Neuro-Map Guide

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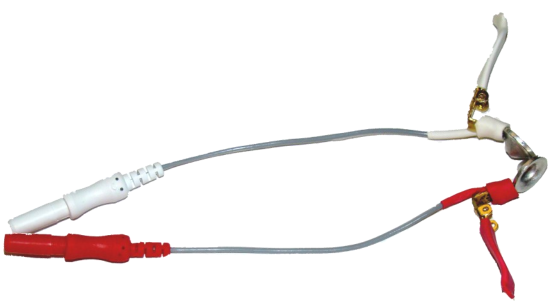
Hardware Equipment List

QEEG Cap

Neuro-Map Recording Device



Ear Clip Leads for QEEG Cap

Syringe with Blunt Tip Needle

Electro-Gel

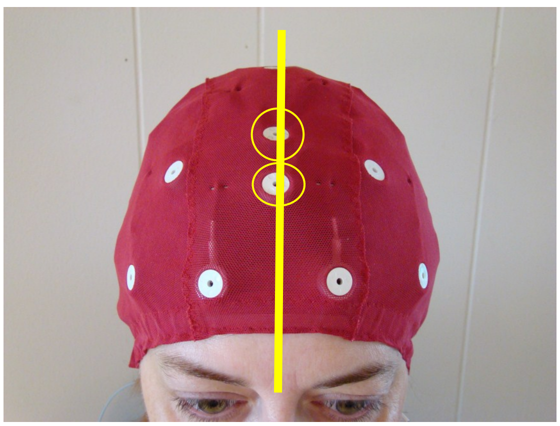
Fitting QEEG Cap to the Patient

1. Begin by having the patient remove any earrings.

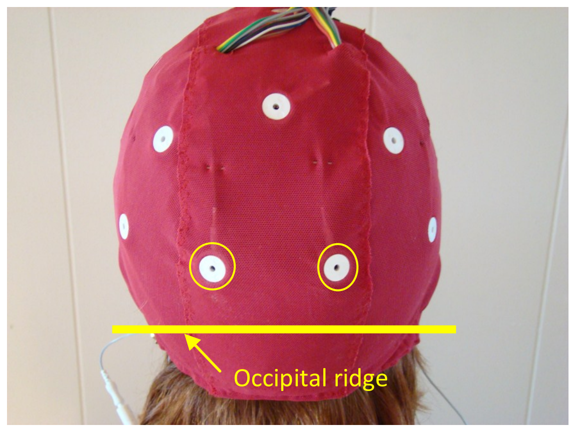
2. Prep the ear lobes with an alcohol swab

3. Fill the metal cups of the ear clips with Electro-Gel and attach them to the patient. Making sure that the red clip is placed on the right ear lobe and the white clip is placed on the left ear lobe.

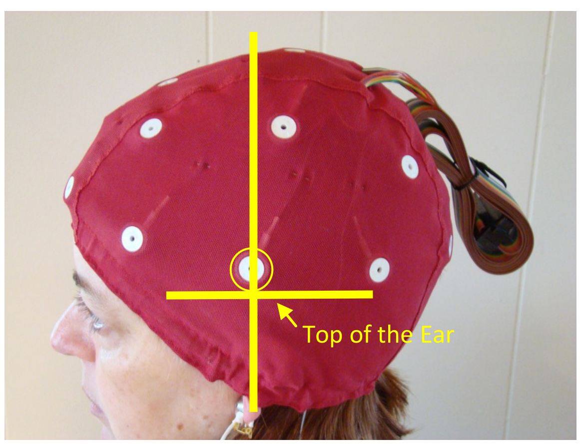
4. Have the patient hold the front of the QEEG Cap on the forehead and stretch the cap over their head. See the pictures below for proper placement.



The FZ, CZ, and ground sensors should line up with the center of the patients nose.



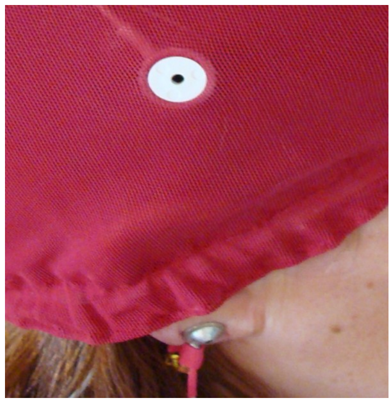
The O1 and O2 sensors should be placed 1” above the occipital ridge



The T3 and T4 sensors should be place on the mid-sagittal line just above the ears

Before Recording Data

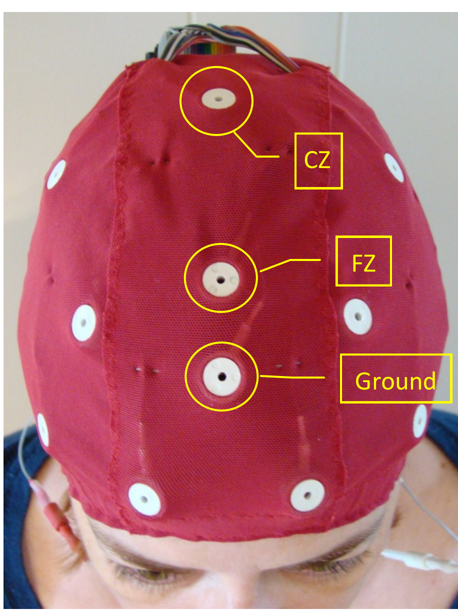
1. Prepare a quiet, comfortable area to perform the brain mapping procedure. The area should be free from distractions such as TVs, radios, or pedestrian traffic.
2. Affix the EEG Cap to the patient's head. Be sure to attach the ear clips with a small amount of electro-gel before adding any electro-gel/10-20 paste to any other locations. The RED ear clip always goes on the right side of the patient's head.



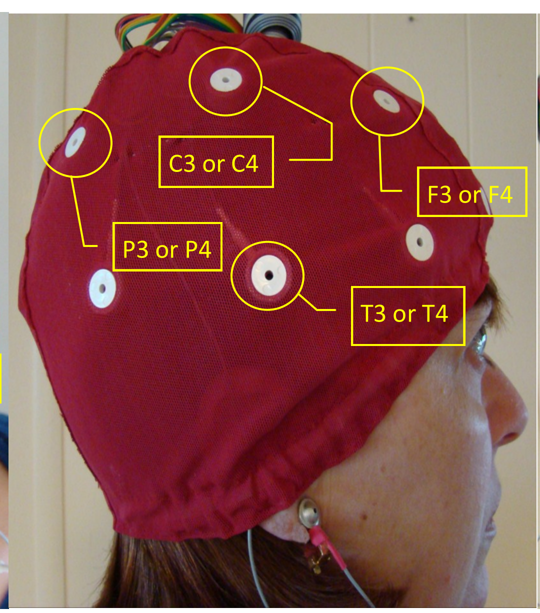
- Have patient remove all earrings prior to attaching ear clips

3. Inject electro-gel into the 12 locations indicated on the Neuro-map Device. These are:
   a FZ & CZ & Ground
   b. F3 & F4
   c. C3 & C4
   d. P3 & P4
   e. T3 & T4
   f. O1 & O2

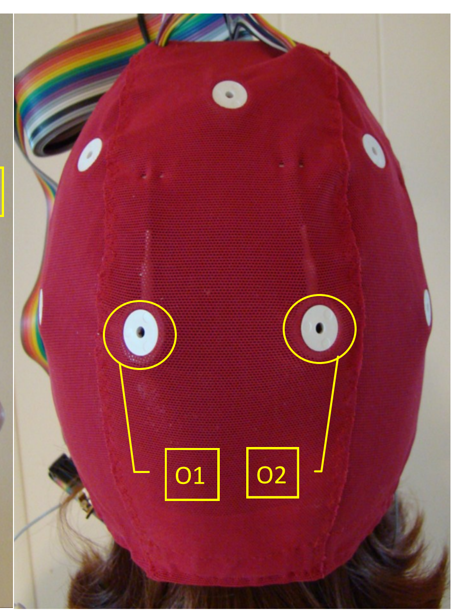
*** Odd numbers are on the left side of the patient's body and even number are on the right side**



Front View
FZ, CZ, & Ground

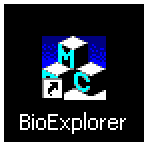


Left & Right View
F3,F4, T3,T4, P3,P4 C3,C4,

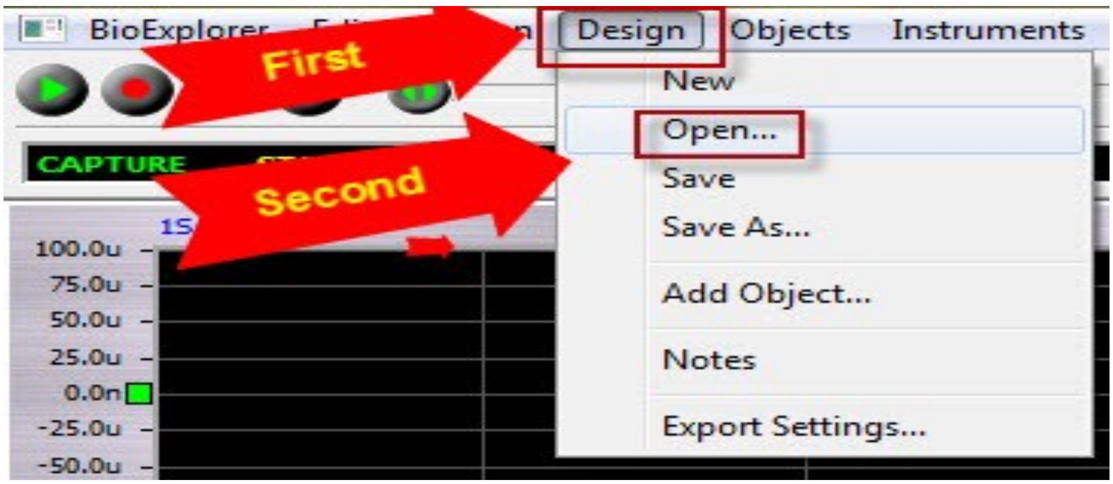


Back View
O1,O2

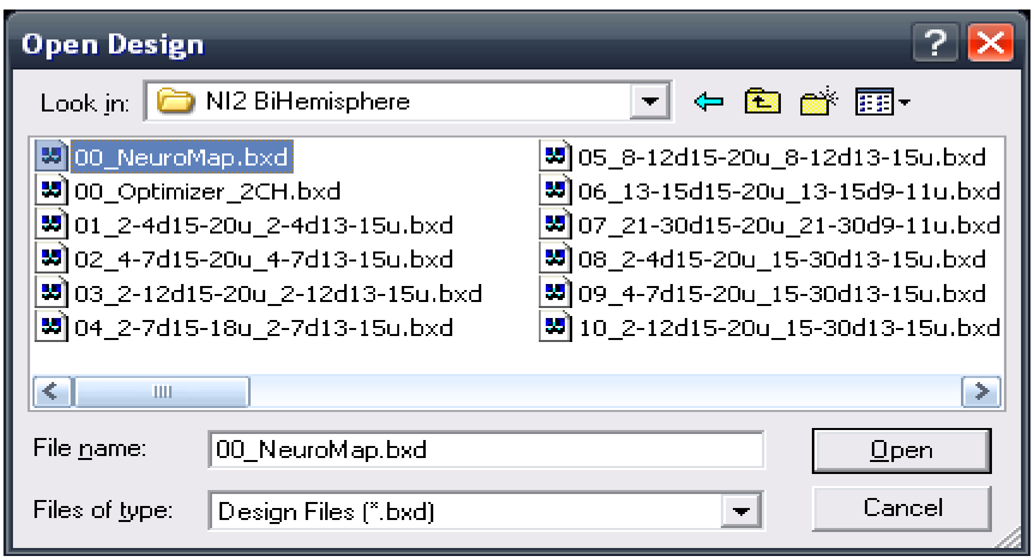
4. Unplug (if connected) any Photic-Stim glasses from the NeuroIntegrator2 unit and turn the NeuroIntegrator2 unit on. The Run LED should be lit.
5. Open BioExplorer.



6. Click on “Design>Open”.

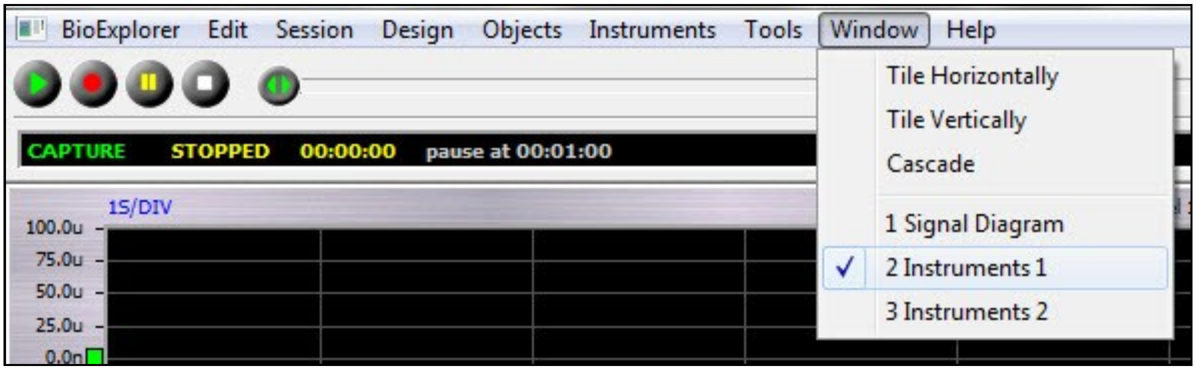


7. Open up the “00_Neuro-map.bxd” design found in the “NI2 BiHemisphere” folder.

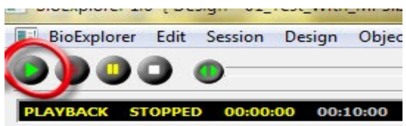


You may need to navigate up to the “C:\NeuroIntegrator2” folder to see the “NI2 BiHemisphere” folder

