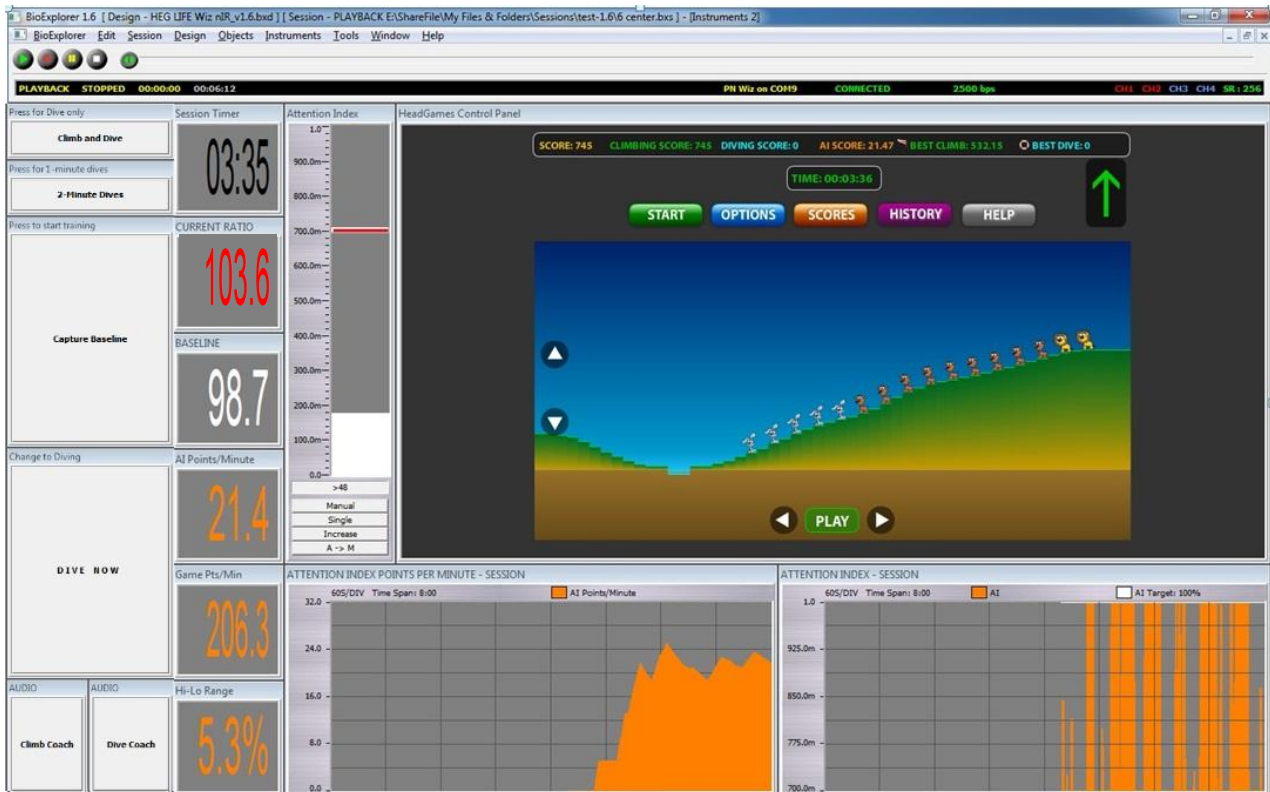


Bring your brain to LIFE

LIFE is a game for use with [nIR HEG](#) systems, including the HEG Pendant, Peanut, Pocket and the WIZ family of amplifiers operating in BioExplorer.

Unlike previous nIR HEG designs, LIFE teaches the client to activate (increase blood oxygen levels in the executive center of the brain) AND to de-activate. Improving energy levels in the pre-frontal cortex (PFC) involves knowing how to “idle,” and how to “turn it on.”



Like other Brain-Trainer HeadGames, LIFE runs in BioExplorer’s Flash Player. Unlike most other Flash games in BioExplorer, the HeadGames provide a Control Panel for the trainer on Instruments 2 (Trainer Screen) and a separate game screen on the Trainee window.

We’ll review both screens, how the game works.

