



TECHNOLOGIES
MCN: MICRO CURRENT NEUROFEEDBACK

Foundations of IASIS MCN

Practicum Preparation



Visit Our Website
microcurrentneurofeedback.com



Topics for Review



How IASIS Works



The EEG and Brainwaves Overview
from Zach Burns



IASIS Hardware



Electrodes
the 10/20 System

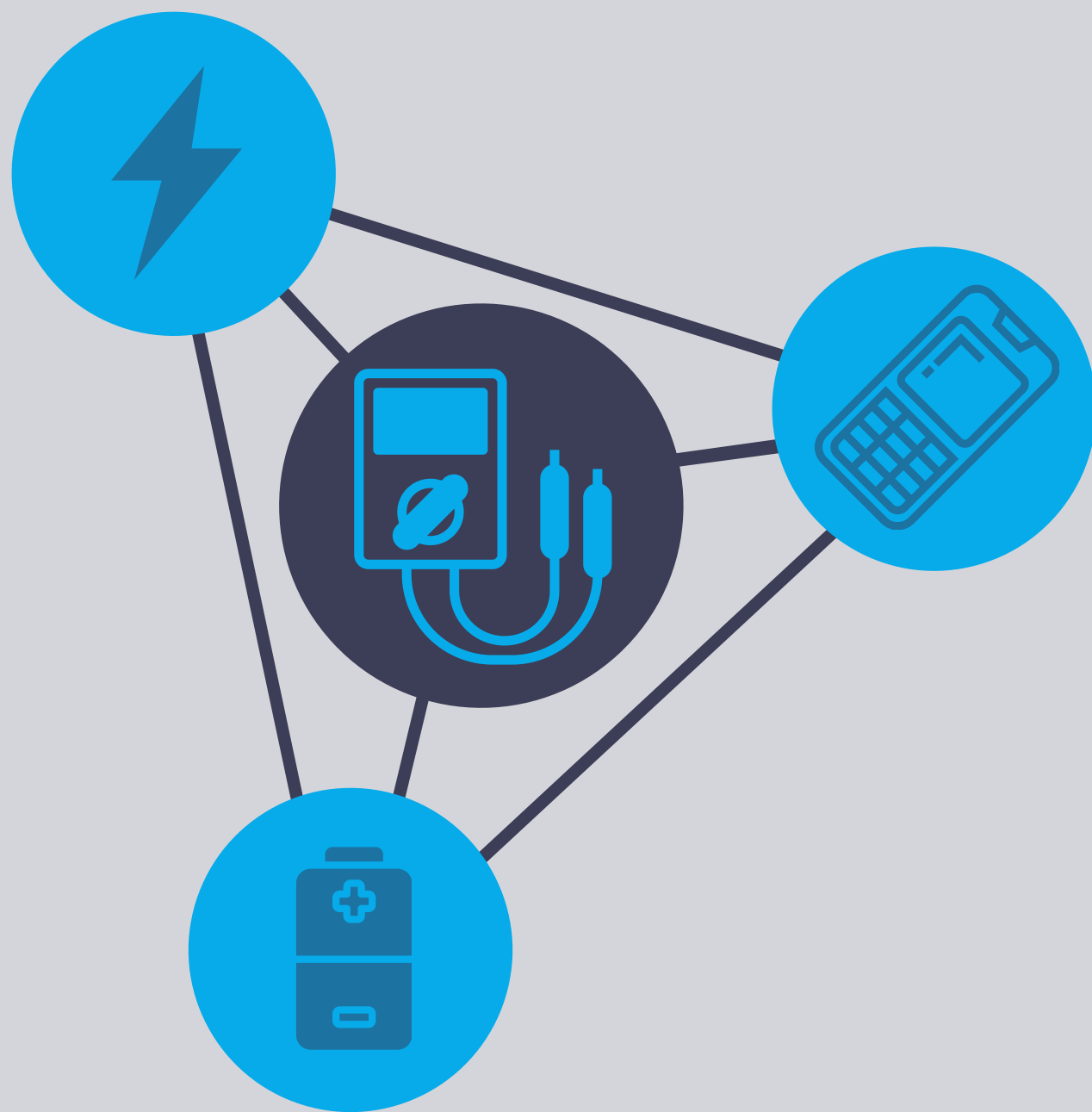


IASIS Procedure Supplies
Care and Maintenance of Equipment

How IASIS Works



HOW IASIS WORKS: TRANSCRANIAL ELECTRICAL STIMULATION (TES)