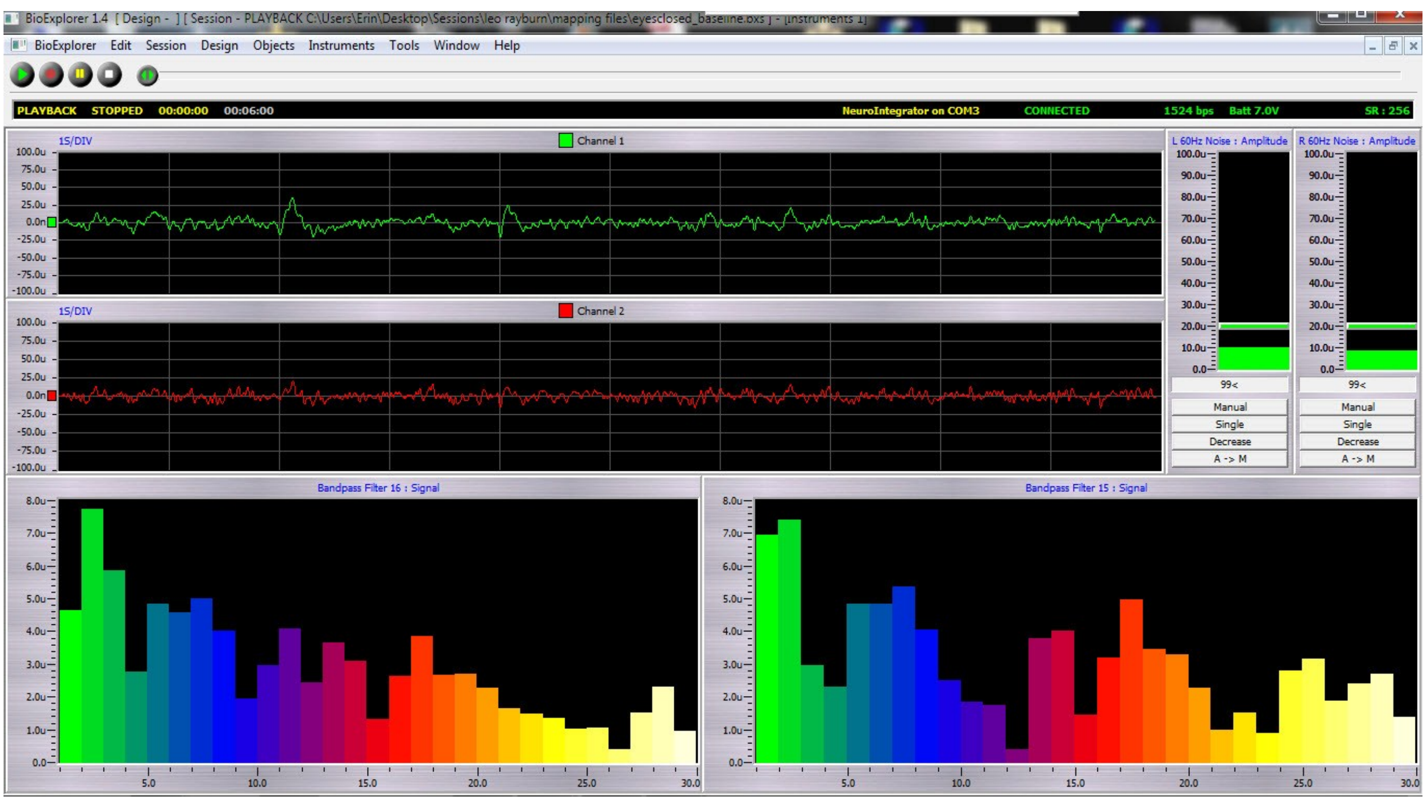
8. Click “Window>2 Instruments 1”



9. Press the green play arrow in the upper left hand corner of the BioExplorer application. Data should start appearing on the screen. *Note* The design is set up to pause after 1 minute of play-back. To continue looking at the data, press the green play arrow button after BioExplorer pauses itself.

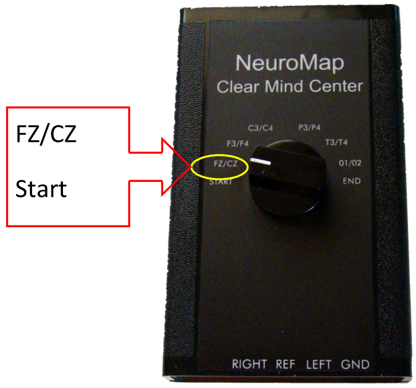


Green Play Button

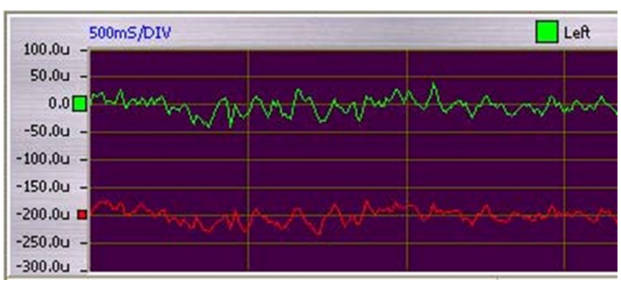


Example of a clean EEG signal

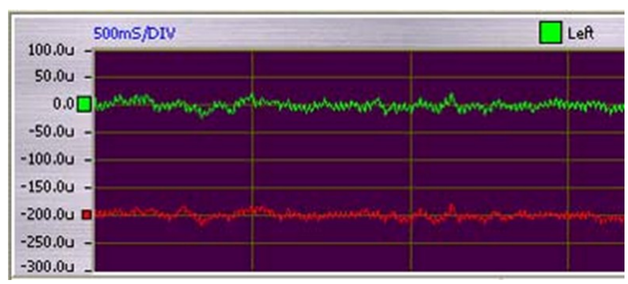
10. Put the Neuro-map knob in the furthest left “Fz/Cz Start” position and inspect the EEG Traces for any signs of artifact. If any artifact is present, use a blunt-tipped needle and try to get a good contact. To do this insert the needle into the sensor that has the artifact and move the needle around to get the hair out of the way so the gel is making direct contact with the scalp and the sensor.



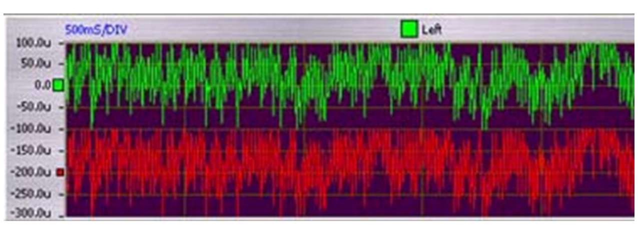
Artifacts are unclean EEG signals. They can be caused from excessive electrical noise in the area of the NeuroIntegration such as electrical panels or office equipment. If you see electrical artifacts you can relocate your NeuroIntegrator to another locating in your office or buy stezer filters for you outlets. Other artifacts can be caused from tension in the patients muscles. If you see muscle artifacts try to get you patient to relax. Below are pictures of clean and unclean EEG traces.



Clean EEG Signal



Muscle artifact in EEG



Major electrical noise in EEG

Right EEG Electrode not connected

11. Repeat step 10 cycling clockwise through all of the EEG Locations on the Neuro-map device.

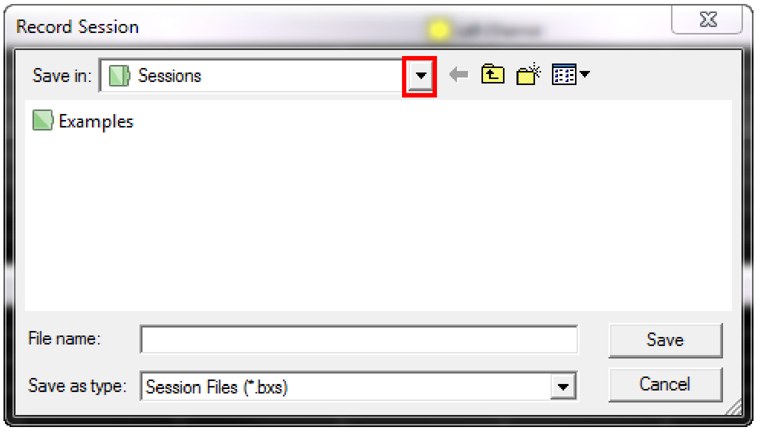
12. After ensuring there is a good connection at all of the locations, move the Neuro-map knob back to the “Fz/Cz Start” location.

After you are assured that there are no artifacts in all of the locations your are ready to proceed to the next section, Recording Your Data Twice (Eyes open & Eyes closed)

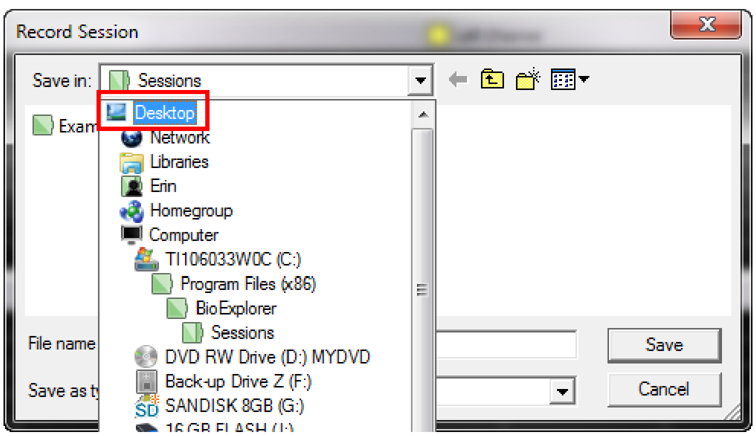
Recording Data Twice (once for Eyes Open, and Once for Eyes Closed)

1. Press the Red Circle Record Button next to the Green Play Arrow Button. The record session window will pop up asking where to save your session. We recommend using the session file that we have made for you which is located at C:\Neurointegrator 2\Sessions. Follow the next steps to find this location.

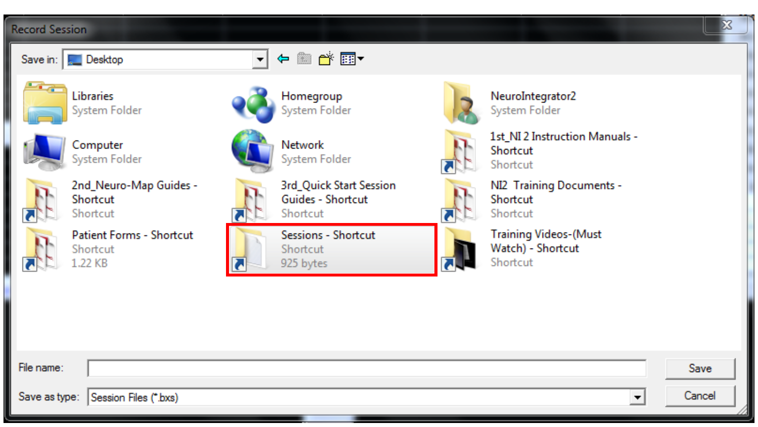
2. Click on the downward facing arrow to the right of "Save in:"



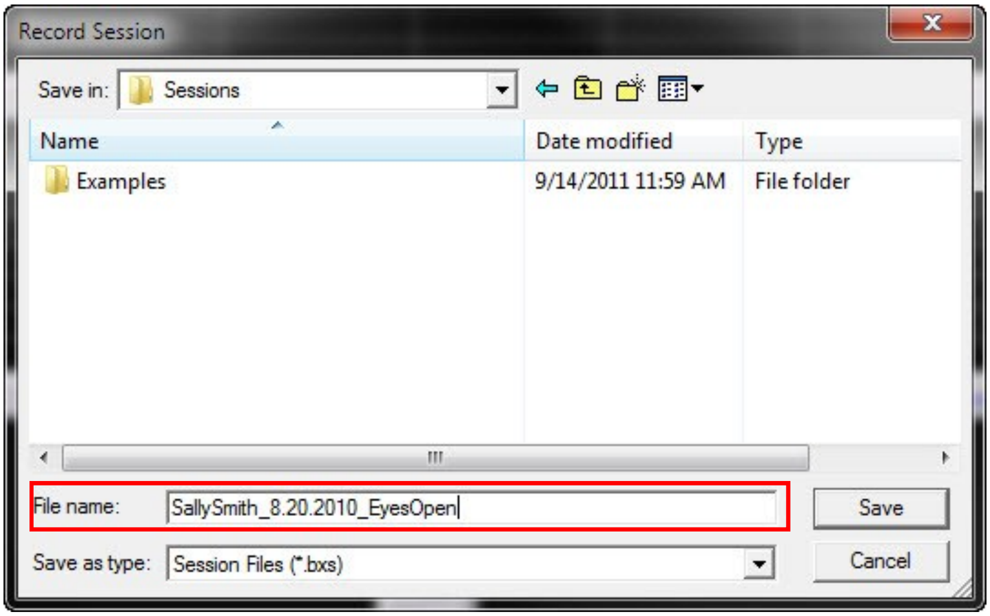
3. Select the Desktop by left clicking on it.



4. Locate "Sessions - Shortcut" and double left click on it.

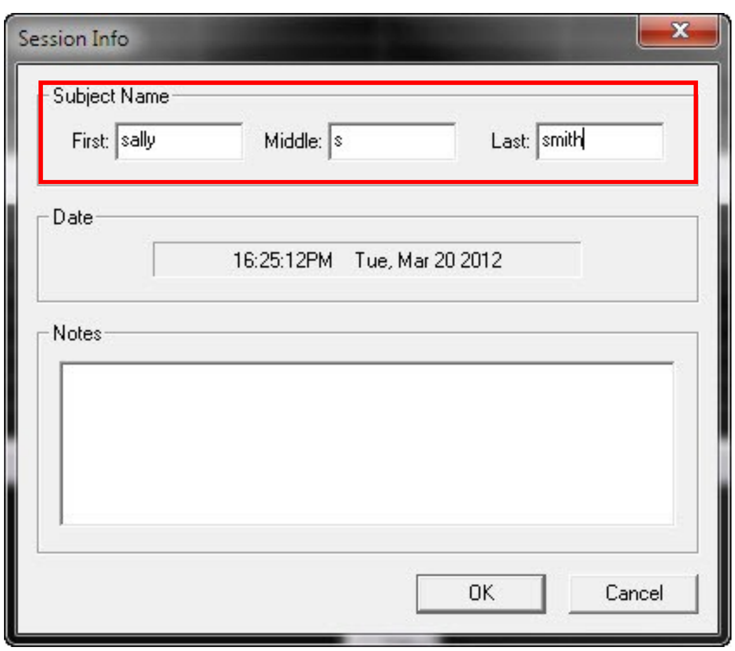


5. Name Session in the "File Name" field and Press Save. It would be a good idea to include a date stamp in the file name to help keep the data organized

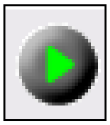


For example: "SallySmith_8.20.2010_EyesOpen" *NOTE* Remember the location that you are saving to, you will need to come back to this location in a later step.

6. Fill in Patient's name in selected fields then click the OK button. Any notes in the "Notes" field are optional.

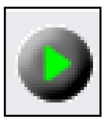


7. Click the Green Play Arrow Button – BioExplorer will record for 1 minute and then pause the recording. The time is displayed in the upper left section of the screen.



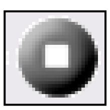
8. Once the playback has paused, turn the Neuro-map Knob clockwise one click to the next location.

9. Click the Green Play Arrow Button. The recording will pause after another minute.



10. Repeat steps 5-6 until BioExplorer has recorded 00:06:00 worth of data. The Neuro-map Knob will be in the “O1/O2 End” position for the last minute of recording.

