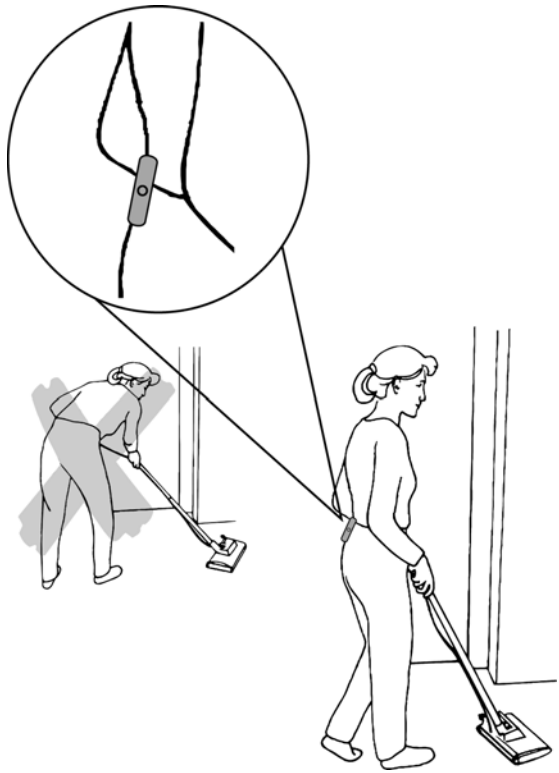
Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Lumbar APT/PPT	--
Mode	Monitor	--
Audio	On	--
Angle	0^{o}	--
Speed	0 (static)	--
Time/Reps	1 minute	--
Difficulty	--	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	Neutral Spine	--

Variations:

- Functional activity examples:
  - Have the patient perform reaching activities.
  - Have the patient perform pushing/pulling tasks.

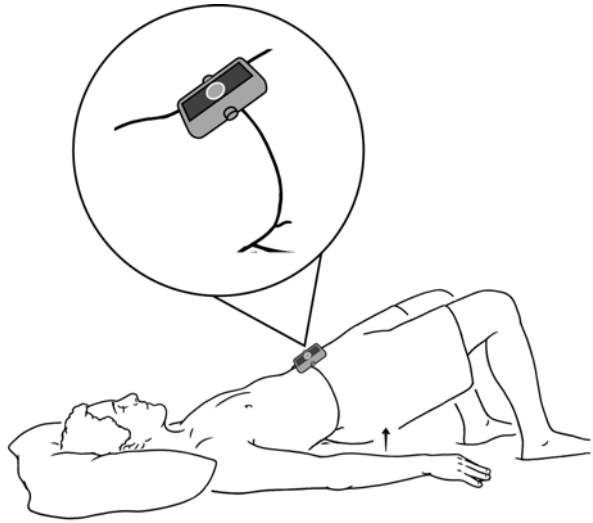


– Have the patient simulate vacuuming or sweeping.



– Have the patient simulate work activities (sorting mail or working with hand tools overhead).

Lumbar Stabilization During Bridge



Purpose of Exercise: To guide a patient in achieving lumbar stabilization in a bridge position.

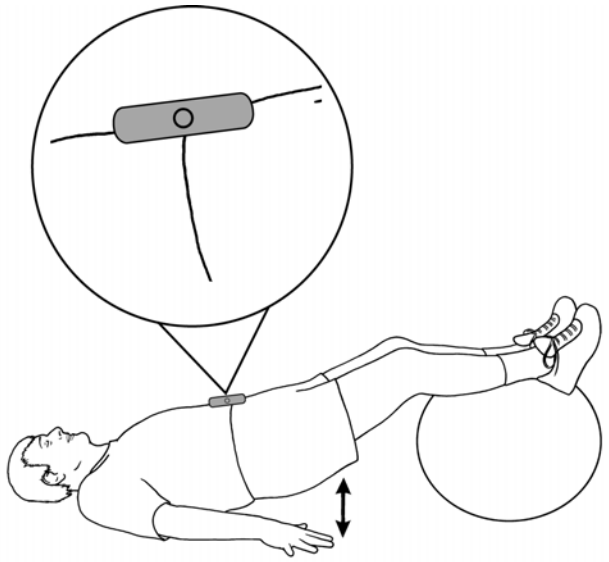
Preparation/Positioning: Instruct the patient in the desired bridge position. Apply the Core:Tx transceiver to the patient's abdomen with the strap lying across the iliac crests. Perform the activity setup below, and assist the patient in finding a neutral position of the lumbar spine while bridging. Have the patient hold this position when starting the activity. The patient will try to maintain the preset position of a neutral spine, while maintaining a bridge position.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Lumbar APT/PPT	--
Mode	Monitor	--

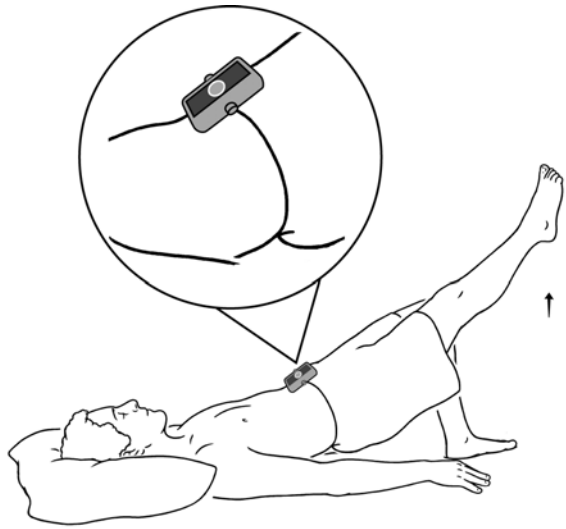
Activity Setup Screen		
Setting	Monitor	Challenge
Audio	On	--
Angle	90^{o}	--
Speed	0 (static)	--
Time/Reps	1 minute	--
Difficulty	--	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	Neutral Spine	--

Variations:

- Have the patient perform this activity with both feet on a foam roller or rocker board.
- Have the patient perform this activity with both calves on a therapy ball.

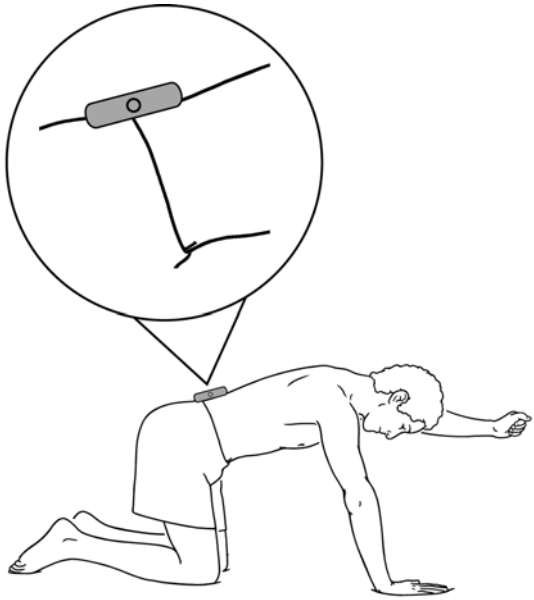


- Have the patient perform this activity and lift alternating feet.



- Have the patient perform this activity with both UE's flexed to 90° and hands clasped. Provide manual perturbation to the patient's hands.
- Provide manual perturbation to the patient's hips.
- For a dynamic activity, set the speed at 5, calibrate the start and end point of the bridge, and have the patient move in and out of the bridge position with controlled movement.

Lumbar Stabilization in Quadruped Position



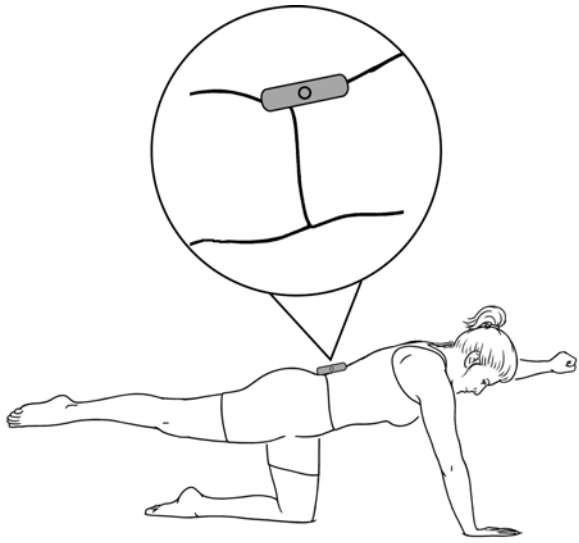
Purpose of Exercise: To guide a patient in stabilizing the lumbar spine during a quadruped exercise.

Preparation/Positioning: Apply the Core:Tx transceiver to the patient's low back at the level of L4-5 with the lumbar strap. Assist the patient into a quadruped position. Perform the activity setup, as shown below, and assist the patient in finding a neutral position of the lumbar spine. Have the patient hold this position when starting the activity. The patient will try to maintain the preset position of a neutral spine while exercising.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Lumbar APT/PPT	--
Mode	Monitor	--
Audio	On	--
Angle	9º	--
Speed	0 (static)	--
Time/Reps	1 minute	--
Difficulty	--	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	Neutral Spine	--

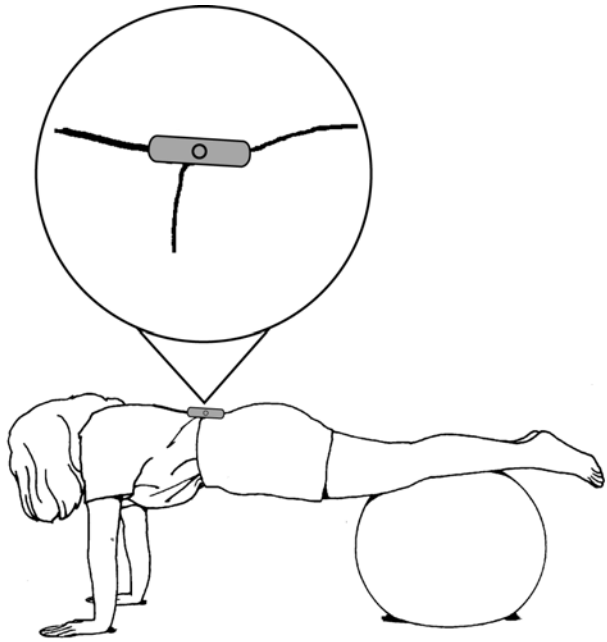
Variations:

- Have the patient perform alternating LE lifts.
- Have the patient perform alternating UE lifts.
- Have the patient perform alternating contralateral UE/LE lifts.