3

PICO WATTS OF ENERGY

3

TRILLIONTHS OF A WATT

1/

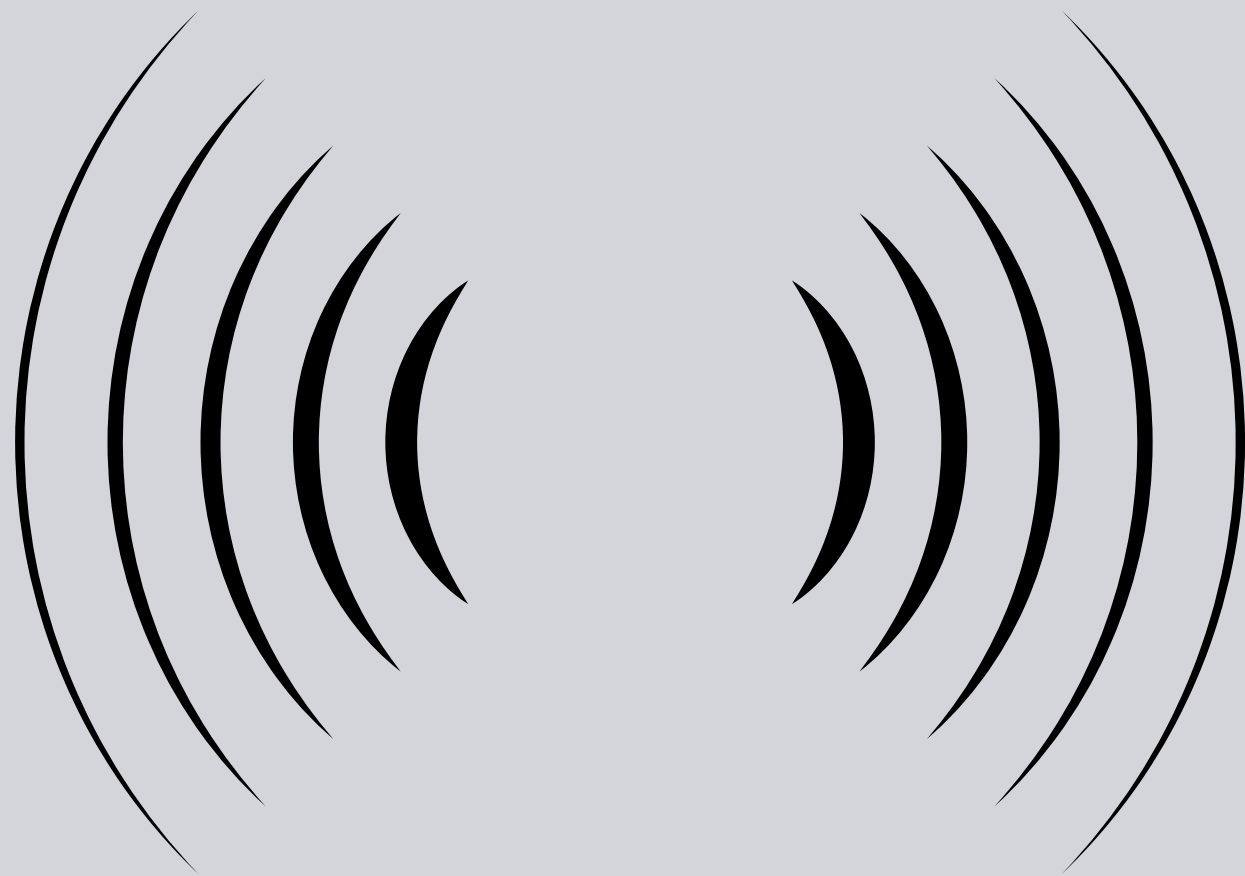
100th OF A AA BATTERY

1

**MILLIONTH OF A
CELLPHONE BATTERY**



HOW IASIS WORKS: TRANSCRANIAL ELECTRICAL STIMULATION (TES)



- The IASIS MCN signal consists of narrow pulses
 - Approximately 120ns (nanoseconds) in duration
 - Approximately 150mv (millivolts) in amplitude
- Pulses are both positive and negative, so the tiny current flows in both directions



HOW IASIS WORKS: What is happening ?



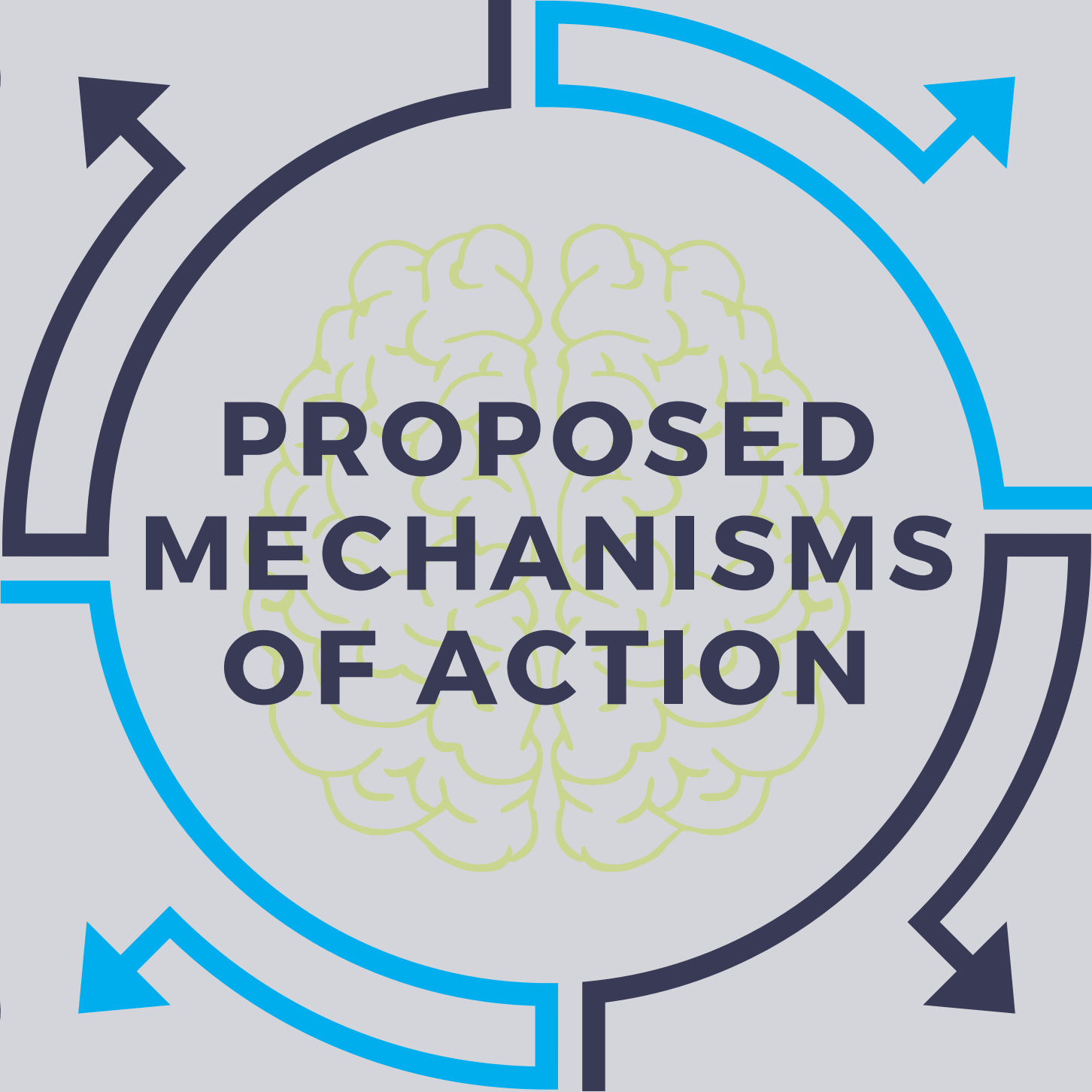
- 1** The device reads the client's EEG
- 2** Their dominant brain rhythm is identified
- 3** An alternating offset signal is added to the dominant rhythm
- 4** The new signal (dominant + offset) is sent back to their brain, which moves their brain out of the dysfunctional rhythm
- 5** Thus every treatment is individualized per person per treatment per day

