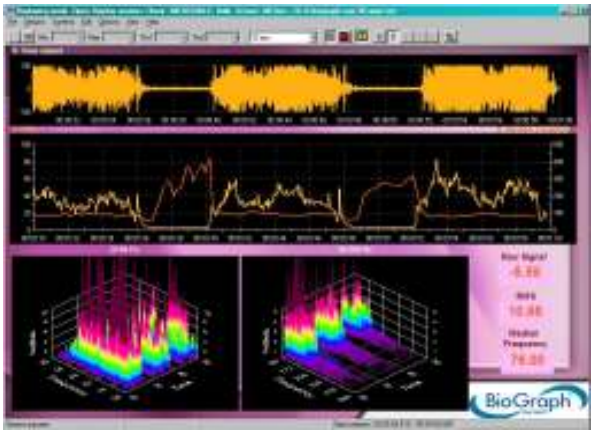
Rehab SUITE™

Software Overview



Thought Technology Ltd.

2180 Belgrave Avenue, Montreal, QC H4A 2L8 Canada
Tel: +1 (800) 361-3651 · +1 (514) 489-8251 Fax: +1 (514) 489-8255
E-mail: mail@thoughttechnology.com
Webpage: http://www.thoughttechnology.com

MyoTrac™ INFINITI

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INTRODUCTION

SEMG biofeedback involves measuring the subject's muscle tension and conveying such information to them in real-time in order to raise their awareness and conscious control of the related movement. It accelerates both the therapist's instruction to the patient, and the patient's ability to complete specific movements. Its role in controlling urinary and fecal incontinence is widely recognized and well-established.

By providing the user, and their therapist, access to muscular information about which they are both generally unaware, SEMG biofeedback provides accurate, reliable, measurable, objective data to augment and support the subjective reporting of the patient and observations of the therapist.

Microvolt (millionths of a volt) measurement values of muscle activity can be recorded and used to provide instant feedback for motivation, learning and improved rehabilitation. They can also be turned into trend reports (within and/or across sessions) to demonstrate with objective numbers the value of the therapy both to the patient and to the service provider or payer.

This document is a brief overview of the exciting features in Rehab Suite 4.0. Detailed information is provided in the suite manual upon purchase of the product.

INSTALLATION AND SYSTEM REQUIREMENTS

If you do not have the BioGraph Infiniti software setup in your computer, please follow the Installation Instructions provided to install the program. Then follow similar steps to install the Rehab Suite.

Please make sure that your computer meets the following requirements before you install the BioGraph Infiniti software:

Recommended

- **IBM PC compatible, AMD Athlon XP 3000 or higher, Pentium P4 CPU speed 3 GHz or higher or equivalent mobile Laptop CPU.**
- **Desktop or Laptop with two monitor capability**
- **Microsoft® Windows® 2000 with Service Pack 4, or Windows XP with Service Pack 2, or Windows Vista.**
- **50-60 gigabytes hard disk space for video recording and processing. (The software needs 2.5 gigabytes to install and run on available hard drive space)**
- **Memory, 512 MB of RAM or more**
- **CD ROM or DVD drive (DVD drive is required for DVD functions in BioGraph Infiniti)**
- **XVGA graphic card (1024 x 768) or higher resolution adapter & monitor**
- **32 bit Sound Blaster compatible sound card & speakers**
- **1 to 4 USB ports, depending on the desired number of MYOTRAC INFINITI encoders**
- **Mouse or compatible pointing device**
- **MS Word 97 or higher (for printing purposes)**
- **Compact Flash Reader (For use with compact flash card only)**
- **Webcam 30 frames per second (for video purposes only)**
- **Internet access (for updating Software).**

Update Information

Periodically, updates may become available for the BioGraph Infiniti software. Please contact your local distributor or visit our website www.thoughttechnology.com for further information on how to obtain updates.

