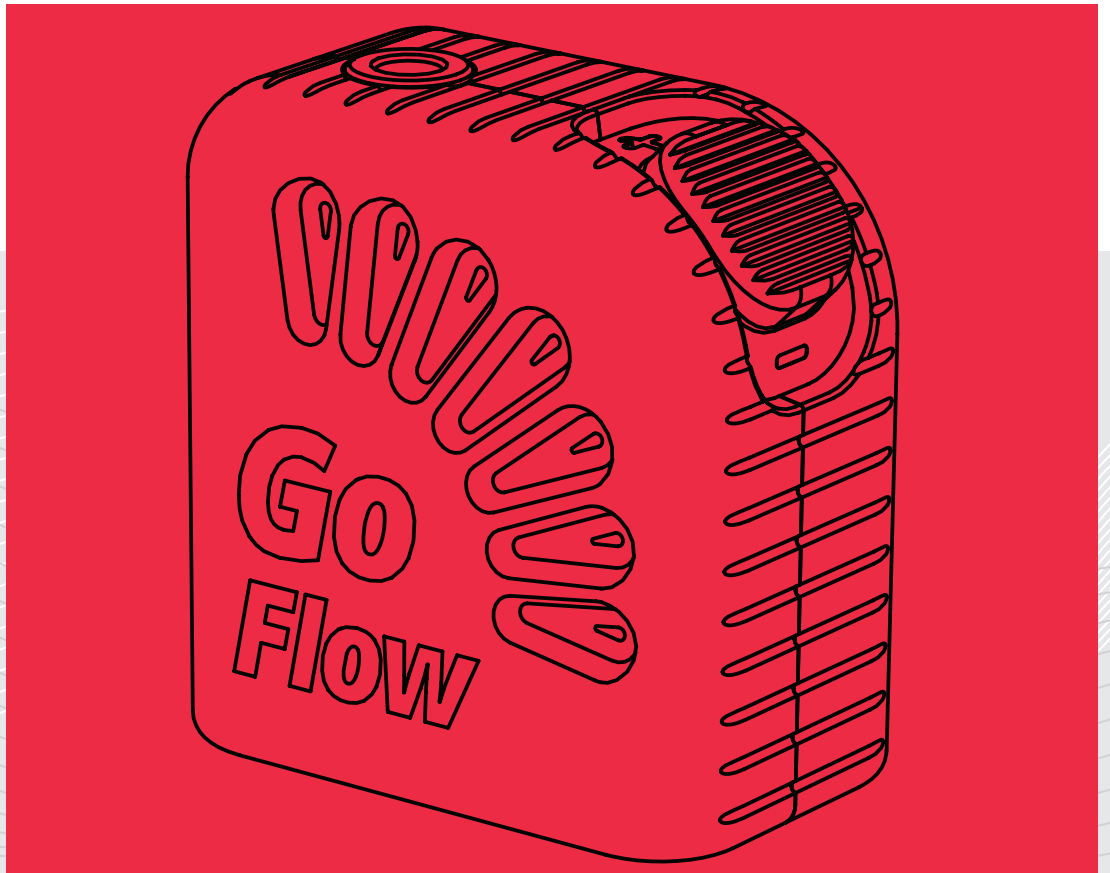




GO FLOW 4

User Manual & Warranty



INTRODUCTION

Welcome to the new Go Flow brain stimulator by Foc.us. I imagine you are keen to get started but please take a few minutes to read this booklet and familiarize yourself with the key concepts and details. Go Flow 4 has double the output current of most tDCS stimulators so you should exercise double the caution. With great power comes great responsibility and self-administration of tDCS puts the safety responsibility squarely in your hands.

Use Go Flow 4 to:

- Learn new skills faster
- Increase endurance levels
- Turbo-charge sleep
- Recreate other tDCS and sotDCS studies

Important!

You should not use the Foc.us stimulator if you suffer from epilepsy, seizures, brain lesions, bipolar depression, or severe heart disease. Immediately stop using foc.us if you experience short short-term negative effects. Foc.us is not a toy and is not intended to be used by anyone under the age of 18 years old. If using external electrodes, it is not recommended to place electrodes in patterns that differ from the default foc.us configurations. Do not position electrodes in a manner where current may pass through the brainstem. Do not position electrodes over cuts, grazes, or damaged skin. Allow at least 48 hours between each use of foc.us. Always place wet sponges between the electrodes and your skin when using foc.us. Do not touch the black silicone electrodes when using foc.us as you may get burned. Take extra care if using hydrogels.

Again

Foc.us Go Flow 4 is designed to be used by healthy adults who do not suffer from epilepsy, brain conditions, have a metallic implant such as a skull plate, or have other implants such as a cochlear implant or pace-maker. The sole purpose of foc.us Go Flow is to improve your brain. You are responsible for the administration of your tDCS so look after yourself.



WARNING

If you suffer from epilepsy, brain lesions, bipolar depression or severe heart disease you should not use a foc.us stimulator. If you experience short term negative effects with foc.us you should immediately stop using it. This is not a toy and is not intended to be used by anyone under the age of 18 years old. Do not position the electrodes over cuts, grazes or damaged skin. Allow at least 48 hours between usage. Do not directly touch the electrodes as this can lead to burns. Always use electrodes with wet sponges.