Topics:

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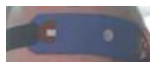
LIFE Quick Start printable reference sheet

Get ready



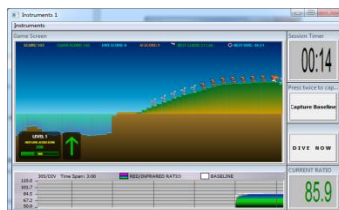
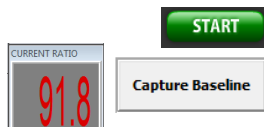
- A. Open BioExplorer
- B. Open Design - *Design / Open / HEG LIFE__nIR_v1.7*
- C. Power on amplifier
- D. Select settings for your amplifier
(Optima+ 4: load *HEG nIR.nbc*; Q-wiz: select *4 Channel*)
- E. Confirm Device is Connected
- F. Connect headband to amplifier
- G. Place headband on head with white dot over training site

Neurobit Optima 4 CONNECTED

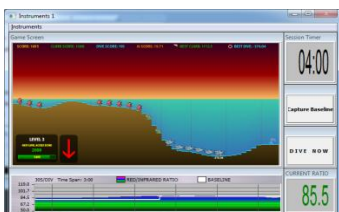


Get set

1. Capture Signal - *Press green triangle*
 - a. **Wiz users: Press Calibrate**
2. Start LIFE Game
3. Capture Baseline *when ratio number is stable*
 - a. **Optima+ users: Click Capture Baseline again!**



DIVE NOW



GO!

Open Instruments 1 and watch the brain man climb

Focus! Pay attention to the brain man as he climbs.
Remember to BREATHE.

DIVE

When you feel tired, have trouble sustaining the climb or after 3 minutes click DIVE NOW and watch the brain man dive

STOP

After diving ends, press Stop (white square)

Train a new site

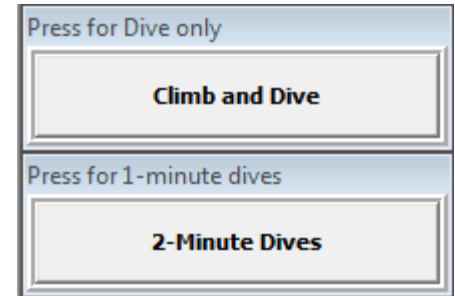
Move the headband to a new site to train and start from Step 1.

Train 3 sites each training and start with 3 minutes of climbing at each site.
Increase training time as you develop stamina.
(See Documents\Brain-Trainer\LIFE Cycle)

PLAYING LIFE

The goal of LIFE is to score as many points as possible by adding animals to the training field, and to add larger animals with higher point values by climbing higher or diving deeper.

Most trainees will begin training a few sessions learning to dive. Press the "Climb and Dive" button so it says "Dive Only". Trainees with obsessive thinking, compulsive behaviors, getting "stuck," anxiety or intellectualizing may find it more difficult to dive.



The Diving state is the opposite of single-pointed mental focus. The trainee defocuses the eyes, shifts from paying attention to the mind to attending to breathing in the chest/belly. The mind is still and aware but not thinking or trying. This is an open focus state. It may help to start with eyes closed and then learn to hold the state while slowly opening them.

When the trainee has the feel of "open focus" and is able to produce and sustain good Dives, try some sessions of Climbing. Climbing is the default setting. Trainees with difficulty in focusing, motivation, self-control low energy/depression and organizing may find climbing more difficult.

The Climbing state is the opposite of Diving. Instead of open focus, the trainee defocuses the eyes, shifts from paying attention to the mind to attending to breathing in the chest/belly. The mind is still and aware but not thinking or trying. This is a single-pointed focus state.

There are brief coaching files that you can listen to in order to better understand the process. Press *Climb Coach* or *Dive Coach* any time during the session or use the shortcuts on your desktop to listen at any other time.



After the trainee has gained some ability to raise or lower the training line, leave *Climb and Dive* as the default setting and improve ability to shift smoothly back and forth. The "Life Cycle" file in your Brain-Trainer Help folder outlines an entire training cycle with suggestions for climb and dive time to total 300 minutes of increase training.

Example		
0	Dive only	3 min each
0	Climb only	3 min each
1	Climb/Dive	3 min/2 min
2	Climb/Dive	3 min/2 min
3	Climb/Dive	3 min/2 min
4	Climb/Dive	3.5 min/2 min
5	Climb/Dive	3.5 min/2 min
6	Climb/Dive	3.5 min/2 min
7	Climb/Dive	4 min/2 min
8	Climb/Dive	4 min/2 min
... so on, up to not more than 10 minutes per site		

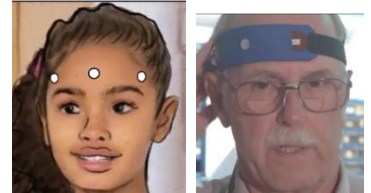
The game will always begin with Climbing. The trainer chooses when to Dive. Start with climbing then dive at each training site. Clients with migraines may find the "Rocking" most useful, since it mimics what happens in many migraines.

Each session will train 2-3 sites (left and right temples or over the left and right eyes and over the bridge of the nose), beginning with 2-3 minutes at each site and building up to as many as 10 minutes per site. Sessions shift from alternate days to a session every three days to one session a week as they grow longer. You can vary which site to start with at each session.



