**BrightStim Self-Administration Manual**

Epworth Centre for Innovation in Mental Health (ECIMH)

**Simplified Treatment Checklist**

1. Saline on sponges – 6mL on each side (12mL per sponge in total).
2. Insert sponges over white clip forks.
3. Insert electrodes into each sponge (Red lead > red clip / blue lead > blue clip).
4. Place cap on head – ensure correct placement of cap as per instructions
5. Start treatment.
6. Relax for 30 minutes – follow guidelines.

**Guidelines for Treatment**

During treatment, you want your brain activity to be ‘neutral’, meaning you want to be relaxed but alert. It is important that you do not participate in any activities that require mental effort as this can prevent the treatment from having long-lasting effects on your memory and thinking abilities.

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| **Acceptable activities** | **Why?** |
| Sitting / laying down | It doesn’t require mental effort |
| Light TV/podcast | It doesn’t require mental effort |
|  |  |
| **Activities to avoid** | **Why?** |
| Drinking coffee/tea before treatment | Coffee stimulates the brain, interfering with the effects of tACS |
| Reading | It may activate parts of the brain we are targeting. |
| Using the computer or mobile phone | It may activate parts of the brain we are targeting. |
| Talking to people for extensive periods of time | It may activate parts of the brain we are targeting. |
| Physical activity (e.g. gardening, cleaning) | It may activate different parts of the brain we are targeting and impact hormonal changes. |
| Sleeping / Meditating | It lowers brain activity to a minimal level which may counteract the stimulation’s effect. |

**Equipment Descriptions**

The *BrightStim* home-kit includes the headset, yellow sponges, two electrodes connected to leads, *Brightstim* device, kidney dish, alcohol swabs, bottled saline, needleless syringe and a clear plastic container. Each item is important for a different stage of treatment which is outlined in the step-by-step user-manual.

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| Headset: | \\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Headset_PP.jpg | Used to secure the electrodes in the correct location and ensures that the electrodes are in close contact with your scalp for optimal brain stimulation. |
| Yellow sponges: |  | Used to connect the rubber electrodes to the Bright-Stim device. |
| Rubber electrodes connected to leads: | **\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\IMG_2137.jpg** | Used to deliver the stimulation produced by the Bright-Stim device. |
| *Brightstim* device: |  | Produces the stimulation |
| Kidney dish: | **\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Kidney dish.jpg** | Used to organise and hold required materials for stimulation so that they are in one location for easy access and use. |
| Alcohol swabs: | 100Pcs Alcohol Swabs Pads Wet Wipes 70% Isopropyl First Aid Home ... | Can be used to clean the electrodes and equipment after treatment |
| Saline: |  | Used to dampen the sponges so that they become soft and increase electrical conductivity of electrodes. |
| Needleless syringe: | Terumo Luer Lock Syringes 3ml 5ml 10ml 20ml 30ml Plastic Syringe ... | Used to extract saline from inside the saline bottle. |
| Clear plastic container: | Graduated Measuring Cups - Small Bear Electronics | Used to collect saline in order to extract with the needleless syringe |

***BrightStim* Device Button Diagram**

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|  | **Power button:**  Press to turn device on.  Red light indicates device is on. |
|  |  |
| **Start Stimulation:**  Flashing green light indicates device is ready for treatment.  Continuous green light indicates treatment is being conducted. | **Pause Stimulation:**  Yellow light indicates treatment is paused. |
| **Check Headset:**  Red light indicates poor connection between electrodes and device. | **Treatment already conducted today:**  Red light indicates  daily limit of treatment has been achieved and no more treatments can be performed. |
| **Return for service:**  Red light indicates  low battery or functional issue - contact the study coordinator. |  |