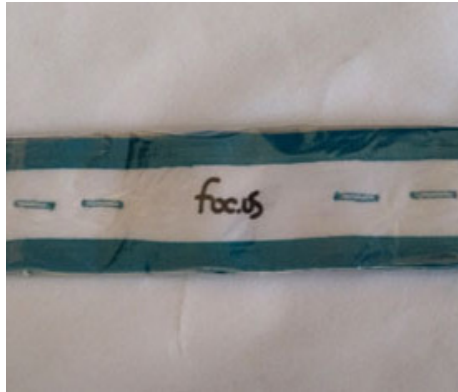
YOUR GO FLOW BRAIN STIMULATOR

Understand the different parts of your Go Flow brain stimulator.



Go Flow 4

This is the Go Flow 4 tDCS & sotDCS stimulator.



Foc.us Headband

This is the Foc.us headband with amx-y electrode holes.



Electrode Water Bottle

Use this small dropper bottle to hold water for sponges.



amx-y electrodes

This is the amx-y conductive silicone sponge electrode cup.



X/Y Magnetic Cables

This is the stimulation electrode cables. X is anode, Y is cathode.



9V Battery

foc.us 9V 6LR61 Ultra alkaline non-rechargeable battery.

- Always store your Go Flow in the supplied case when not in use. Squeeze any excess liquid from the sponges and place them in the electrodes. Ensure the lid of the supplied water bottle is tightly closed before returning to its place.
- The silicone electrodes can be disassembled for cleaning. Push firmly in the centre of the black silicone to reinsert into the metal connectors. The expected service life is three years.

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2.

Go Flow 4

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3.

Stimulation Montages

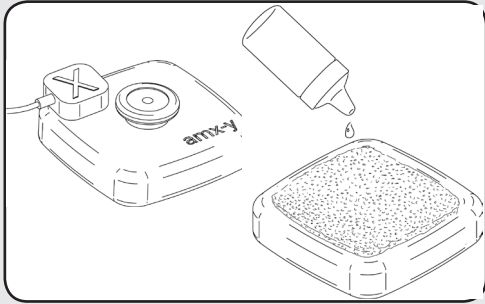
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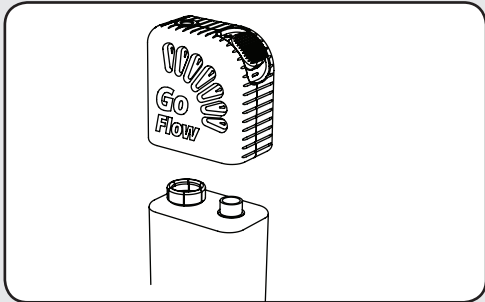
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QUICK START GUIDE



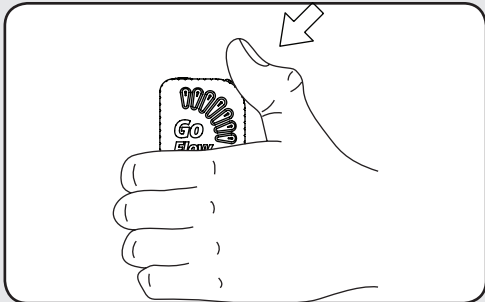
1. Prepare Electrodes

Position the electrodes & wet sponges in the headband and place headband on head. Connect the magnetic ends to the electrodes and the 2.5mm jack to the Go Flow. Liberally wet the sponges before use.



2. Battery & Go Flow Together

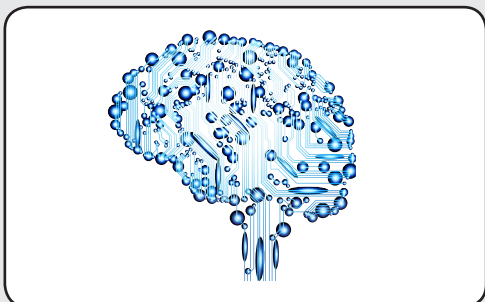
Connect the 9V battery to the Go Flow 4 and they can stay connected forever. Go Flow 4 will power-off automatically and can be turned on by a 2 second press of the rocker.



3. Set Current & Duration

When the lights are ORANGE/RED you can change the current using the red rocker. Press to set. GREEN lights let you change and start the duration timer.

Tip: 3 presses total: 1) Turn on 2) Set current 3) Start timer



4. take charge

The stimulation will start at 0mA and slowly increase. The lights will change every 5 seconds between showing the actual current in ORANGE/RED and the remaining duration in GREEN. You can increase or decrease the current using the red rocker.



5. Go Flow

Your brain cells are now excited, your plasticity is increased. Go learn, train or sleep!