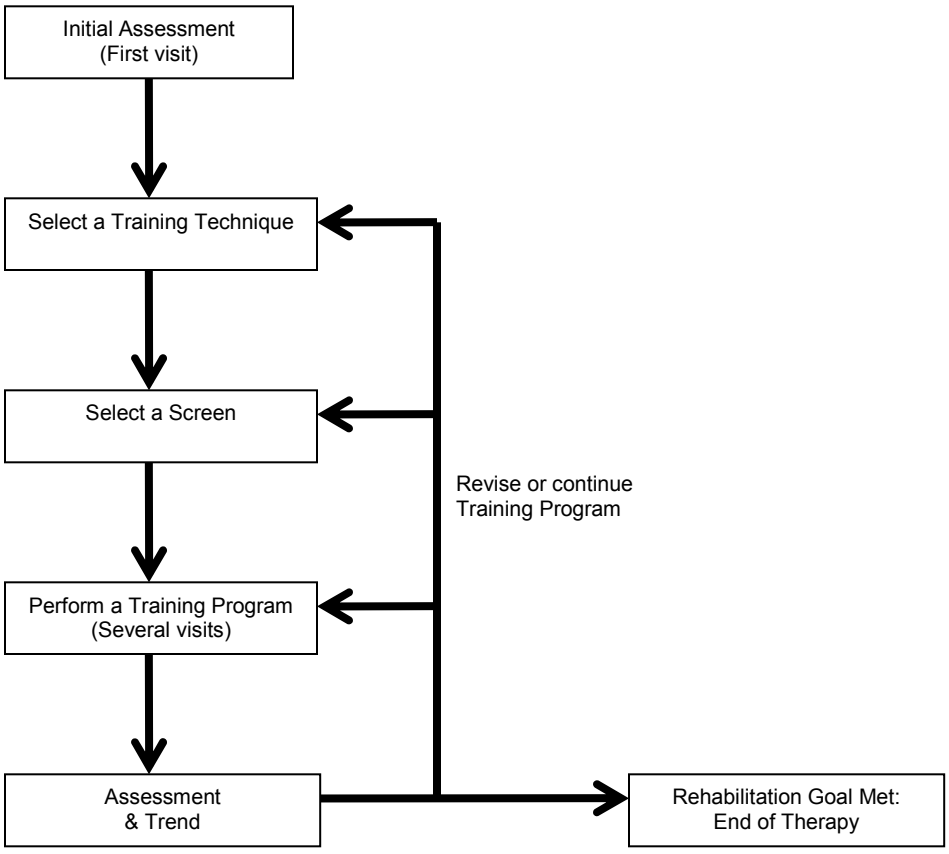
Skeletal Muscle Rehabilitation

This chapter focuses on skeletal muscle rehabilitation.

Two types of protocols are described:

- Assessment protocols
- Training protocols (training techniques)

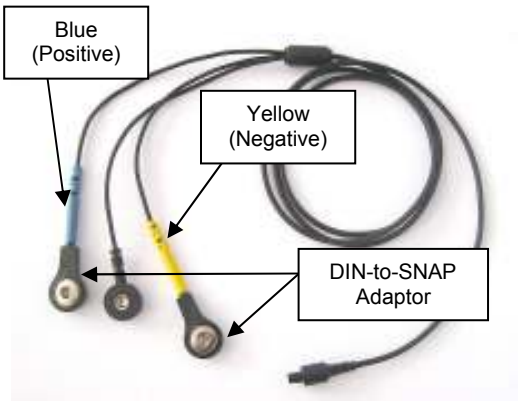
The following chart suggests how to use the different protocols. Assessment protocols help you to evaluate the condition of your patient, before, during and after the treatment, and to choose the appropriate training technique. For each technique, a choice of various protocols (screens) is proposed, allowing you to adapt the training to the patient and the exercise you want them to perform.



The protocols can be in the form of open display screens (free sessions) or scripts (directed sessions), as described in the Quick Start section.

All the assessment protocols are scripts. The training protocols are open display screens. For open display screens, select the channel set **Skeletal Muscle Rehabilitation**.

ATTACHING ELECTRODES – PREPARATION FOR TREATMENT



In order to use EMG surface electrodes with the extender cable, you must attach the two black DIN-to-Snap adaptors to the pins of the cable, as shown in the picture.

For EMG, the blue (positive) and yellow (negative) connectors are for the active electrodes, the black one is for the reference.

Connect the EMG electrodes to the DIN cable, using the adaptors, and connect the cable to one input of the device.

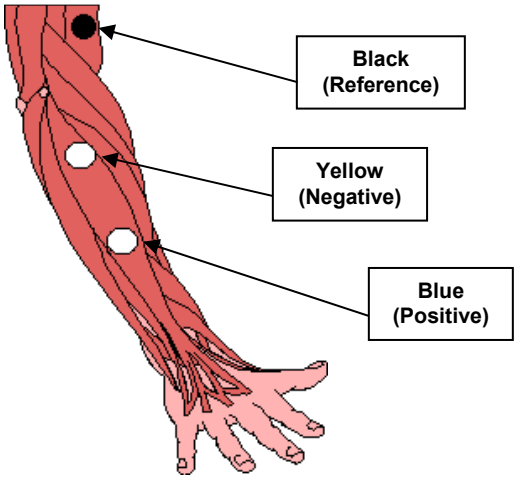
Before applying electrodes, be sure the skin surface is clean and dry. Palpate the muscle to locate it.

Then place the electrodes on the muscle **along the muscle fibers** as illustrated.

Make sure the electrodes are placed firmly on the skin, and make good contact between the skin and electrodes.

It is recommended to put conductive electrode paste or cream on the EMG electrodes (grey area only) before applying them to the skin.

Then place the reference electrode (black connector) anywhere on the body, but more proximally than the active electrodes (yellow and blue connectors), as shown on the picture.



Example of placement for EMG (Wrist and Finger Extension)

For more examples of electrode placements, please refer to your clinical guide, installed on your computer with the other user documents (click on the **BioGraph Infiniti Docs & Editors** icon on your desktop).

ASSESSMENT PROTOCOLS (SCRIPTS)

The assessment protocols are an asset to the standard examination of your patient. They allow you to objectively quantify and document the state of your patient's muscles.

They will help you to detect hypo-tonicity, hyper-tonicity, faulty timing and faulty multi-muscle contraction, and to decide on the training technique to use.

All the assessment protocols are kept in the **Assessment** script category.

SHORT AND SIMPLE PROTOCOLS

These protocols can be performed at the beginning of each visit. They allow you to quickly assess the patient's muscle condition and get the training parameters of the day (since a patient's condition can change over time).

BASELINE
This protocol measures the resting level of the muscle. The patient must be asked to totally relax the muscle.

MAXIMAL FORCE
This protocol measures the maximal force of the muscle. The maximal force is the highest level of voluntary contraction that a person can achieve without inducing unacceptable pain.

ENDURANCE (or RESISTANCE)
This protocol assesses a sustained contraction. The patient contracts as strongly as they can during an extended period (about 20 seconds). This monitors the recruitment of the slow twitch fibers (muscle endurance). The contraction should be performed against static resistance (isometric contraction).

