



platoscience  
neurostimulation

PlatoWork Manual

# PlatoWork Manual

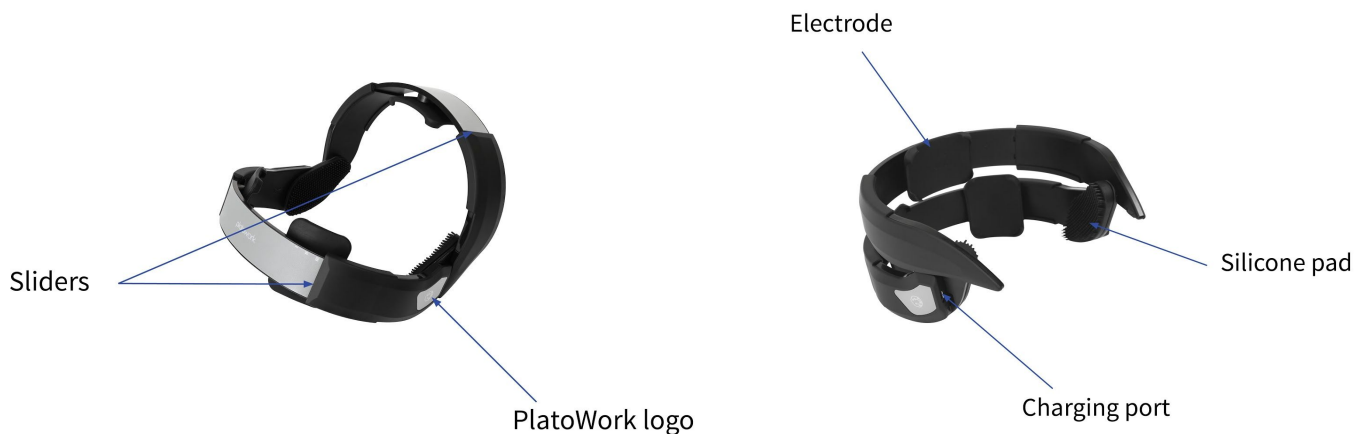
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## Getting started

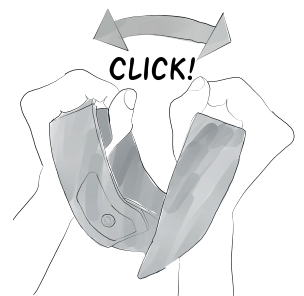
Download the PlatoWork app here: [platoscience.com/app](https://platoscience.com/app)

### Your PlatoWork



#### Turning on PlatoWork

To turn on your PlatoWork, simply unfold the headset. To turn it off, collapse the headset again. You will know the headset is fully open and operational when you hear the “CLICK” sound and the PlatoWork logo on the side of the headset starts blinking blue.



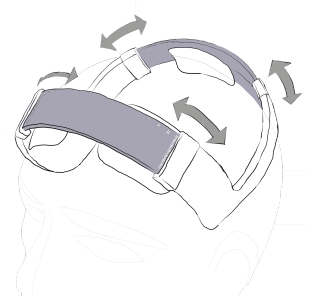
Once PlatoWork is turned on and the PlatoWork App is open, the app will automatically connect to your headset. There is no need to go into your phone settings for bluetooth pairing.

#### Sleep mode

After 20 minutes of not using PlatoWork, the headset will go into sleep mode and will turn off to save energy. To turn it on again, simply close and reopen PlatoWork.

#### Sliders

The grey areas of PlatoWork have four adjustable sliders, which can be adjusted to fit your head size. The sliders are each marked with I II III IIIIIII to indicate from smallest to largest head size.



## Prepare the Essentials

### Saltwater

Ensure the bottle provided is filled with saltwater, used to soak the electrode sponges. Prepare the saltwater by filling the bottle with drinkable water. Add 1/4 teaspoon of regular kitchen salt into the water, replace the lid and shake the mixture.

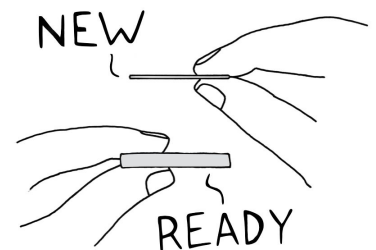


(more info about the saltwater on [page 6](#))

### Sponges

The sponges provided are compressed and need to be soaked in saltwater before use. Moisten 3 dry sponges (1 mm thickness) with the saltwater until they are fully expanded (5mm thickness).