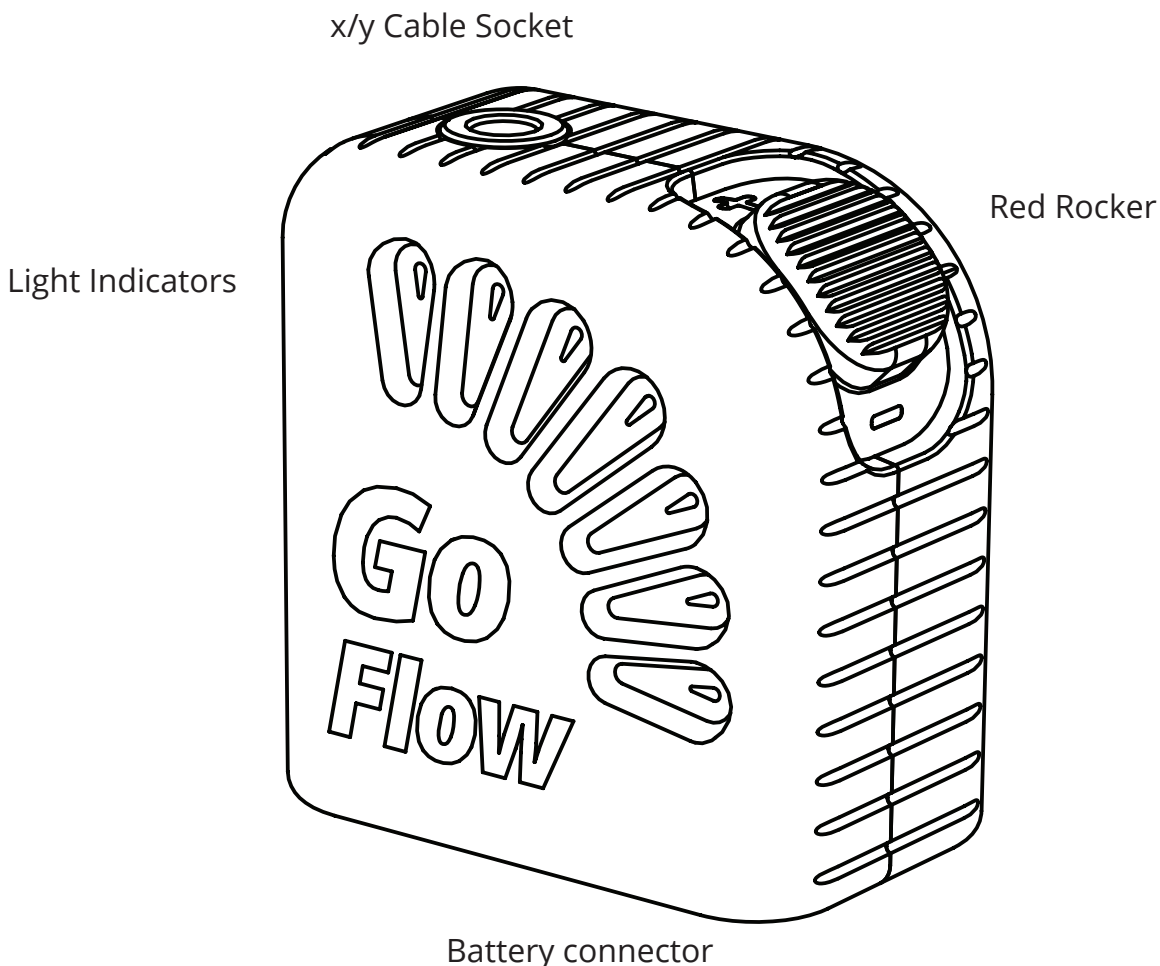
Tip: Test yourself to confirm if it's working

GO FLOW TDCS & SOTDCS STIMULATOR

Your Foc.us Go Flow 4 is an electrical neurostimulator which is designed to deliver a direct (meaning: constant) current across your cranium.

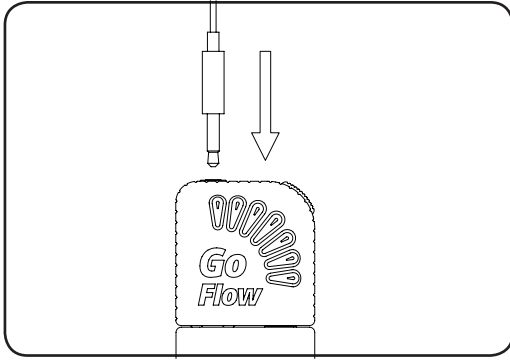
The theory of transcranial Direct Current Stimulation (tDCS) is that by delivering a constant current into your brain, the excitation levels of your brain cells are altered. The delivered current is small compared to the current that is already flowing in your brain so the current itself does not induce your brain cells to fire, but does prime some of your brain cells to fire more readily depending on the specific settings that are used. It is therefore important that the right settings are used to induce the right level of charge. It is recommended that you do not deviate from prescribed levels of current intensities, current durations and electrode placements. Given the right settings, the subtly induced changes in brain cell excitation levels can result in significant cognitive performance enhancements.

Possible side-effects include visual artifacts (such as white flashes), nausea, headaches, and fatigue. If you experience any of these side-effects, stop your foc.us session. If you see white flashes (known as phosphenes), adjust the position of the Foc.us electrodes away from your eyes. You may feel tingling, hot, or cold sensations from using foc.us. If these sensations become uncomfortable or painful, stop your foc.us session. Skin redness may appear under electrodes after use, which will disappear after a short time. Repeated use of foc.us may lead to skin irritation. If you exceed the recommended session duration, you increase the risk of consolidating both the excitatory and inhibitory processes. Always proceed gradually and with caution.