STIMULATES

NEUROGENESIS AND
NEUROPLASTICITY

ENHANCES

THE FUNCTION OF
NEURONS



BALANCES

THE AUTONOMIC
NERVOUS SYSTEM

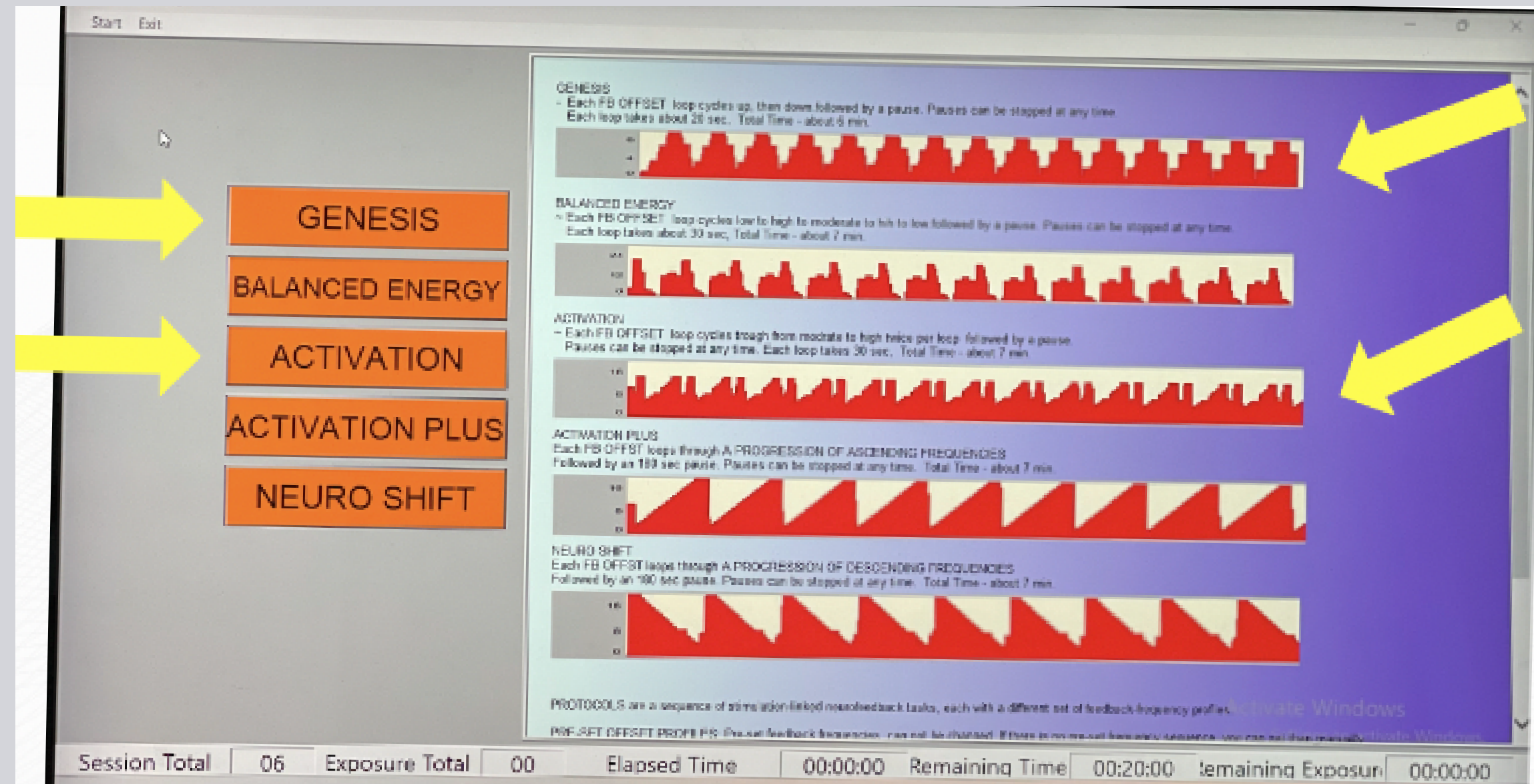
ELEVATES

GLYMPHATIC FUNCTION



Distinguishing Features of IASIS Protocols

- The Offset signal determines the flow rate
- The strength of stimulation
- The exposure pattern (and corresponding changes in signal complexity)
- The number of exposures per cycle
 - Genesis, Balanced Energy and Activation have 15
 - Activation Plus and Neuroshift have 10