PREPARING FOR LIFE

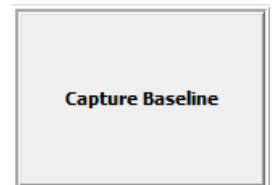
HOW TO Video: Running a LIFE Session

1. **LIFE DESIGN** - Open BioExplorer, and in the Design menu, choose Open and Load the LIFE training design from the folder *Documents\BioExplorer\Designs*.
2. **AMPLIFIER** - Make sure your amplifier (Optima+, Wiz, etc.) is turned on and sending to your computer. You should see the name of the amplifier in the black status bar across the top of the screen, showing beside it the green word **Connected**. *If using the Q-wiz, use 4CH mode, not HEG. If using the X-wiz, use EEG Mode in the BioExplorer Wiz window. If using Optima+, Load HEG nIR.nbc from Documents\Neurobit.*
3. **SENSOR** - Place the nIR HEG headband on the trainee with the white velcro dot shown at the area you want to train (left, right or center) and plug it into the amplifier.





STARTING THE GAME

1. **SETTINGS** - Select your training settings (dive or climb, dive time) using the buttons.
2. **DATA FLOW** - Click **Capture**  to start data flowing into BioExplorer. If you don't want to save the data, click Cancel if prompted by dialogue window.
3. **GAME ACTIVATION** - Click the **START**  button in the Control Panel for LIFE to open the door to the game.
4. **BEGIN TRAINING** - Tell the trainee to relax and just look around naturally. When the signal has stabilized (see instructions for your amplifier) click Capture Baseline on either screen. For Optima+, click Capture Baseline a second time.
5. View Instruments 1. The game will start. Tell the client to begin training.



After training one site, stop the segment by pressing the Stop button . Begin training the next site by following the above steps.

- 1 **SETTINGS** - Use default or change to Dive only
- 2 **DATA** - **Capture** 
- 3 **GAME** - **Start** in  game Control Panel
- 4 **TRAIN** - Capture Baseline

2 Data flow

REVIEWING THE GAME

SCORES:

At the end of each round of the game (training several minutes at one site), the trainer clicks Stop in BioExplorer and the game also stops. Then by clicking the SCORES button on the Control Panel, Scores will be shown. The last line is the most recent.

HISTORY:

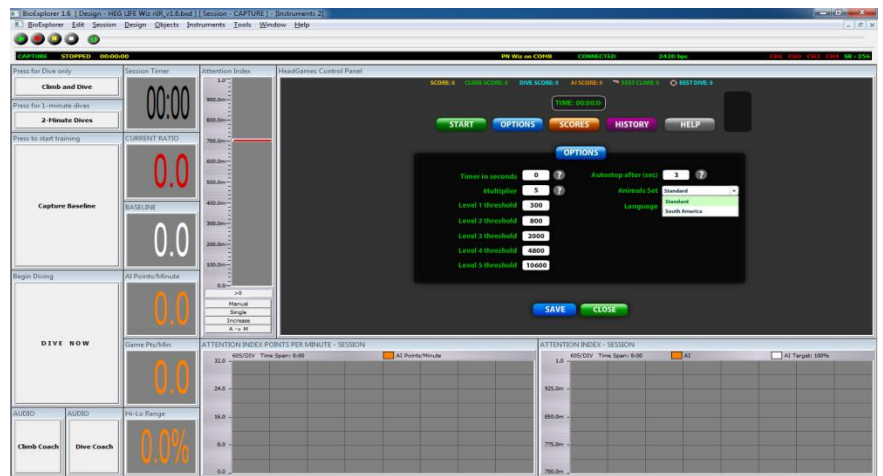
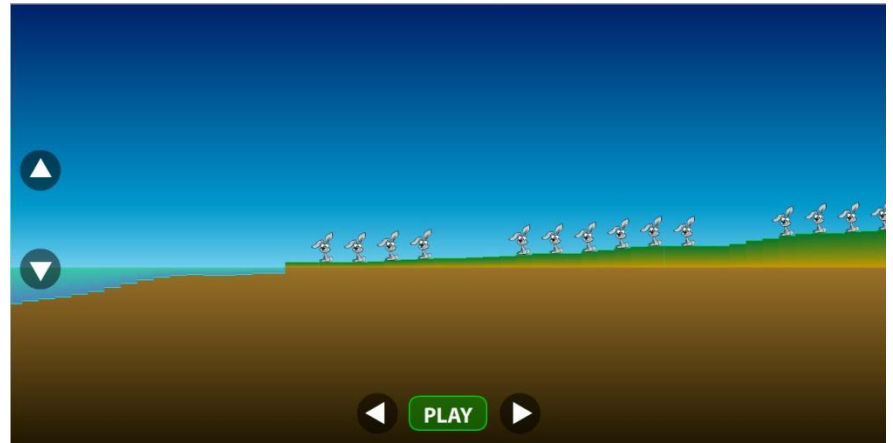
By clicking the HISTORY button on the Control Panel, the trainer can replay the session to allow the trainee to see the entire process.