USAGE INSTRUCTIONS

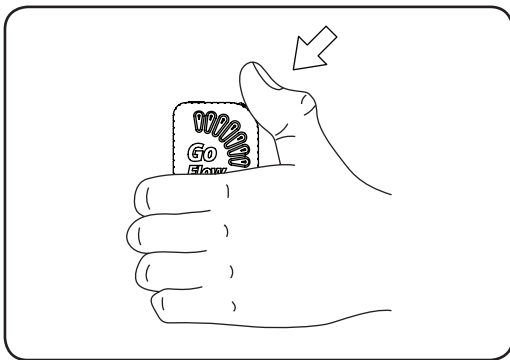
Step by step Go Flow instructions



1. Connect cable & battery

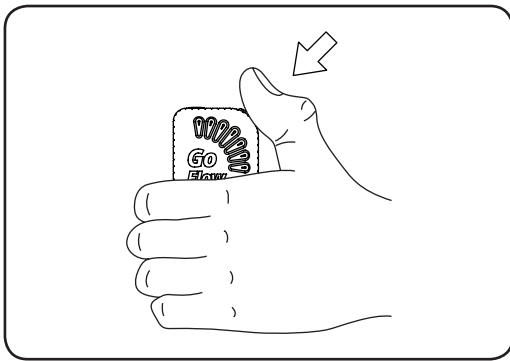
Go Flow should remain connected to the 9V battery between uses. Press the RED rocker for 2 seconds to turn on the device in tDCS mode.

Tip: Leave the battery connected when not in use



2. Set Current - ORANGE/RED

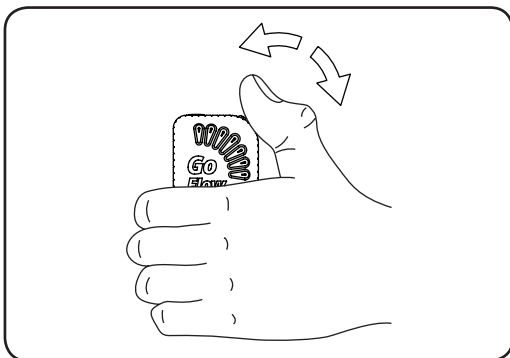
Orange and red lights indicate the current in mA. One light indicates 1mA and all seven lights 4mA. Use the red rocker to increase or decrease the target current in 0.5mA steps. Press the red button ONCE to confirm the target current.



3. Set Duration - GREEN lights

Green lights indicate the stimulation duration. Each light is 5 minutes of stimulation. Set any value from 5 to 35 minutes using the red rocker up or down. Press once to confirm duration and start the session.

Tip: You cannot change the duration once set



4. Monitor & Adjust Current

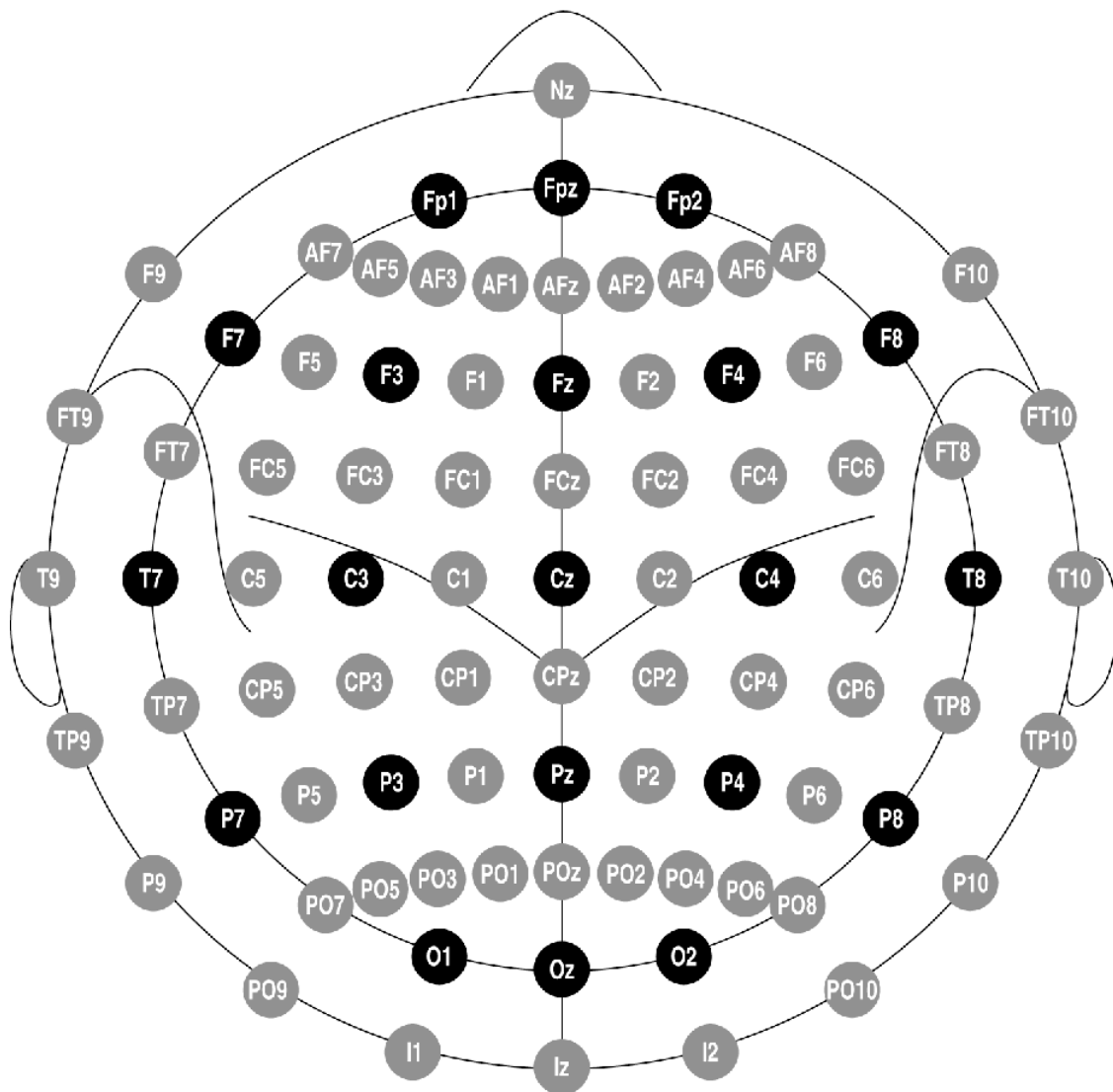
During the stimulation session the lights will alternate from Green to Orange/Red. Orange/Red shows you the exact actual current. Green shows the approximate remaining duration.