- Have patients utilize cuff weights on their ankles/wrists for increased challenge.
- Have the patient stabilize in the presence of manual perturbation that you apply.

Lumbar Stabilization during Prone Walk-Outs with Therapy Ball



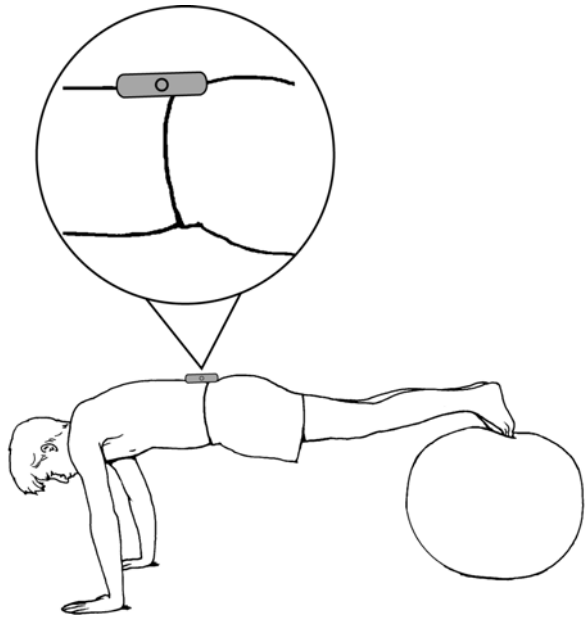
Purpose of Exercise: To guide a patient in achieving proper stabilization and neuromuscular control of the trunk.

Preparation/Positioning: Apply the Core:Tx transceiver to the patient's low back at the level of L4-5 with the lumbar strap. Instruct the patient in the desired lumbar positioning during a therapy ball walk-out. Perform the activity setup below, and assist the patient in finding a neutral position of the spine. Have the patient hold this position when starting the activity. The patient will try to maintain the preset position of a neutral spine while exercising.

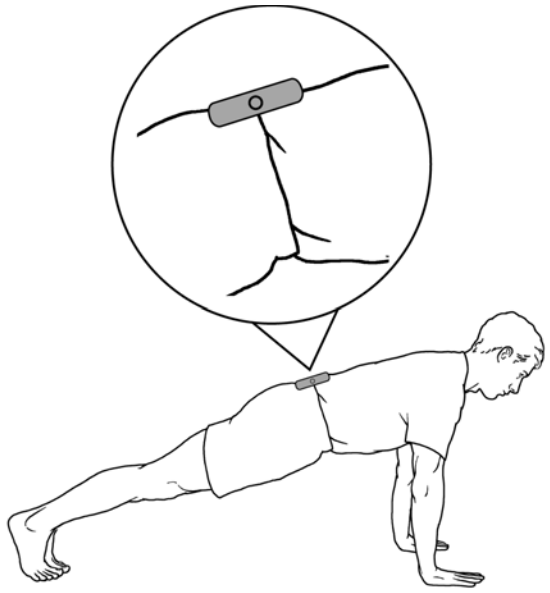
Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Lumbar APT/PPT	--
Mode	Monitor	--
Audio	On	--
Angle	9º	--
Speed	0 (static)	--
Time/Reps	1 minute	--
Difficulty	--	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	Neutral Spine	--

Variations:

- Have patients progressively work farther out onto the therapy ball as their ability to stabilize improves. For example, initially have patients roll out to their upper thighs, then knees, then mid-shin, then feet.



Lumbar Stabilization in Plank Position



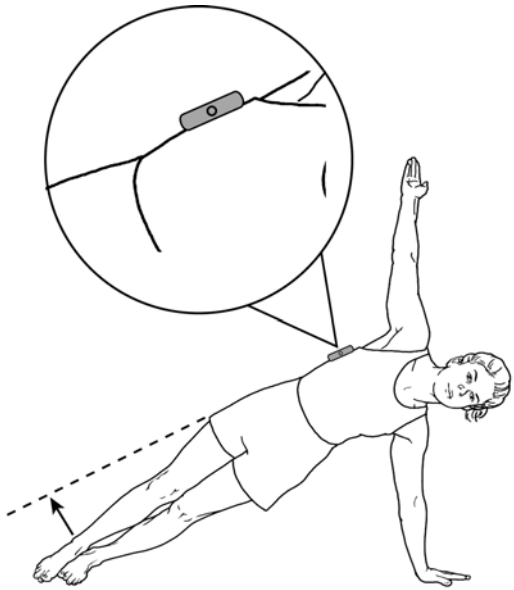
Purpose of Exercise: To guide a patient in achieving proper stabilization and neuromuscular control of the trunk.

Preparation/Positioning: Apply the Core:Tx transceiver to the patient's low back at the level of L4-5 with the lumbar strap. Instruct the patient in the plank position. Perform the activity setup below, and assist the patient in finding a neutral position of the spine while in the plank position. Have the patient hold this position when starting the activity. The patient will try to maintain the preset position of a neutral spine.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Lumbar APT/PPT	--
Mode	Monitor	--
Audio	On	--
Angle	0º	--
Speed	0 (static)	--
Time/Reps	1 minute	--
Difficulty	--	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	Neutral Spine	--

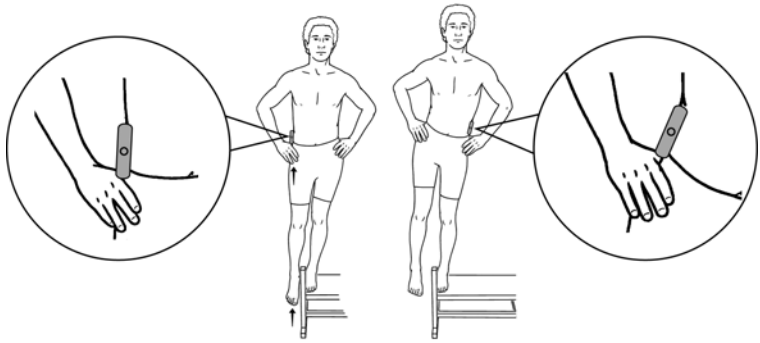
Variations:

- Have the patient perform a plank and alternately lift each foot in a steady rhythm.
- Have the patient perform a side plank as shown below.



- Have the patient perform a side plank, then perform continuous active abduction of the top leg for a set duration of time.

Hip Hike



Purpose of Exercise: To promote neuromuscular control and stability of the hips.

Preparation/Positioning: The patient should stand in a unilateral stance on the affected lower extremity. Apply the Core:Tx transceiver to the lateral iliac crest of the unaffected lower extremity, as shown above, with the lumbar strap. Instruct the patient in the hip hike movement and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Hip Hike	Hip Hike
Mode	Monitor	Challenge
Audio	On	On
Angle	0^{o}	0^{o}
Speed	5	0
Time/Reps	1 minute	1 minute
Difficulty	--	1

Activity Screen Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

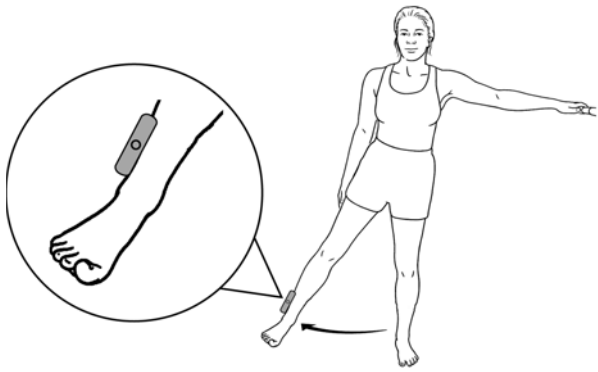
Variations:

- Have the patient stand on a step to permit additional range of motion.
- Perform this activity with an ankle weight on the unaffected lower extremity for additional challenge.

Associated Exercises:

- Patients benefiting from this exercise may also benefit from the variety of hip abduction exercises in “Hip Abduction/ Adduction” on page 112.

Hip Abduction/Adduction



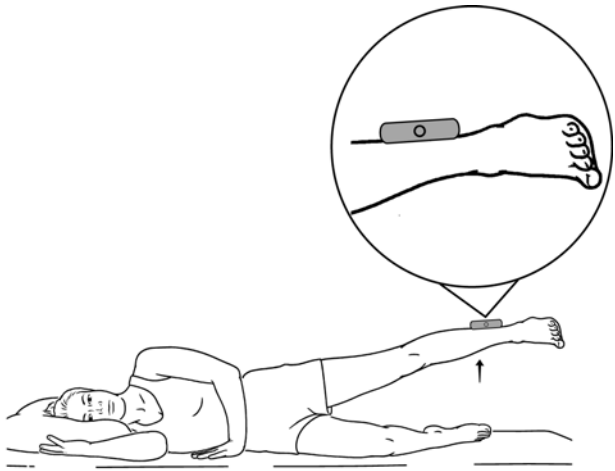
Purpose of Exercise: To promote neuromuscular control during hip abduction.

Preparation/Positioning: The patient should be in a standing position. Apply the Core:Tx transceiver to the distal lower leg, as shown above, with a dark gray strap. Instruct the patient in the movement of hip abduction/adduction, and set up the activity as shown below.

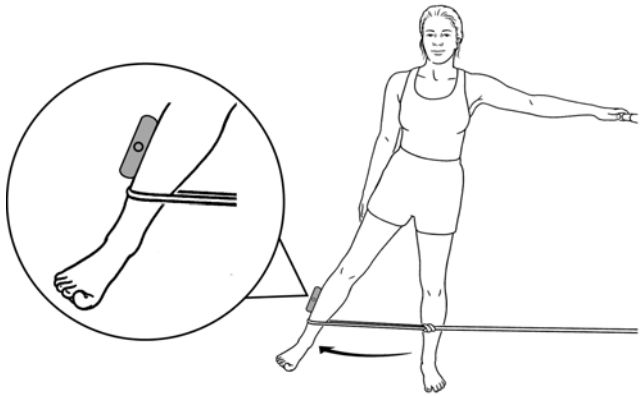
Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Hip abd/add	Hip abd/add
Mode	Monitor	Challenge
Audio	On	On
Angle	0^{o}	0^{o}
Speed	4	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

Variations:

- Perform this activity initially with hand support and progress to hands free in order to challenge the patient's balance.
- In the presence of significant weakness, this exercise can be performed in supine position.
- For additional challenge, have the patient perform hip abduction/adduction in sidelying position.