The graph can be played or paused to point out specific occurrences. It's also possible to raise or lower the scale by clicking the arrows to keep the desired area on screen, fast forward or rewind, and to click and drag the display forward and back.

TRAINER SCREEN

BioExplorer always opens Instruments 2 screen with trainer controls on top. It offers these options for using LIFE:

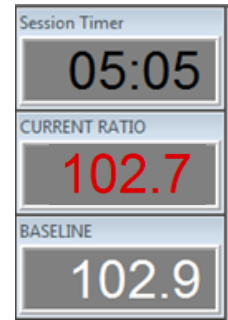
1. *Dive Time*—Using LIFE in “rocking” mode, you control the climb period. Each time you terminate a climb with the Dive Now button, LIFE will dive for 1 or 2 minutes before climbing again. Begin with 2-minute Dives (default); try switching to 1-minute Dives later in training.
2. *Climb and Dive/Dive Only*—Click the button to select diving only or leave at default (Climb and Dive) to climb until the Dive button is pressed. When the trainee can raise and lower the training line, begin Rocking training to improve ability to shift smoothly back and forth. (See "[LIFE Cycle](#)")
3. *Capture Baseline*—This is the button that actually starts the game. Click this after the signal stabilizes. For Optima+, press a second time.
4. *DIVE NOW*—When the trainee has climbed for the desired period—or when there are signs of fatigue, click this button to set a relaxing period. The dive will last 1 or 2 minutes based on the trainer choice, and then it will begin another climb.
5. *Control Panel*—This allows trainers with 2nd monitors to control the Flash game from their window. Buttons allow you to Start or Stop the game, set Training Options, display the score or history of the game just completed or learn more about the game with the HELP button. (note: The two control buttons—Capture Baseline and Dive Now—are available on the trainee screen as well.)
6. *Options*—The trainer can change the responsiveness of the screen for clients whose signals vary widely, or very little, to make it more visually useful and select the language and animal set to use. It is also possible to set a time for the session and to adjust the targets for the game's 6 levels.



Several display instruments are available to give information to the trainer:

RED/INFRARED RATIO:

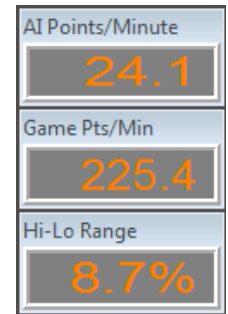
1. The Session Timer is at the top left of the Trainer screen. It displays the length of the training session and is reset when the *Capture Baseline* button is pressed.
2. Below that are the current value of the red/infrared ratio and the baseline. When the baseline is captured, the Baseline meter will show the ratio at that time as a constant. This is the value the trainee wants to stay above (or below for diving).



PROGRESS:

Three orange meters show the three most useful values for judging progress across sessions:

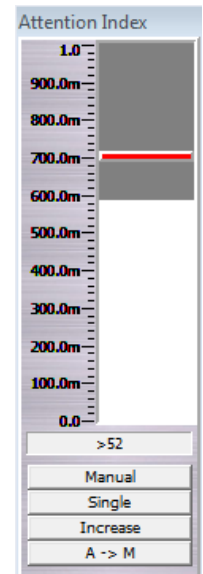
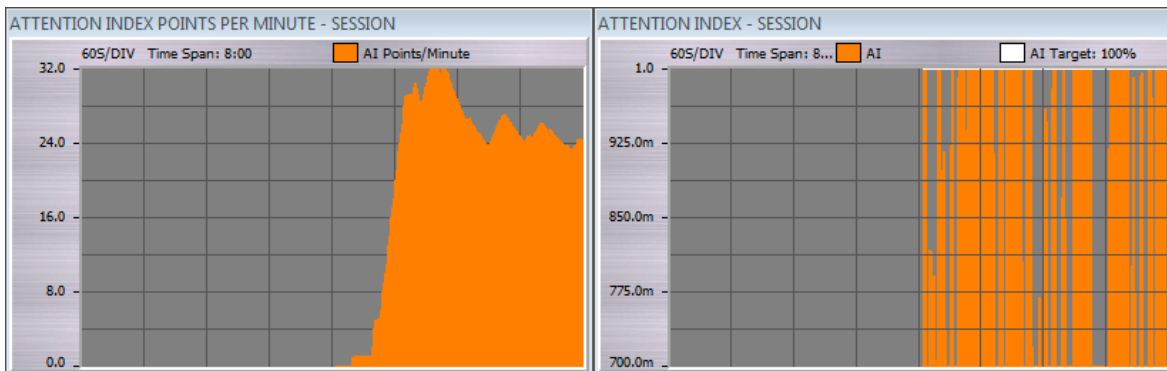
1. Attention Index Points/Minute - *Stability*
2. Game Points/Minute - *Control*
3. High - Low Range maximum - *Range*





ATTENTION INDEX:

The Attention Index (AI) is a measure of how consistently the HEG ratio is increasing. 100% is best.