Tip: You can change the current up or down during a session

ELECTRODE PLACEMENTS

The effects of tDCS and sotDCS depend on the positioning and polarity of the electrodes. Anodal stimulation induces an increase in cortical excitability under the X electrode. Cathodal stimulation induces an increase in cortical inhibition under the Y electrode. When electrodes are placed on the shoulder or arm, the exact location is less important than when placed on the head, so long as the correct arm/shoulder is used i.e. left or right.

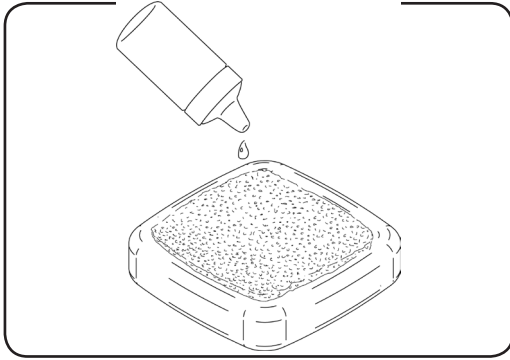
The most common system for electrode positioning is known as the 10-20 system. This system involves measuring your head and placing electrodes at the 10%, 20%, 20%, 20%, 20% and 10% positions. This is shown in the dark circles below. The 10-20 system has been further divided into smaller percentages as shown by the gray circles in the same figure.



The focus headband is not designed to be as precise as the 10-20 system. The best way to find accurate electrode placements is to use the montages as a starting guide only. Measure the results from stimulation and use trial and error to find the exact location for your personal physiology.

ELECTRODE SETUP DETAILS

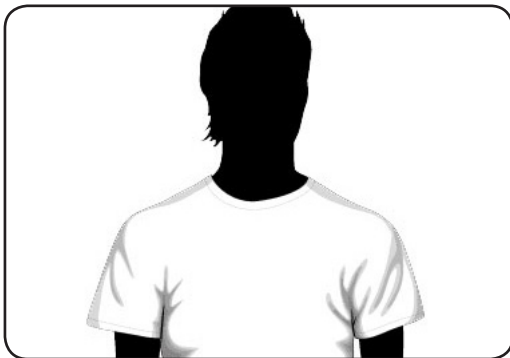
Step by step connection instructions



1. Wet sponges in amx-y

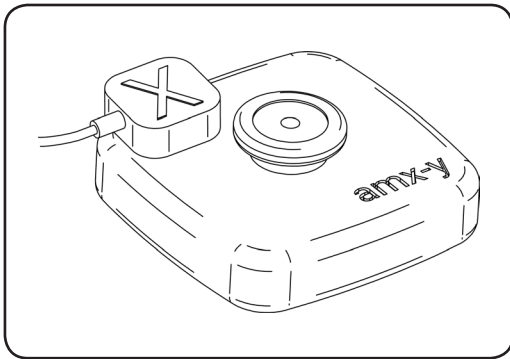
Sponges should be wet. Use the small water bottle to keep water handy. Be careful not to touch the black silicone as this can result in burns.

Tip: Add a pinch of salt if you want a saline solution



2. Amx-y electrodes in place

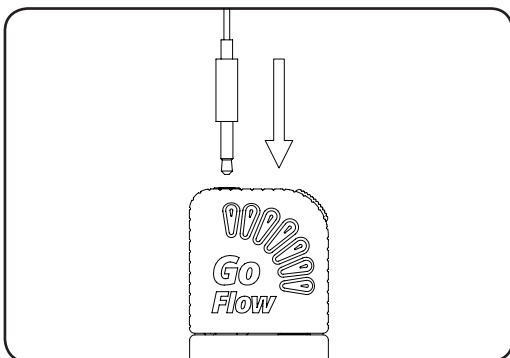
The amx-y electrode mushroom tips are designed to fit comfortably through the headband holes. Get them in place before putting the headband on your head. It doesn't matter which one you use as the polarity is determined by the cable. Shoulder placements can be held under a t-shirt.