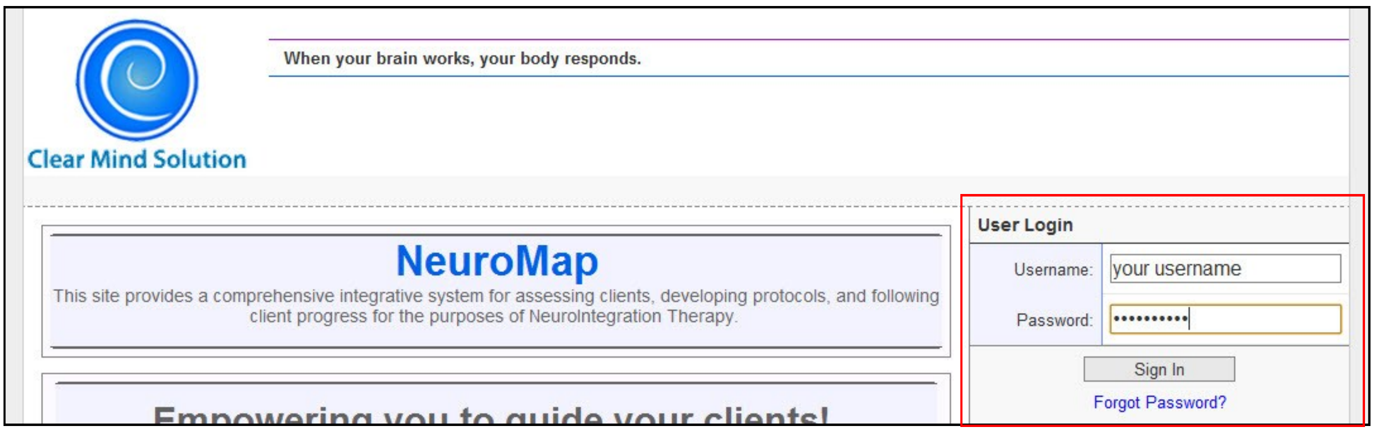
11. After recording the full 00:06:00 of data, press the White Stop Square Button. The timer should reset to 00:00:00.



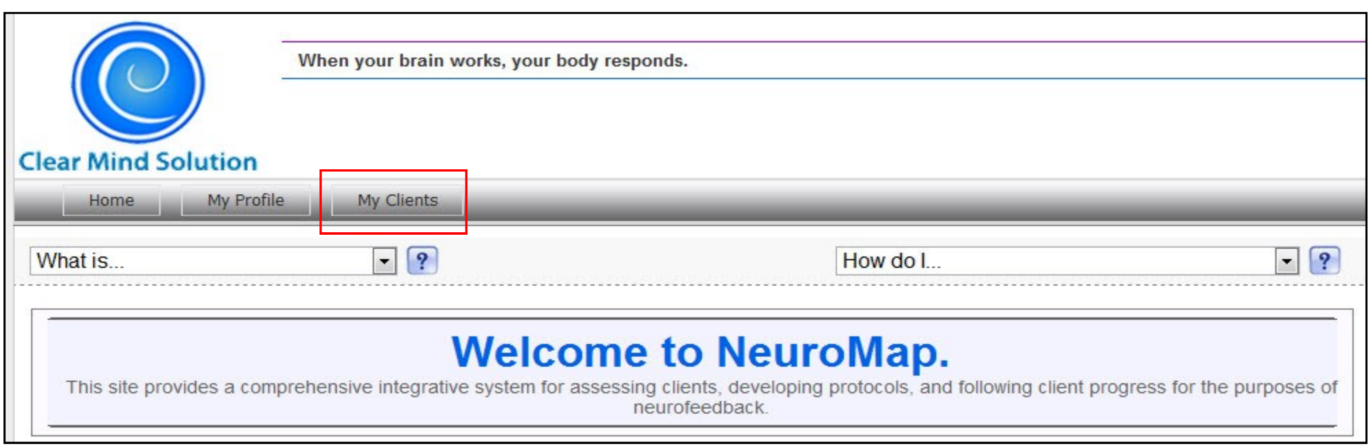
Your recording is now complete. If you need to do another recording, (Eyes Closed or Eyes Open) reset the knob back to the “Fz/Cz Start” location and repeat steps 1-8 listed above (having the patient’s eyes opened or closed, depending on the recording type). After the second

Processing the Brain Map

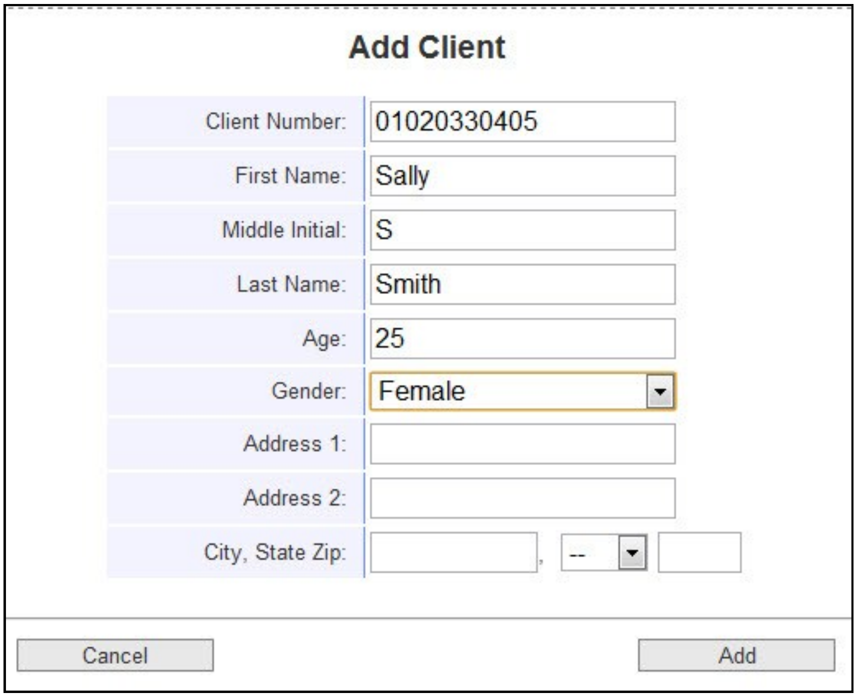
1. Go to www.neuro-map.com
2. Log in using your username (usually your email address) and password (Default is "Password99")



3. Select Client List.



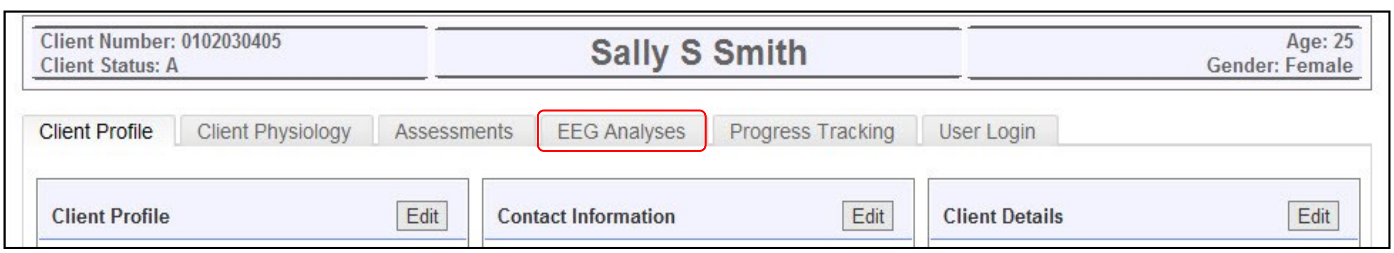
4. If the client already exists in the database, click on the View Client button next to their name. Otherwise, click on the Add Client button and fill in the information on the next page. After filling in the information click the add button at the bottom right.



The client number can be whatever helps to identify the individual. Many practices use the patient's folder number here; however feel free to put anything into this field to identify the individual.

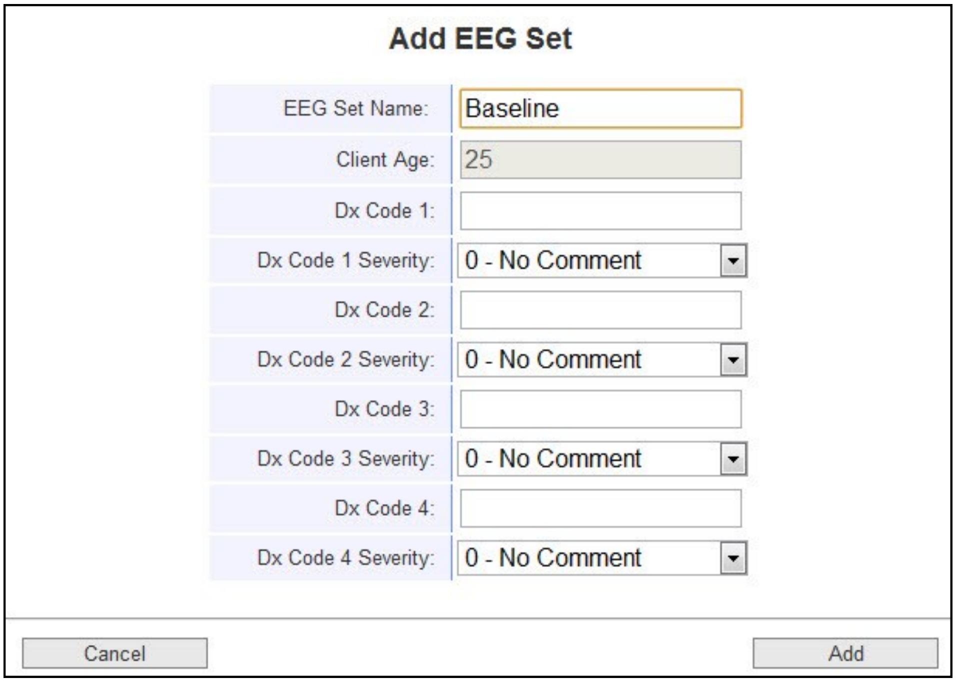
5. Feel free to update any information on this "Client Info" screen.

6. Towards the top of the frame, under the Client's name bar, click on the "EEG Analyses" tab.



7. Click on the Add EEG Set button.

8. For the EEG Set Name, use something that will help identify the recordings that you just recorded. After filling in the information click on the Add button at the bottom right.

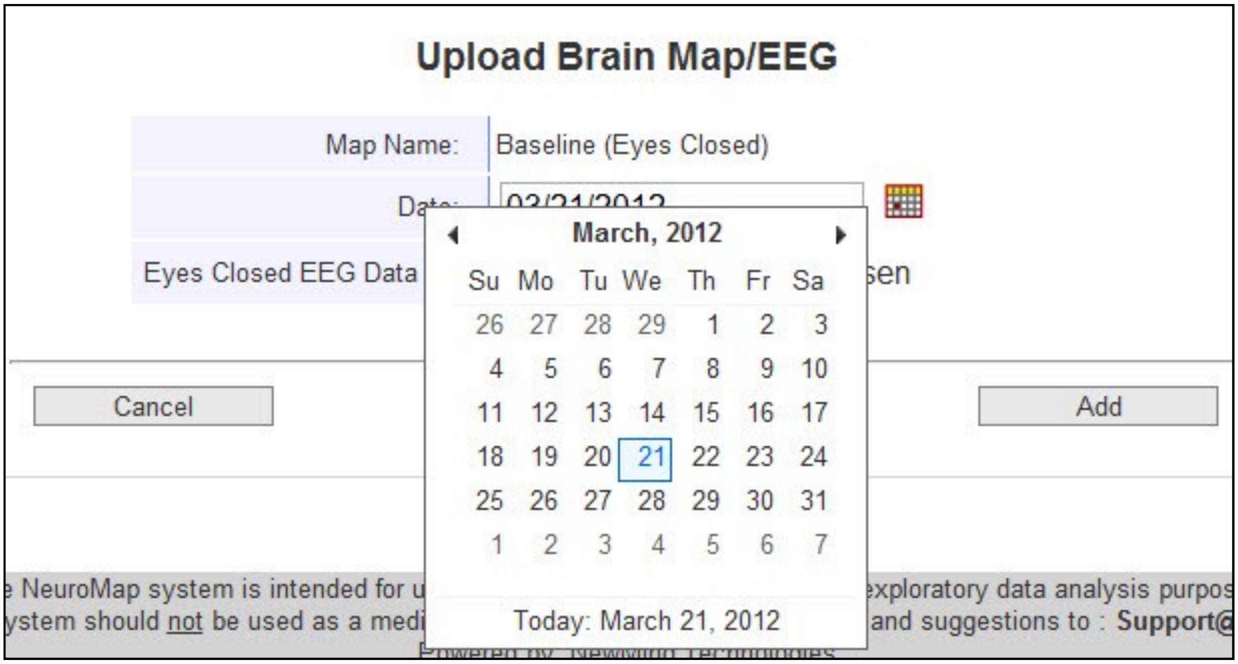


For example, you could use “Baseline” or “Before Treatment” as names to identify the patient’s first recording, or “After 20 Sessions” etc… When finished, click the “Add” button. DX Codes and Severity are for flagging individuals who have been diagnosed with certain disorders.

9. The EEG Set you just created should now appear with Blue Buttons for “Upload Eyes Closed” and “Upload Eyes Opened”.

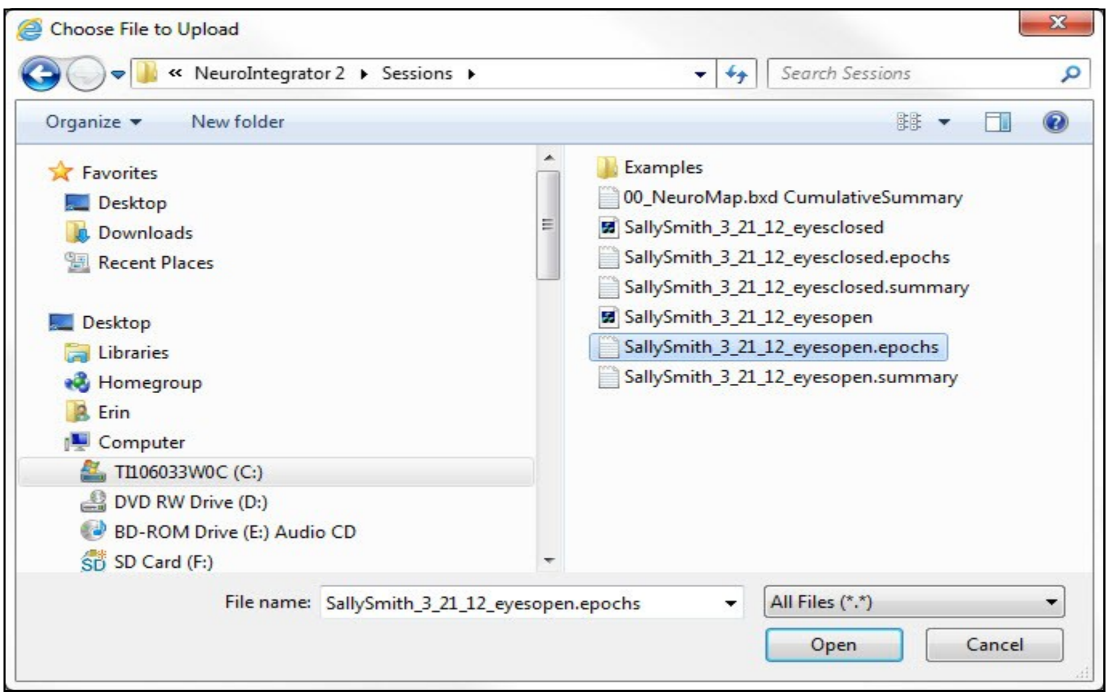
10. Click on one of the Blue Upload buttons.

11. Enter the date that you recorded the session by clicking on the calendar button off to the right of the “Date” field and selecting the date from the calendar.