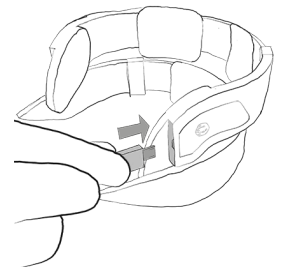
*Tip: Fill all 3 sponge cases with saltwater and dip the dry sponge in it.*



### Charging the headset

When you receive PlatoWork, the built-in battery is already charged. The app will indicate when your headset needs charging. You can find the charging port on the side, which is only accessible when you collapse the headset. Connect the cable that is present in the box and the other end to any USB port.

A small green light next to the charging port will indicate that the battery is recharging. The light will turn off when the battery is fully charged. Recharging a flat battery will take approximately 1 hour.



## Start a neurostimulation session

Now that you are familiar with PlatoWork and you have prepared the essentials, you are ready to start a neurostimulation session.

As is with most new devices, it might take some attempts to find the right fit and get the first session going. Setup will become easier, as you become more familiar with your PlatoWork headset.

We recommend starting with the “Learn” mode on your app, for your first session. Our users have found that this mode gives the best first-time experience.

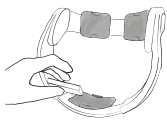
## PlatoWork setup



1. **Activate** the headset by simply unfolding it (it will make a 'click' sound when it's fully opened). When the headset is turned on, the logo on the left side of the headset will blink blue.



2. **Connect.** Open the PlatoWork App, and the headset will automatically connect with your phone (make sure your phone's bluetooth is turned on). The logo on the headset will turn from blinking blue to solid blue once it is connected.



3. **Place the sponges.** Make sure that the sponges are fully moist with saltwater, but not dripping wet. Place a sponge in each of the three black electrodes.



4. **Put the headset on.** Make sure that the two textured silicone pads are placed right above the ears, and that you have two sponges in the front and one in the back. Use four fingers to measure the distance between the centre of your eyebrows and the bottom of the two front sponges to ensure that the headset is correctly placed.



5. **Ensure headset fit.** For the headset to work, it has to sit tightly on your head so all three sponges are firmly pressed against your skull. If the headset feels too loose, adjust the sliders to obtain a tight fit between the sponges and your head.



6. **Select mode.** When you have ensured a good headset fit, select your stimulation mode in the app. When starting the session, the app will first test that the headset has sufficient contact with your head. When the test is successful, you can put your phone away and begin your task.

## Using the PlatoWork headset

### Important

*Never take the headset off or adjust it during an active session, as this could lead to a short but uncomfortable 'sting' under the active electrodes ([more info below](#)).*

*Keep the usage to a maximum of one full session, or 30 minutes total, per day per user ([more info below](#)).*

### Ensuring good contact

For neurostimulation to work, the electrodes need to have good contact with the head. Good contact is ensured by a combination of 1. Sponges (pre-soaked in saltwater), 2. Pressure, and 3. Sponge surface touching the head. When starting a session, the headset will test if the relevant electrodes have sufficient contact, and ask you to improve contact if they don't. If asked to improve the contact by adjusting the headset, please make sure that:

1. The sponges are moist.
2. The headset is fitted tightly to your head.
3. The angle of the electrodes is aligned with your head so the whole surface of the sponge is touching the head.
4. There is not too much dry hair directly underneath the electrodes.

Tip: If you are having trouble, look at the instructions in the [Getting Started](#) section and try adjusting the headset again.

### Select mode

In the app you need to choose between four modes: Learn, Create, Concentrate and Rethink. You have to decide if you need to *focus* on a task at hand or *create* new ideas. We suggest you try out each mode with different tasks to figure out what works best for you.

### Saltwater

The saltwater is a crucial component in maintaining the required conductivity when using the headset. The salt ensures that the electrical contact between the headset and your head stays consistent throughout your session.

The amount of salt is important: too little salt will result in a low contact between the electrodes and the skin, too much salt can cause irritations on the skin. We, therefore, recommend starting with 1/4 teaspoon of salt for the bottle provided with the headset, following the refill instructions on [page 8](#).

If you experience irritation or discomfort under the electrodes, but your headset contact is correct, review your saltwater ratio.

For the saltwater to have an effect, it needs to be +0.6% NaCl - meaning at least 6 gram per 1 litre of water. This equals as little salt as 0.6g in the bottle provided with the headset. To achieve this, either mix 1 teaspoon to 1 litre of water (and then use this saltwater), or use an exact measure to add 0.6 gram of salt to the saltwater bottle.

Conductivity as a function of salinity is nonlinear, meaning that even a little saline is enough to ensure conductive properties.