3. Connect x/y cable to amx-y

X is the anode and Y is the cathode so it is important to get this the right way around. The X and Y magnetically connect to the metal backs on the amx-y electrodes. Use the cable with as few electrodes as required.

Tip: X is the anode, Y is the cathode



4. Connect x/y cable to Go Flow

Insert the 2.5mm 4 pin jack end of the x/y cable into the socket on the top of the Go Flow and you are ready to go.

GO FLOW MONTAGES

The Internet contains information on hundreds of tDCS studies. Go Flow is flexible enough to recreate the protocols of all of them but this does not mean you will find the same results as those published. Electrical stimulation is cutting edge and many studies are yet to be reproduced by other scientists.

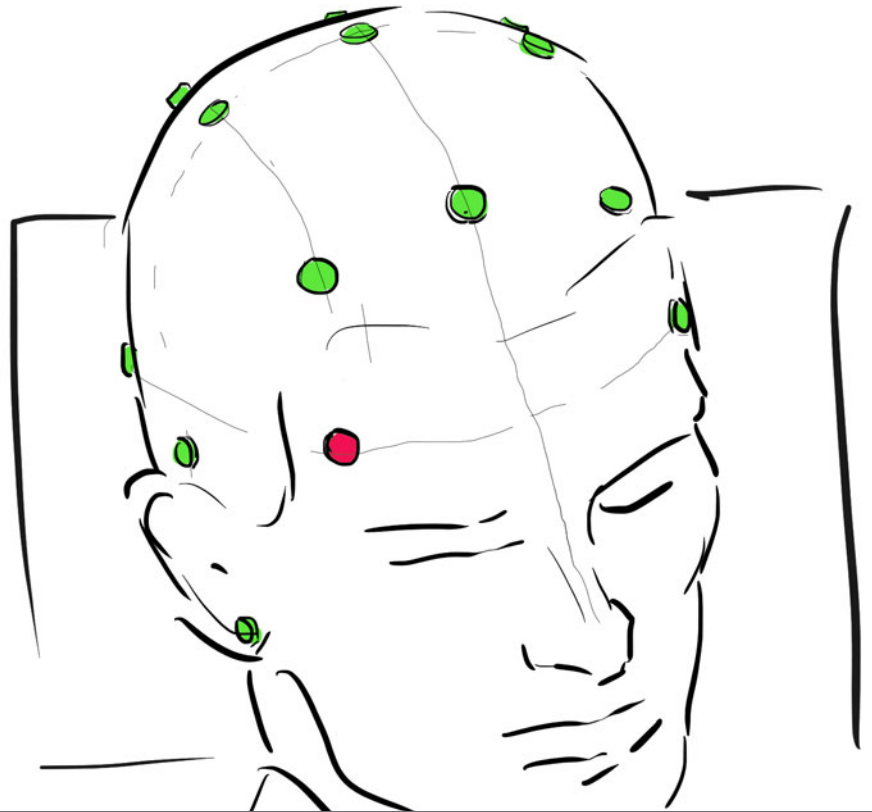
Here are three of the most reliable stimulation montages you can try with Go Flow 4.

Learn New Skills Faster

The ability to sustain attention and maintain goal-directed behaviour for extended periods of time is known as vigilance. It's a life or death quality in a soldier. Lack of vigilance may not be so fatal in your line of work but you can imagine why increased vigilance would be beneficial.

tDCS significantly altered baseline task-induced physiologic and behavioral changes.

Behavioral measures showed a significant improvement in target detection performance with tDCS compared to the sham stimulation.



Goal	Learn new skills faster with Focus
Target current	2mA or less for comfort
Duration	20 mins
Electrode placement	X front right (shown red), Y left shoulder
Notes	Stimulate prior to learning new skills