12. Click on the “Browse” button and browse to the location where you recorded the data. The default recording location is “C:\Neurointegrator2\Sessions”This is also accessible through the shortcut “Sessions” on the desktop.

13. Select the file ending with “.epochs.txt” and click the “Open” button.



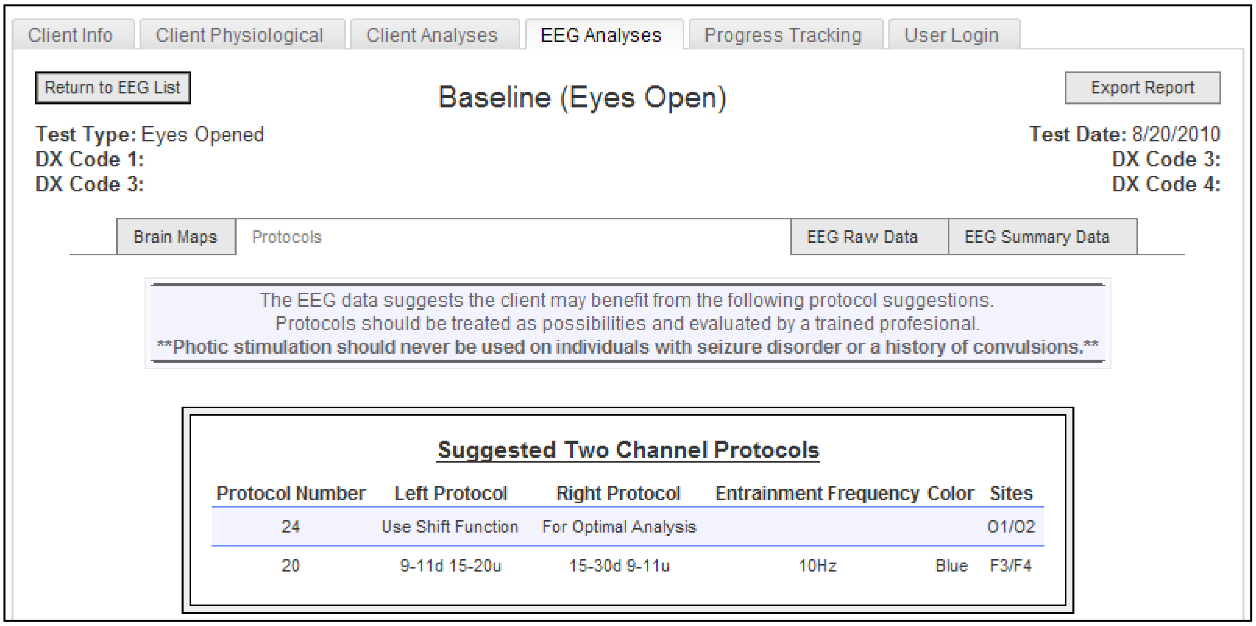
For Example: “SallySmith_8.20.2010.EyesOpen.epochs.txt”

14. Click the 

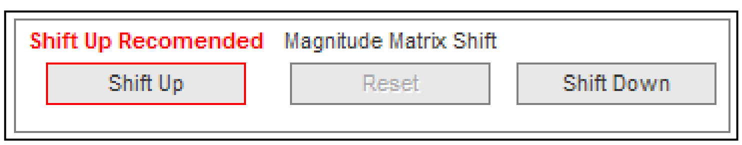
button. The report will be displayed after this is completed.
15. Repeat Steps 9-14 for the other recording (eyes closed & eyes opened)

Retrieving Treatment Protocols from the Brain Map Report

1. Go into the EEG Analysis for the Eye's Open brain map.
2. Click on the "Protocols" tab



3. If the protocol number 24 "Use Shift Function" appears in the Suggested Protocols list, go back to the "Brain Maps" tab and click on the recommended (red border) "Magnitude Matrix Shift" button. Then go back to the "Protocols" tab.



The shift key can be employed at the user's discretion when the "Shift Recommended" indicator comes on. This usually occurs when the overall amplitude of the client's EEG is unusually low or high. This results in magnitude brain maps being all blue or all yellow and consequently difficult to interpret. The shift key does not need to be used in any other situation. The shift allows the user to view the brain maps as if the client's EEG amplitude was in normal range. This results in better color contrast and variation so that the maps are more easy to interpret. It also adjusts the protocol recommendations accordingly. For instance a person with all blue magnitude brain maps but still have elevated delta and theta compared to the other component bands and would be considered "low voltage slow" from a neurophysiological perspective. You would not want to train everything blue up, because you may end up training the delta and theta too much. It would be better to train beta or alpha up and hold delta and that in place. The protocols will adjust automatically for this strategy resulting in a better training outcome.

4. The “Suggested Two Channel Protocols” box gives all the information needed to start administering Neuro-Feedback using the NeuroIntegrator system.

Suggested Two Channel Protocols

Protocol Number	Left Protocol	Right Protocol	Entrainment Frequency	Color	Sites
20	9-11d 15-20u	15-30d 9-11u	12L-17R	Blue	O1/O2
4	2-7d 15-18u	2-7d 13-15u	14L-16R	Yellow	F3/F4

Designates which design to open in BioExplorer

Tells which frequencies to enter into the photic glasses controller. (L) designates left and (R) designates right.

Color of Photic Stim Glasses to use

Tells which sites to connect the red and green EEG leads to

5. It is recommended that you perform 10 Neuro-Feedback sessions using the first line’s information and 10 Neuro-Feedback sessions using the second line’s information.
6. If you want to save this report, towards the top of the right hand side of the screen should be a grey button with “Export Report” on it. Click this button and save the file to your computer. Rename this downloaded EEGReport.pdf to “[The patient’s name][Eyes Open/Closed].pdf”

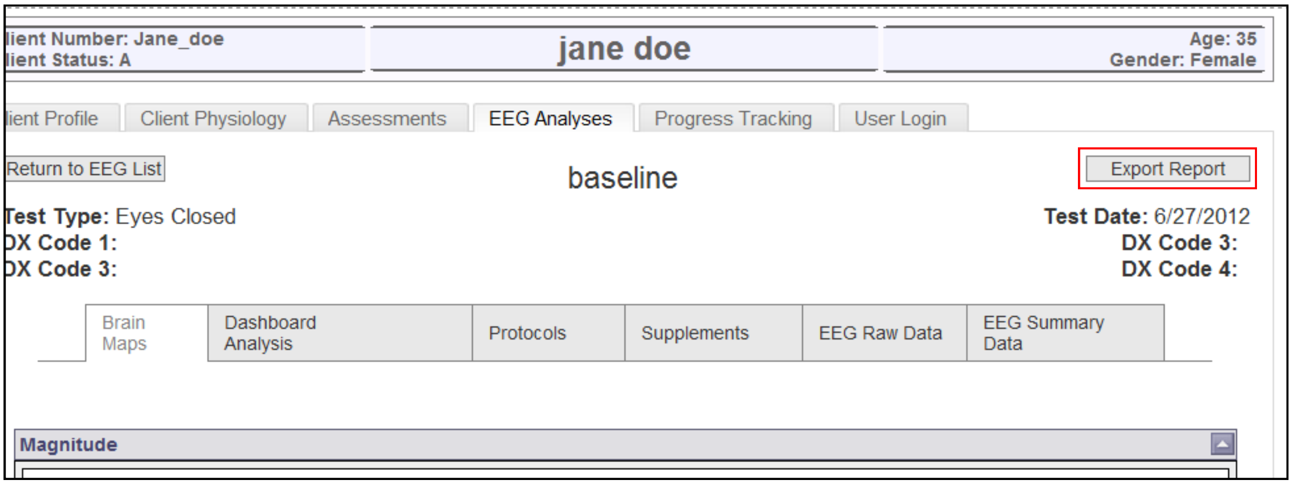
** Remember that Odd numbers are on the left side of your patient and Even numbers are on the right side. The green lead always goes on the left and the red always goes on the right. So O1 would use the green lead and be place on the left side of the patient**

Exporting a Brain Map as a PDF File

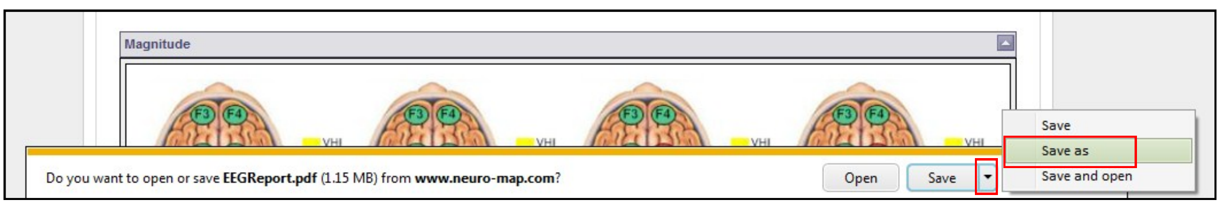
It is possible to export a map as a pdf file for easy retrieval or to email it. It is recommended that the exported map be saved in your sessions folder under the patients name with any other files related to them.

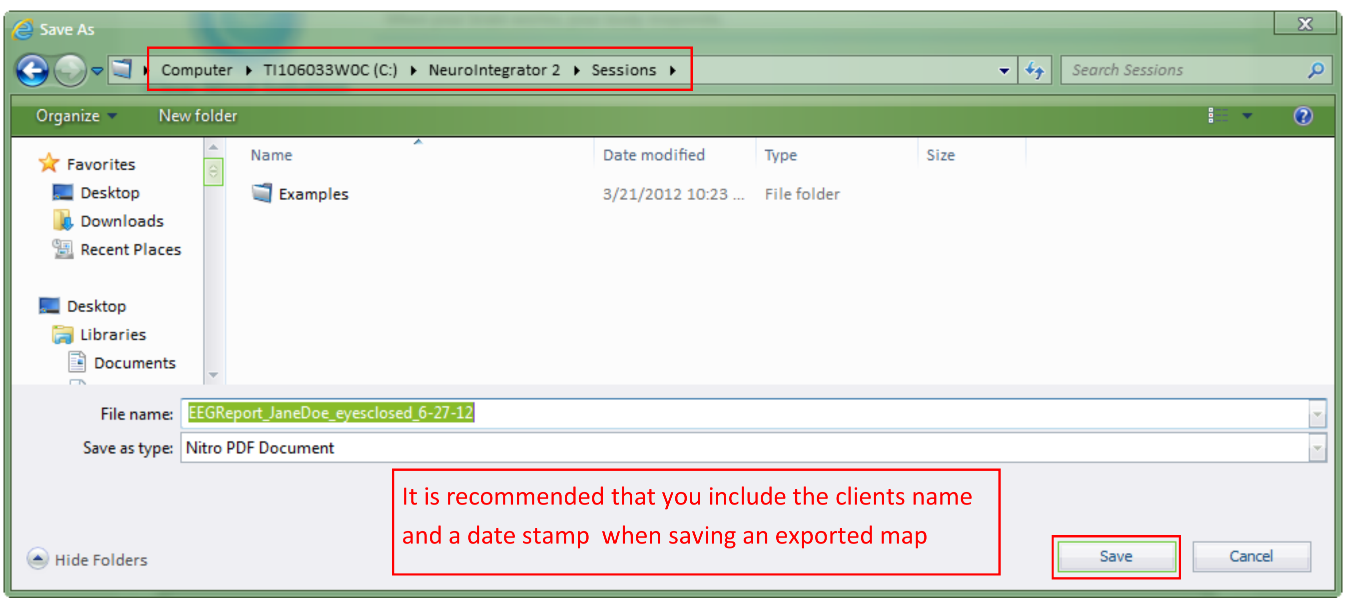
1. First click on the EEG Analyses tab and choose the map you wish to export. Click on the view button for that map.

2. Click on the "Export Report" button in the upper right corner of the map.



3. It can take up to 1-2 minutes for the file to be exported and the save function to appear on the bottom of the screen. Once the save option appears on the bottom of the screen click on the arrow next to the save and choose save as. Locate the patients folder in the sessions folder. The sessions folder is located in the NeuroInegrator 2 folder in the C: drive.



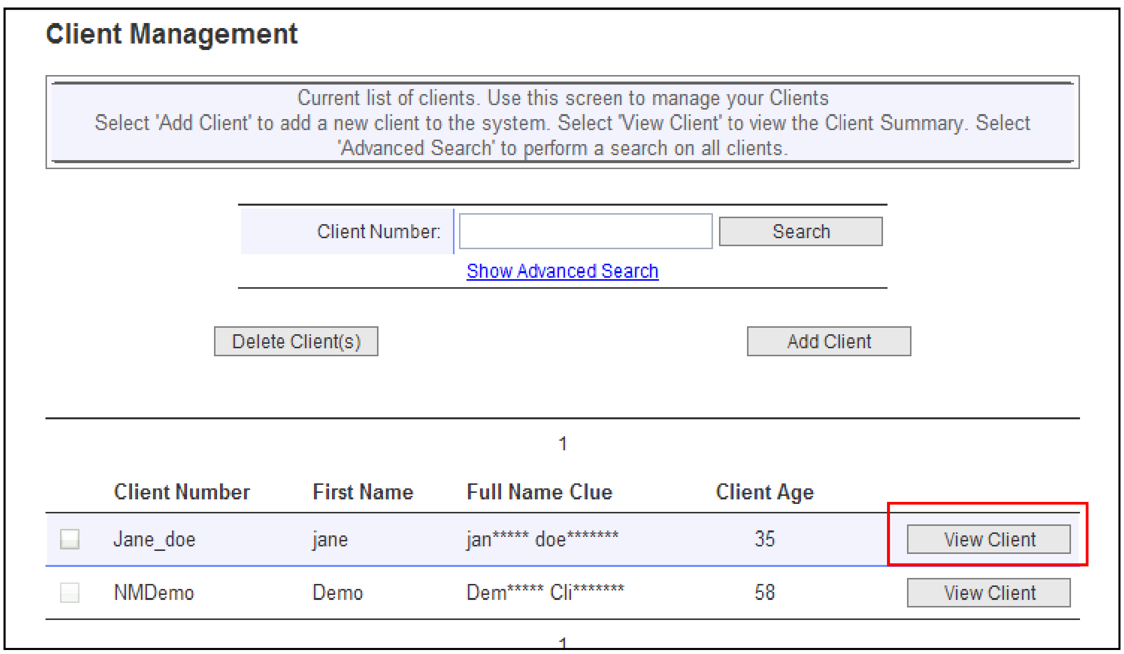


Creating Surveys in Neuro-Map.com

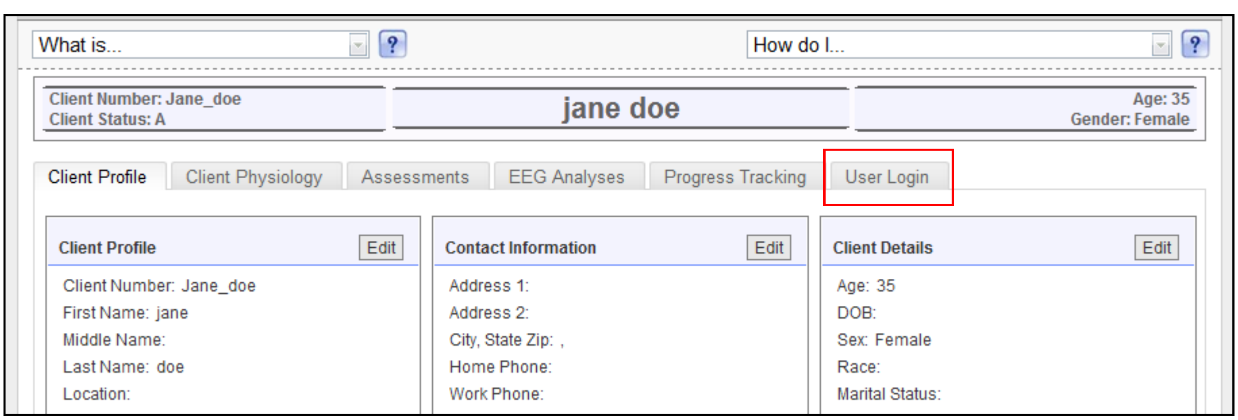
The surveys included in the Neuro-Map website are provided to help you understand your patients conditions. They can provide you with insight into their physical, emotion, and cognitive states and well as tracking their progress as they are being trained. The Neuro-Map website offers a private area on the website for patients to fill out these surveys at home or in your office. The following steps will explain how to create a personal login for your patients and how to set up the surveys for your patients.