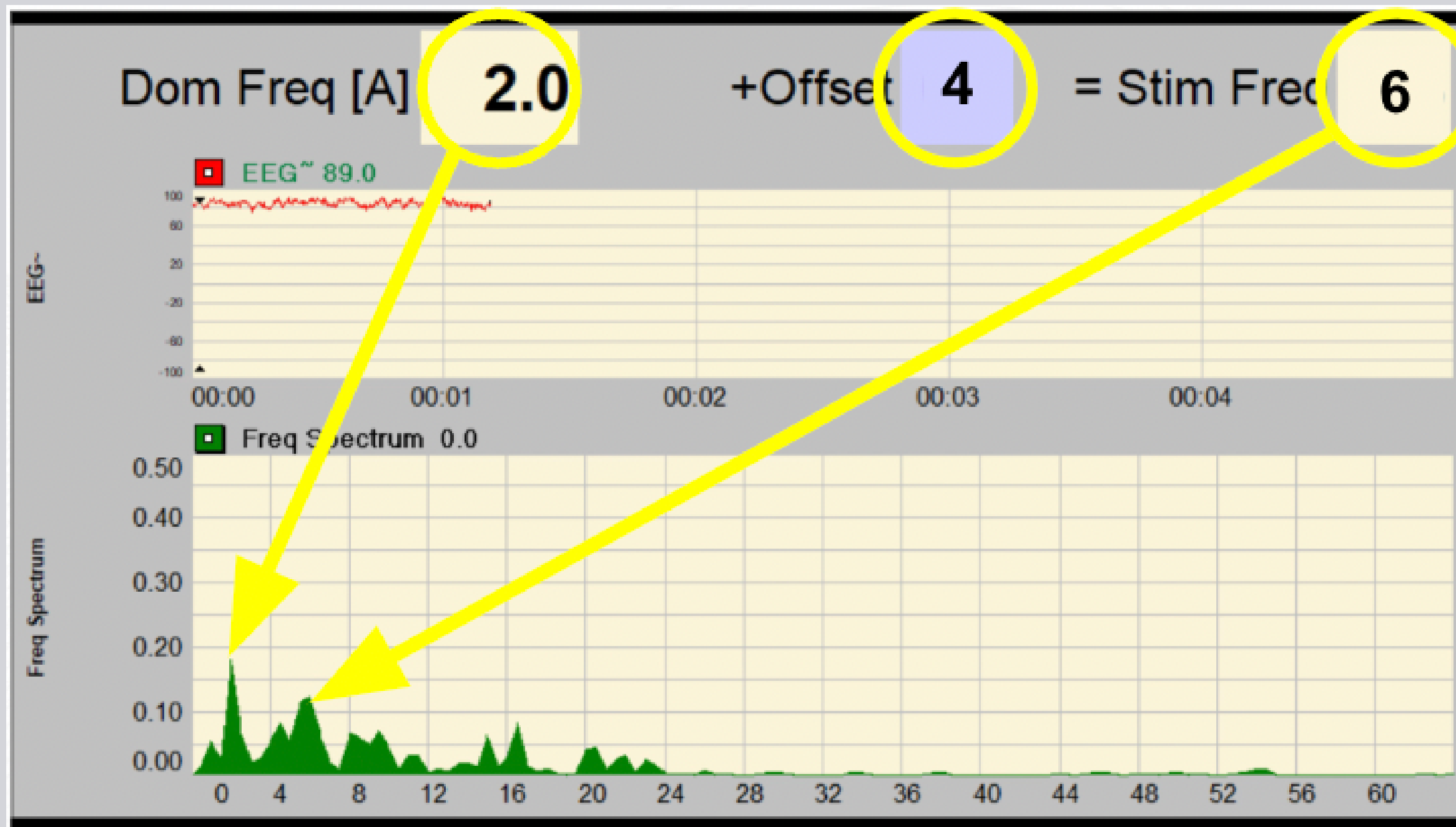




One "full cycle" is represented here

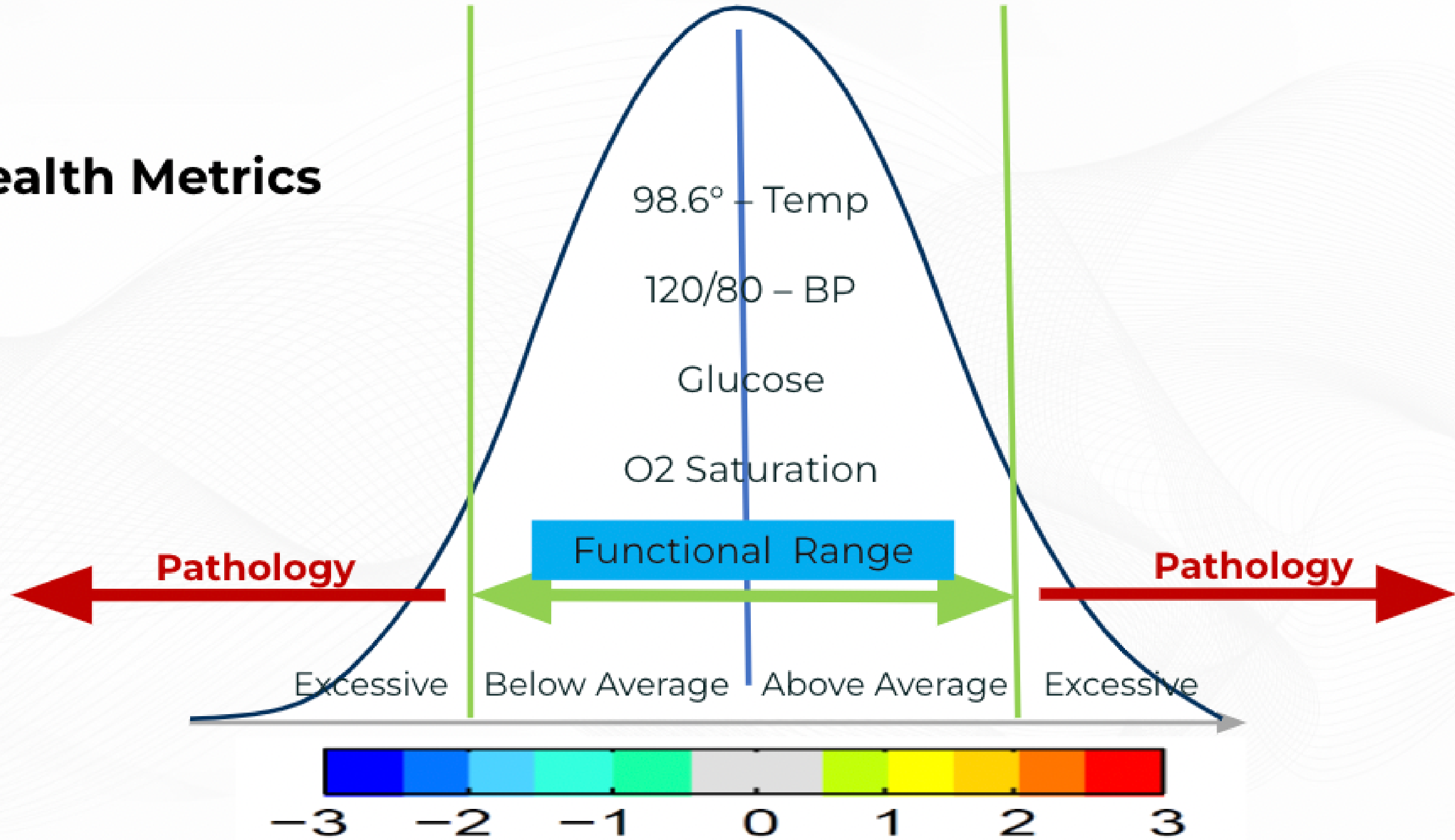
IASIS Protocol Differences

<u><i>Protocol</i></u>	<u><i>Exposures/Cycle</i></u>	<u><i>Total Time for Cycle</i></u>
Genesis	15	6 min 37 seconds
Balanced Energy	15	6 min 49 seconds
Activation	15	6 min 20 seconds
Activation Plus	10	7 min 15 seconds
Neuroshift	10	8 min 34 seconds



