Best Practices for transcranial Direct Current Stimulation (tDCS) and related techniques

A Q&A Session (and a demo)

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Disclosure:

Soterix Medical Inc. produces tDCS and High-Definition tDCS. Marom Bikson is founder and has shares in Soterix Medical. Some of the clinical data presented may be supported by Soterix Medical. Marom Bikson serves on the scientific advisory board of Boston Scientific Inc.

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Some questions about tDCS....
What is the “dose” of tDCS?

- Size, position, and current applied to electrodes
- Example: 5x5 cm$^2$ electrodes, C3 Anode, SO Cathode, 2 mA for 20 minutes
What is the High-Definition tDCS?

• Use of small “HD” gel-electrodes, instead of sponges
• Categorical increase in control on brain targeting
• Useful with EEG

Dmochowski, Bikson et al

*J. Neural Engr.* 2011
What is the 4x1 HD-tDCS?

- Five HD electrodes (one center, four surround)
- Used for focal unidirectional cortical modulation

Datta, Bikson et al
*Brain Stimulation* 2009
Is tDCS safe?

- Consensus YES: No serious adverse effect in >30,000 sessions in (diverse) patients or healthy volunteers
- Requires certified equipment and protocols
Is tDCS tolerated?

- Consensus YES: but when standard protocols are followed
- Requires certified equipment (devices, electrodes) and training
Can tDSC be done at home?

- Only with specially designed equipment
- Consensus telemedicine protocols: “Remote-Supervised tDCS”
What does tDCS look like?
How does tDCS work?

• Low-intensity direct current polarizes neurons
• Change in membrane potential changes processing and plasticity

NYC Neuromodulation 2017 Conference
January 13-15, 2017 (New York City, USA)
tDCS, EEG, HD-tDCS, tACS, DBS, ECT, SCS, Image guided neuromodulation

Speakers, Program, Registration Details: neuromodec.com

Abstract or 1-Page Proceedings Published in Brain Stimulation Journal – Due Nov. 1st, 2016

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