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| ***BrightStim* Self Administration User Manual Instructions** | | | | | | | | |
|  | | | | | | | | |
|  | **Prepare Home Environment** | | | | | | | |
|  | Place your *BrightStim* Kit on a table in a quiet and well-ventilated area of the house where you can be seated and unoccupied for approximately 40 minutes. | | | | | | | |
|  | Open your *BrightStim* Kit and check that none of the items listed on the inventory list are missing. Items are pictured below: | | | | | | | |
| **\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Headset_PP.jpg**  Headset |  | | **\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\IMG_2137.jpg**  Rubber electrodes connected to leads | | *Brightstim* device | | **\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Kidney dish.jpg**  Kidney dish |
| 100Pcs Alcohol Swabs Pads Wet Wipes 70% Isopropyl First Aid Home ...  Alcohol swabs | | Yellow sponges  Saline | | Terumo Luer Lock Syringes 3ml 5ml 10ml 20ml 30ml Plastic Syringe ...  Needleless syringe | | Graduated Measuring Cups - Small Bear Electronics  Clear plastic container | |
|  | **Preparation of the Headset** | | | | | | | |
|  | Check the electrodes and electrode cables for signs of wear and tear.  Please note: If equipment is damaged, contact the study coordinator and do not proceed with treatment.    Electrode Damage | | | | | | | |
|  | **Prepare the sponges:**  Figure 3.1   1. Place the sponges in the kidney dish side-by-side (**Figure 4.1**).     Figure 4.1   1. Pour roughly 24ml of saline into the clear plastic container. 2. Draw up 6mL of saline with the needless syringe (**Figure 4.2**)  Please note: saline is the only option. Please do not use water.   \\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Drawing up saline.jpg  Figure 4.3  Figure 4.2  6mL   1. **Apply 6mL evenly to EACH side** of the sponge in a zig-zag manner as shown in **Figure 4.3** (12mL for each sponge in total).   Please note: Ensure that the saline covers the dry areas of the sponge on each side. | | | | | | | |
|  | **Place Sponges:**   1. Turn the swimming cap inside out, fold the cap in half and place it on a table surface so that the bottom of the cap is towards you and the clips are on the top (**Figure 5.1**). 2. Place a sponge in front of each clip so that the closed sides are in left side and the open sides are on the right (**Figure 5.2**).   **\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Blue sponge near clip_PP-2.jpg\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Clip with sponge closeby.jpg**  **\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\IMG_2139.jpg**        Figure 5.1  Figure 5.2   1. Slide the sponges onto the forks of the clips. It helps to lift the fork of the clips up to give space for the sponge (**Figure 5.3**)   \\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Inserting sponge to blue clip_PP.jpg  \\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Clips lifted.jpg\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Sponge in the clip_red.jpg  \\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Sponges in clips_PP.jpg    Figure 5.3 | | | | | | | |
|  | **Insert Electrodes:**   1. Untwine the electrodes and leads and place them on a table (**Figure 6.1**).     Figure 6.1   1. Place the **BLUE lead** **electrode** next to the **BLUE clip**. 2. Place the **RED lead electrode** next to the **RED clip**.   **BLUE Lead Electrode**  **RED Lead Electrode**    Figure 6.2   1. With the ***FLAT side*** of the electrode ***facing upwards towards the ceiling and away from the white clip***, insert the BLUE lead electrode into the **sponge** of the corresponding BLUE clip and the RED lead electrode into the **sponge** corresponding RED clip **(Figure 6.3)**.   \*DO NOT put the electrodes under the white clips as this could impair stimulation/damage electrodes. Electrodes may fall out of the sponges from time to time. STILL do not clip down the electrodes.  \\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Inserting electrode to sponge_blue.jpg**\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Electrode inside sponge_red.jpg**    Figure 6.3   1. Ensure that the BLUE leads and RED leads are facing the same direction when the cap is placed on the table **(Figure 6.4)**.   **\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Electrodes in_PP.jpg**    Figure 6.4 | | | | | | | |
|  | **Applying the Headset** | | | | | | | |
|  | 1. Remove hair accessories so that hair hangs loosely. Earrings can stay in.   \* Any metal may cause problems with stimulation conductivity and potentially cause painful sensations to the scalp.   1. Hold the headset in front of your forehead (**Figure 7.1**) and place the front sponge (with RED lead) over your forehead (**Figure 7.2**).   **\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\IMG_2146.jpg\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\IMG_2145.jpg**  Figure 7.2  Figure 7.1   1. Hold the front of the headset against your forehead with one hand and pull the back of the headset backwards until it covers the head (**Figure 7.3**).     Figure 7.3   1. When you have applied the headset as instructed above, **using a nearby mirror**, ensure the following (**Figure 7.4**):  * The front edge of the cap sits just above your eyebrows. * Line up the centre of the cap (marked with a black line) to the midpoint between your eye brows. * The cap must cover your ears. * The cap must fit snuggly on your head. * Ensure the electrode leads are facing outward and away from your face.   Figure 7.4   1. Hold the heads of the clips and firmly rub the scalp beneath in a circular motion for 10 seconds (**Figure 7.5**).   \* To make sure that rubbing has not displaced the cap, recheck the instructions in step (d).  \\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\IMG_2152.jpg    Figure 7.5 | | | | | | | |
|  | **Connecting the Device** | | | | | | | |