Creating Client Login Information

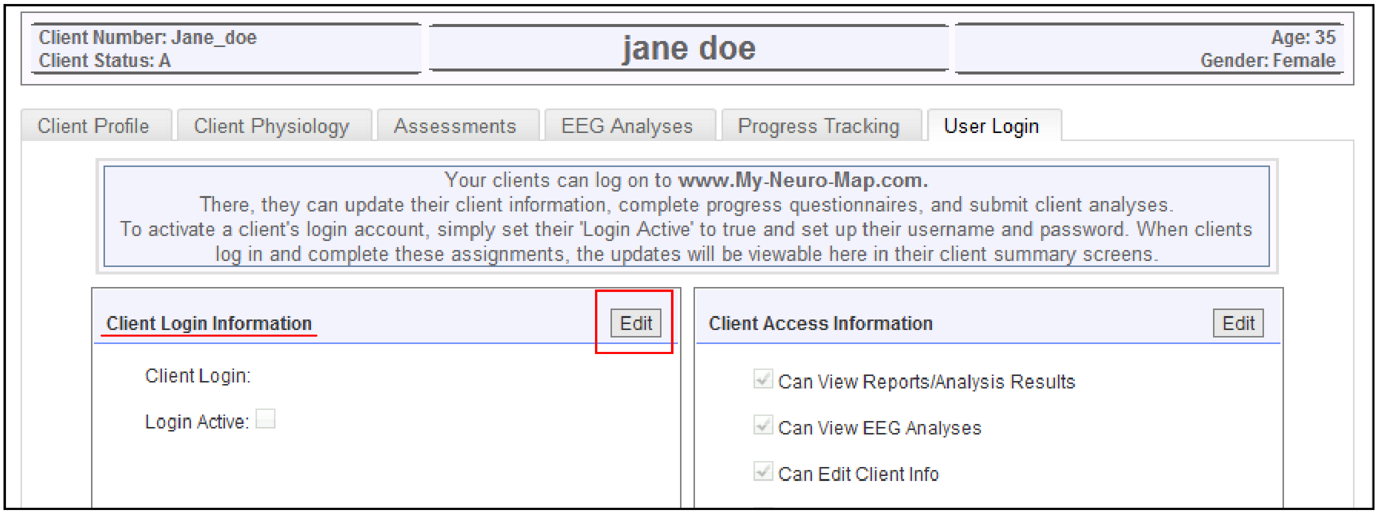
1. Choose the client you wish to create a user login for by clicking on the view client button to the right of their name on your home page.



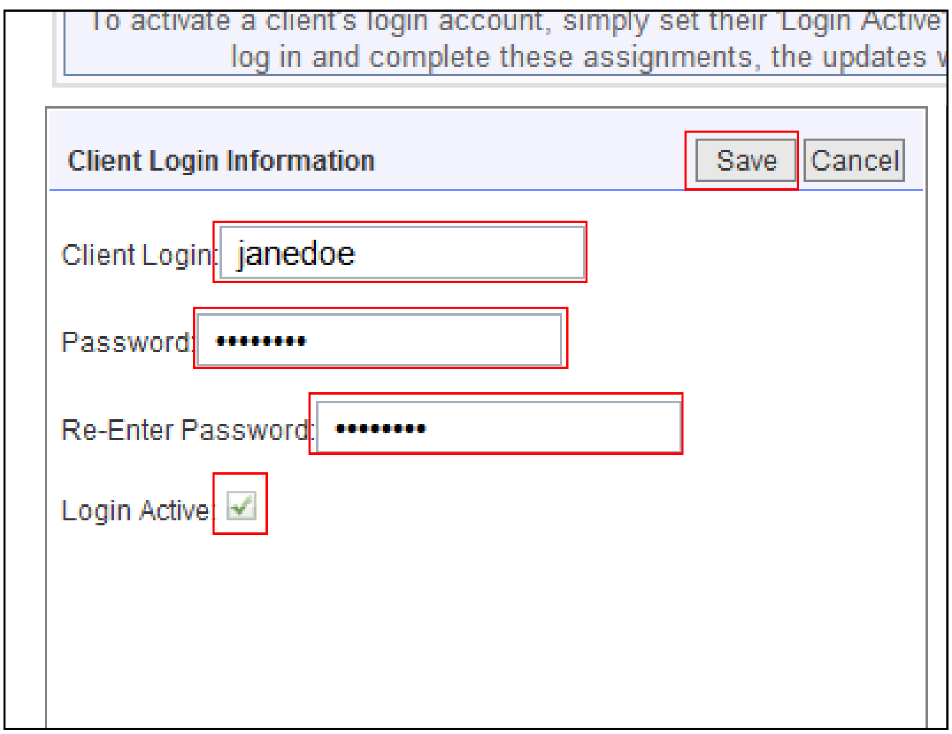
2. Click on the User Login tab that is located towards the right side of the screen.



3. Find the box on the left side of the screen labeled “Client Login Information” and click on the Edit button.



4. You will now need to create a username and password for your client. It is our suggestion that you use their first and last name together, all in lower case letters, for the username and the word “password” for the password. Next check the box next to “Login Active” to activate the clients login information. After you have enter all of the data and checked the login active button click on the save button in the upper left hand corner of the box. Once the client has logged in they can change the username and password is they choose to. It is very important that you check the “Login Active box that is located below “Re-Enter Password”.



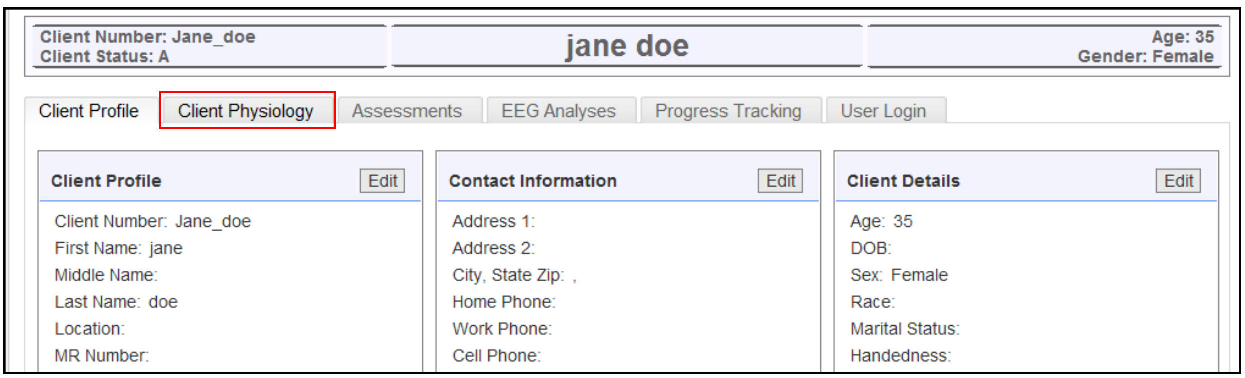
Client Surveys and Progress Tracker

The Neuro-Map website has four surveys for your patients to fill out. These surveys include the Client Physiology, Cognitive and Emotional, Interactive Self Survey, and the Progress Tracker. The Client Physiology, Cog/Emo, and the ISI cannot be altered. The Progress Tracker can be customized to fit your patients needs. Once you have uploaded the initial brain map the progress tracker will automatically generate symptoms to track from the results of the Cognitive and Emotional analysis. You can choose to use the symptoms that it generates or you can choose from a detailed list of symptoms included in the system.

Client Physiology Survey

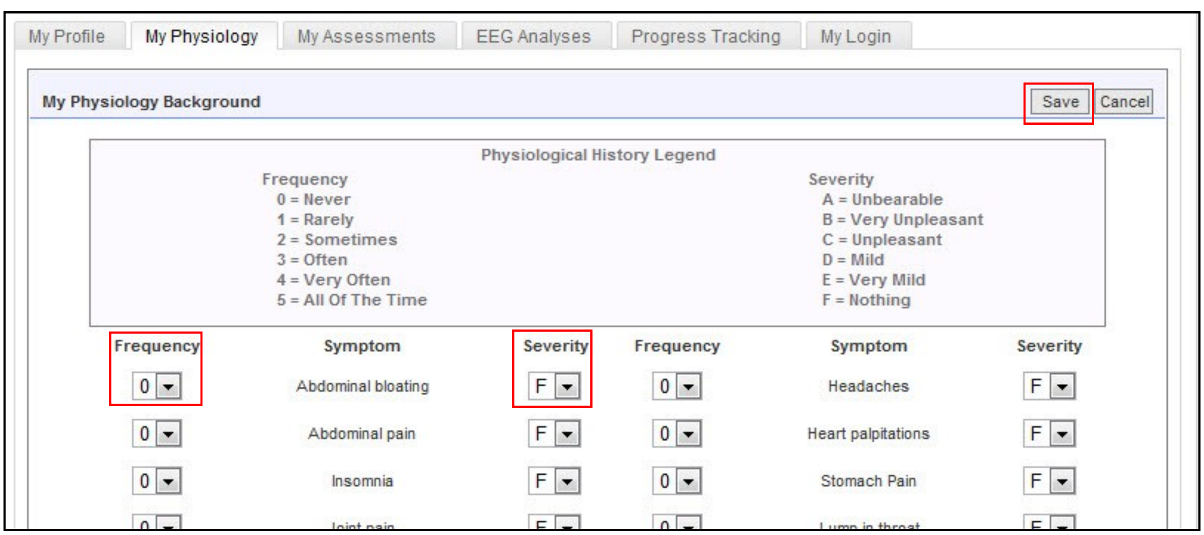
The First survey is the Client Physiology. This survey is used to determine if the client has any physical conditions that could be affecting the brain map results. The client will rate the frequency and severity of each physical symptom they are experiencing. The results of this survey will integrate into the eyes closed map. It is recommended that if they receive a score higher then 20 in any category they should have that area tested by a qualified medical doctor. The following step will explain how to use this survey from your side of the website. If you plan to have your client fill out these surveys from home refer to the "How to use the My-Neuro-Map.com Website" section of this manual.

1. After you have choose to "View Client" click on the "Client Physiology" tab in the clients home page.



2. Click on the edit button located at the top right of the survey.

3. Enter the frequency and severity for each symptom. When all the questions have been answered click on the save button located at the top right of the survey.

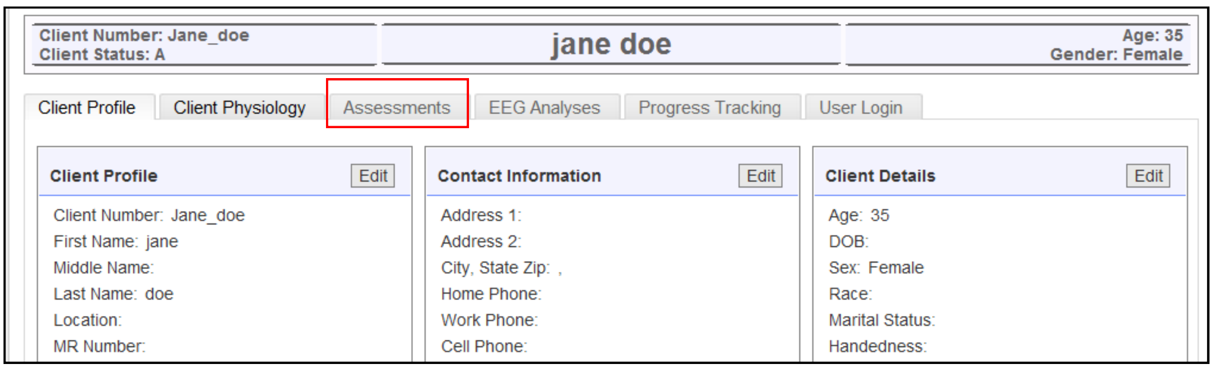


Cognitive/Emotional Checklist and ISI Survey

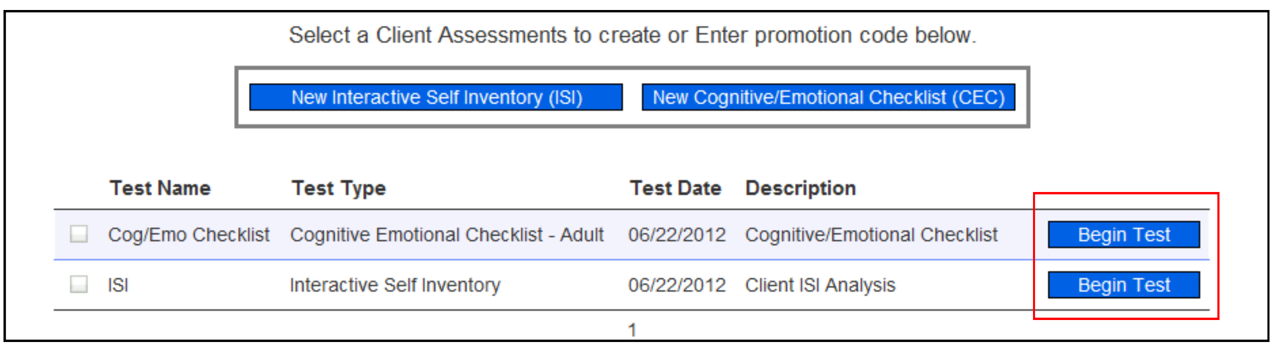
The next set of surveys are located in the assessments tab. They are the cognitive/emotional checklist and the interactive self inventory. The Cog/Emo checklist will integrate into the eyes closed map after it is completed. It allows you to have a cross comparison between what the client says they have issues with, in cognitive and emotional states, and what the mapping system says that they have potentials to have problems with. The Interactive Self Inventory does not integrate into the maps. It can be exported by clicking on the export button on the results page after the test has been completed.

It is important to know that once a client has filled out either of these surveys you will need to generate a new test is you wish to have them take the surveys again. To start a new set of surveys you click on the blue buttons that say "New" above the existing surveys. We will cover this at the end of the instructions for these surveys.