<u>Frequency (Hz)</u>	<u>Wave</u>
1-4	Delta
5-9	Theta
8-12	Alpha
12-15	Low Beta
15-20	Beta
20-35	High Beta

Health Metrics



Brainwaves

- There are no good or bad brain waves
- Brainwaves are like gears in a transmission
- Flexibility = Wellness
- Rigidity = Illness



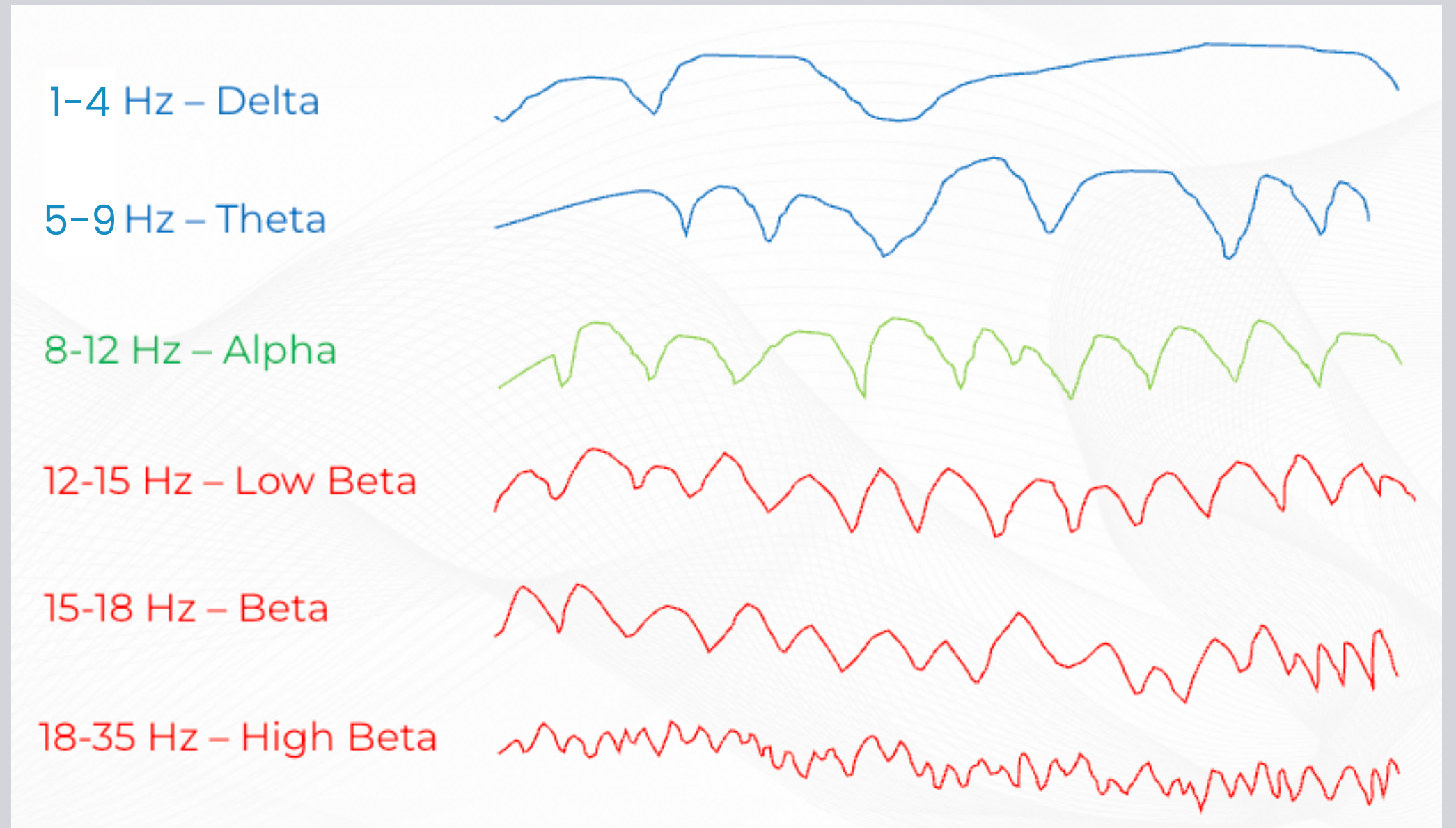
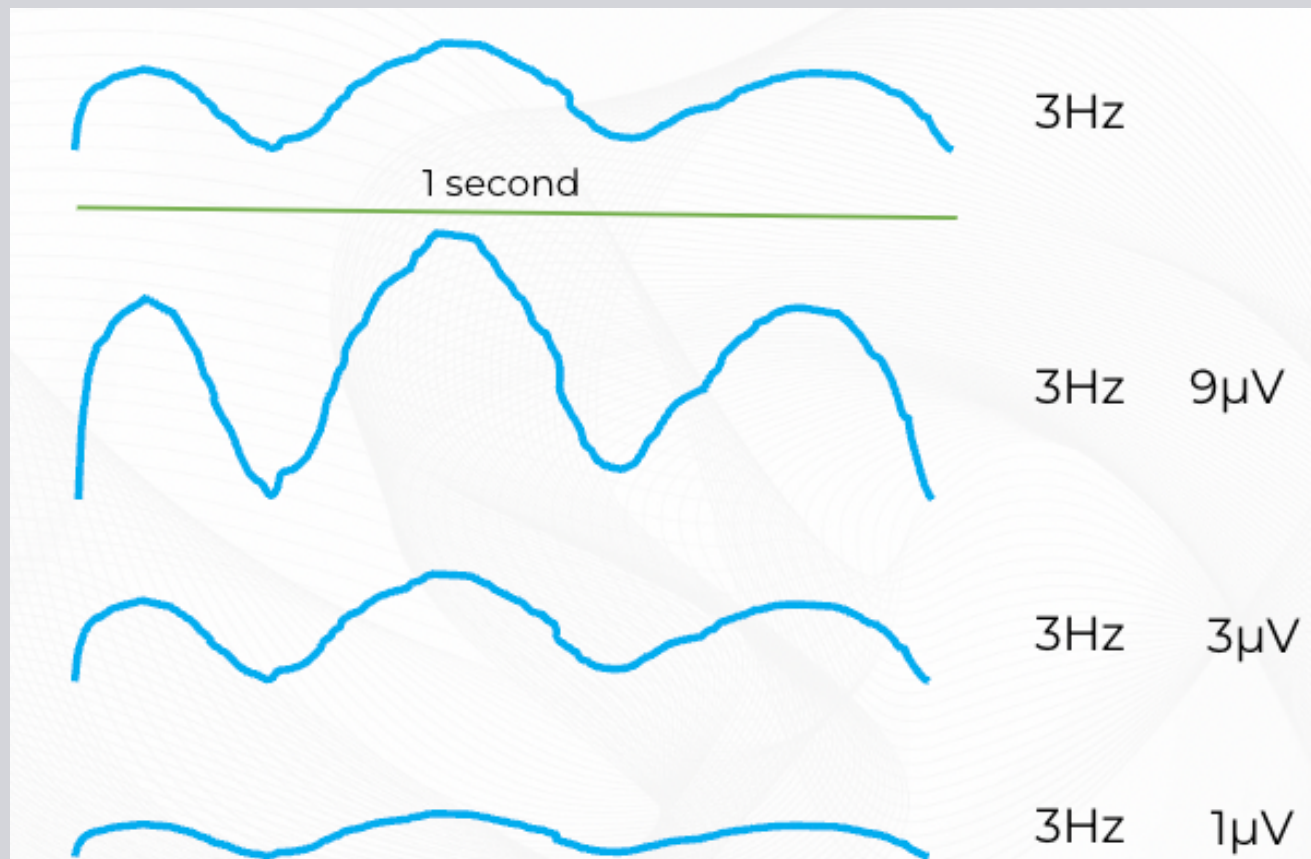
Brainwaves