|  | Place the *BrightStim* device and GREY connector cord next to each-other and ensure the connecting parts are properly aligned before putting together (**Figure 8.1**).  Figure 8.1 | | | | | | | |
|  | **Begin Treatment** | | | | | | | |
|  | Press the **Power** button and wait for the RED light to turn on. | | | | | | | |
|  | 1. Wait for the green ‘start stimulation’ button to begin flashing. This indicates that the device is ready.  Please note: You only have 10 seconds to begin stimulation when the green ‘Start Stimulation’ button starts flashing. After this the device powers down and you will need to undertake step 9 again. 2. Press the green ‘start stimulation’ button to begin stimulation. The button will stop flashing and remain lit for the duration of the treatment. | | | | | | | |
|  | **During Stimulation** | | | | | | | |
|  | **Pause stimulation:**  If at any time, you need to stop the stimulation, press the yellow ‘Pause stimulation’ button. Stimulation will stop immediately, and the green ‘Start Stimulation’ button will begin to flash.  Please note: Device will begin to power down automatically if paused for longer than 2 minutes.  **Resume stimulation:**  To resume stimulation, press the green ‘start stimulation’ button.  The device enables 20 to 40 minutes of treatment per day. If the device is paused, when resumed it will deliver the remaining treatment allowance for that day. | | | | | | | |
|  | **System error** | | | | | | | |
|  | **\\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Check headset.jpgIF the connection is poor between the electrodes and your scalp:**  The ‘Check headset’ light will light up.  **SOLUTIONS:** There are three things you can do to improve the  electrode to scalp connection.   1. Add another 6ml saline to sides of the sponges that make contact with your scalp (**Figure 12.1**).   \*Please note on your self-report form if you add more saline.  \*Ensure that the sponges are not too saturated that the saline is leaving the sponge. If this happens you could be connecting electrode to electrode, not electrode to scalp, in which case the treatment is not reaching your brain.  Figure 12.1   1. Firmly rub the sponges to your scalp 2. Check that the electrodes and leads are connected properly by pushing the leads into each hole firmly (**Figure 12.2**).     Figure 12.2  Once you have completed these steps, undertake steps 9-10 again to begin treatment.  Please note: If the ‘check headset’ lights up again, contact the study coordinator (contact details are provided on the last page of this user-manual) | | | | | | | |
|  | **After Stimulation** | | | | | | | |
|  | **Automatic device shut-down:**  The device will turn off automatically following the completion of treatment:   1. The green ‘Start Stimulation’ button will begin to flash.      1. The yellow ‘Pause Stimulation’ button will flash 3 times rapidly. 2. The *BrightStim* device will then power down (2 minute duration). 3. Wait until the power button light has turned off before removing the headset and disconnecting equipment. This is for safety purposes. If after 2 minutes the device is still on,   turn the device off at the power button.  **Forced device shut-down:**  Please note: ONLY turn device off if it is absolutely necessary   1. Press the yellow ‘*Pause Stimulation’* button and wait for the green ‘*Start Stimulation’* button to begin to flash. 2. Press the yellow ‘*Pause Stimulation’* button again and it will flash 3-times rapidly. 3. The *BrightStim* device will then power down (2 minute duration). 4. NB: Wait until the power button light has turned off before removing the headset and disconnecting equipment. This is for safety purposes.   Please note: The device enables up to 60 minutes of treatment per day. If the device turns off after stimulation has been paused, follow steps 9-10 to resume the remaining time allocated for your daily treatment. | | | | | | | |
|  | **Remove Equipment** | | | | | | | |
|  | 1. Remove the cap from your head (**Figure 14.1**)     Figure 14.1   1. Remove the rubber electrodes from the sponges (**Figure 14.2**).     Figure 14.2   1. Remove the sponges from the white clips attached to the headset and place the wet sponges in the kidney dish (**Figure 14.3**).     Figure 14.3   1. Unplug the connecting lead from the *BrightStim* device (**Figure 14.4**).   Figure 14.4 | | | | | | | |
|  | **Equipment Cleaning** | | | | | | | |
|  | 1. Rinse each sponge thoroughly using warm water to remove excess saline. 2. Squeeze each sponge firmly to remove excess water and saline. 3. Dry both sponges using a towel and leave to air dry over-night. 4. Dry the kidney dish using a towel.   Figure 15.1   1. Wipe the rubber electrodes with an alcohol swab. This is in important part of equipment maintenance. The electrodes can accumulate saline in ridges which may affect the delivery of the treatment (**Figure 15.2**).   \*DO NOT put water on the electrodes. Do not put under the tap or soak.  \\ad.monash.edu\home\User002\mper0017\Desktop\Brightstim Manual\All photos\Wiping electrodes.jpg  Figure 15.2   1. Wrap the electrodes with leads around your hand to prevent them from tangling (**Figure 15.3**) and put them in their plastic bag.   Figure 15.3 | | | | | | | |
|  | **Packing Up** | | | | | | | |
|  | 1. Cover the *BrightStim* device in bubble wrap and insert to the small blue box   (**Figure 16.1**).  Figure 16.1     1. Insert the box with the device and the plastic bag with electrodes to the pocket at the rear of the bag (**Figure 16.2**).   Figure 16.2   1. Insert the cap with clips into the sealable plastic bag and put into the middle pocket of the bag with the saline bottle (**Figure 16.3**).   Figure 16.3   1. Once sufficiently dry, insert all other equipment to the front pocket of the bag (**Figure 16.4**).   Figure 16.4 | | | | | | | |

**Contact Details**

In the event that you should experience any difficulties using this kit, please refer to the following contact details of project coordinators who can assist:

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