ADVANCED PROTOCOLS

1 CHANNEL EMG ASSESSMENT (FOR ONE MUSCLE)
This is a complete assessment of the muscle with 5 activities: pre baseline, fast flicks (rapid contractions), work/rest, endurance (resistance) and post baseline. This script will help you to detect potential hypo/hyper tonicity (max work, mean rest) or velocity (onset & release time).

2 CHANNEL EMG ASSESSMENT (FOR TWO MUSCLES)
This protocol can be used to compare agonist and antagonist muscles, or measure a bilateral difference.

SPECIALIZED PROTOCOLS

SEMG is widely used in the evaluation of low back pain, patellofemoral pain and unstable shoulder.

LOW BACK PAIN EVALUATION
This script allows you to assess low back pain.

PATELLOFEMORAL PAIN EVALUATION
This script allows you to assess patellofemoral pain.

UNSTABLE SHOULDER EVALUATION
This script allows you to assess shoulder instability.

TRAINING PROTOCOLS

This section suggests several training protocols for your rehabilitation program. For each protocol, a series of training screens are recommended.

ISOLATION OF TARGET MUSCLE ACTIVITY

THRESHOLD-BASED RELAXATION TRAINING

THRESHOLD-BASED STRENGTHENING

TENSION RECOGNITION

TENSION DISCRIMINATION TRAINING

BILATERAL EQUILIBRATION TRAINING

MOTOR COPY TRAINING

PROMOTION OF CORRECT MUSCLES SYNERGIES AND RELATED COORDINATION PATTERNS

POSTURAL TRAINING

SELECTION OF THERAPEUTIC EXERCISES

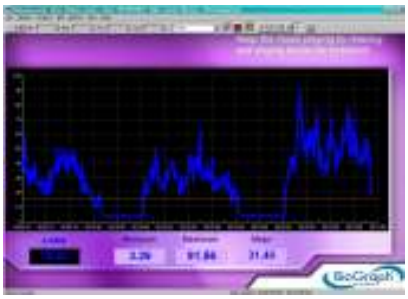
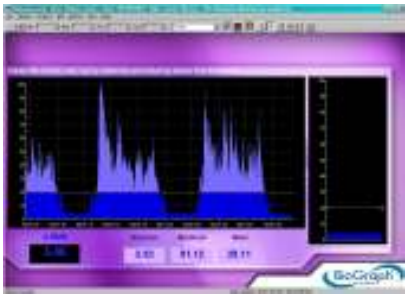
TRAINING SCREENS

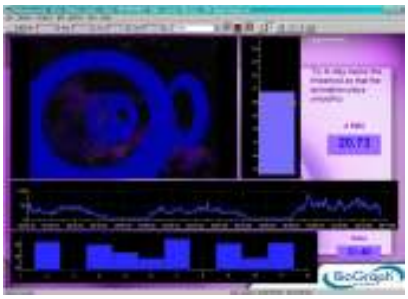
These screens are designed to be used with one or several training protocols. They have various displays and audio/visual feedbacks. You can select up to 5 screens for the same sessions. This allows you to change your training goal or technique on the fly.

You can adapt screens to your patient and training goal by changing the scale and thresholds (when not automatic).

CATEGORY: RELAXATION

These screens are designed for muscle deactivation training and ultimately total relaxation.

Relaxation - 1Ch line graph Music is played when the channel A signal stays below the threshold.	
Relaxation - 1Ch filled line-bar graphs Music is played when the channel A signal stays below the line graph threshold. The signal is displayed in two different views: filled line graph and bar graph.	
Relaxation - 1Ch Relaxation Bar Graph Music is played when the channel A signal stays below the threshold.	

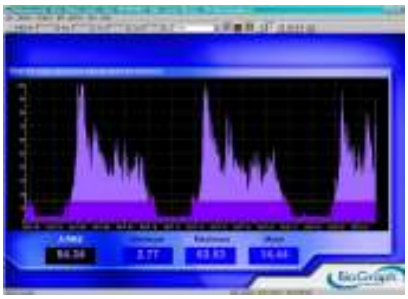
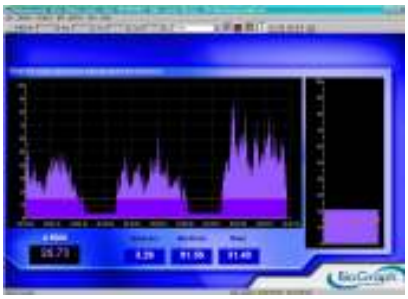
Relaxation - 1Ch Smiley The face will smile when the channel A signal is below the threshold.	
Relaxation - 1Ch DVD auto-threshold The channel A signal must stay below the threshold to keep the DVD screen size constant.	
Relaxation - 1Ch Growing Fractal This display assists a patient to differentiate between contracting and relaxing their muscles. Set the animation scale to a maximum value that is appropriate for a low sub-maximal contraction. Set the animation threshold in the middle of this scale. As the patient sustains a sub-maximal contraction and the EMG activity goes above the threshold, the fractal will fill in. As the patient releases the contraction and the EMG activity falls below its threshold the fractal will slowly open and a relaxing song is heard. The complete animation cycle takes approximately 20 seconds, 10 on each side of the threshold.	
Relaxation - 1 Ch Parrot Puzzle Single channel puzzle screen. If the EMG reading is below the threshold for 10 seconds then the puzzle starts to fill in. If the signal goes above, pieces will disappear.	
Relaxation - 1Ch Space Hoops auto-threshold The animation moves when the channel A signal is below the threshold. The threshold will automatically move down to push the patient to relax.	