INCREASE YOUR ENDURANCE

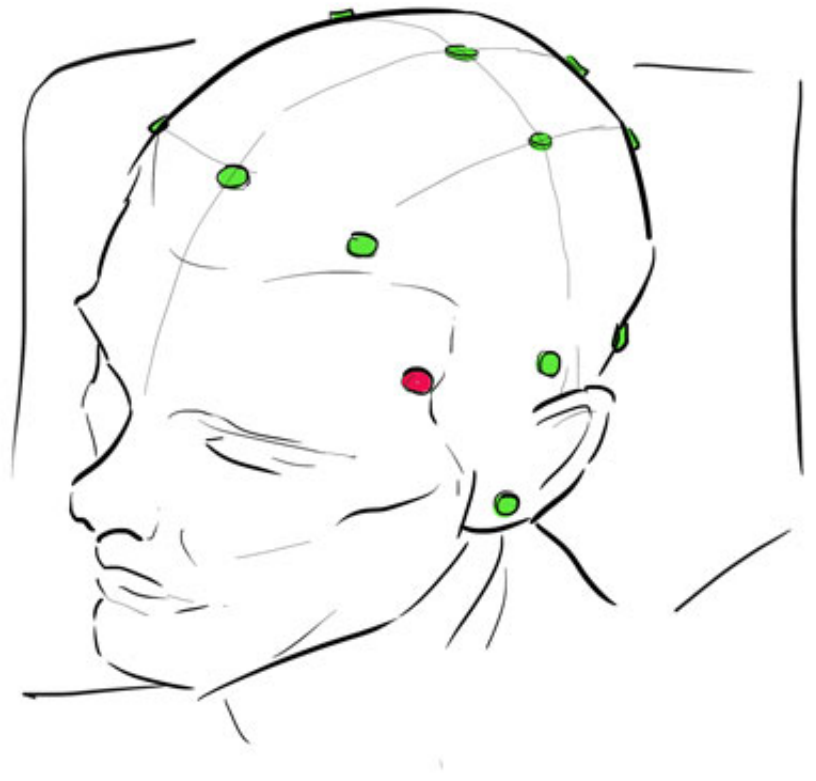
Train harder with tDCS

Targeting the pain centers of the brain can increase our tolerance to fatigue. Studies suggest that one way of reducing perceived pain is by stimulating a region of the brain called the dorsolateral prefrontal cortex.

Modern sports science believes that endurance is a complex interaction between brain and body. We feel tired not only due to physiological stress but also due to neurological stress - for example, if we've had a stressful day at work. By stimulating the brain in the right way, it is believed that physical endurance and performance can be extended.

The temporal cortex of the brain is thought to play a central role in how we perceive and respond to fatigue.

Modulation of this region can reduce how tired we feel and thereby extend physical endurance.



Goal	Increased physical endurance
Target current	4mA or less for comfort
Duration	20 mins
Electrode placement	X front left (red), Y right arm or right shoulder area
Notes	Stimulate before athletic activity

POWER NAP WITH FOCUS

Sleep better with increased spindles

Evidence suggests that lack of slow-wave activity may play a role in sleeplessness. so-tDCS is a solution to increase slow-wave activity.

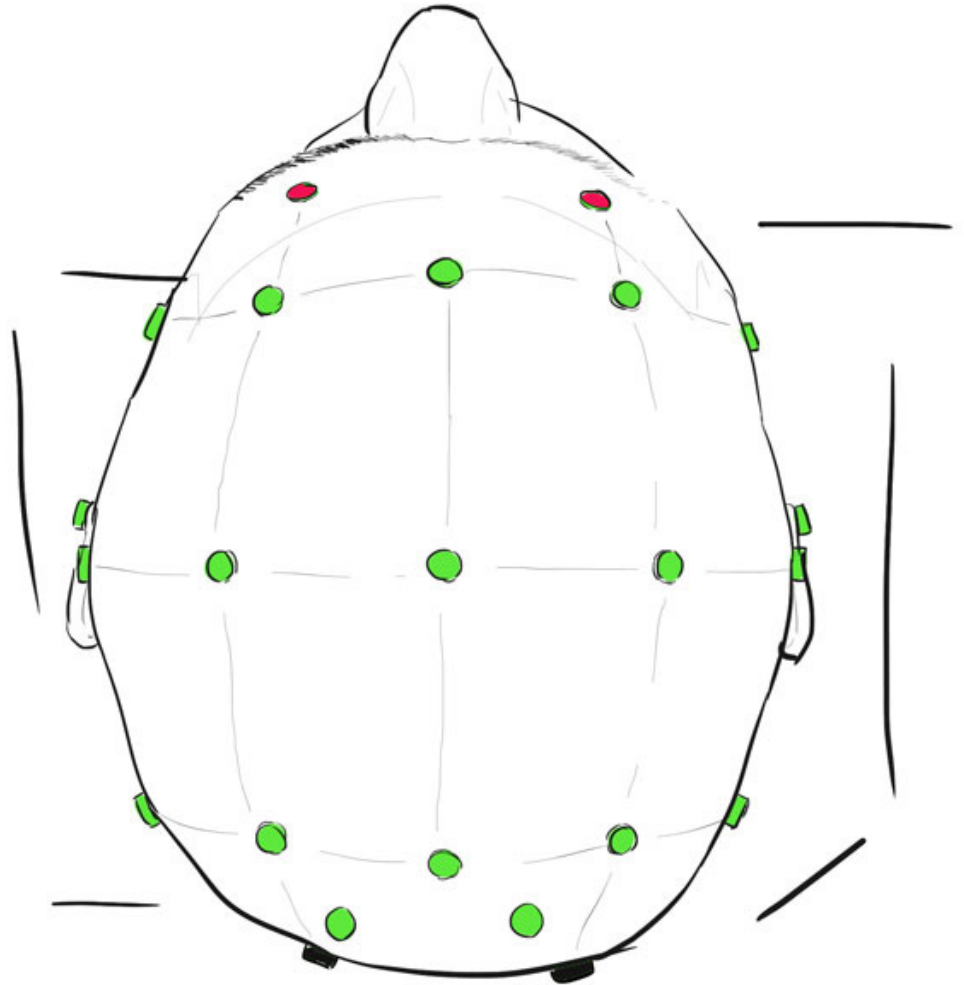
Research has shown that transcranial slow oscillating stimulation increases power in slow oscillations locally and also in theta and beta frequency widely. Increases in theta (4-8Hz) have shown to increase short term memory by promoting of hippocampal encoding process.