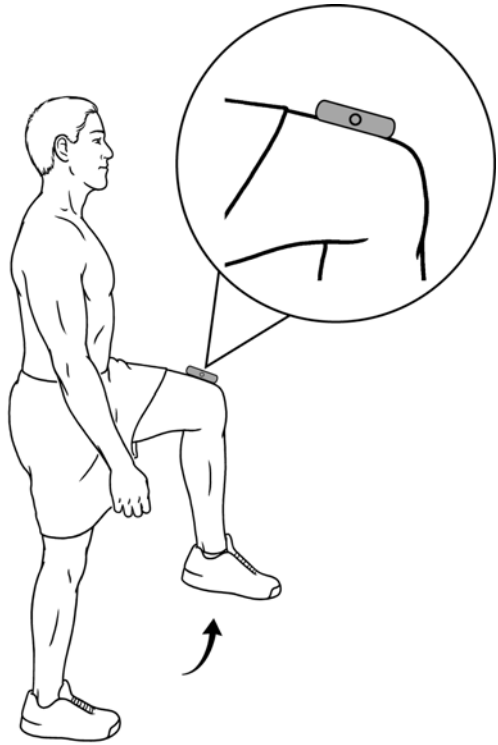
- Use ankle weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback so that the patient uses controlled movement while performing resisted exercises.



Associated Exercises:

- Have advanced patients perform a side plank exercise as described in “Lumbar Stabilization in Plank Position” on page 108.

Hip Flexion/Extension: Standing Flexion



Purpose of Exercise: To promote neuromuscular control and strengthening during hip flexion.

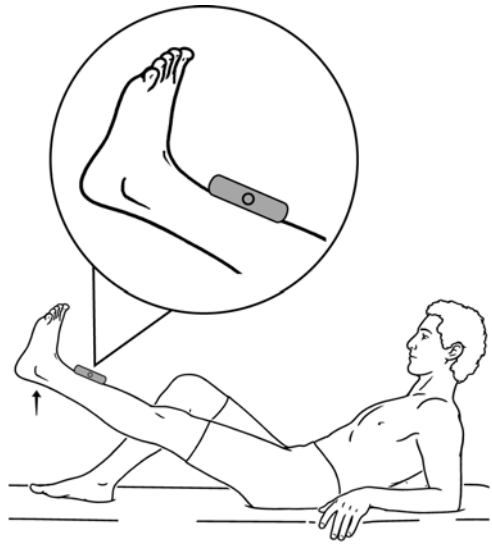
Preparation/Positioning: The patient should be in a standing position. Apply the Core:Tx transceiver to the distal thigh, as

shown above, with a dark gray strap. Instruct the patient in the movement of hip flexion, and set up the activity as shown below.

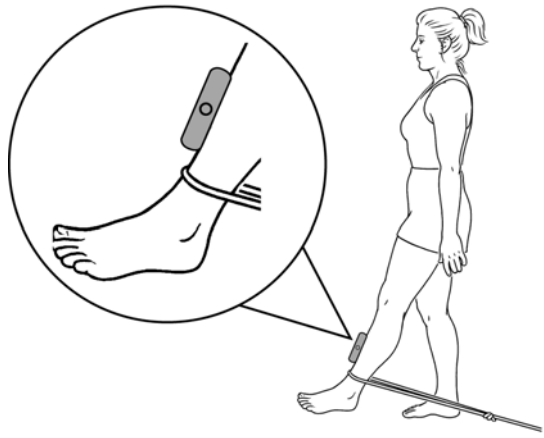
Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Hip flex/ext	Hip flex/ext
Mode	Monitor	Challenge
Audio	On	On
Angle	0^o	0^o
Speed	4	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

Variations:

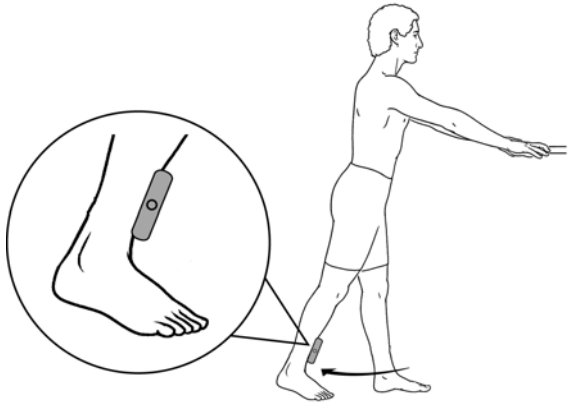
- Perform this activity in a supine or sitting position.



- Use ankle weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback so that the patient uses controlled movement while performing resisted exercises.



Hip Flexion/Extension: Standing Extension



Purpose of Exercise: To promote neuromuscular control and strengthening during hip extension.

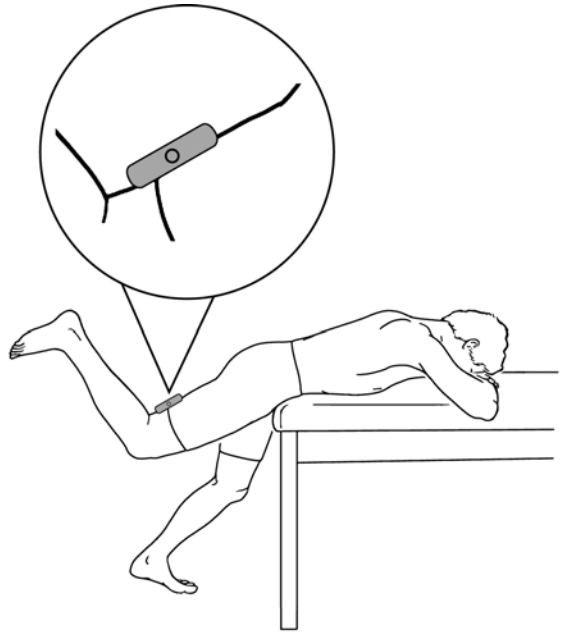
Preparation/Positioning: The patient should be in a standing position. Apply the Core:Tx transceiver to the distal lower extremity, as shown above, with a dark gray strap. Instruct the patient in the movement of hip extension, and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Hip flex/ext	Hip flex/ext
Mode	Monitor	Challenge
Audio	On	On
Angle	0^o	0^o
Speed	4	0 (static)
Time/Reps	2 minutes	1 minute

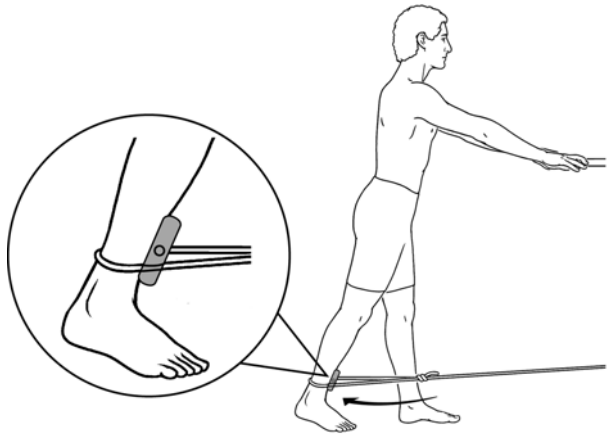
Activity Setup Screen		
Setting	Monitor	Challenge
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

Variations:

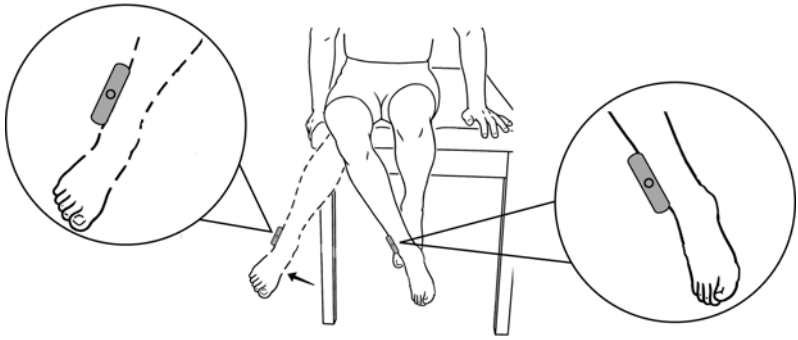
- Perform this activity in prone position, quadruped, over a therapy ball, or bent at the waist over a treatment table.



- Use ankle weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback so that the patient uses controlled movement while performing resisted exercises.



Hip Internal/External Rotation



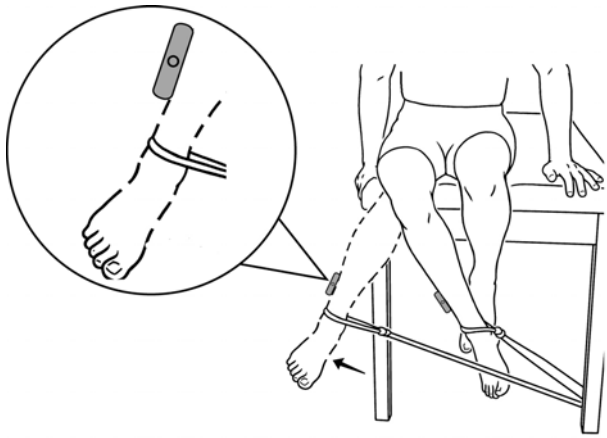
Purpose of Exercise: To promote neuromuscular control and strengthening during hip rotation.