Relaxation - 1Ch Knee Flexion The animation is controlled by the signal and the threshold. When the signal is below the threshold, the leg relaxes; when above, it straightens. Adjust the threshold by moving the orange line up or down.	
Relaxation - 1Ch Wrist Flexion The animation is controlled by the signal and the threshold. When the signal is below the threshold, the wrist relaxes; when above, it straightens. Adjust the threshold by moving the orange line up or down.	
Relaxation - 2Ch Relaxation with DVD The DVD will resume playing when both channels A and B are below the threshold.	
Relaxation - 2Ch Shrinking Heads auto-threshold Music is played when both channels A and B (bar graphs on the lright) are below the threshold. The two heads must have the same size, which means both signals must be at the same level. Channel B could be connected to the healthy site, in order to use it as a model for the unhealthy site.	

CATEGORY: STRENGTHENING

These screens are designed for muscle activation training and ultimately strengthening. The scale should be adjusted according to the maximal force and the threshold to the training goal.

The three first screens show a classic view of the signal with bar graphs and line graphs.

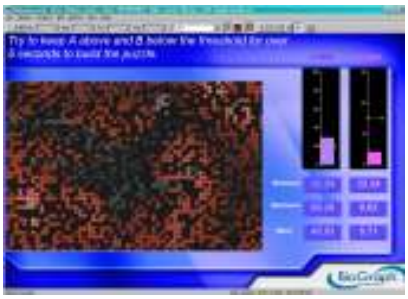
Strengthening - 1Ch Bargraph This screen graphs the channel A signal on a bar graph and also displays statistics. A sound plays when the signal goes above the threshold.	
Strengthening - 1Ch filled linegraph The signal changes color, and bolero music plays, when channel A goes above the threshold.	
Strengthening - 1Ch filled line-bar graphs The signal changes color, and music plays, when channel A goes above the line graph threshold. The bar graph also displays the EMG levels in real time.	

The four next screens provide a more interesting feedback to the patient. Each screen requires the patient to hold the contraction for a longer period of time.

Strengthening - 1Ch Smiley The face will continue smiling as long as the contraction on channel A is being held above threshold.	
Strengthening - 1Ch Rooster Puzzle The puzzle will fill when the contraction on channel A has been held above the threshold for more than 3 seconds. If the contraction dips below the threshold, then the timer will reset. The threshold is also indicated by the Tarantella tune and can be set on the bar graph instrument.	

Strengthening - 1Ch Flower Puzzle The puzzle will fill when the contraction on channel A has been held above the threshold for more than 5 seconds. If the contraction dips below the threshold, then the timer will reset. The threshold is also indicated by a jazz tune and set on the bar graph.	
Strengthening - 1Ch Dolphin Puzzle The puzzle will fill when the contraction on channel A has been held above the threshold for more than 10 seconds. If the contraction dips below the threshold, then the timer will reset. The threshold is also indicated by a harpsichord sound and can be set on the bar graph instrument.	

The four next screens are more challenging, involving two muscles. Channel A is used for the muscle that must be activated, while channel B is used for the muscle that must not be activated.

Strengthening - 2Ch Tomato puzzle The signal displayed on channel A must exceed the threshold and channel B must be below the threshold for 5 seconds in order for the puzzle to be revealed. Basic statistics are also displayed to give a more detailed picture.	
Strengthening - 2Ch Hero Morph-slow The animation is connected to channel A, and is threshold dependent. Once the signal goes above its threshold the boy slowly morphs into a superman. The complete animation cycle is about 14 seconds. An audio tone is heard when the signal is above the threshold. If channel B exceeds its threshold the animation resets to the beginning. The animation can also be reset manually.	
Strengthening - 2Ch Car race The aim is to make the blue car (channel A) pass the finish line (the white bar on the far right of each track) before the yellow car (channel B). To meet this goal, A must stay above its threshold while B stays below. The points for A increment when both channels are in condition, and the points for B increment when B is above threshold.	

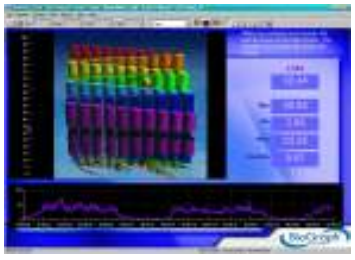
Strengthening - 2Ch Conditional DVD The DVD stays on when the channel A signal is above its threshold and channel B signal stays below. If either condition is not met the DVD stops playing.	

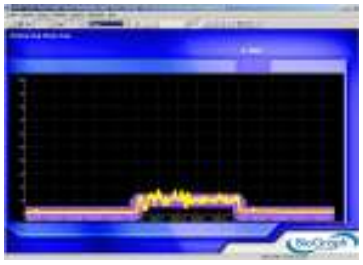
The two next screens are specific to a given joint.

Strengthening - 2Ch Knee flexion Control over both channels during the movement is required to move the animation. The threshold can be set on the bar graphs to make it progressively easier or harder to trigger the animation.	
Strengthening - 2Ch Wrist flexion Control over both channels during the movement is required to move the animation. The threshold can be set on the bar graphs to make it progressively easier or harder to trigger the animation.	

CATEGORY: CONTROL

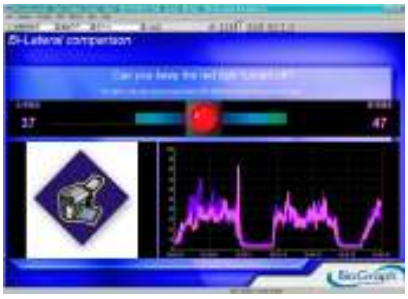
These screens are designed for muscle control training. The scale should be adjusted according to the maximal force. Channel B is used to train the patient not to activate a second muscle while activating the first one. The threshold of channel B should be set at a small value above the resting baseline.