1. Below the meters is the AI threshold. This is set at 70% and should not be changed. The bar is orange when trainee AI is above 70%. The game scores points when this bar is in range.
2. Below the control panel are trend graphs showing the AI points per minute and AI accomplishment across the entire session.



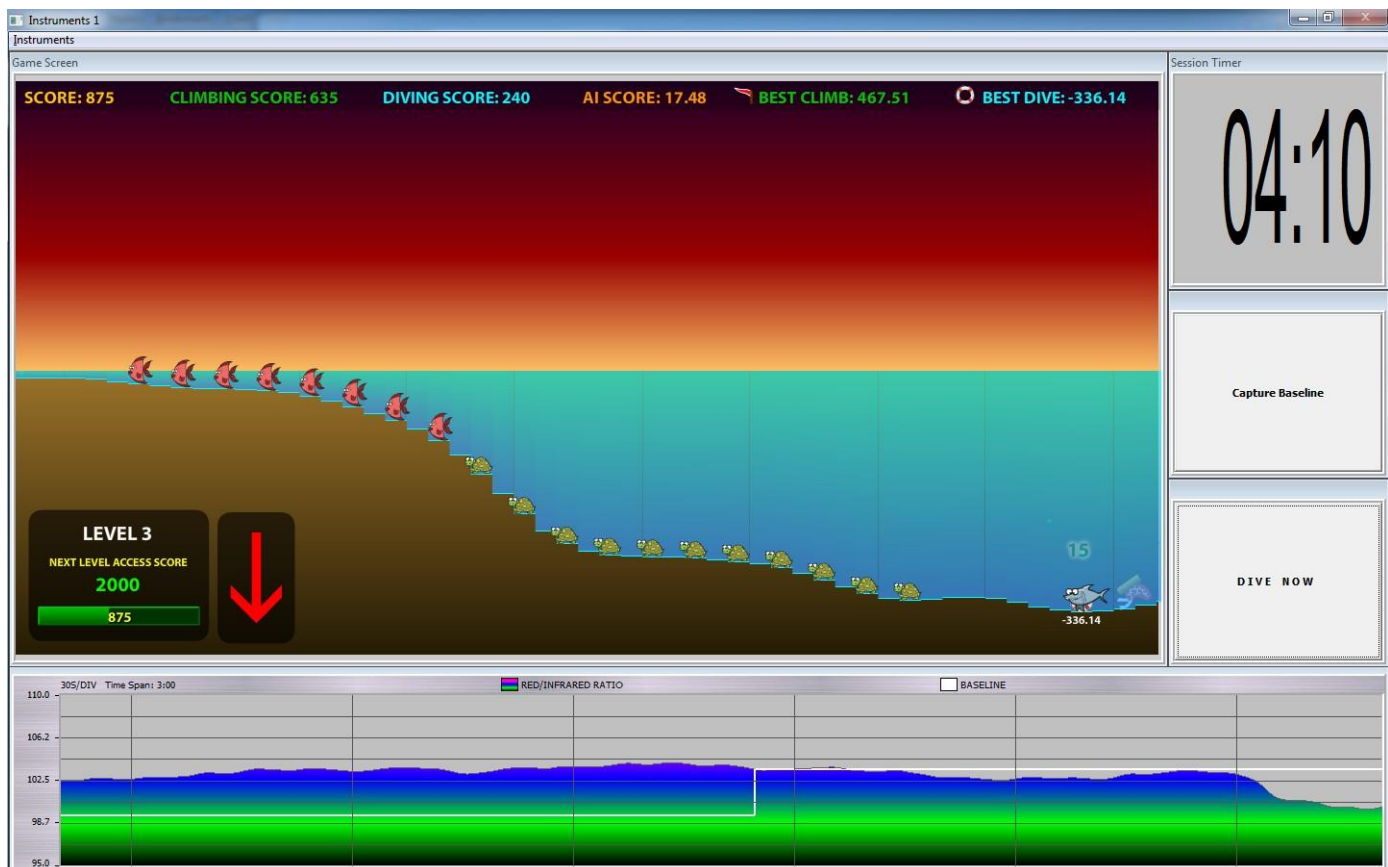
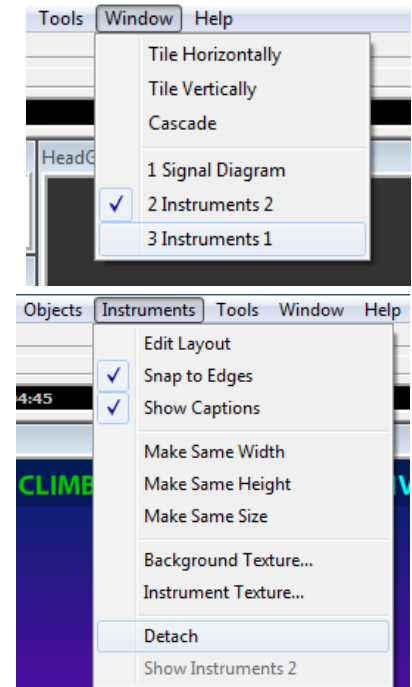
TRAINEE SCREEN