### **Purchasing saline water**

If you prefer, you can purchase premixed saltwater ('saline', or 'saline solution') at most pharmacies/drug stores. Standard, or normal, saline contains 0.9% salt (0.9g per litre, NaCl 0.9%), which is a bit higher salinity than strictly necessary. The only potential negative effect of this increased salinity is potential discomfort under the electrodes, as described above. If you buy pre-mixed saltwater/saline, make sure it only contains water and NaCl (salt).

### **Adjusting the intensity slider**

During stimulation, the app offers a slider to adjust the intensity of the stimulation. The slider is there to enable users to adjust the sensation on the skin under the electrodes to their liking, as the same current might be experienced differently from user to user. The relationship between the intensity slider and the effect of the stimulation is not linear, so feel free to adjust up or down as you prefer.

If the current feels too intense on the skin, in the beginning, reduce the intensity down gradually to find a comfortable level. Normally the sensitivity of the skin is reduced during a session, so after 5-7 minutes you can try to turn the intensity back up and see how it feels.

### **Headset light indicators**

- Blue-blinking: Awaiting connection with bluetooth
- Blue: Connected via bluetooth
- Green-blinking: Testing electrode connection
- Green-slowly pulsating: Ongoing session
- No light: closed headset or sleep mode

### **Sleep mode**

If the headset is open (and thus turned on) but not in use for 20 minutes, it will enter sleep mode to save battery. To wake it up from sleep mode, simply close and reopen the headset.

### **PlatoAcademy**

We operate a Facebook group called [PlatoAcademy](#). PlatoAcademy enacts as a closer user forum for all PlatoWork users, where we can all share our experiences and discuss topics related to neurostimulation. Within the next six months, it's our ambition to host this



community on our website, where - as well as a discussion forum - you will also be able to see historic usage data from the app, examine your cognitive test results, and more.

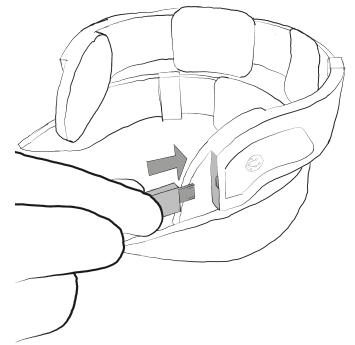
## Maintaining the headset

### After each use

Take out the sponges from the headset and rinse them under lukewarm tap water. Ideally, let them air dry first before placing them back into the plastic case. Before the next usage, they need to be moistened with saltwater from the bottle. Doing this will help maintain the sponges.

### Charging the headset

After about 5-10 sessions, the headset will require charging. The app will inform you when the battery is getting low. Charge the headset with the provided USB cable only. The battery should last for more than 10 sessions, but we recommend you to charge it often so that you can ensure your headset works when you need it and through your session.



### When sponges get worn out

Your sponges can last for many (100+) sessions if treated correctly. But if they begin to get worn out and are discoloured, you can order new sponges at cost price from [platoscience.com](https://platoscience.com).

### When you are out of saltwater

Follow these steps to refill:

1. Remove the screw cap, and fill the bottle with drinkable water.
2. Add 1/4 teaspoon of regular kitchen salt to the water.
3. Screw the lid back on, and shake the mixture.

Note: as little as 1/10 of a spoon, or two pinches, is sufficient, equivalent to 1 teaspoon per litre. See more details under section *saltwater* on [page 6](#).

## Troubleshooting

### **I cannot turn on the PlatoWork headset**

Gently fold PlatoWork and reopen it. PlatoWork turns ON automatically once you open it and hear the “click” sound.

The headset goes into sleep mode if it is not used for more than 5 minutes. Make sure your phone’s bluetooth is on or try to recharge the headset for 1 minute.

### **I cannot get the PlatoWork headset to connect to my phone**

Try the following steps:

1. Open the app and initiate a stimulation session. If there is no connection, the app will show an error message.
2. Ensure that your phone’s bluetooth is turned on.
3. Go to the App Store and download the newest version of the PlatoWork app.

### **I cannot get past the electrode test**

This problem is caused by insufficient contact between the headset electrodes and your skin. Refer to the Getting Started instructions again to ensure proper contact.

Things you can do:

1. Readjust the headset so it is fitted tightly to your head.
2. The angle of the electrodes are aligned with your head so the whole surface of the sponge is touching the head.
3. Make sure the sponges are sufficiently moist.
4. Check your bluetooth is on.
5. There is not too much dry hair directly underneath the electrodes.

If you still cannot pass the electrode test, empty your saltwater bottle and prepare a new mixture following the method on [page 8](#).

Additionally, apply pressure on the front of the headset by gently pressing inwards against your forehead. Please do not hesitate to [contact us](#) if you require more help, we would be happy to walk you through the process.