Preparation/Positioning: Patients should be in a seated position with their hips and knees flexed to 90 degrees. Apply the Core:Tx transceiver to the distal lower extremity, as shown above, with a dark gray strap. The Core:Tx transceiver should be placed on the lateral leg with an anterior-posterior axis. Instruct the patient in the movement of hip internal/external rotation, and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Hip IR/ER	Hip IR/ER
Mode	Monitor	Challenge
Audio	On	On
Angle	0^{o}	0^{o}
Speed	4	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	N/A	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

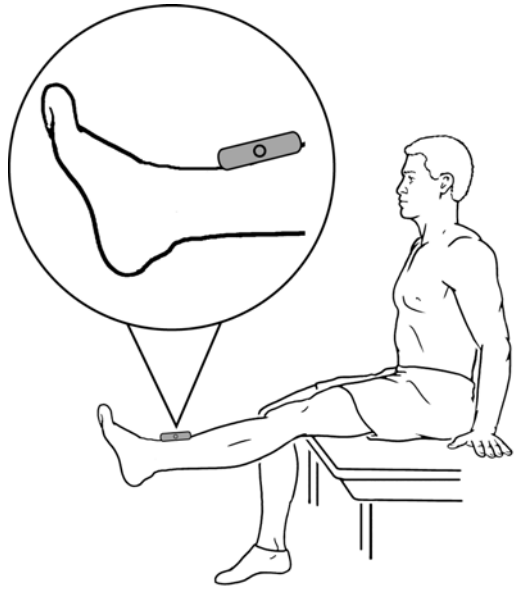
Variations:

- Use ankle weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback so that the patient uses controlled movement while performing resisted exercises



- Perform this exercise in hooklying or quadruped position by placing the Core:Tx transceiver on the lateral distal thigh with the same orientation as previously.

Knee Flexion/Extension: LAQ



Purpose of Exercise: To promote neuromuscular control and strengthening during knee extension. This open chain exercise may be appropriate for patients who are unable to bear weight.

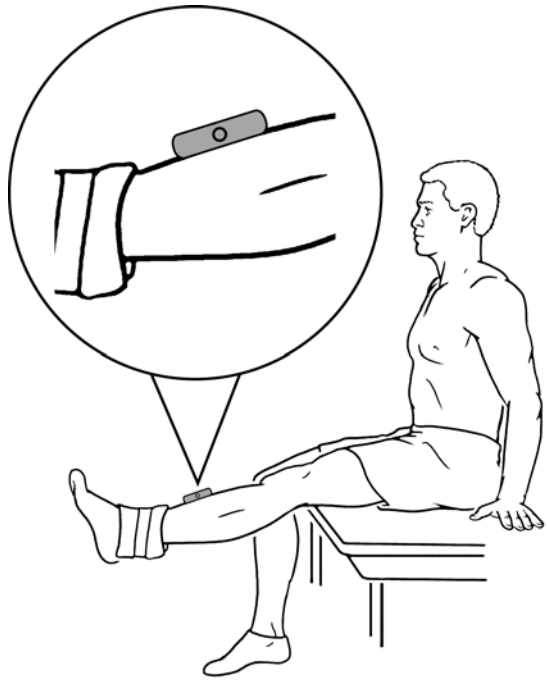
Preparation/Positioning: The patient should be seated in a chair. Apply the Core:Tx transceiver to the distal lower leg, as shown above, with a dark gray strap. Instruct the patient in the required movement and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Knee flex/ext	Knee flex/ext
Mode	Monitor	Challenge
Audio	On	On
Angle	0^{o}	0^{o}

Activity Setup Screen		
Setting	Monitor	Challenge
Speed	5	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

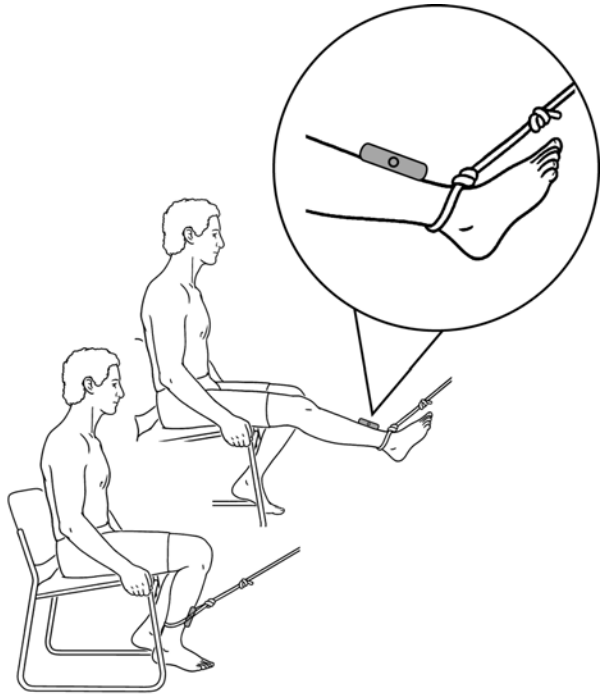
Variations:

- Use ankle weights, resistive bands or a knee extension machine for advanced patients. Core:Tx can provide the patient with constant feedback so that the patient uses controlled movement while performing resisted exercises.



- To help your patients achieve greater extension AROM, utilize progressive increases in calibration range in Monitor Mode. This can help emphasize terminal knee extension.

Knee Flexion/Extension: Seated Hamstring Curl



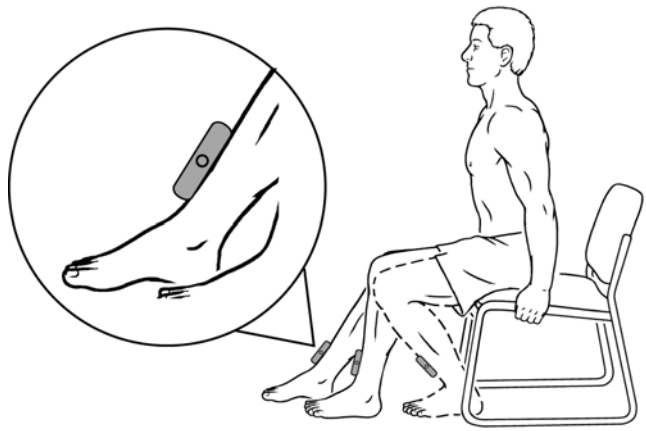
Purpose of Exercise: To promote neuromuscular control during knee flexion. Exercise variations allow you to emphasize gains in strength or motion. This open-chain exercise may be appropriate for patients who are unable to bear weight.

Preparation/Positioning: The patient should be seated in a chair. Apply the Core:Tx transceiver to the distal lower leg, as shown above, with a dark gray strap. Apply resistive tubing to the patient's lower leg distal to the Core:Tx transceiver. Instruct the patient in the required movement and set up the activity as shown below.

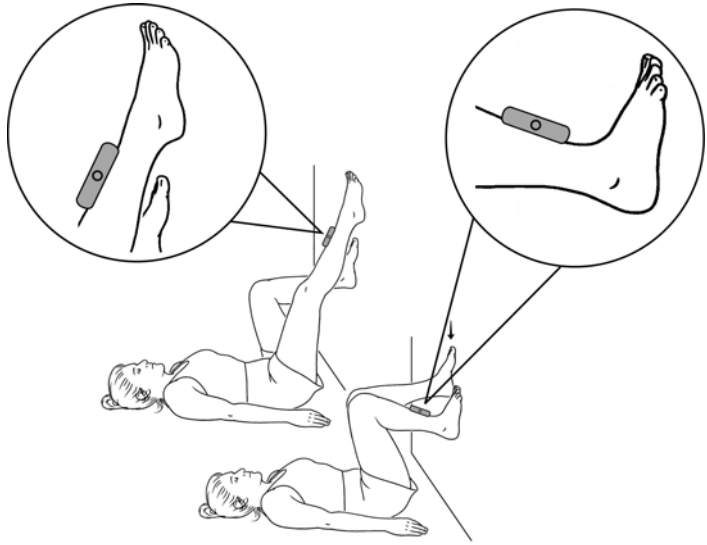
Activity Setup Screen Setting	Monitor	Challenge
Movement	Knee flex/ext	Knee flex/ext
Mode	Monitor	Challenge
Angle	0^o	0^o
Speed	5	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	---	1 (beginners)
Activity Screen Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

Variations:

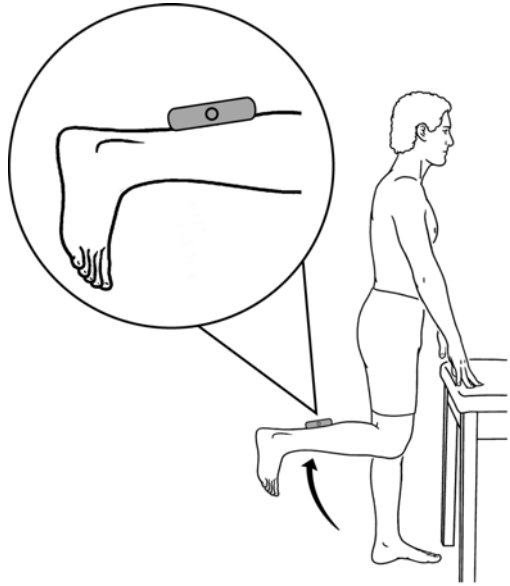
- To emphasize increased ROM, use progressive increases in calibration range in Monitor Mode. Begin by having patients work in their comfortable range, then recalibrate and repeat the activity with slightly larger ROM. Use this technique as a warm-up prior to manual stretching and mobilizations.



- For greater emphasis on increasing knee flexion ROM, have the patient in supine position with both feet sliding on a wall for gravity-assisted flexion stretch. You can utilize audio feedback if the patient cannot comfortably view the screen.



Knee Flexion/Extension: Standing Hamstring Curl



Purpose of Exercise: To promote neuromuscular control and strengthening during knee flexion.

