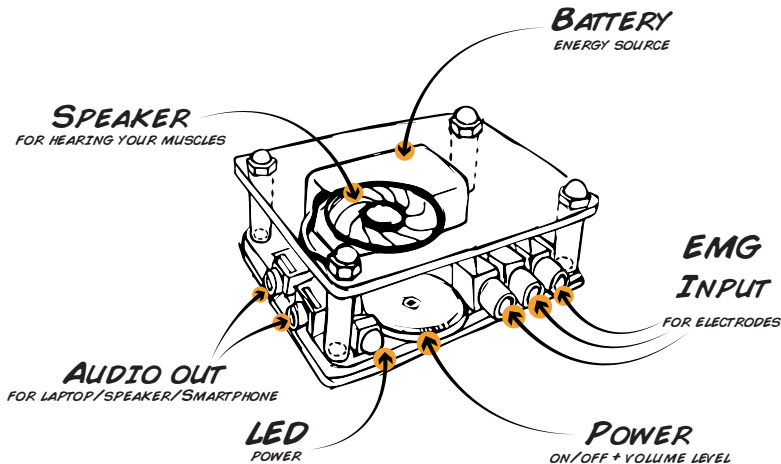


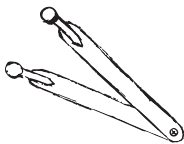
WELCOME TO THE **NEURO**REVOLUTION!

CONGRATULATIONS! YOU ARE NOW A PROUD OWNER OF THE SPIKERBOX.



SMALL MUSCLE ELECTRODES

Use for recording from small muscles.
Apply gel first!



CONDUCTIVE GEL

Apply gel to get a better signal from small muscles.



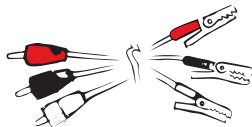
LAPTOP CABLE

Connect EMG SpikerBox to your laptop.



EMG LEADS

Connect these from the SpikerBox to your electrodes.



LARGE MUSCLE ELECTRODE PADS

Stick to your arm for recording. (see back for instructions)



SMARTPHONE CABLE

Use to record muscles on your smartphone.



FLIP OVER TO GET STARTED WITH YOUR FIRST EXPERIMENTS...

GETTING STARTED WITH YOUR

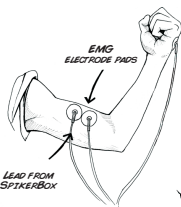


You may have heard and seen spikes from invertebrates. But what about yourself? Your body uses electricity to communicate and control parts of the body. So now let's try to record electrical impulses from muscles in humans!

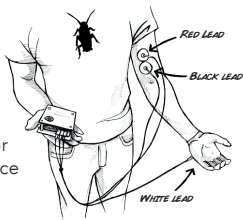
LET'S GET STARTED!

In this experiment, we are going to record the group activity of 1000's of muscle fibers within the large bicep muscles and also a small number of fibers from the tiny interosseous muscle in your hand

BICEP RECORDING



Remove the sticky backing from your EMG pads, and place these surface electrodes on two sides of your bicep.



Hook up the EMG SpikerBox leads (the red and black alligator clips) to the two surface electrodes on your bicep.

Place the reference electrode (White) anywhere on the body. You can stick electrode pad on the back of your hand. You can also simply hold the reference electrode in your hand.

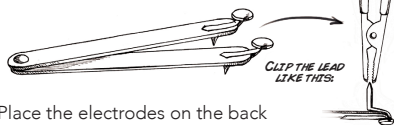
Turn on the EMG SpikerBox and listen for changes in activity. Notice a difference when you flex your muscles?

Plug in your SmartPhone (with our free Android or iPhone apps installed) or computer (using our Backyard Brains PC app or Audacity program). Can you see spikes?

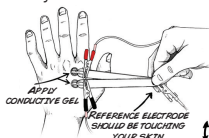
**DOZENS OF OTHER EXPERIMENTS AT
BACKYARDBRAINS.COM/EXPERIMENTS**

MUSCLE ACTION POTENTIALS

Attach both the Red and Black lead clips to brass fasteners on either side of your "Popsicle stick" small motor electrode.



Place the electrodes on the back of your hand between the knuckles as shown:



Turn on your EMG SpikerBox and move your middle finger like this:

Now try the other small muscles: arm, leg or face? Don't forget to use gel!