### **Red marks under the electrodes**

Some users experience temporary red marks under the electrodes after stimulation; this is normal and always disappears quickly after the session. The marks are caused by a combination of heat, current, and the saltwater used to moisten the sponges. If you discover marks after your session, try reducing the amount of salt in the water (see [page 6](#) about saltwater). You should also ensure to regularly rinse the sponges under running tap water to avoid salt build-up.

### **My skin itches when using the PlatoWork headset**

This feeling is quite normal and caused by personal levels of skin sensitivity. If you experience an itching sensation while running a session, try to lower the intensity or add more water to the sponges. You can also experiment with lower saltiness/salinity in the saltwater, as described under *saltwater* on [page 6](#). Please note that your skin will most likely adjust to this sensation the more you use the headset, and most users don't even notice this after getting familiar with the headset.

### **I wear glasses - can I use PlatoWork?**

PlatoWork is fixed just above the ears and can be worn with most types of glasses.

### **What if I have thick hair?**

Thick or coarse hair can be a challenge but is not impossible to maintain sufficient conductivity. The problem is often biggest for the electrode at the back of the headset. Usually, the problem can be solved by adding additional saltwater to the sponges and parting the hair to allow the sponge to have maximum contact with the scalp. If problems persist, try dampening the hair underneath the electrode, to ensure contact between the sponge and the scalp.

## What's in the box

### Sponges

The purpose of the sponges is to ensure good contact between the headset and the skin.

- **Detach:** Store the sponges in the plastic casing. We recommend allowing them air dry before placing them in the plastic case.
- **Rinse:** After every session, rinse the sponges under running lukewarm tap water. Before the next usage, they need to be moistened with saltwater from the bottle.
- **Replace:** If the sponges wear out (get too thin, stop retaining water, get dirty, etc.), reach out to us at [hi@platoscience.com](mailto:hi@platoscience.com) and we will arrange for replacement sponges to be sent to you.

### Bottle for saltwater

The bottle is used for containing the saltwater, which is used to soak the white electrode sponges for ensuring a good electric conductivity between the electrodes and the scalp. More information about saltwater and refill can be found on [page 8](#).

### Charging the battery with the USB cable

The USB-cable provided is used for charging the headset which runs on an internal lithium-ion battery. This battery can last up to 10 sessions with a normal headset connection. On the home screen of the app, you can see the battery status, and whether it is enough for one session. If it gets too low, you can charge the device using the cable provided in the headset case or any other standard micro USB cable. Collapse the headset, and insert the micro-USB into the headset on the left side. The other end of the cable is a regular USB and will fit any USB port. There is a green light indicator next to the USB when the device is charging, and the indicator will turn off when the battery is fully charged.

### The paper thin sponges

In the plastic case provided, there are three paper-thin sponges.

### The case

PlatoWork is housed in a black hardshell case to protect and store the headset and its accessories together. The casing should be sufficient for normal use.

## **Additional information**

### **General tips for neurostimulation**

When you get to know your PlatoWork, you will learn how the various modes work for you. All brains are different, so it is impossible to predict the exact effects for each user. We encourage you to try the modes for different tasks and see what works for you. Some modes can give a mild effect, while others can give a quite strong cognitive sensation. In general, try to avoid focusing too much on the fact that you're being stimulated, and rather find a relevant task to work on during the stimulation. Feel free to combine all four modes, but from our experience, we have found that a creative mode quickly followed by a focus mode (or vice versa) will neutralise the effects.

### **The effect**

While tDCS is a well-proven technology, the experience varies from person to person and depends on the state of mind you are in while using it.

A stimulation session lasts for 30 minutes and the effect will appear slowly after 3-5 minutes. After the session ends, the effect will last for approximately 1 hour, but this is very individual. In the app, you can send us feedback about your experience with the stimulation. Please use this opportunity to inform us of your neurostimulation experience.

### **Why should I not take the headset off during use?**

Never take the headset off or adjust it during an active session, as this could lead to a small but uncomfortable 'sting' under the active electrodes. The explanation is simple: A rapid change in current can be uncomfortable to the skin, and taking the headset off, moving it, lifting and putting it back on will potentially cause an immediate change in the current reaching the skin. This is not dangerous but can be a bit painful, and/or give the sensation of a sting and sometimes a small visual flash.

### **Why maximum 30 minutes per day?**

For safety reasons, we ask all users to keep the usage to a maximum of one full session, or 30 minutes total, per day per user. There are no reports of negative effects caused by longer usage, but there are also no rigorous longitudinal studies of potential negative effects of 30+ minutes stimulation.

## **Disclaimer of responsibility**

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- In the event that the surface of the product(s) is damaged by use.