Frequency (Hz):

How frequently do you see the wave in one second?

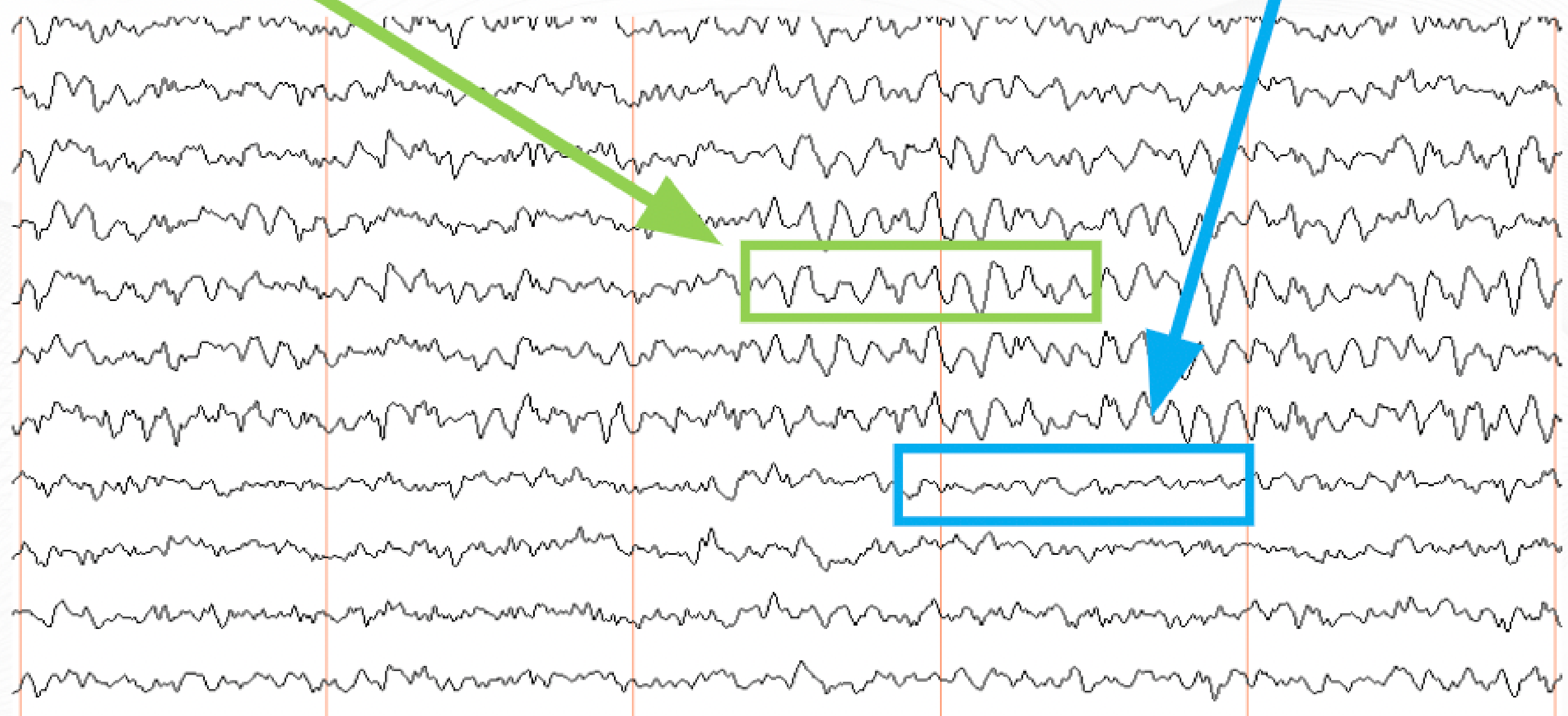
Amplitude (μV):

How large is the wave?