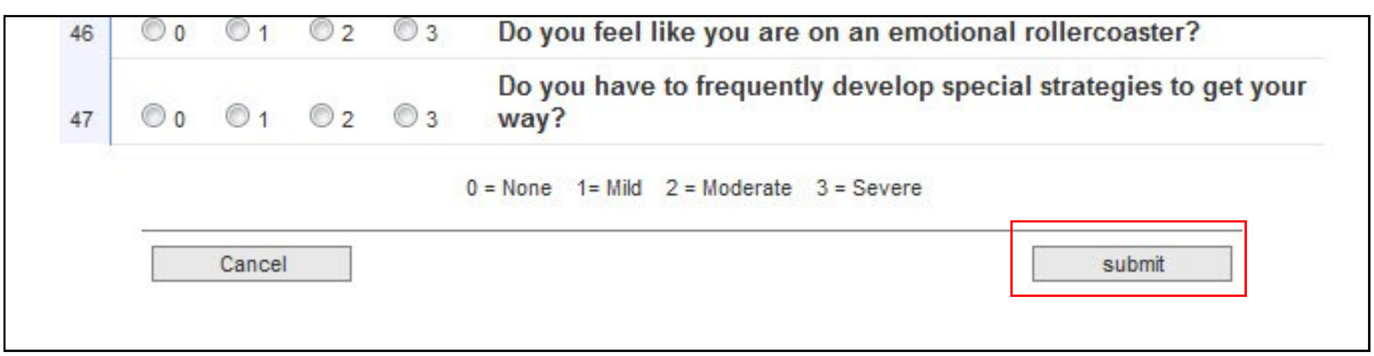
1. From the clients home page click on the assessments tab.



2. Choose the survey you wish to start and click on the blue button to the right of the test that say "Begin Test".

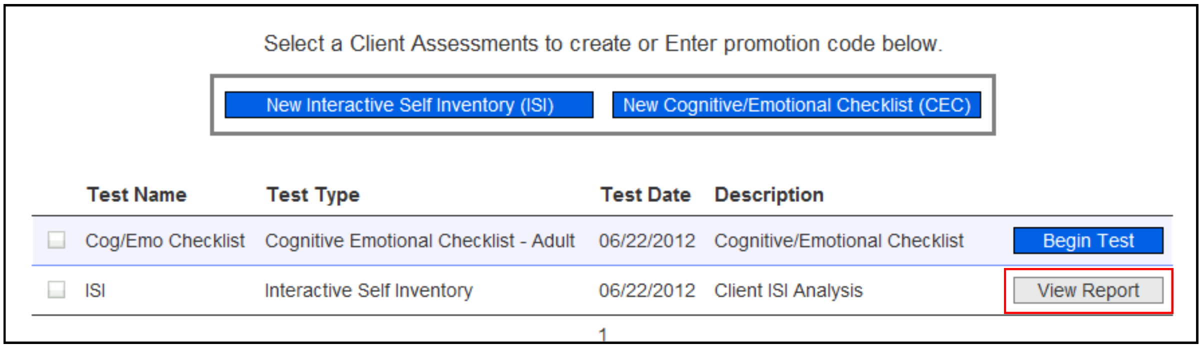


3. Fill out all of the questions on the survey then click on the submit button that is located at the bottom right of the survey.

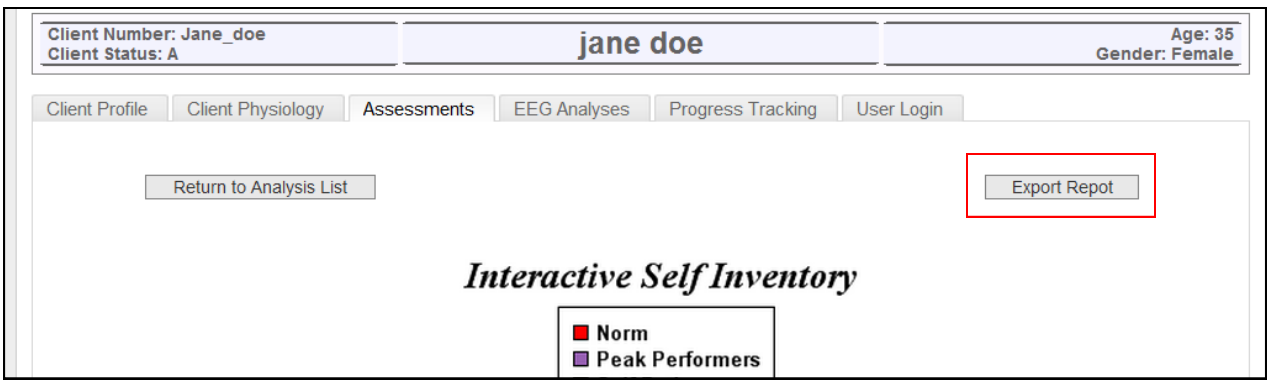


Exporting the ISI Survey

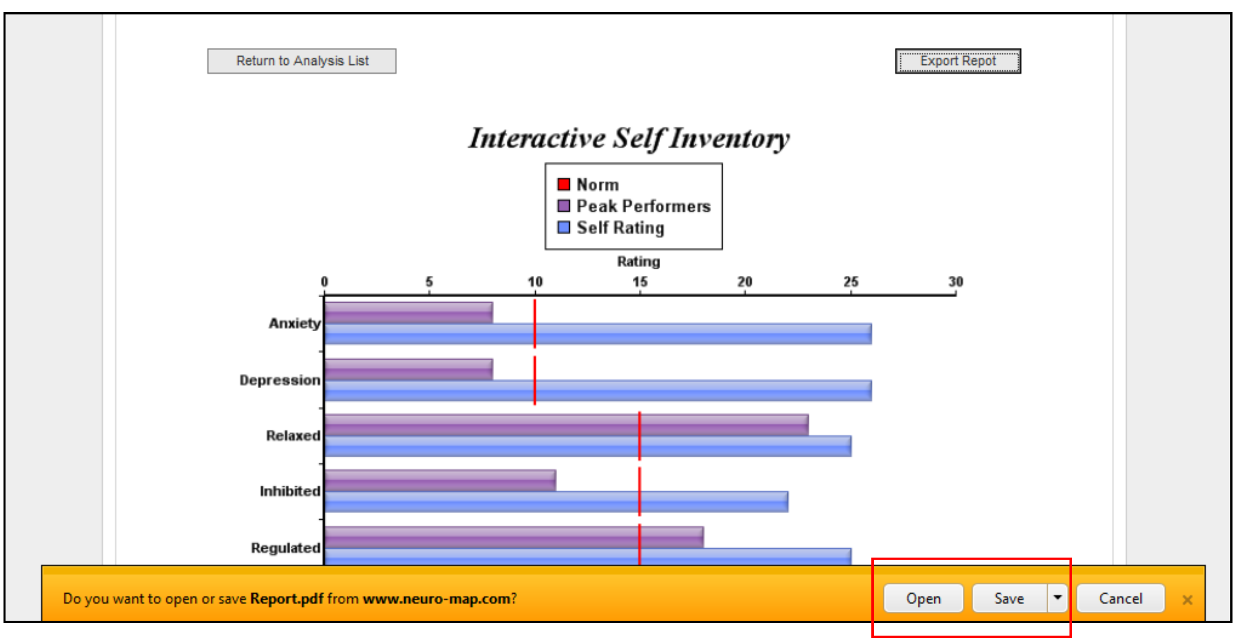
1. From the assessments tab click on the view report button located at the right side of the ISI survey.



2. Click on the export report button located at the top right of the report.

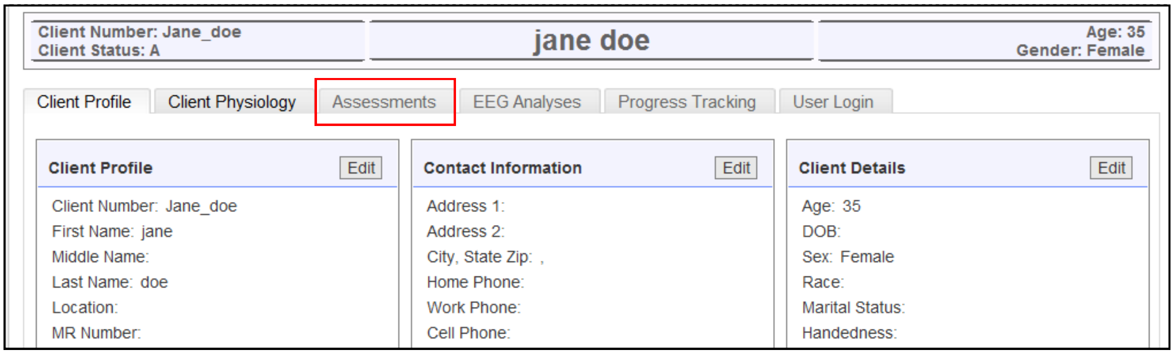


3. In Internet Explorer an box will pop up asking you to open or to save the file. Choose the save option and navigate to the patients file on your sessions folder and click on the save button. You can also choose the open option which will open the report as a pdf document in Adobe Reader. You may then choose to save the survey or print it.

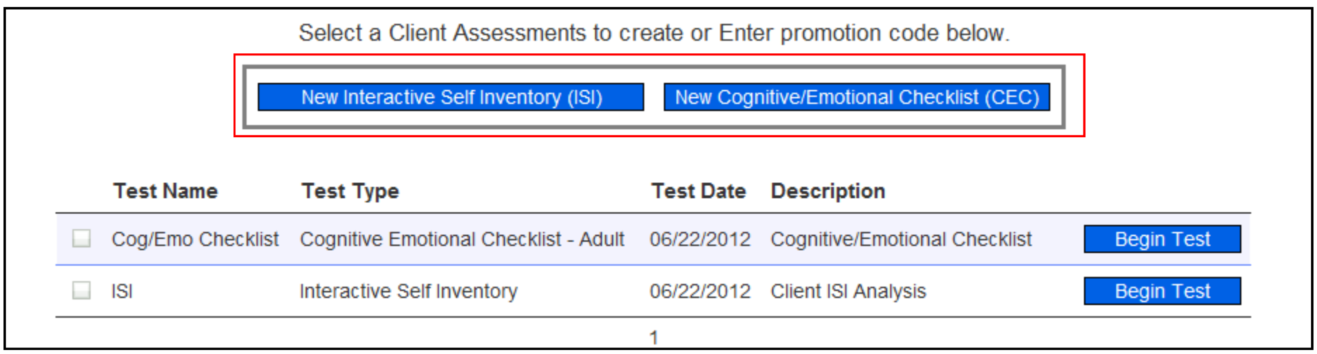


Adding a new Cog/Emo survey or ISI Survey

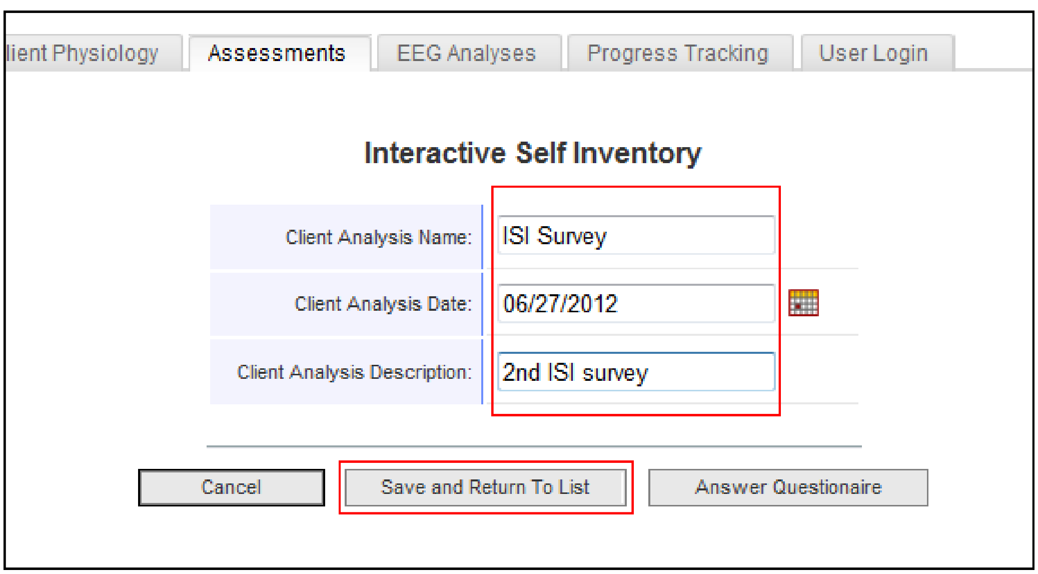
1. Click on the assessments tab from the clients home page.



2. Locate the blue buttons that are located above the old surveys that say “New Interactive Self Inventory (ISI)” or “New Cognitive/Emotional Checklist (CEC)”. Choose the survey you wish to add and click and that button.



3. The next page that opens will ask you to name the survey and enter a date and description. Enter this information and click on the “Save and

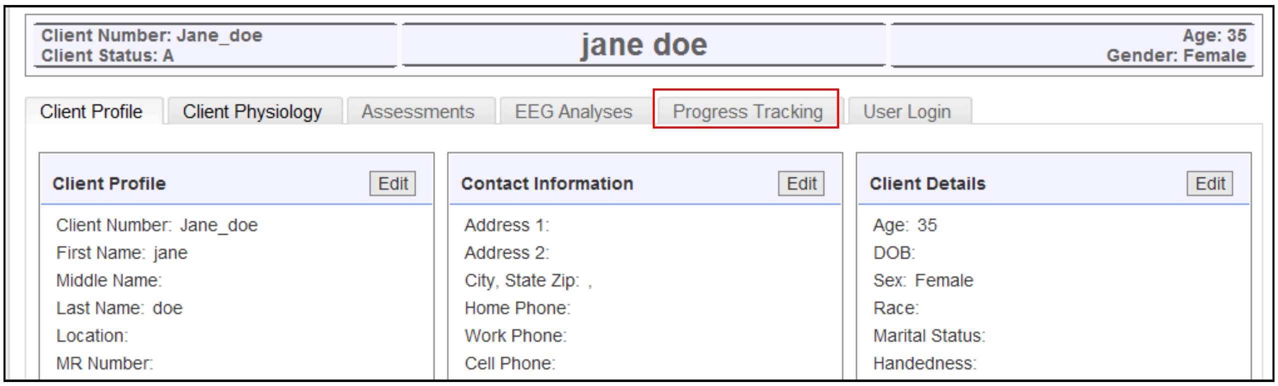


4. You client can now take the new survey from your neuro-map site or their my-neuro-map page. You will now see a new blue button on the assessments tab that say begin test next to the new survey you just created.