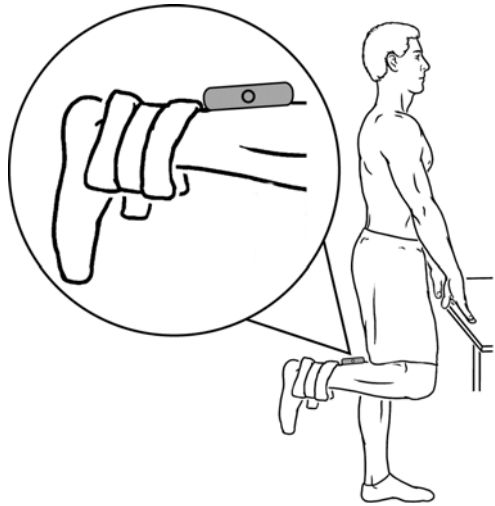
Preparation/Positioning: The patient should be in a standing position. Apply the Core:Tx transceiver to the distal lower leg, as shown above, with a dark gray strap. Instruct the patient in the required movement and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Knee flex/ext	Knee flex/ext
Mode	Monitor	Challenge
Audio	On	On
Angle	0^{o}	0^{o}

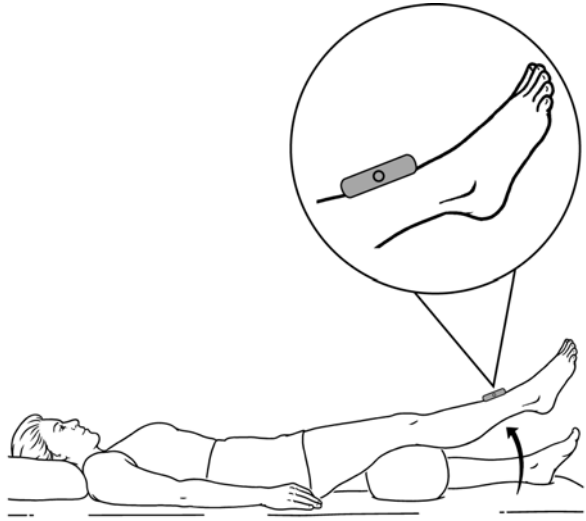
Activity Setup Screen		
Setting	Monitor	Challenge
Speed	5	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

Variations:

- For an increased challenge, utilize ankle weights or resistive bands.



Knee Flexion/Extension: Terminal Knee Extension



Purpose of Exercise: To provide instruction and motivation to the patient that lacks full active knee extension.

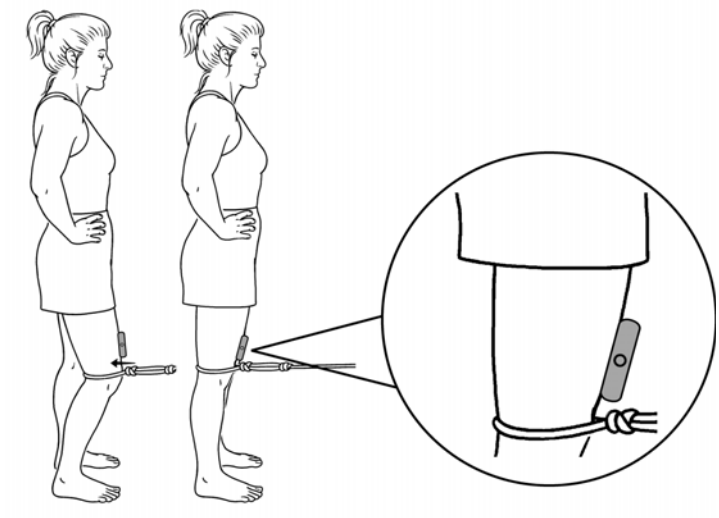
Preparation/Positioning: The patient should be positioned in a supine position with a bolster supporting the distal thigh. Apply the Core:Tx transceiver to the distal lower leg, as shown above, with a dark gray strap. Instruct the patient in the desired movement and set up the activity as shown below. Set the calibration to emphasize end range extension. Manual assistance may be provided to set the extension goal for the patient.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Knee flex/ext	--
Mode	Monitor	--
Audio	On	--

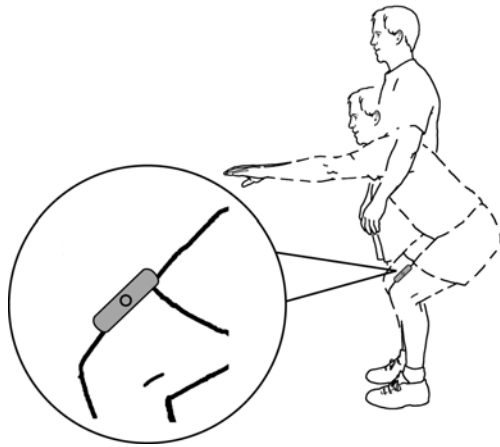
Activity Setup Screen		
Setting	Monitor	Challenge
Angle	0º	--
Speed	5	--
Time/Reps	2 minutes	--
Difficulty	--	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	--	To preference

Variations:

- For closed-chain emphasis on terminal extension with resistance, have the patient stand and place the Core:Tx transceiver above the knee as shown below. With resistive tubing secured posterior to the distal thigh, have the patient emphasize full extension.



Knee Flexion/Extension: Closed-Chain Squat



Purpose of Exercise: To address neuromuscular control and strengthening during a closed-chain squat.

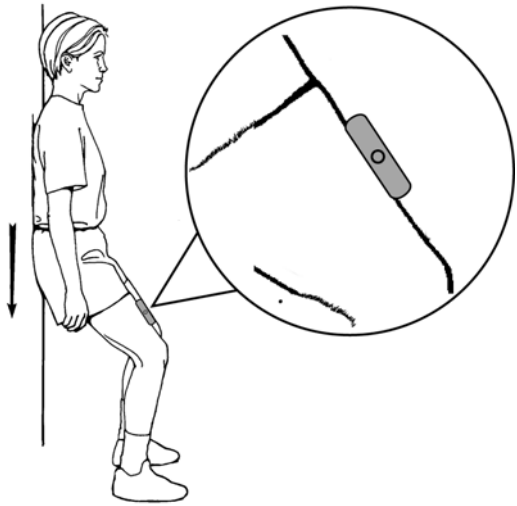
Preparation/Positioning: Patients should be in a standing position with their feet shoulder width apart. Apply the Core:Tx transceiver to the distal thigh, as shown above, with a dark gray strap. Instruct the patient in proper squatting form, and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Knee flex/ext	Knee flex/ext
Mode	Monitor	Challenge
Audio	On	On
Angle	0^o	0^o
Speed	5	0 (static)

Activity Setup Screen		
Setting	Monitor	Challenge
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

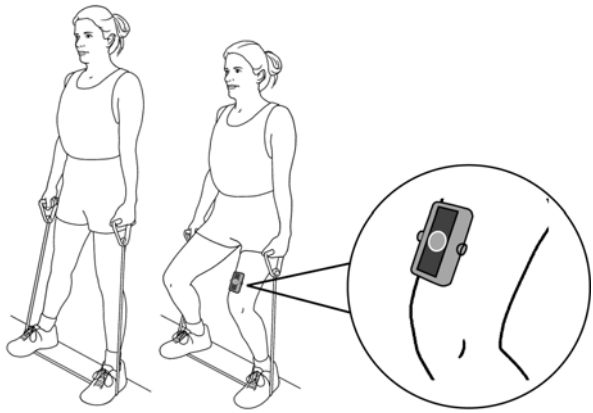
Variations:

- Have patients perform a squat with their back against a wall.

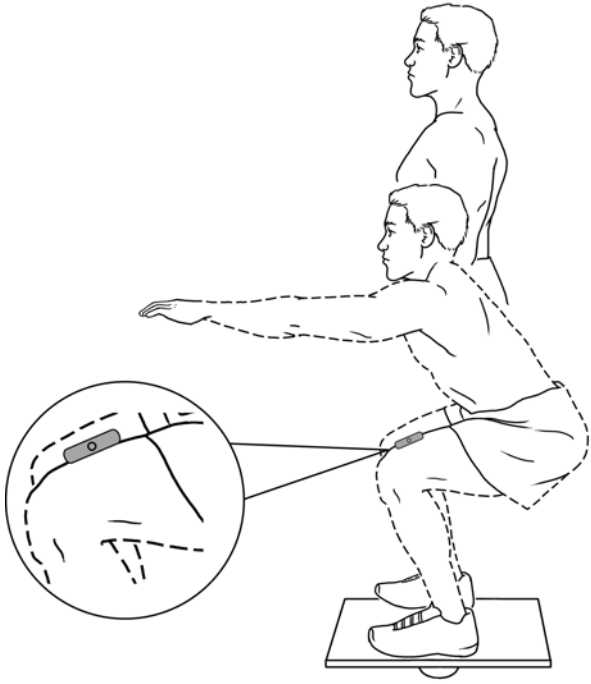


- Perform this activity on an inclined sled that uses only a portion of the patient's body weight in order to decrease resistance. This will enable the patient to reap the benefits of closed-chain exercise, while bearing less weight. Utilize audio feedback if the patient cannot comfortably view the screen.

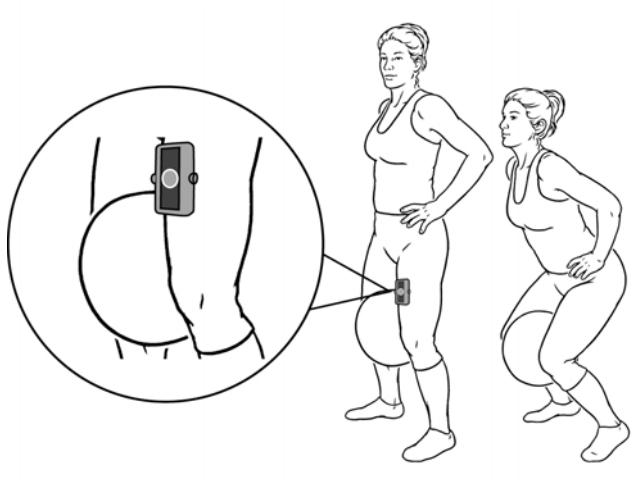
- Use resistive tubing to add a resistive component to neuromuscular reeducation. Have the patient stand on a long section of tubing with the ends in either hand. Pull the tubing taut to increase resistance with hip/knee extension.



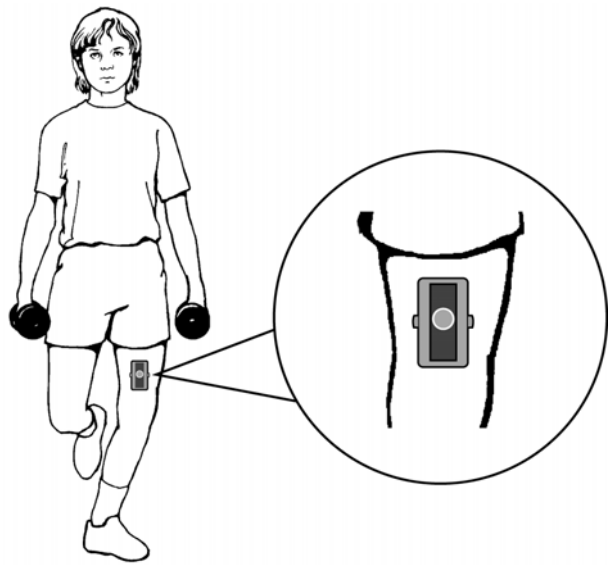
- Perform the squat while on a rocker board, dynadisc, or foam pad.