It has been shown that 0.75Hz oscillation might play a role in sleep maintenance and the development of sleep. Go Flow 4 sotDCS mode uses 0.75Hz frequency.

To start Go Flow in sotDCS mode you must press the red button twice - a short press, followed by a longer press. When turned on in sotDCS mode you will see the rainbow flash confirmation in red instead of the usual green.

This montage stimulates both hemispheres of your brain and uses the dual X/Y cable.

The current is directional flows from front to back in slow oscillating waves.



Goal	Power nap with sotDCS
Target current	1.5mA
Duration	20 mins before sleep
Electrode placement	X front left and front right (red) Y rear left and rear right (black)
Notes	Stimulate immediately prior to sleeping

What to expect?

• **What to expect from brain stimulation**

- You may feel a tingling when the stimulation starts. For most people this sensation is comfortable but if it is not you can try lowering the current level.
- The increased excitation levels of your neurons caused by the stimulation move your brain into a ready state. This state will naturally wear off so you should look to undertake your neuronal activity immediately after the stimulation session ends.
- Studies have shown these stimulation montages work. However, there are factors that can negatively impact your results. By changing the current (both down and up) and duration on different sessions over different days, you can find the best settings for your own unique brain physiology.
- Electrode placement cannot guarantee the exact path of electrical current flow so results can vary between sessions.
- tDCS is much less influential on the brain than drugs or alcohol and should not be combined with either.
- Studies have shown that time of day can effect stimulation results.
- Leave the Go Flow connected to the battery, store everything in the case between uses and it will serve you well.
- Changing the current during an active session enables half increment steps of 0.25mA. When the LED is half lit, this indicates half the current step.
- Check the Foc.us website for new montages and new ways to use your Go Flow.
- Good luck and take charge

SPECIFICATIONS

Go Flow 4 Specifications

Size	26mm x 28mm x 16mm
Weight	10g
Battery	9V 6LR61 Ultra alkaline
tDCS Settings	<ul style="list-style-type: none">• 4.0mA maximum current setting, 25V maximum output voltage• 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0mA configurable current level• 5, 10, 15, 20, 25, 30, 35 minute timer• 1.25, 1.75, 2.75, 3.25, 3.75mA incremental session adjustments• 0.1mA/s up and down ramping• 0.75Hz sotDCS frequency

Problem	Solution
No lights on Go Flow	Battery is low. Change the battery
Flashing Orange/Red Lights	Resistance is too high, check sponges, not too much hair, good connections everywhere.
Flashing Orange/Green Lights	No x/y cable connected to Go Flow. Connect cable.
Headband doesnt fit	Try holding the electrodes via another method.
Painful sensation	If you experience discomfort you should stop using Go Flow

WARRANTY & GUARANTEE

foc.us warrants the foc.us Go Flow (the "Product"), and only the Product, against defects in materials and workmanship under normal use for a period of twelve (12) months commencing on the date of original purchase by the original purchaser (the Warranty Period). This warranty does not cover damage caused by misuse, accident, abuse, natural and/or external causes (i.e. fire, earthquake, flood, etc.), use other than as intended and described in the Product instruction manual, finishes, normal wear and tear, tampering, unreasonable use, service performed by unauthorised service agents, or loss or damage to the battery. foc.us does not warrant that the operation of the Product will be uninterrupted or error-free.

Limitation of remedies

- Under this Limited Warranty, foc.us liability and customer's exclusive remedy under the foregoing paragraph will be limited to replacement or repair of the Product by foc.us or its authorized service centers. A replacement Product or part assumes the remaining warranty of the original Product or ninety (90) days from the date of replacement or repair, whichever is longer. To obtain warranty service, contact help@foc.us For your security, please return your Product with an insured carrier (e.g., FedEx, UPS, USPS Parcel Post) and retain your receipt. foc.us is not responsible for items damaged or lost in transit. Other than for the reason of hardware defects, the return freight cost responsibility belongs solely to the customer.

Limitation of damages

- In no event will foc.us or any of its affiliated or subsidiary companies be responsible for any special, incidental, or consequential damages resulting from the use of this Product, or based on any breach of warranty, breach of contract, negligence, tort, or any other legal theory. Such damages may include, without limitation: loss of savings or revenue; loss of profit; loss of use; the claims of third parties, including without limitation retailers; any cost of any substitute equipment or services. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. The warranty gives specific legal rights, and you may have other legal rights, which vary from state to state or country to country. This Limited Warranty is valid only in the United States and Europe for Products sold in the United States and Europe. Resellers, agents, or employees of foc.us are not authorized to make any modification, extension, or addition this Limited Warranty

FCC

- FCC warning statement: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Technical support

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SUPPORT

More information is available on the website: <https://www.foc.us/>
You can email help@foc.us if you have any questions or concerns.
Help can also be found at <https://www.foc.us/forums>
Equipment providing body floating protection against electric shock



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