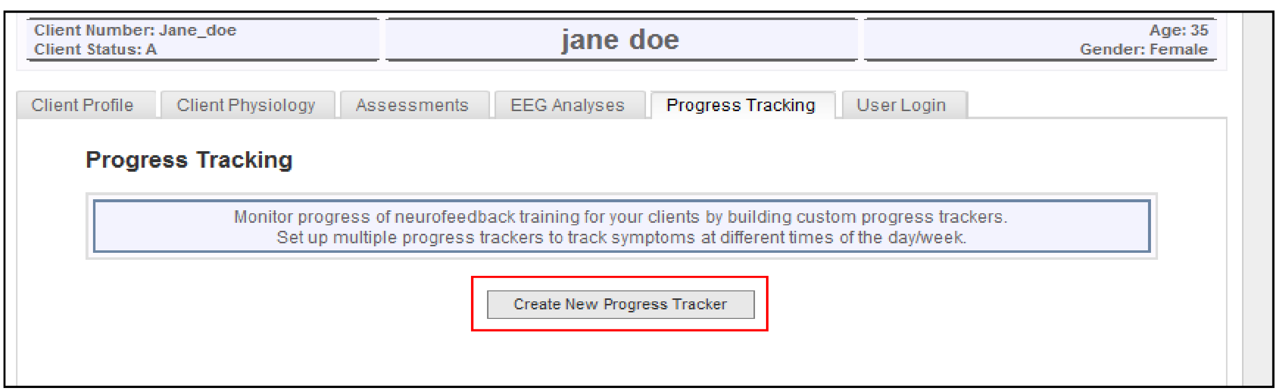
Creating a Progress Tracker

The progress tracker is a way to track specific conditions with your clients. They can be used throughout the training process to monitor their conditions. You will be able to view these conditions in a graph form. The clients continually rates them self on a score from 1 to 10 on each symptom. The progress tracker can be filled out as often as you wish. Once your client has filled out the Cog/Emo survey the system will generate a list of symptoms based on the Cog/Emo survey results. You can choose to track these symptoms or you can track other symptoms.

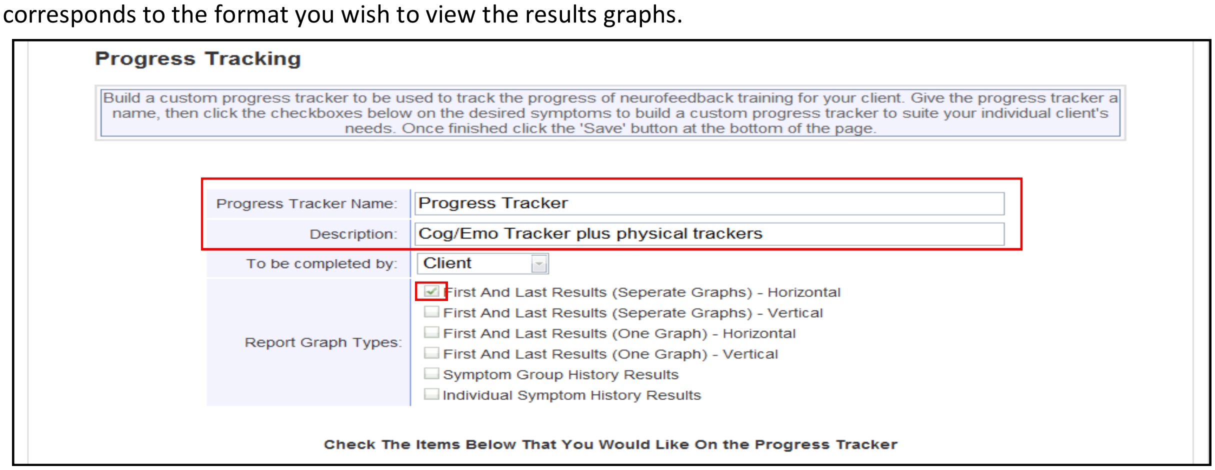
1. Click on the progress tracker tab located on you clients home page.



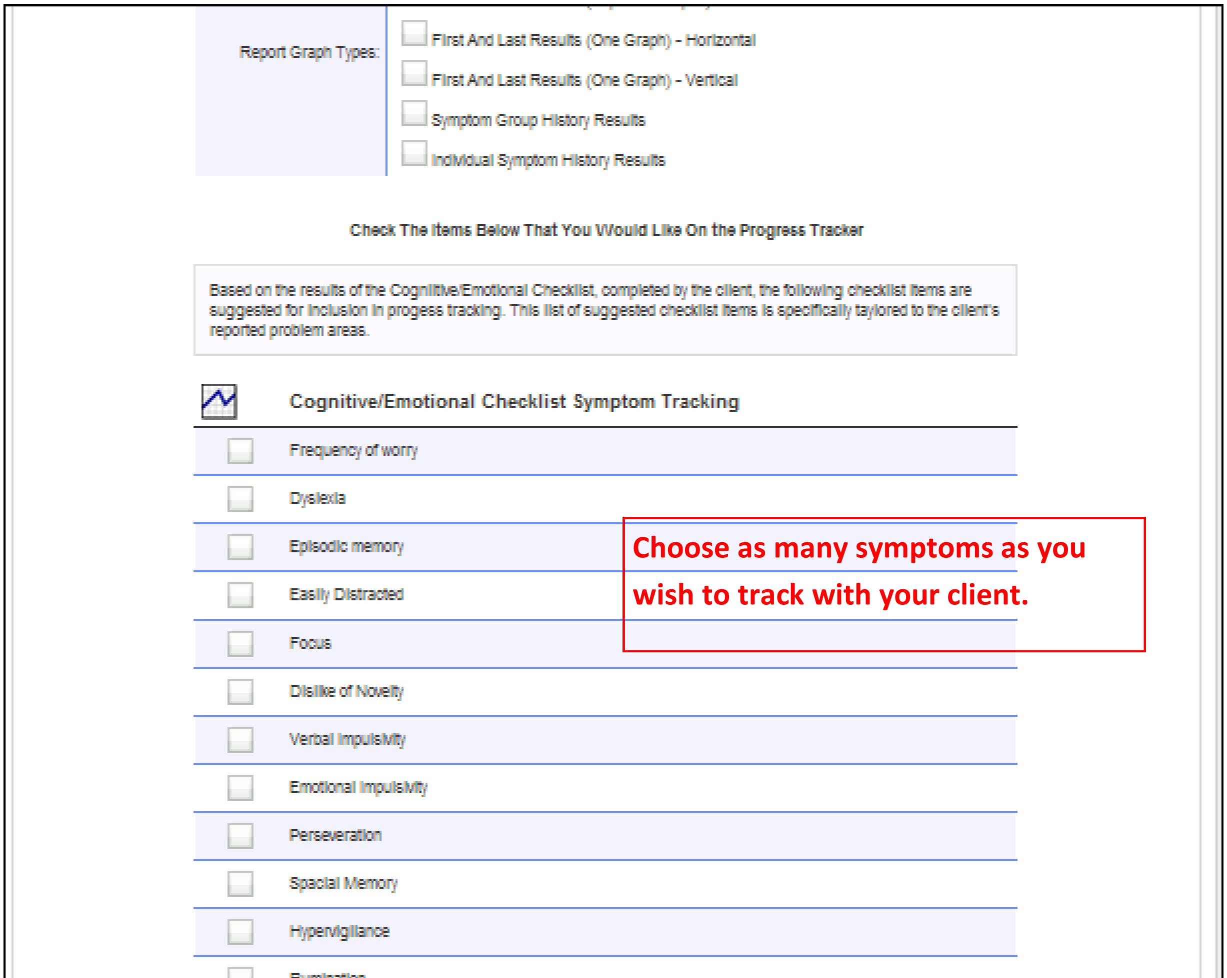
2. Click on the “Create New Progress Tracker” button.



3. You now must name the new progress tracker and give it a description of your choice. You will also need to check the box that corresponds to the format you wish to view the results graphs.



4. Now choose the symptoms with wish to track with your client. The first category you see is the symptoms that was generated from their Cog/Emo survey. You can choose any or all of these by checking the box nex to each symptom you wish to track. You also have access to a larger list of symptoms ranging from sleep to physical symptoms. To access this list scroll to the bottom of the page and click on “Click Here For More Symptoms”. You can now select any of these symptoms and add them to the progress tracker. When you are done click on the save button at the bottom left side of the page. The progress tracker is now ready to use.


Report Graph Types:

☐ First And Last Results (One Graph) - Horizontal
☐ First And Last Results (One Graph) - Vertical
☐ Symptom Group History Results
☐ Individual Symptom History Results

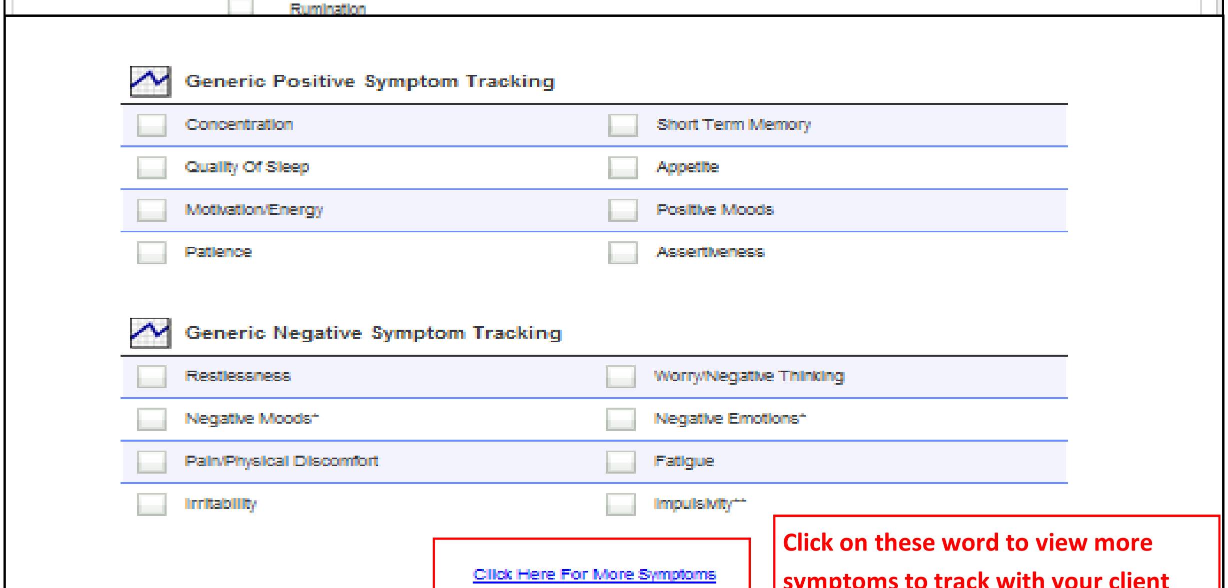
Check The Items Below That You Would Like On the Progress Tracker

Based on the results of the Cognitive/Emotional Checklist, completed by the client, the following checklist items are suggested for inclusion in progess tracking. This list of suggested checklist items is specifically taylored to the client's reported problem areas.

Cognitive/Emotional Checklist Symptom Tracking

☐ Frequency of worry
☐ Dyslexia
☐ Episodic memory
☐ Easily Distracted
☐ Focus
☐ Dislike of Novelty
☐ Verbal Impulsivity
☐ Emotional Impulsivity
☐ Perseveration
☐ Spacial Memory
☐ Hypervigilance
☐ Rumination

Choose as many symptoms as you wish to track with your client.


Generic Positive Symptom Tracking

☐ Concentration	☐ Short Term Memory
☐ Quality Of Sleep	☐ Appetite
☐ Motivation/Energy	☐ Positive Moods
☐ Patience	☐ Assertiveness

Generic Negative Symptom Tracking

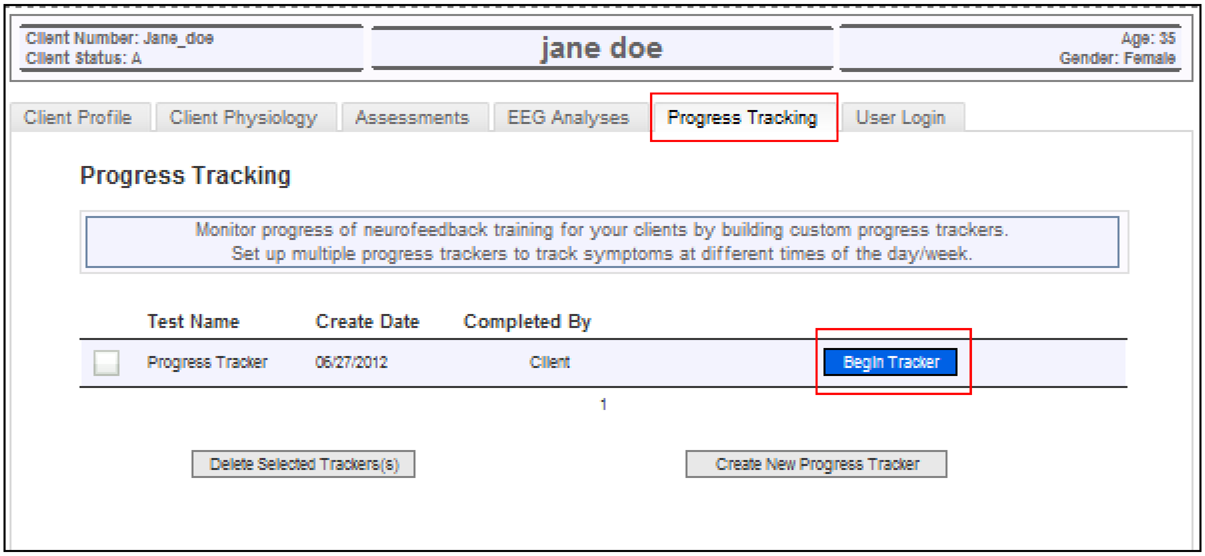
☐ Restlessness	☐ Worry/Negative Thinking
☐ Negative Moods*	☐ Negative Emotions*
☐ Pain/Physical Discomfort	☐ Fatigue
☐ Irritability	☐ Impulsivity**

Click Here For More Symptoms

Click on these word to view more symptoms to track with your client

Using the Progress Tracker

1. Click on the progress tracker tab from your patients home page.
2. Click on the blue “Begin Tracker” button.

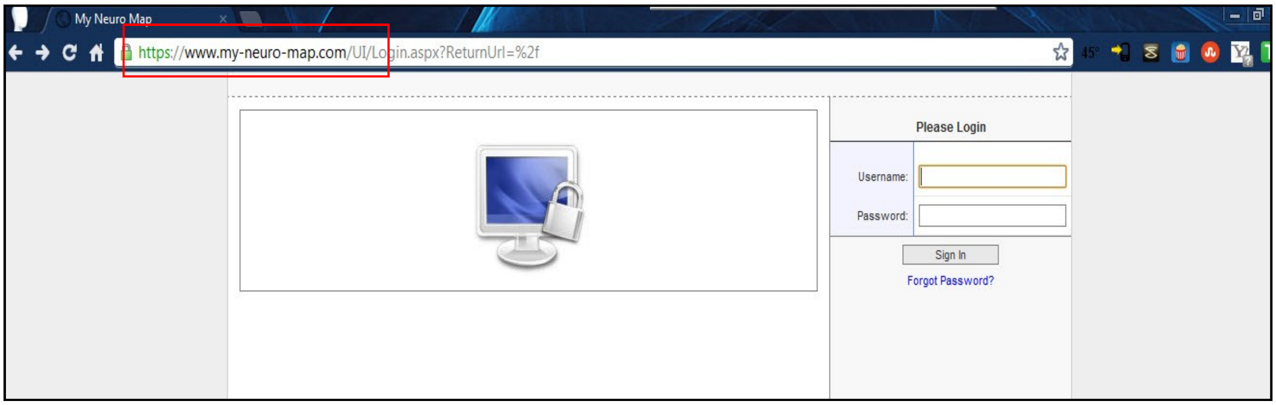


3. Have the patient answer all of the questions from 1 to 10. When they have completed all of the questions click on the submit button located at the bottom right of the survey.
4. After pressing the submit button you will automatically be taken to the results page. The first time the client fills out the progress tracker you will notice that each categories are repeated and have the same date on both graphs. Every time the client fills out the progress tracker the second graph will be updated with the new results. This will allow you to compare how far the client has come from their first session.