Alpha

Beta



Hardware



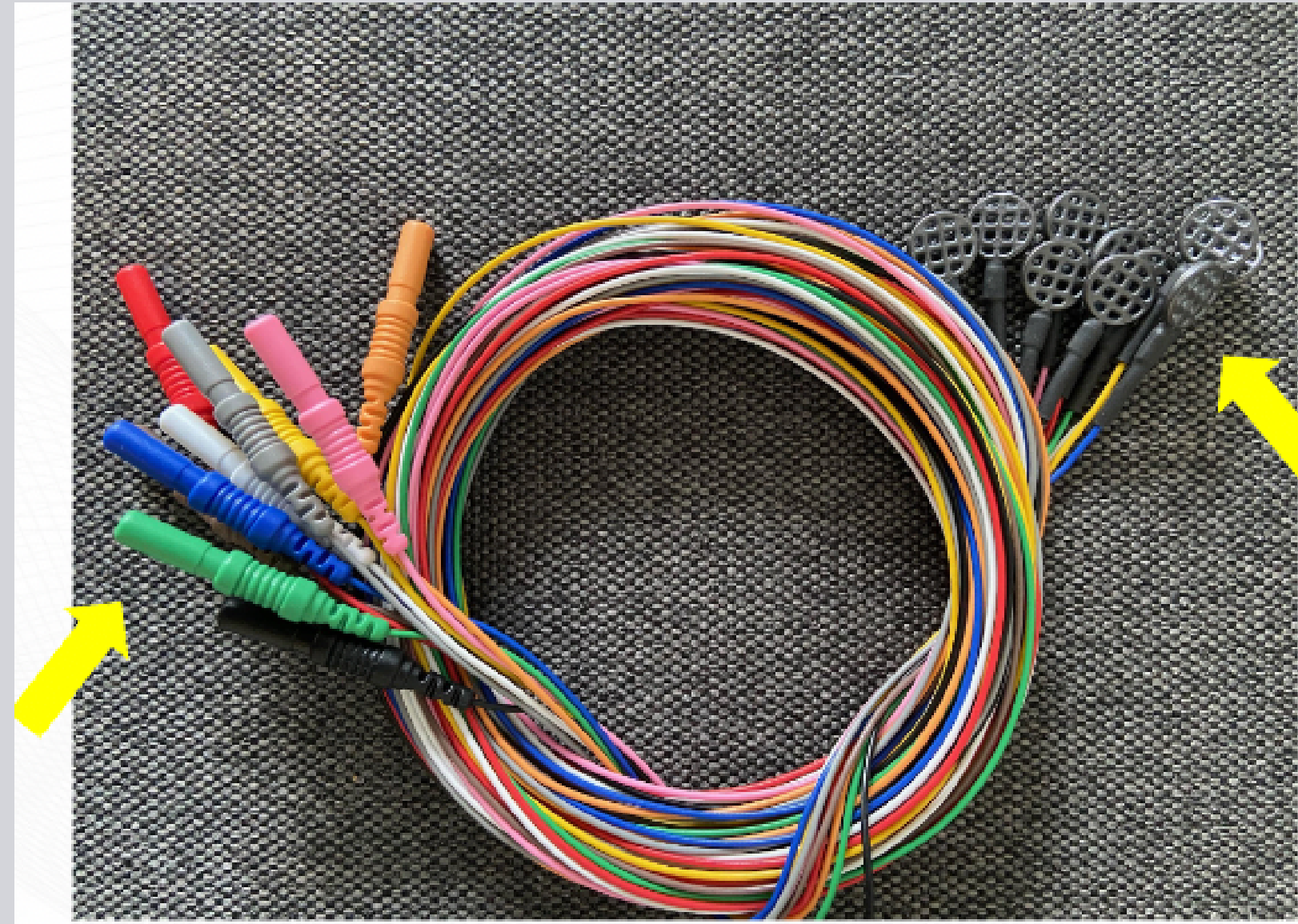




Electrodes



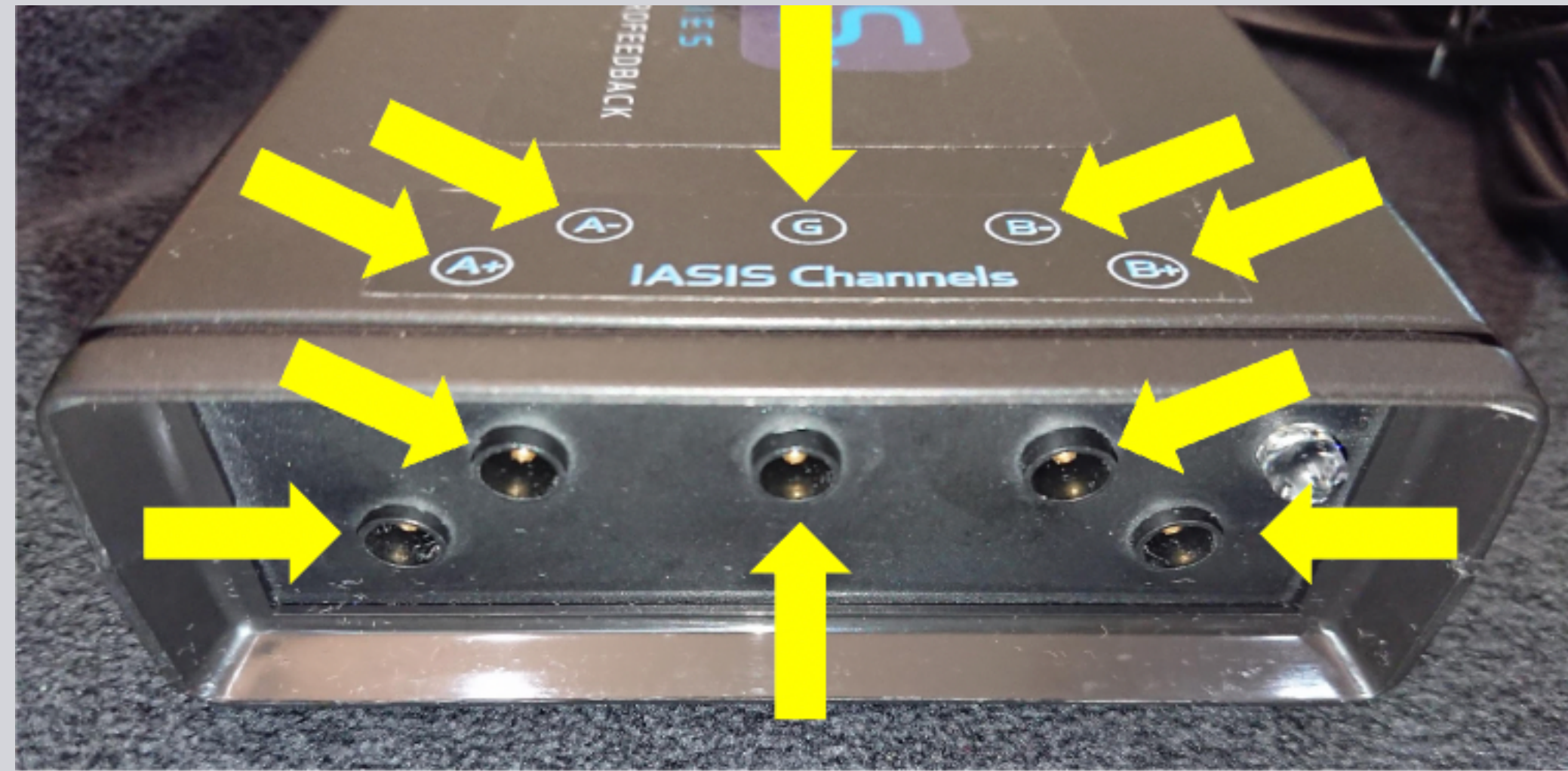
Electrodes



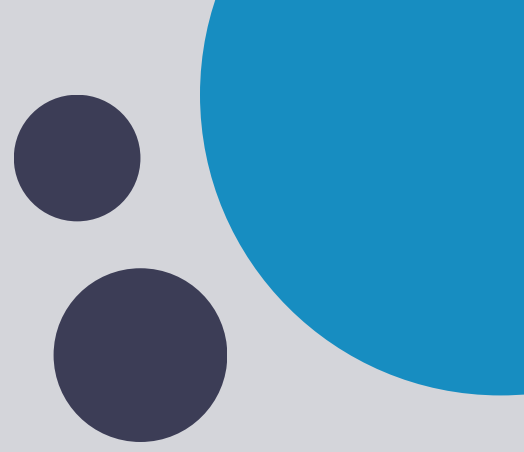
- Rhythmlink.com
- Disposable Webbed™ EEG Electrodes*
- Watch [this](#) video for unpacking and twisting techniques

Electrodes

- IASIS MCN is delivered using 4 leads and a ground lead
- A- and B- leads
 - Referred to as the reference leads
 - Attached to the mastoids (if sleep is good) or the pre-auricular area (if sleep needs improvement)
 - Are stationary
 - Read EEG signals
- A+ and B+ leads
 - Referred to as the active leads
 - Are moved from site to site on the face and scalp
 - Deliver IASIS stimulation/energy



Electrodes



Learn how to plug in the electrodes in [this](#) video

Electrodes

- What color is the ground lead in this photo?
- How are leads in the A- and B- ports referred to?
- On which side of the client's head will the black electrode be affixed?
- Which two colors of electrodes will move from site to site?
- Where will the green electrode be affixed?



Electrodes

Avoid touching the leads during a session

- Waffle portions are transmitting energy
- Touching the wires interferes with the signal



Electrodes: The 10/20 System

- F3/F4, F7/F8 ,Fpz/Bz
- Electrode Letter and Corresponding Lobe
 - F: Frontal
 - T: Temporal
 - C: Central* (No central lobe exists; the 'C' letter is used for identification purposes only.)
 - P: Parietal
 - O: Occipital
- The 'z' (zero) refers to an electrode placed on the midline
- **FPZ/BZ is a site reference used only by IASIS providers**

Electrodes: The 10/20 System



Electrode Placement for Neurofeedback Using the International 10-20 System

Dr. Delton

How to practice 10-20 EEG electrode placement.

101,759 views · Dec 19, 2014

635 74 SHARE SAVE ...

Yohan Delton

Practice electrode placement with international 10-20 system for neurofeedback. Grateful for Siegfried and Sue Othmer.

SUBSCRIBE

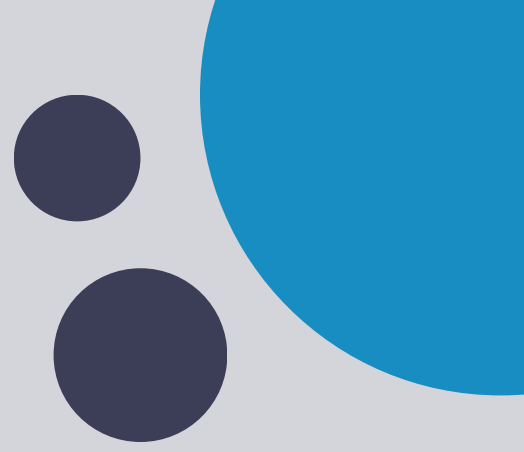