- Have patients squeeze a ball between their knees while performing a squat.



Knee Flexion/Extension: Unilateral Squat



Purpose of Exercise: To address neuromuscular control and strengthening during a unilateral, closed-chain squat.

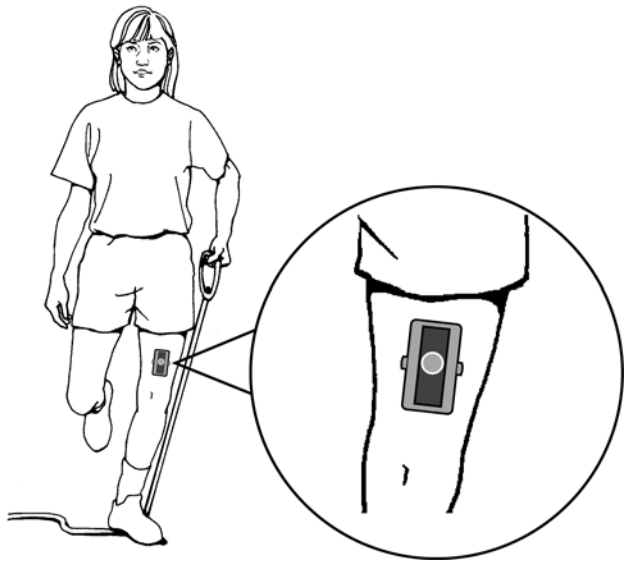
Preparation/Positioning: The patient should stand in unilateral stance on the affected lower extremity. Apply the Core:Tx transceiver to the distal thigh, as shown above, with a dark gray strap. Instruct the patient in the desired movement and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Knee flex/ext	Knee flex/ext
Mode	Monitor	Challenge
Audio	On	On
Angle	0º	0º
Speed	5	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

Variations:

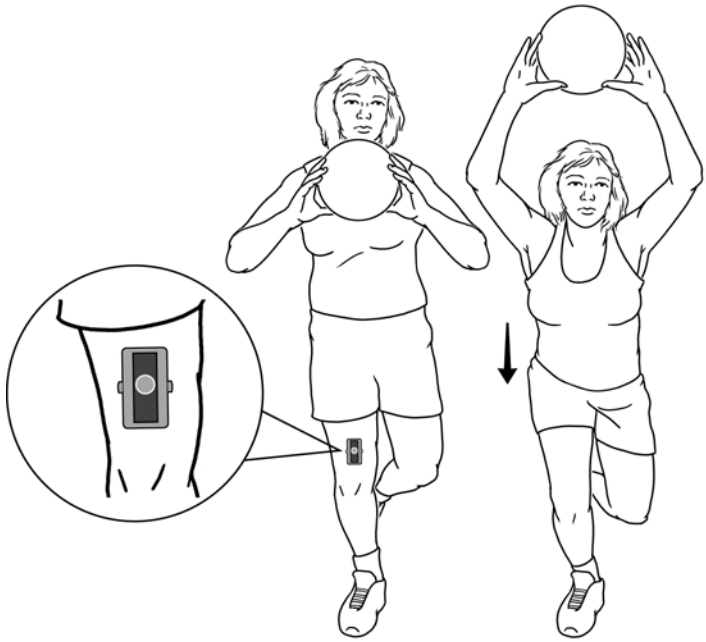
- Perform the unilateral squat with the patient's back against a wall.
- Perform this activity initially with hand support and progress to hands free.
- Perform this activity on an inclined sled that uses only a portion of the patient's body weight in order to decrease resistance. This will enable the patient to reap the benefits of closed-chain exercise, while bearing less weight. Utilize audio feedback if the patient cannot comfortably view the screen.

- Use resistive tubing to add a resistive component to neuromuscular reeducation. Have the patient stand on a long section of tubing with the ends in one hand. Pull the tubing taut to increase resistance with hip/knee extension.

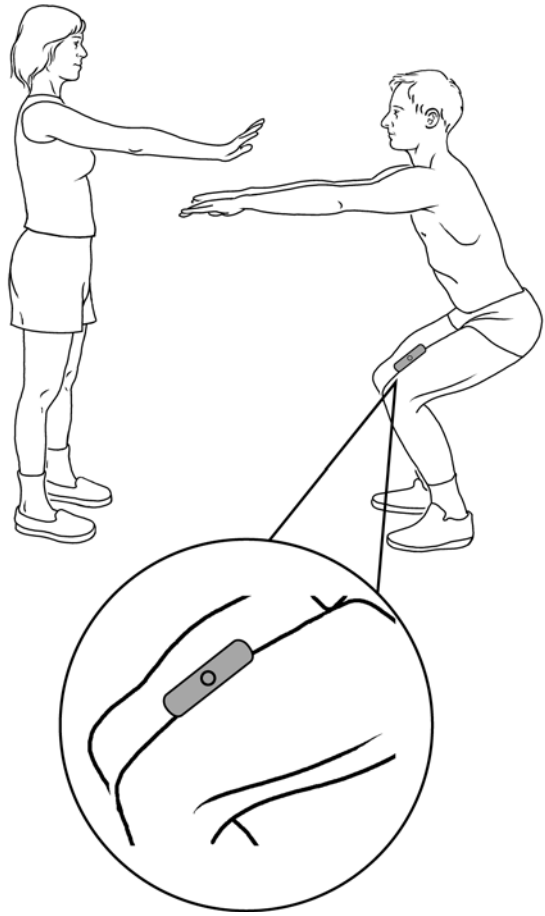


- Perform the unilateral squat while on a rocker board, dynadisc, or foam pad.

- Have the patient perform a unilateral squat while moving a medicine ball with bilateral upper extremities.



Knee Flexion/Extension: Squat and Hold



Purpose of Exercise: To address neuromuscular control and strengthening during a closed chain squat.

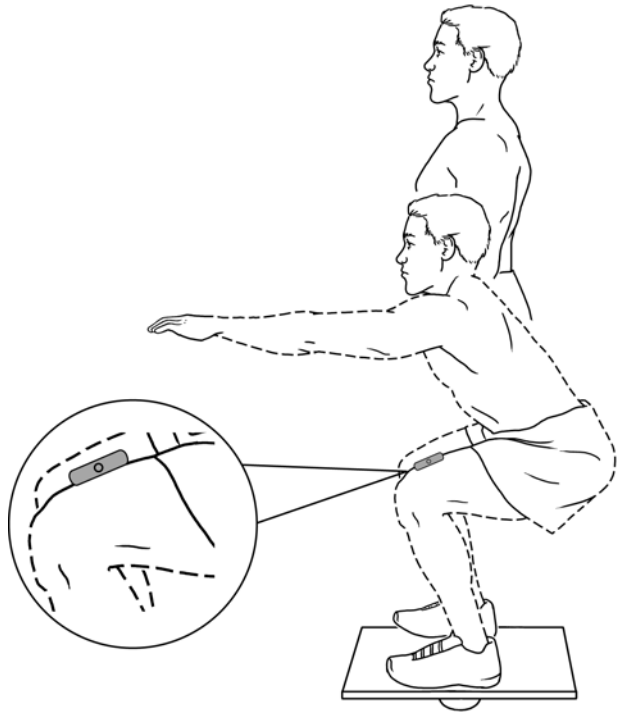
Preparation/Positioning: The patient should be in a standing position. Apply the Core:Tx transceiver to the distal thigh, as shown above, with a dark gray strap. Instruct the patient in proper

squatting form. The patient will then perform a long-duration static squat activity with feedback from the static Monitor Mode.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Knee flex/ext	--
Mode	Monitor	--
Audio	On	--
Angle	0^{o}	--
Speed	0 (static)	--
Time/Reps	30 seconds	--
Difficulty	--	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	Desired flexion	--

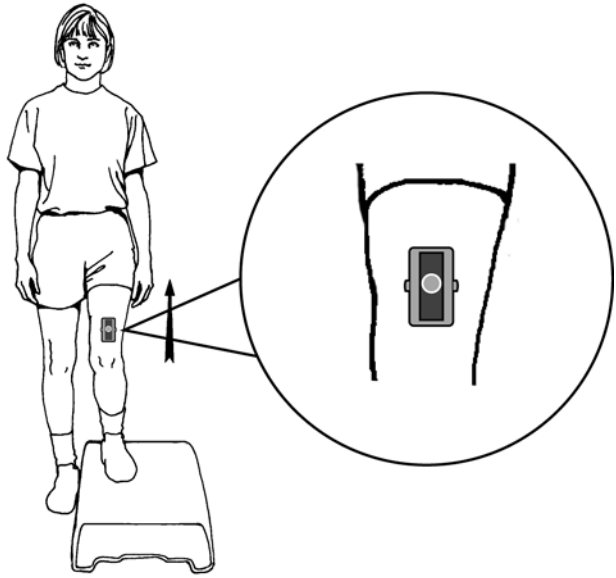
Variations:

- Perform the squat with back against a wall.
- Perform the squat while on a rocker board, dynadisc, or foam pad.



- Utilize this same activity in multiple positions; require the patient to hold each squat for 60 seconds at 15, 30, and 45 degrees of hip flexion, for example.
- Utilize a rebounder for ball tossing while performing this activity.

Knee Flexion/Extension: Step-Up



Purpose of Exercise: To address neuromuscular control and strengthening during a step-up.