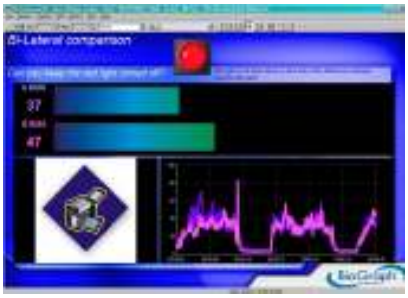
Control - 1Ch Tubes The animation represents channel A and is dependent on the scale on the left. The ball climbs the tubes when the signal goes up. Instruct your patient to place the ball to a given tube color.	
Control - 2Ch Hero Morph-fast The animation represents channel A and is dependent on the scale on the left. The boy morphs into a superman when the channel A signal is toward the upper range of the scale. As the signal comes down the scale, the superman returns to a boy.	

Control - 2Ch Animal game An exercise to control muscle contraction by lining up the cartoon man with the animal in the blue square while the line-up of animals constantly changes. Channel A is connected to the animation. The stronger the contraction, the further the man moves to the right. To keep the man moving, the signal from channel B should remain below its threshold.	
Control - 1Ch Tension Discrimination Training level 1, 2 and 3 Each screen contains a template to follow. Three levels of difficulty are available. You can also adjust the level of difficulty by adjusting the graph scale. These screens are designed for tension discrimination training and for muscle contraction control.	

CATEGORY: EQUILIBRATION

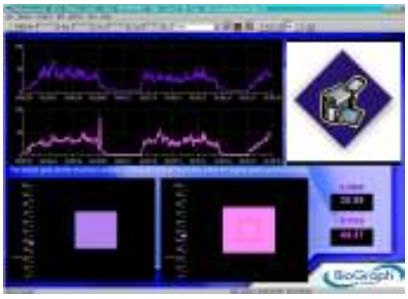
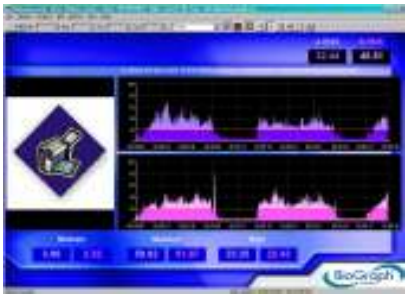
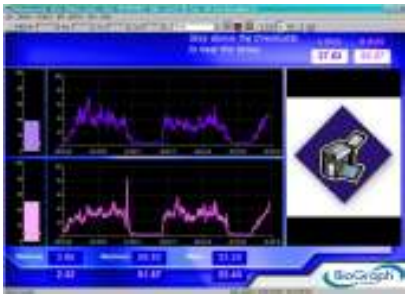
These screens are designed for equilibration training. Equilibration refers to bringing muscles into equilibrium.

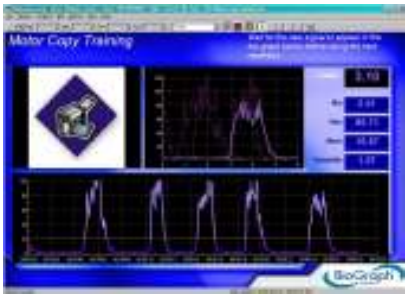
Equilibration - 2Ch Balance ratio This two-channel ratio screen easily communicates the interplay of two muscles. When the muscles are in equilibrium, the weight is in the middle of the balance. When the weight is off to one end or the other, the muscles are progressively more out of balance.	
Equilibration - 2Ch Gorilla ratio This two-channel ratio screen easily communicates the interplay of two muscles. When the muscles are in equilibrium, the ball is balanced on the gorilla's shoulders. When the ball is off to one end or the other, the muscles are progressively more out of balance.	
Equilibration - 2Ch Bi-Lateral Bar-Video The light turns red when the difference is greater than 35%. Both signals are also displayed in the same line graph and mirrored bars for comparison.	

Equilibration - 2Ch Bi-Lateral Bar-Video 2 The light turns red when the difference is greater than 35%. Both signals are also displayed in the same line graph and bars for comparison.	

CATEGORY: TRAINING

These screens are for general training, involving more complex or various exercises.

Training - 2Ch Line Graph – Grow Box A proportional sound is played when the square expands past the limit (red line). The left square is for channel A and the right square for channel B. The signals are also displayed on a line graph.	
Training - 2Ch Bar Graphs A simple and easy-to-understand display for two channels of EMG. A song is played in two parts. If both channels are below the threshold then the music stops. If one or both channels are above the threshold then progressively more layers of music are added.	
Training - 2Ch Filled Line Graphs Two filled line graphs display the two channels, with a color change at the threshold. Each channel controls a different part of the same song.	
Training - 2Ch Line/Bar Graphs Both channels are displayed on a line graph and a bar graph.	

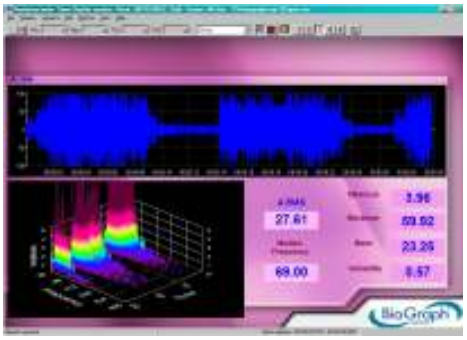
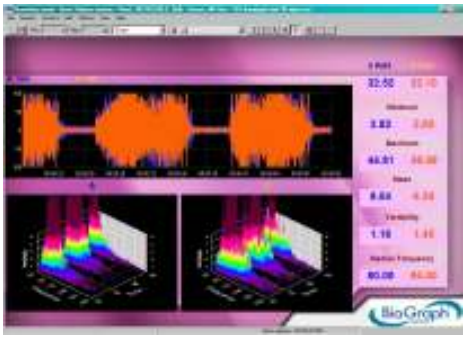
Training – 1Ch Motor Copy Training This screen is used for the motor copy training technique. It can also be used to train the patient to consistently repeat the same contraction without a template. Do the first repetition, and then wait for the new signal to appear in the top graph below before doing the next repetition. The movement detection threshold is set to 20µV. If you want to modify this value, from the **Edit** menu select **Edit VC Settings**, select V210 and edit the **Input 2 Constant Value**.	

