

Mind Muscle

Introduction

The purpose of this document is to provide a comprehensive overview of using the software “Mind Muscle”. Mind Muscle is a game that allows you to measure, train and track your ability to focus. It is designed to be used in conjunction with the Neurosky EEG (electroencephalogram) headset, giving you an easy way to gauge your own level of focus, and providing an interface for further analysis.

Basic Setup

Once the headset is properly placed on your head, launch the game. If the headset was properly detected (please see Troubleshooting section for more information), then you will see the game’s start menu. If this is your first time, click “Calibrate”. The calibration mode will show you the current state of the brainwaves detected, in the form of “Focus”, a percentage value with 0 as the minimum and 100 as the maximum. It will also show you a notification every time you blink, and the strength of the blink detected.

Start Game

Once you’re comfortable with the calibration, click “back” to go back to the main menu. You may now initiate the game by clicking “Start game”. You will see a list of the levels. The levels give you challenges of varying difficulties.

Playing the Game

The very first level of the game presents you with a single box. The goal is to lift the box up off the ground and keep it in the air for 3 seconds. The box is lifted only when the focus reading is above a certain threshold. This will force you to try and train your brain to focus to keep the box afloat.

Certain levels might have two or more boxes. You can only control one box at a time. The box which you are currently controlling will be green. Blinking will switch to the next available box.

So if you have two boxes on screen, blinking once will allow you to control the second box. Blinking again returns control to the first box.

Future levels will have you lifting the box for longer periods of time, or lifting multiple boxes. To do this, you will have to be careful to keep your focus up as well as switching at the correct times. Further challenges will introduce dummy objects or moving images, designed to test your ability to focus despite distractions.

Passive Reading Mode

If you've already explored and exhausted all the available options in the game, and still thirst for more in-depth analysis, you might want to consider using the "Passive Reading Mode". Click on this mode from the main menu. Once clicked, the program will start to record your brain readings and write them to a file. The program will always append to the file "brain.out", and create it if it does not exist, so you don't have to worry about any data being overwritten. Clicking "Stop Reading" will take you back to the menu. The program continually writes to the disk, so even if you shut down the computer before clicking stop, you will not use any of your data.

Having this data will then allow you to generate reports. You may use the basic in-game analyzer, which maps the focus levels over the timestamps recorded, or you may wish to use your own programs for analysis. Giving you the raw data is a powerful way for you to integrate these brainwaves in any application.

The Raw Data

TODO: Explain what exactly the headset is reading from your brain, and how this is used to calculate focus levels.

Data Analyzer

TODO: Explain how to generate a basic graph of the recorded data.

Troubleshooting

TODO: Explain various issues one might encounter when running the game.