The Instruments 1 screen is the training screen. It can be used with a single-monitor by clicking Capture  in BioExplorer, clicking the Control Panel's START button  and moving to Instruments 1 in the Window menu. Click Capture Baseline to begin play.

For use with two monitors, bring Instruments 1 to the top (in the Window menu) and, in Instruments menu, choose Detach. Then the window can be dragged to the trainee's monitor.

The game window shows the Brain character, always on the right edge of the screen either running (if climbing) or swimming (if diving). The environment comes onscreen from the right, so the trainee can see where his brain is now compared to where it has been.

On land, there are rabbits, dogs, lions, horses, and elephants placed on the landscape each time the brain continues to show equal or better performance for a full second. As the trainee climbs, the animals change and each is worth more points. In the water, there are fish, turtles, sharks, dolphins and whales.



Each time the trainee reaches a new record for highest or lowest point, a flag (Climbing) or a life preserver (Diving) appears on the screen.

The arrow in the bottom left corner of the screen shows whether the client is Climbing or Diving. The Level window shows which of the 5 levels the client is currently on, the target for points to complete the level and progress. When the target points are achieved, a trophy appears and the Level changes. Scoring becomes progressively more difficult on each level as the trainee must sustain the state longer to place an animal.

Across the top of the screen the trainee can see highest climb and deepest dive, points scored climbing, diving and total and the number of AI points per minute—a measure of consistency.

The Trend graph at bottom of page shows training ratio and target line. This trend line follows the terrain in the LIFE game screen.

LIFE AUDIO

The LIFE game comes with its own sounds for scoring, climb and dive record-setting, direction change and leveling up.


The LIFE design has a soft "ding" sound as Attention Index points are scored. This will indicate that the brain man is going in the right direction, even if he is on the wrong side of the training line (e.g. in water while climbing).

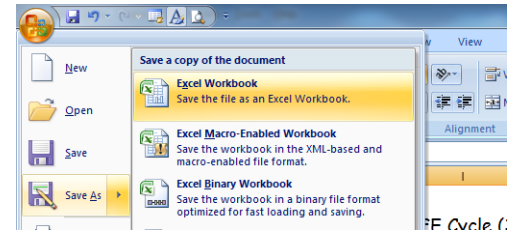
Audio coaching is available and accessed by buttons in the lower left of the trainer screen. These can be played as desired during a session. There are shortcuts on the desktop so you can listen at any time outside of a session.

SESSION RECORDS

In your Brain-Trainer folder you will find LIFE Cycle in .pdf and Excel form for keeping track of training time. Keep one record for each trainee in his sessions folder.

The target is 300 minutes of climbing training. Record the number of total climbing minutes for each session. Use the LIFE Cycle recommendations as a guide to training length. The .pdf file can be printed for keeping track on a hard copy. The Excel file automatically counts climbing minutes and keeps a running total.

To save a copy of the Excel file, select File  | Save As | Excel Workbook in the trainee's folder.



HEG LIFE Cycle (300 climbing minutes)

Client Name **9** - Total Climb Minutes

WEEK	CLIMB	DIVE	SITES	LENGTH	DATE/TIME	CLIMB MIN
1	3	2	3	15	3/1/2015	9
	3	2	3	15		
	3	2	3	15		
2	3.5	2	3	16.5		
	3.5	2	3	16.5		
	3.5	2	3	16.5		
3	4	2	3	18		
	4	2	3	18		
	4	2	3	18		
4	4.5	1	3	16.5		
	4.5	1	3	16.5		
	4.5	1	3	16.5		
5	5	1	3	18		
	5	1	3	18		
	5	1	3	18		
6	6	1	3	21		
	6	1	3	21		
	6	1	3	21		
7	7	2	2	18		
	7	2	2	18		
8	8	2	2	20		
	8	2	2	20		

*Train for 8 weeks, 2-3 times/week
Begin with climb period, then dive for 2 or 1 minutes per session.
Note the session date/time
Save sessions and track the graph of performance.*

Some trainees may need to start slower (shorter climbs), and increase training time more slowly to sustain climbing.