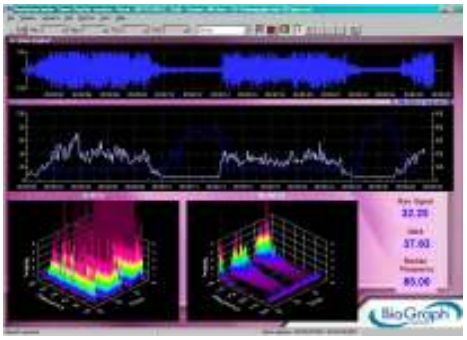
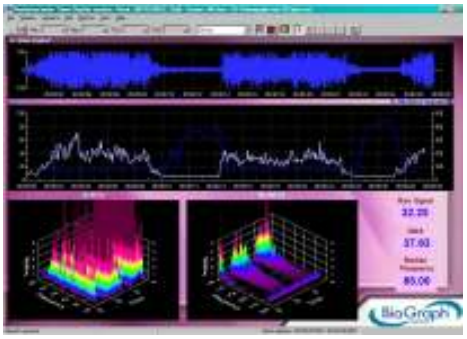
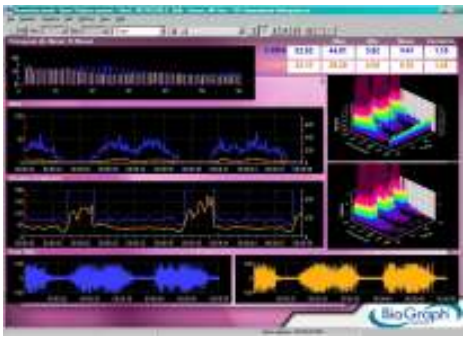
REVIEW AND REPORT

You can then review the session with the screen **Report-Review 1 Ch Open display** for 1 channel or with the screen **Report-Review 2 Ch Open display** for two channels in the category **Report-Review** and generate a session report.

EXPERT SCREENS

These screens use advanced concepts and properties of the EMG signal, such as raw EMG, frequency spectrum and median frequency. You can use them to troubleshoot the system, if you see unexpected waveforms or levels in the signal. You can also use them in review mode to reject artifacts before computing statistics or to perform more advanced assessment. Or you can simply use them to learn more about EMG.

Expert - 1Ch linegraph raw 3D spectrum This screen graphs the raw EMG and frequency spectrum of channel A, and displays median frequency and statistics.	
Expert - 2Ch linegraph raw 3D spectrum This screen graphs the raw EMG and frequency spectrum of both channel A and B, and displays median frequency and statistics.	

Expert - Ch A linegraph raw 3D spectrum This screen graphs the raw EMG, two frequency spectra, median frequency and RMS EMG for channel A. Median frequency and RMS are displayed on the same screen, because the median frequency is not relevant when the muscle is relaxing. By displaying the RMS EMG, it shows you when the muscle fires. The two spectra show two different frequency ranges. The first one on the left isolates the slow-twitch fibers, and the second one on the right isolates the fast-twitch fibers.	
Expert - Ch B linegraph raw 3D spectrum This screen is the same as the previous one, but for channel B.	
Expert - 2Ch Assessment-Histogram This is for a more involved assessment or review. The histogram displays the mean of channel A every 5 seconds. The first multi-line graph connects to both channels A and B, and the second multi-line graph shows the median frequency. The two single line graphs are the raw signals, and the 3-D spectra show the frequencies from 20 to 500Hz. The numerical displays are the current values and statistics.	

Treatment of Incontinence

Most incontinence problems can be improved by biofeedback. Its role in controlling urinary and fecal incontinence is widely recognized and well-established. Patients can acquire more control over their pelvic floor muscle through strengthening exercises, reducing excessive muscle activity or using the muscles appropriately.

Two types of protocols are presented:

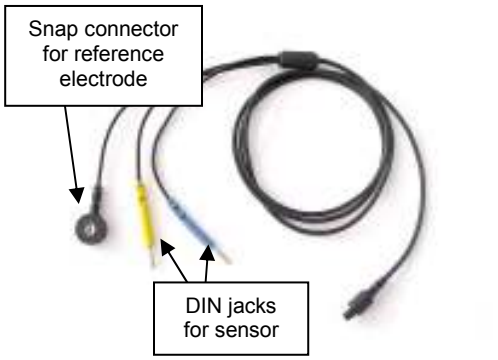
- Assessment protocols
- Training protocols (such as templates, strengthening or relaxation)

The assessment protocols will help you to evaluate the condition of your patient, before, during and after the treatment, and will allow you to generate session reports or trend reports.

All the assessments are scripts. Most of the training protocols are open display screens; some of them are scripts.

ATTACHING ELECTRODES– PREPARATION FOR TREATMENT

CHANNEL A FOR PELVIC MUSCLES



Channel A is dedicated to monitoring the pelvic muscles and requires the use of a vaginal or rectal sensor.