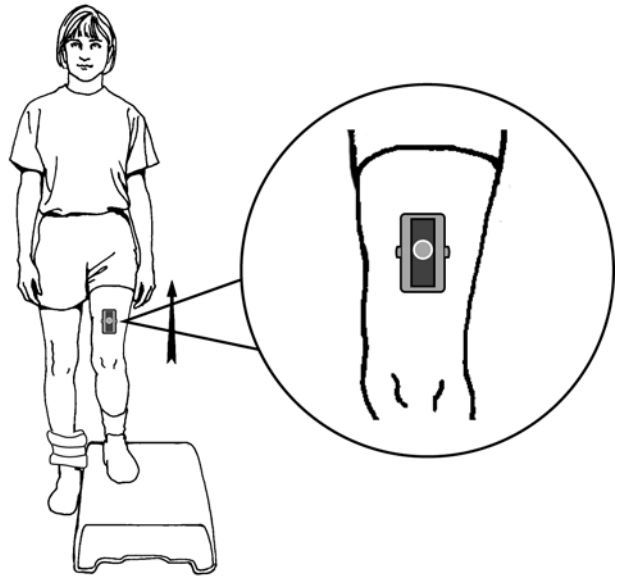
Preparation/Positioning: The patient should stand on the affected LE on a step. Apply the Core:Tx transceiver to the distal thigh, as shown above, with a dark gray strap. Instruct the patient in proper step-up form, and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Knee flex/ext	Knee flex/ext
Mode	Monitor	Challenge
Audio	On	On
Angle	0^o	0^o
Speed	3	0 (static)

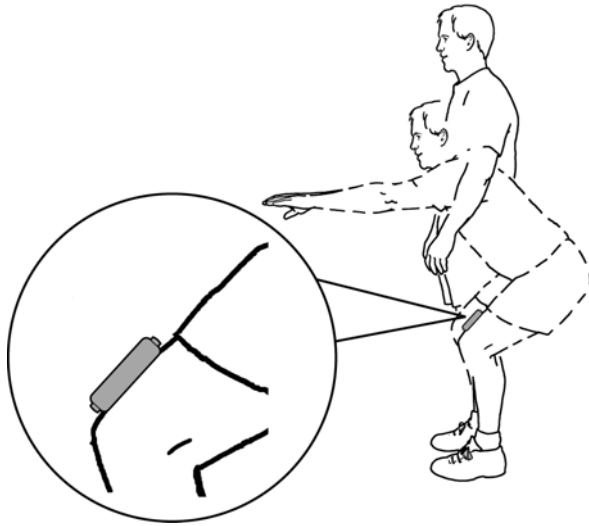
Activity Setup Screen		
Setting	Monitor	Challenge
Time/Reps	1 minute	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

Variations:

- Perform this activity with hand support initially and progress to hands free.
- Fasten an ankle weight to the patient's unaffected leg for additional challenge.



Knee Varus/Valgus



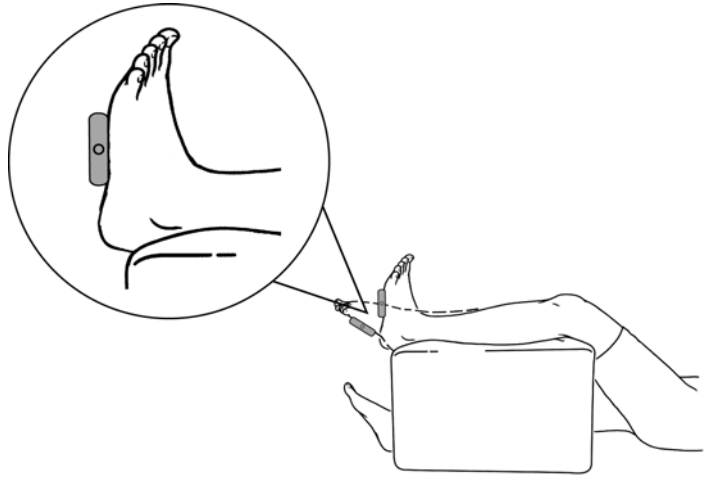
Purpose of Exercise: To promote correct joint position while performing a closed chain squat.

Preparation/Positioning: The patient should be in a standing position. Explain the definition of varus/valgus and why controlling this aspect of movement is important. Apply the Core:Tx transceiver to the anterior distal thigh, as shown above, with a light gray strap for a horizontal orientation. For additional strap length, use the extension strap. Ensure that the patient is in a desirable position of varus/valgus prior to starting the activity. The patient will then maintain this varus/valgus position in static Monitor Mode while performing a squat.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Knee varus/valgus	--
Mode	Monitor	--

Activity Setup Screen		
Setting	Monitor	Challenge
Audio	On	--
Angle	90^{o}	--
Speed	0 (static)	--
Time/Reps	1 minute	--
Difficulty	--	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	Desired varus/valgus	--

Ankle Dorsiflexion/Plantarflexion



Purpose of Exercise: To promote neuromuscular control during ankle dorsiflexion/plantarflexion. Exercise variations allow you to emphasize gains in strength or motion as well

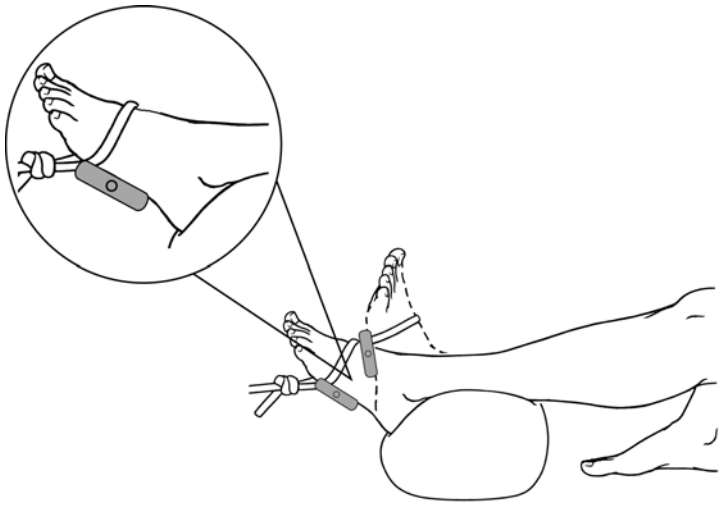
Preparation/Positioning: The patient should be seated in a chair with the lower leg supported and the ankle/foot unsupported. Apply the Core:Tx transceiver to the plantar aspect of the foot, as shown above, with a dark gray strap. Instruct the patient in the required movement of plantarflexion/dorsiflexion and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Ankle DF/PF	Ankle DF/PF
Mode	Monitor	Challenge
Audio	On	On
Angle	0^o	0^o
Speed	5	0 (static)

Activity Setup Screen		
Setting	Monitor	Challenge
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

Variations:

- Use ankle weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback so that the patient uses controlled movement while performing resisted exercises.



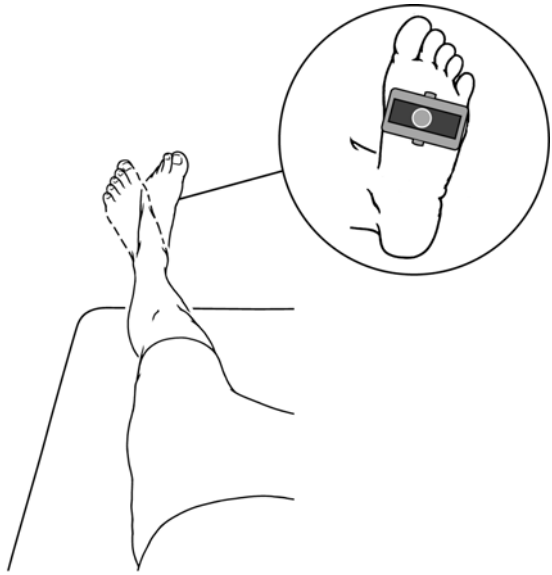
- To emphasize increased ROM, use progressive increases in calibration range in Monitor Mode. Begin by having patients

work in their comfortable range, then recalibrate and repeat the activity with slightly larger ROM.

Associated Exercises:

- See the knee exercises starting on page 123 for closed-chain, neuromuscular reeducation exercises.

Ankle Inversion/Eversion



Purpose of Exercise: To promote neuromuscular control during ankle inversion and eversion. Exercise variations allow you to emphasize gains in strength or motion as well

Preparation/Positioning: The patient should be seated in a chair with the lower leg supported and the ankle/foot unsupported. Apply the Core:Tx transceiver to the plantar aspect of the ball of the foot, as shown above, with a light gray strap. Instruct the patient in the required movement of inversion/eversion, and set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Ankle Inv/Ev	Ankle Inv/Ev
Mode	Monitor	Challenge
Audio	On	On
Angle	90º	90º
Speed	5	0 (static)
Time/Reps	2 minutes	1 minute
Difficulty	--	1 (beginners)
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	To available ROM
Set Position	--	To preference

Variations:

- Use ankle weights or resistive bands for advanced patients. Core:Tx can provide the patient with constant feedback so that the patient uses controlled movement while performing resisted exercises.

- To emphasize increased ROM, use progressive increases in calibration range in Monitor Mode. Begin by having patients work in their comfortable range, then recalibrate and repeat the activity with slightly larger ROM.

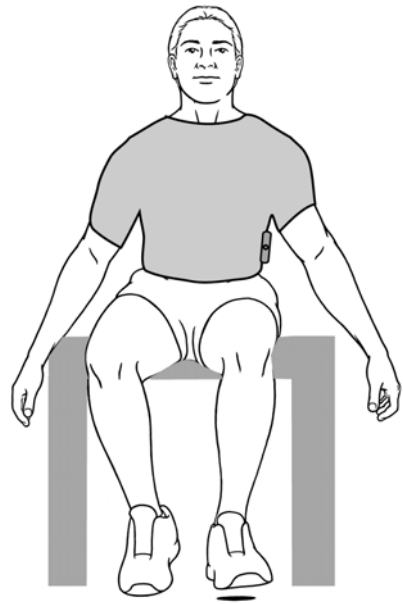
Associated Exercises:

- See the knee exercises starting on page 123 for closed-chain, neuromuscular reeducation exercises.

Core:Tx Creative Solutions

Core:Tx Creative Solutions showcases some innovative approaches to common rehabilitation problems. However, the uses listed in this chapter represent only a portion of the possible Core:Tx applications. Use the templates in “Exercise Templates” on page 162 to document your own Creative Solutions. You can also send your ideas to Performance Health Technologies via e-mail at support@performancehealth.com.

CVA: Midline Orientation

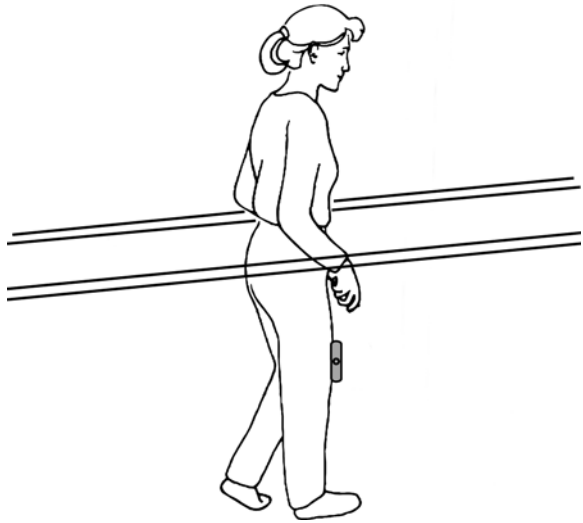


Purpose of Exercise: To provide visual and audio feedback for CVA patients demonstrating lack of midline orientation in a sitting position.