The full cycle involves 300 minutes of climbing training. Extend the number of sessions as needed to reach this level (generally no more than 12 weeks).

*3-site sessions: Left / Center / Right (order can be varied)
2-site sessions: Left / Right.*

UNDERSTANDING LIFE STATISTICS

There are three primary measures we track: **AI points per minute** (Stability), **Game points per minute** (Control) and High to Low maximum **Range**.

ATTENTION INDEX POINTS/MINUTE

Consistency and ability to sustain the state (climbing or diving)

When you score an AI point, if you are climbing and out of the water (or diving and in the water) you will hear the "shing" sound and see an animal added to the landscape. If you are climbing but are in the water (or diving but are out of the water) you won't get this feedback, but you'll hear a click. You can score AI points even if you are NOT scoring Game points. AI points are a measure of you brain's ability to SUSTAIN the desired state.

In each second, LIFE samples your HEG signal 10 times/second. If each measure is equal to or greater than the last (climbing) or equal to or less than the last (diving) for a second, the AI graph on the trainer screen will reach the top--AI of 100. Then, if you continue for another half second without going the wrong direction, you score an AI point. You may have seen times in your training where you placed a whole series of animals on the landscape one right after the other. That happens when you manage to climb or dive without a break for multiple half-seconds. The moment the brain shows a change in direction--even 1 step--the AI drops down, and you have to sustain the climb or dive for a second again to be able to start scoring AI points. So, for example, if you climb steadily for 10 readings (1 second) and reach an AI of 100, then sustain for a half second, then miss a step, then you maintain for another second to reach AI 100 again, you'll score 1 AI point in 3 seconds. If you get to an AI of 100 and keep climbing without a drop for the next two seconds, you'll score 4 AI points in 3 seconds.

There are two graphs at the bottom of the trainer page you can look at after the session is over to see how steadily you were able to maintain the desired state.

RANGE

How well you are able to distinguish between the two states

As you are climbing or diving, in addition to the "shing" sound when you score a point, you may also hear a "ding". If you are watching the screen, you'll see a little flag (if climbing) or Life Preserver (if diving) appear on the landscape and briefly you'll see a numeric value. This tells you that you have reached a new high or low for that session. The third measure for you performance is how high you are able to climb when climbing, and how deep you are able to dive when diving. These are measured against the climbing or diving baseline.

The ideal is that you are able to shift quickly back and forth from concentration to consciousness (climbing to diving) and that you are able to sustain each state when in it. Range measures the highest percent above the baseline you achieved when climbing to the deepest percent below baseline when diving. The greater this range, the more effectively your prefrontal cortex will be able to function.

GAME POINTS/MINUTE

Overall view of how well the training went - combination of Attention Index and Range

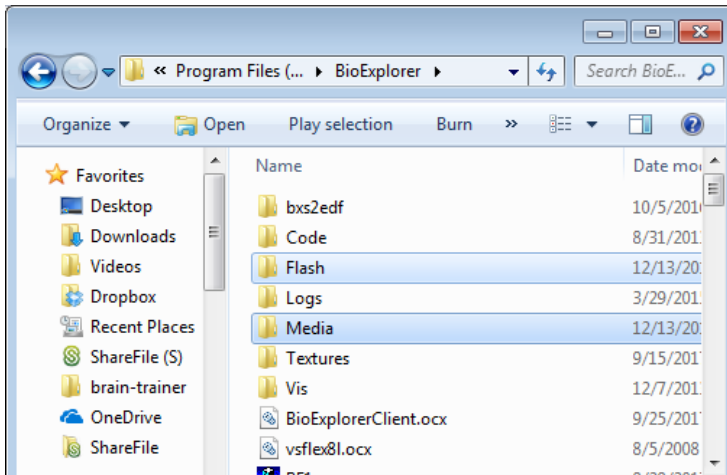
Obviously the more stable your brain's ability to climb or dive, the more animals you will place each minute. But animals also have point values. As you begin, you'll place (for example) rabbits on the screen--each worth 5 points. If you go up and down a lot, indicating a weakness in your perfusion system that supplies your neurons with blood, you may find yourself always placing rabbits--only rabbits. But as you climb further, you start to place dogs, then lions, then horses, and finally elephants. Each dog is worth 10 points, lions 15, horses 20 and elephants 25. The higher (or deeper) you go, the more Game Points you score for each AI point. So Game Points/Minute is a measure of how strongly you were able to activate or de-activate AND how consistently you were able to maintain the state.

Both AI points and Game Points are divided by the number of minutes of training, so they can be compared in a 1 minute segment and a 10-minute segment.