The picture on the left shows the cable required to connect the vaginal/rectal sensor to the device. The two connectors of the sensor connect directly to the DIN jacks (blue and yellow).

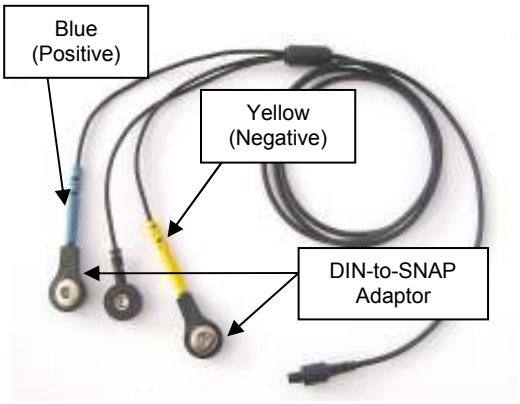
The black jack with the snap is connected the reference electrode.

Connect the sensor to the DIN jacks and the surface electrode to the snap, and the cable to the input A of the device.

Place the reference electrode (black connector) anywhere on the body (thigh or abdomen, for instance).

An example of the connections is shown on the right.

CHANNEL B FOR ABDOMINAL MUSCLES



Channel B is dedicated to monitoring the abdominal muscles.

It requires the use of EMG surface electrodes.

In order to use EMG surface electrodes with the extender cable, you must attach the two black adaptors to the pins of the cable, as shown in the picture.

For EMG, the blue (positive) and yellow (negative) connectors are for the active electrodes, the black one is for the reference.

Before applying electrodes, make sure the skin surface is clean and dry.

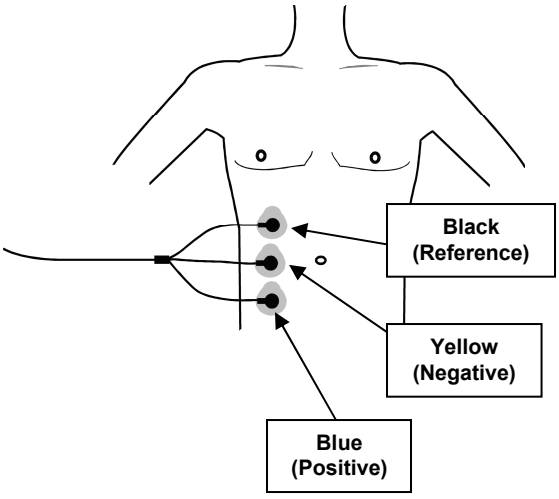
Connect the EMG electrodes to the DIN cable, using the adaptors, and the cable to input B of the device.

Then place the electrodes on the muscle as illustrated.

Place the reference electrode (black connector) anywhere on the body, but more proximally than the active electrodes (yellow and blue connectors), as shown on the picture.

Make sure the electrodes are placed firmly on the skin, and make good contact between the skin and electrodes.

It is recommended to put conductive electrode paste or cream on the EMG electrodes (grey area only) before applying them to the skin.



QUICK ASSESSMENT PROTOCOLS (SCRIPTS)

These protocols can be performed at the beginning of each visit. They allow you to quickly assess the patient's condition and get the training parameters of the day (since a patient's condition can change over time).

BASELINE
This protocol measures the resting level of the pelvic floor. The patient must be asked to totally relax the muscle.

MAXIMAL FORCE
This protocol measures the maximal force. The maximal force is the highest level of voluntary contraction that a person can achieve without inducing unacceptable pain.

PELVIC MUSCLE DYSFUNCTION ASSESSMENT (SCRIPT)

There are many types of biofeedback assessments for the pelvic muscles; these are typically dependent upon the type of incontinence and/or muscle dysfunction that the patient presents. The assessment script included within the Suite is **R PMD Assessment 5 Activities** that can be found in the script category **Rehab Suite – Assessment**. This is a basic assessment protocol that allows the clinician an objective measurement of pelvic muscle function and progress.

PELVIC MUSCLE TRAINING (SCRIPT)

The script is called **R PMD 10-10sec 10 cycles** and can be found in the script category **Rehab Suite - Pelvic Muscle Training**.

PERINEAL TRAINING WITH TEMPLATE (SCRIPTS)

This is a series of work-rest and training scripts focusing on perineal reeducation. The scripts in the first section provide short exercise sessions (1 to 2 minutes) with simple templates. The scripts in the second section are longer sessions with complex templates and they can be used in the design of a treatment program.

SHORT TRAINING SCRIPTS

These scripts can be found in the script category of **Rehab Suite – Short Template Training**.

LONG TRAINING SCRIPTS

The scripts in this section allow you to customize a course of treatment for your patient. Each planned exercise has a template screen that the person can follow. These scripts can be found in the script category of **Rehab Suite – Long Template Training**.

REVIEW AND REPORT

At the end of the session, you can enter session notes.

PERINEAL TRAINING TEMPLATES

Controlled Perineal Contractions

Held Perineal Contractions

PC Hypertonicity

PC Hypotonicity

Perineal Control End-Treatment

Perineal Control Mid-Treatment

Perineal Control Start-Treatment

Postpartum Perineal Tonicity

Relaxation of Perineal Muscles

Stress Incontinence

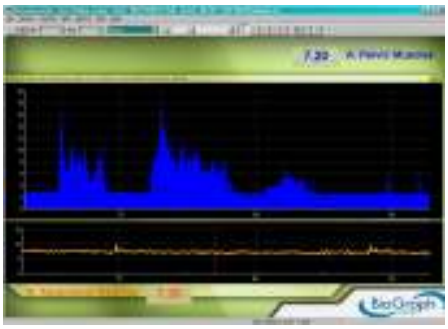
OPEN DISPLAY EXERCISES

The objective of using an open display is to provide variety and engage the patient in more challenging feedback.