Preparation/Positioning: Patients should be seated on a treatment mat of appropriate height with enough hands-on support to ensure their safety. Instruct patients in the goal of the treatment session: to achieve and maintain midline orientation. Apply the Core:Tx transceiver to the lateral trunk using the lumbar strap. Set up the activity, as shown below, and assist the patient into correct midline orientation before beginning the activity. The patient will strive to maintain the preset midline position using audio and visual feedback.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Any movement	--
Mode	Monitor	--
Audio	On	--
Angle	90^{o}	--
Speed	0 (static)	--
Time/Reps	5 minutes	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	Midline	--

Avoiding Knee Hyperextension with Weight Shifting



Purpose of Exercise: To assist a patient in learning to prevent knee hyperextension with weight bearing.

Preparation/Positioning: The patient should be in a standing position with the necessary level of manual support and/or parallel bars if needed. The patient should understand that the goal of this intervention is to prevent excessive knee hyperextension. Apply the Core:Tx transceiver to the patient's knee with a dark gray strap. Utilizing audio and visual feedback, encourage the patient to move freely into flexion, but not to move past the targeted amount of extension.

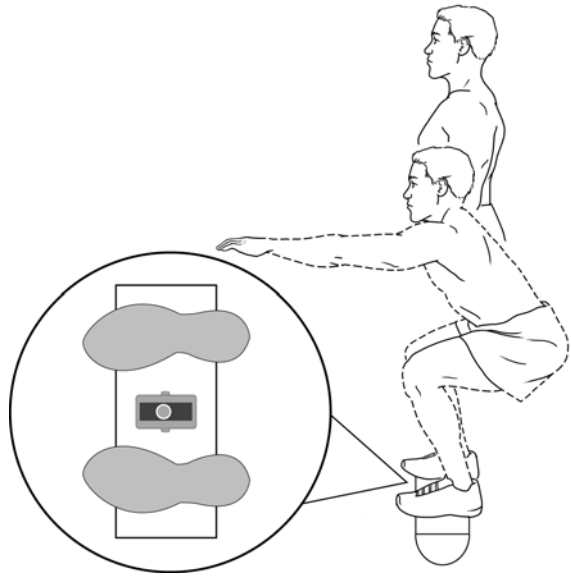
Set up the activity as shown below. Position the patient in the desired position of extension and use the Set Position button. The patient should try to demonstrate a controlled ability to stand and weight-shift onto the affected LE without hyperextending beyond this point.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Shoulder flex/ext	--
Mode	Monitor	--
Audio	On	--
Angle	90º	--
Speed	0 (static)	--
Time/Reps	5 minutes	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	Desired Extension	--

Variations:

- Once the patient has mastered the ability to weight-shift without hyperextending, have the patient step in place with the opposite foot.

Foam Roller Exercises



Purpose of Exercise: To provide real-time feedback and performance scores for patients using a half-round foam roller.

Preparation/Positioning: Secure the Core:Tx transceiver directly to a half-round roller using the light gray strap and the strap extension. The Core:Tx transceiver should be positioned on the top of the roller. Assist the patient into a standing position on the roller. The patient's feet should be perpendicular to the length of the roller as shown above. Set the position with the roller in a level position. The patient will then strive to keep the roller level while performing squats. The patient's score will reflect the patient's success in keeping the roller level. Set up the activity as shown below.

Activity Setup Screen		
Setting	Monitor	Challenge
Movement	Any movement	--
Mode	Monitor	--
Audio	On	--
Angle	90º	--
Speed	0 (static)	--
Time/Reps	1 minute	--
Activity Screen		
Setting	Monitor	Challenge
Calibrate	To available ROM	--
Set Position	Roller level	--

Variations:

- Have the patient balance on the half-round foam roller while tossing a ball.
- Have the patient balance on the half-round foam roller in unilateral stance.
- Have advanced patients perform unilateral squats on the half-round foam roller.
- Change the orientation of the roller to introduce instability in a medial/lateral direction.
- Have the patient use the half-round foam roller for a prolonged gastrocnemius stretch. Position the patient with one foot on the roller and set the position (in static mode) in a dorsiflexed position for 30 seconds. The patient's goal will be to maintain this position for the selected duration of time.
- Have the patient use Monitor Mode with speed set to 5 for a dorsiflexion/plantarflexion AROM exercise in sitting position with the foot positioned on the foam roller.

- Have the patient use Monitor Mode with speed set to 5 for an eversion/inversion AROM exercise in sitting position with the foot positioned on the foam roller.

Exercise Templates

Exercise: _____

Purpose: _____

_____

_____

_____

Position: _____

_____

_____

_____

_____

Activity Setup Screen		
Setting	Monitor	Challenge
Movement		
Mode	Monitor	Challenge
Audio		
Angle		
Speed		
Time/Reps		
Activity Screen		
Setting	Monitor	Challenge
Calibrate		
Set Position		

Notes:

Exercise: _____

Purpose: _____

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_____

Position: _____

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_____

Activity Setup Screen		
Setting	Monitor	Challenge
Movement		
Mode	Monitor	Challenge
Audio		
Angle		
Speed		
Time/Reps		
Activity Screen		
Setting	Monitor	Challenge
Calibrate		
Set Position		

Notes:

Exercise: _____

Purpose: _____

_____

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_____

Position: _____

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_____

Activity Setup Screen		
Setting	Monitor	Challenge
Movement		
Mode	Monitor	Challenge
Audio		
Angle		
Speed		
Time/Reps		
Activity Screen		
Setting	Monitor	Challenge
Calibrate		
Set Position		

Notes:

Exercise: _____

Purpose: _____

_____

_____

_____

Position: _____

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_____

Activity Setup Screen		
Setting	Monitor	Challenge
Movement		
Mode	Monitor	Challenge
Audio		
Angle		
Speed		
Time/Reps		
Activity Screen		
Setting	Monitor	Challenge
Calibrate		
Set Position		

Notes:

Exercise: _____

Purpose: _____

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Position: _____

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Activity Setup Screen		
Setting	Monitor	Challenge
Movement		
Mode	Monitor	Challenge
Audio		
Angle		
Speed		
Time/Reps		
Activity Screen		
Setting	Monitor	Challenge
Calibrate		
Set Position		

Notes:

Exercise: _____

Purpose: _____

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Position: _____

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Activity Setup Screen		
Setting	Monitor	Challenge
Movement		
Mode	Monitor	Challenge
Audio		
Angle		
Speed		
Time/Reps		
Activity Screen		
Setting	Monitor	Challenge
Calibrate		
Set Position		

Notes:

Abbreviations

APT: anterior pelvic tilt

Abd: abduction

Add: adduction

AROM: active range of motion

CVA: cerebrovascular accident

DF: dorsiflexion

ER: external rotation

Ev: eversion

Ext: extension

FA: forearm

Flex: flexion

Inv: inversion

IR: internal rotation

LAQ: long arc quad

LE: lower extremity

L4-5: 4th and 5th lumbar vertebrae

NMR: neuromuscular reeducation

PF: plantarflexion

PPT: posterior pelvic tilt

Pro: pronation

ROM: range of motion

Sup: supination

UE: upper extremity

Limited Warranty

PERFORMANCE HEALTH TECHNOLOGIES will exchange or repair this product, at its option, in the event of defect in materials or workmanship as follows:

CORE:TX UNIT:

PERFORMANCE HEALTH TECHNOLOGIES will warranty the Core:Tx base station & transceiver and components for a period of one (1) year from original date of purchase.

DURATION OF WARRANTY:

LABOR: PERFORMANCE HEALTH TECHNOLOGIES will provide the labor without charge for a period of one (1) year from the original date of purchase.

PARTS: PERFORMANCE HEALTH TECHNOLOGIES will provide parts to replace defective parts without charge for a period of one (1) year from the original date of purchase. Certain parts are excluded from this warranty.

INSTRUCTIONS FOR RETURNS FOR REPAIR UNDER THIS WARRANTY

Prior to returning this product for service, contact PERFORMANCE HEALTH TECHNOLOGIES to receive a Return Authorization, PH# 800-722-4749. ANY SHIPPING COSTS INCURRED IN PRESENTING THIS PRODUCT FOR REPAIR ARE THE SOLE RESPONSIBILITY OF THE SHIPPER. Enclose written documentation detailing the problem. A copy of the original purchase receipt must accompany the product. Without proof of purchase the warranty will not be honored. ALL WARRANTY INSPECTIONS AND REPAIRS MUST BE PERFORMED BY PERFORMANCE HEALTH TECHNOLOGIES AUTHORIZED PERSONNEL.

LIMITS AND EXCLUSIONS:

This warranty is extended only to the original purchaser. A purchase receipt or other proof of original purchase will be required together with the product to obtain service under this warranty. This warranty shall not be extended to any other person or transferee.

This warranty is void and of no effect if any part of the product is altered, replaced, defaced or missing.

This warranty only covers failures due to defects in materials or workmanship, which occur during normal use. It does not cover damage that occurs in shipment, or failures that are caused by repairs, alterations, or parts not supplied by PERFORMANCE HEALTH TECHNOLOGIES, or damage that results from accident, misuse, abuse, mishandling, or alteration. PERFORMANCE HEALTH TECHNOLOGIES will not be responsible for any third-party software installed by the user, nor for user data from the use of such software, during the period of this warranty.

PERFORMANCE HEALTH TECHNOLOGIES AND ITS REPRESENTATIVES OR AGENTS SHALL IN NO EVENT BE LIABLE FOR ANY GENERAL, INDIRECT OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR OCCASIONED BY THE USE OR THE INABILITY TO USE THIS PRODUCT. THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES INCLUDING THE WARRANTY OF MERCHANT ABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, THAT ARE HEREBY DISCLAIMED BY PERFORMANCE HEALTH TECHNOLOGIES AND ITS REPRESENTATIVES.

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Index

P

R

S

T

V

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