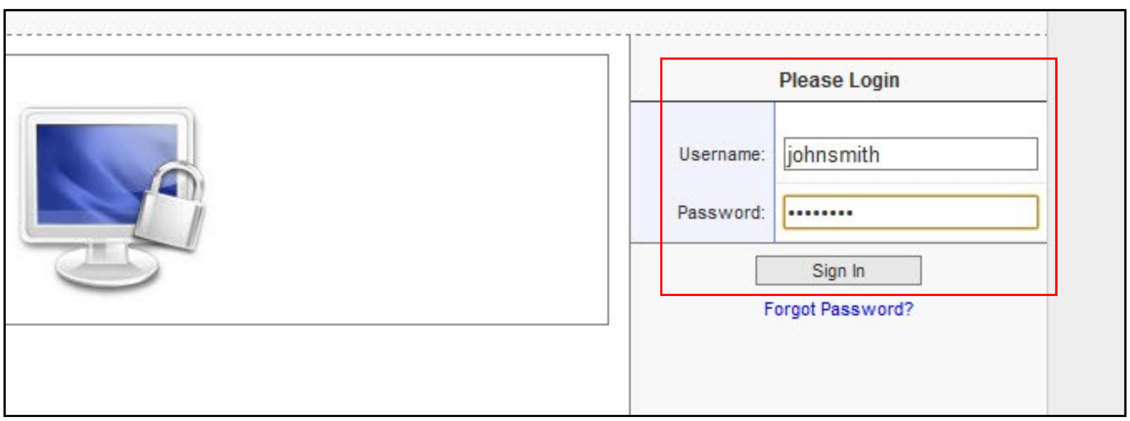
5. Your client can now go to www.My-Neuro_map.com from their home computer or a computer in your office and fill out their surveys.

How to use My-Neuro-map.com website

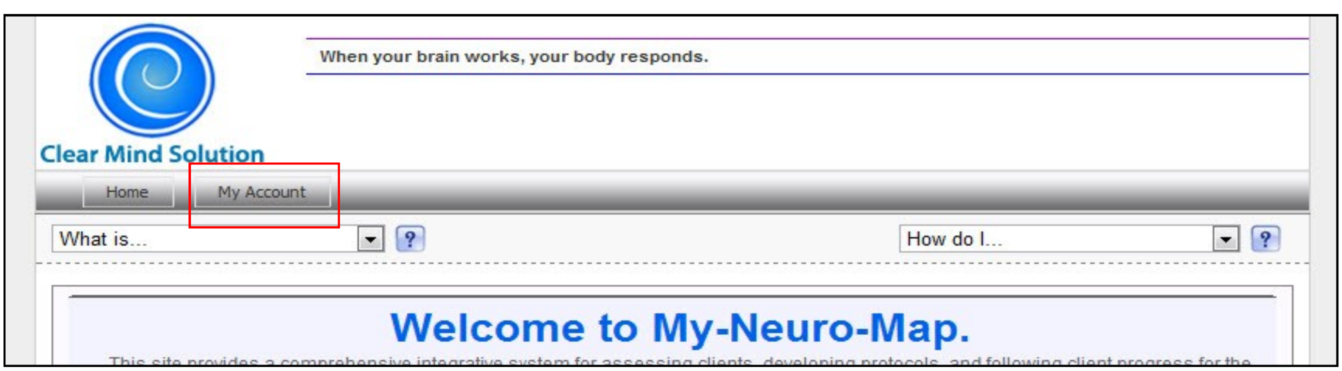
1. Open your preferred web browser and navigate to www.my-neuro-map.com.



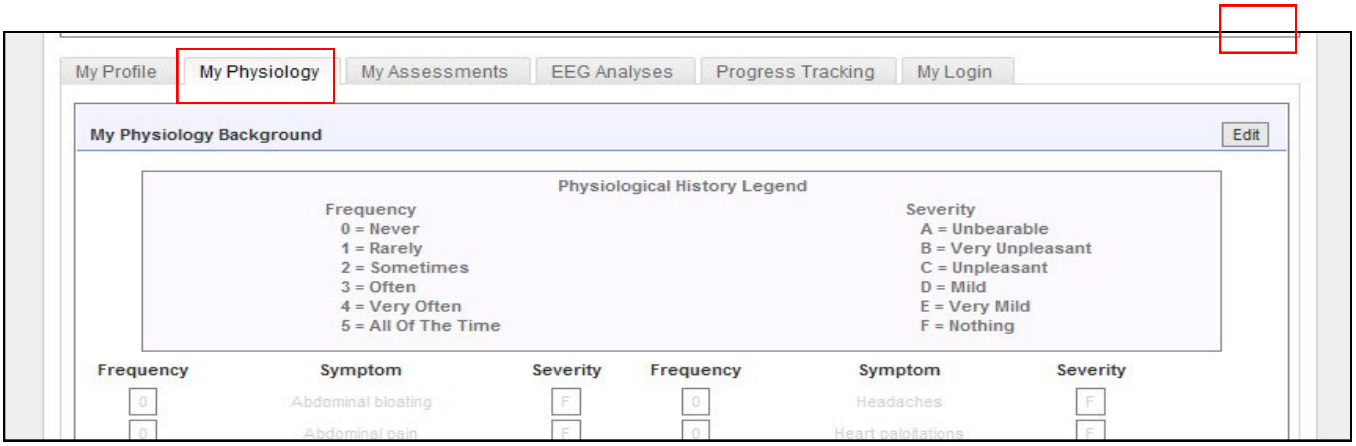
2. Enter the username and password provided by your neurofeedback clinician or doctor. Then click on "Sign In"



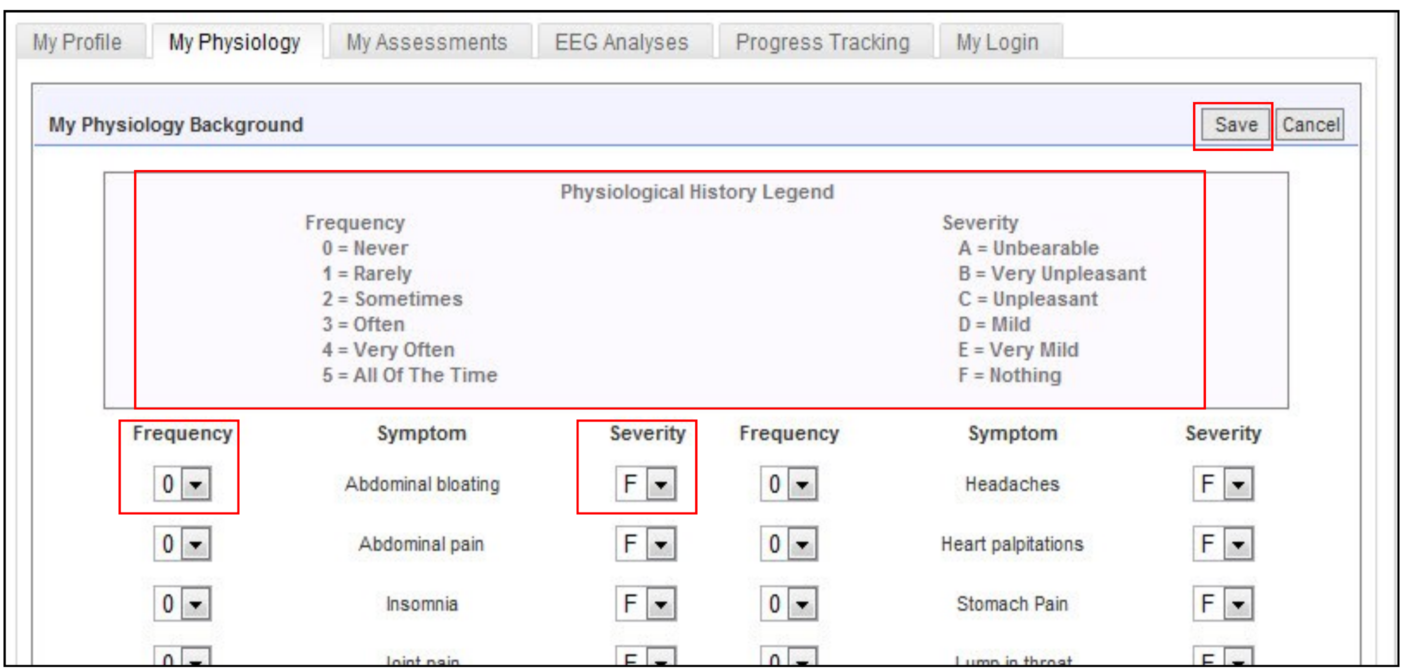
3. Click on the My Account button located at the upper left side of your screen.



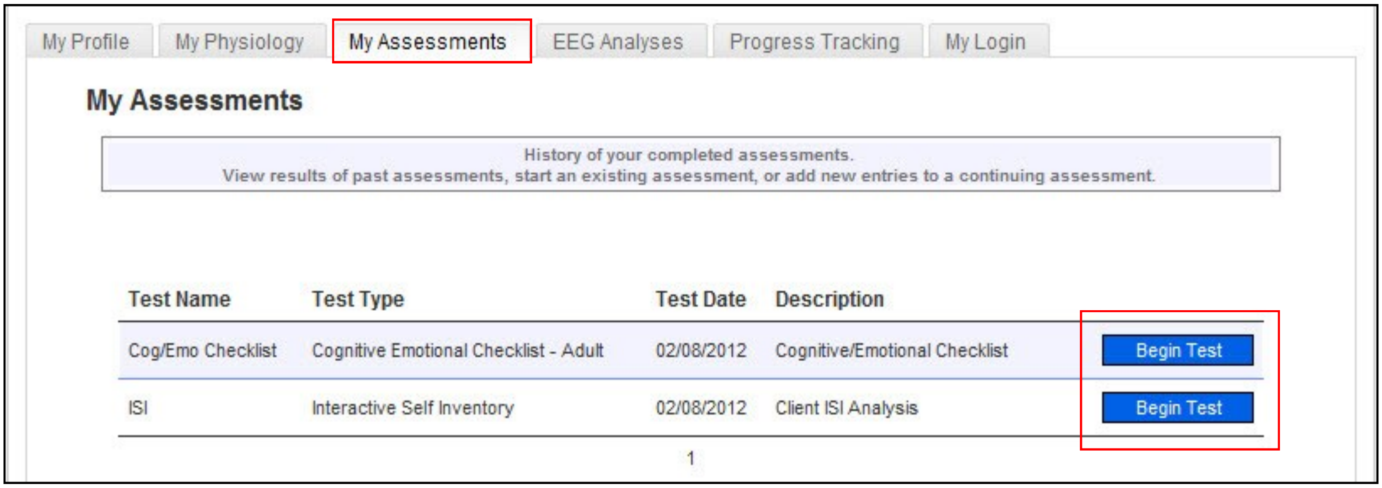
4. Next click on the My Physiology tab then click on the "Edit" button on the upper right hand side of the survey.



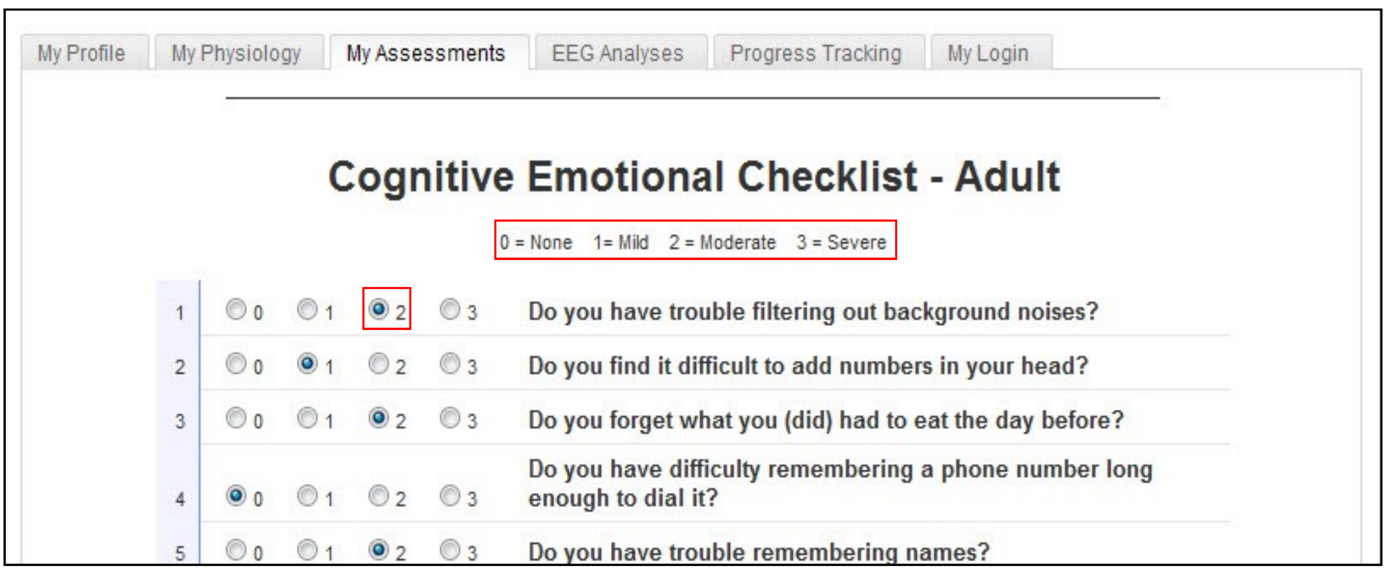
5. You will now notice that all of the question in the survey have two boxes that require your input. Click on the buttons next to the number and the letter by every question and enter the frequency and severity on all of the questions. Above the questions are is a legend to help you understand how to rank the questions. After you have completed all of the questions simply click on the save button on the upper right hand side of the survey.



6. now click on the “My Assessments” tab that is located just to the left of the “My Physiology” tab you were just at. Once the tab opens you will notice two blue boxes that say “Begin Test”. You will need to complete both of these surveys. To start chose on of the surveys and click on the “Begin Test” button.



7. Both of these surveys are designed the same way. You will need to click on a number next to each of the questions that matches you. For example in question one below “Do you have trouble filtering out background noise?”. If your answer is None you would enter 0. If this issue was severe for you enter a 3.



8. When you have completed the survey click on the submit button at the bottom right hand side of the survey.

9. Once you have completed the Cognitive and Emotional survey and pressed the submit button you will be returned to the “My Assesments” window. Complete the ISI survey by pressing the blue button that says “Begin Test”. Complete the survey and press the “Submit” button.