CATEGORY: STRENGTHENING

These strengthening screens are used primarily for reinforcing muscle contractions of channel A.

Note that channel B is dedicated to the monitoring of the abdominal muscles, which have to remain relaxed when the pelvic muscles (channel A) are contracted.

R Strengthening - 2Ch Filled linegraph The audio feedback is conditional to both channels of EMG. Music will play when channel A is above its threshold and channel B is below. If B exceeds its threshold the music stops. Also notice the color changes on the graphs as the signal crosses the threshold.	
R Strengthening - 2Ch Butterflies Butterflies and flowers appear to the sound of chirping birds when the signal goes above the threshold. But the butterflies and flowers disappear as a relaxing song plays when the signal goes below the threshold. The animation cycle is very short: about 3-4 seconds. This display can also be used for relaxing.	
R Strengthening - 2Ch Flower Explosion The animation is conditional to both channels. As channel A stays above its threshold and channel B stays below, the flower explodes. A counter represents the length of time A is above and B is below. If channel A falls below its threshold the cycle is suspended. If channel B exceeds its threshold, the flower and the counter reset to the beginning. The complete animation cycle is about 30 seconds.	

CATEGORY: RELAXATION

The relaxation screens are designed to reinforce lowering levels of EMG activity. The rewards are typically set to encourage EMG activity to fall below its threshold. As the patient releases muscle tension/activity they are rewarded through audio and visual feedback, usually linked to an animation or signal display.

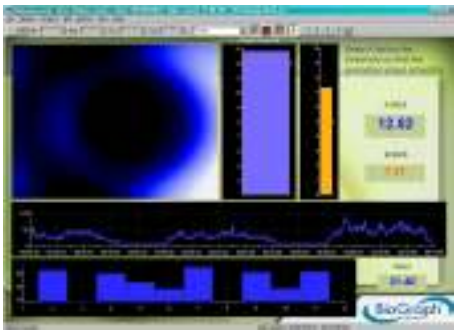
R Relaxation - 1Ch Growing Fractal

This display assists a patient to differentiate between contracting and relaxing their muscles. Set the animation scale to a maximum value that is appropriate for a low sub-maximal contraction. Set the animation threshold in the middle of this scale. As the patient sustains a sub-maximal contraction and the EMG activity goes above the threshold, the fractal will fill in. As the patient releases the contraction and the EMG activity falls below its threshold the fractal will slowly open and a relaxing song is heard. The complete animation cycle takes approximately 20 seconds, 10 on each side of the threshold.

This sample screen was provided by the Biofeedback Foundation of Europe; designed by Nancy Schully.

R Relaxation - 2Ch Closing Circle

This display shows the signal on a bar graph and plays a warm tone, as well as an animation when the amplitude dips below the threshold. The threshold is set to automatically follow the signal, in order to encourage the patient to release muscle tension.



R Relaxation - 2Ch Relaxation with DVD

The DVD will play as long as both channels are below their threshold. If either goes above threshold, the DVD pauses.

This sample screen was provided by the Biofeedback Foundation of Europe; designed by Nancy Schully.

CATEGORY: CONTROL

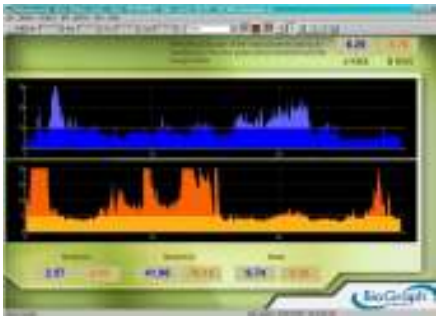
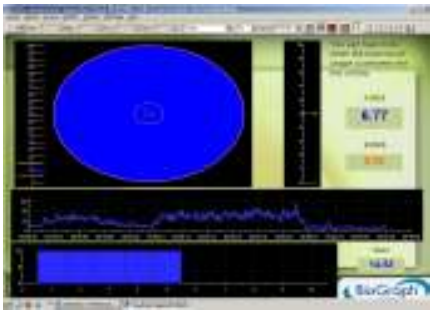
After the patient has gained some muscle control they can test their newly developed skill with more difficult exercises where the level of contraction must be controlled.

The variable in using these screens for well-conditioned muscle tone vs. extremely poor muscle tone is the scale of the animation and/or the threshold setting.

R Control - 2Ch Animal game

An exercise to control muscle contraction by lining up the cartoon man with the animal in the blue square while the line-up of animals constantly changes. Channel A is connected to the animation. The stronger the contraction, the further the man moves to the right. To keep the man moving, the signal from channel B should remain below its threshold.

Adjusting the maximum scale setting on the animation can make the game easier or more difficult. The higher the scale setting, the stronger the contraction must be to move the man to the far right.

R Control - 2Ch filled linegraphs The audio feedback is a midi splitter musical piece. Each channel represents different parts of the musical piece. When channel A is above its threshold and channel B is below its threshold, both parts are heard. When both channels are out of condition the song stops playing. If either condition is not met, only one part is heard.	
R Control - 2Ch Growing Shape The stronger the contraction is on channel A, the smaller the circle is. There are two thresholds dividing the space into three areas. Music is played if the circle is in the center area. The signal from channel B should remain below its threshold.	

REVIEW AND REPORT

At the end of the session, you can enter session notes.

You can then review the session with the screen **R Open Display Report-Review** in the category **Rehab Suite – Report-Review** and generate a session report.