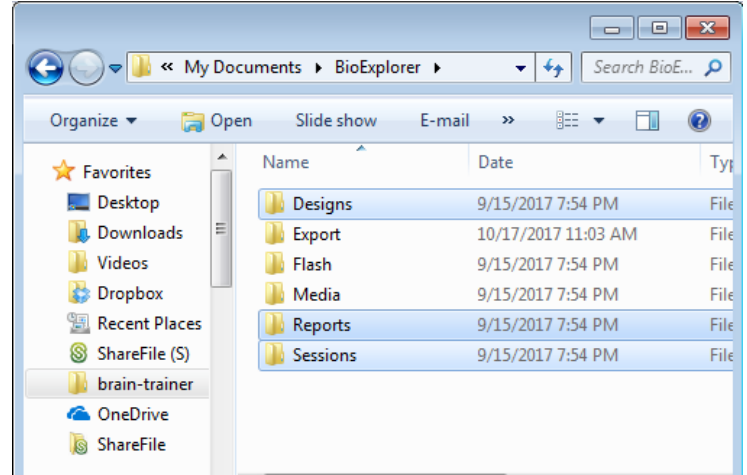
FILE MANAGEMENT

Understanding the BioExplorer file structure and following some guidelines for file saving will help in organizing and reviewing training. The **LIFE_Setup** installer will place files in their appropriate folders. Flash and Media (audio) files are stored inside *(C:) \Program Files (x86) \BioExplorer* so that they can be pre-loaded into designs for your convenience.

(C:) \Program Files(x86) \BioExplorer



Documents \BioExplorer

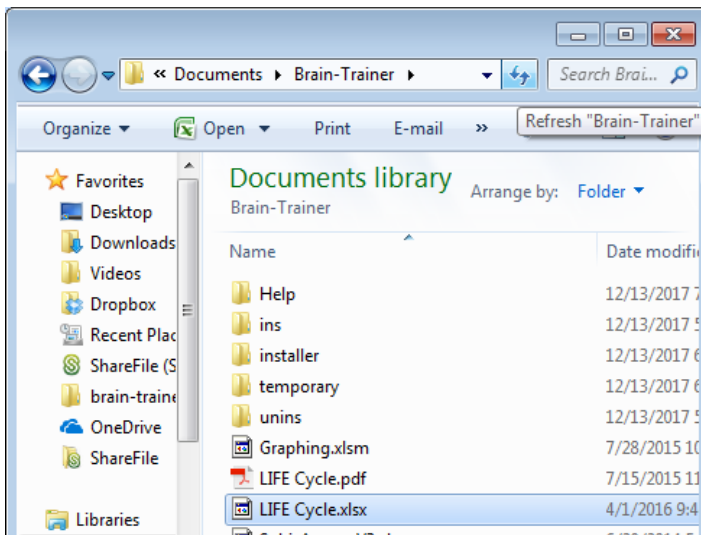


Designs are stored inside *Documents \BioExplorer \Designs*.

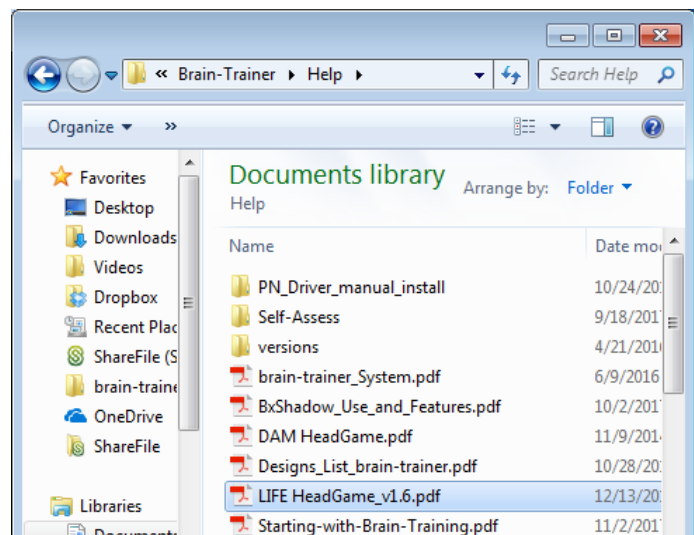
The *LIFE Cycle* tracking file, will be found in the *Documents \Brain-Trainer* folder.

Instructional files are found in *Documents \Brain-Trainer \Help*.

Documents \Brain-Trainer



Documents \Brain-Trainer \Help



BIOEXPLORER PREFERENCES

Before starting with BioExplorer, one time, select BioExplorer | Preferences and [set preferences](#). You may check any or all of these *except* **do not check "Auto Generate Session Filename."** You want to name the file yourself.