The image shows a hand holding several orange circular labels with handwritten electrode codes such as 'F7', 'F8', 'T3', 'T5', 'O1', 'Cz', 'Fp1', 'Fp2', 'F7c', 'F8c', 'T3c', 'T5c', 'O1c', 'Cz1', 'Cz2', 'F7d', 'F8d', 'T3d', 'T5d', 'O1d', 'Cz3', 'Cz4'. In the background, a white mannequin head has several of these labels placed on its scalp to demonstrate their positions.

Watch [this](#) video by Yohan Delton!

Procedure Supplies



Supplies



- Hand sanitizer spray
- Comb
- Headbands
- Clips (several sizes)
- Elastic 10/20 Measures
- Mannequin head with site pair stickers
- Cotton rounds
- Coffee stirrs or cotton swabs
- SkinPure
- Elefix
- Witch hazel
- Tissues
- Electrodes
- Wipes
- Bottle for soaking electrodes



Care and Maintenance

- Always use a surge protector for the laptop
- When the IASIS laptop is it may remain on the internet in order to consistently receive drivers and antivirus updates
- Using a presenter to advance through exposures keeps the laptop surface cleaner

Infrared Device (IR)

- Latest model works in the 920-950nm (nano meter) range
- Has been shown to increase blood flow and oxygenation as well as stimulate neurotransmitter release
- Device is sealed and waterproof
- Device is fragile and costly to repair
 - Should not be held by children



Infrared Device (IR) LIVE



View infrared light with your phone camera!

To activate: must cover green sensor

Infrared Device (IR): Use

- If high measures of reactivity exist do not use the IR device, as its use could potentiate a reaction
- Alternate every 1-2 minutes between client's hands, positioning the IR device 1 inch above grouped fingernail beds
- Alternate every 1-2 minutes between client's hands, positioning the IR device 1 inch above the fleshy area between the first finger and thumb

Infrared Device (IR): Use



- Can be tripod mounted
- The light can be directed on the cerebellum, at the base of the skull near the suboccipital ridge



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Thank you for your attention!

Q&A



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