

Materials List for

# Simultaneous Application of Transcranial Direct Current Stimulation during Virtual Reality Exposure

Mascha van 't Wout-Frank<sup>1,2,3</sup>, Noah S. Philip<sup>1,2,3</sup>

<sup>1</sup>VA RR&D Center for Neurorestoration and Neurotechnology, Providence VA Medical Healthcare System <sup>2</sup>Department of Psychiatry and Human Behavior, Alpert Brown Medical School <sup>3</sup>COBRE Center for Neuromodulation, Butler Hospital

## Corresponding Author

Mascha van 't Wout-Frank  
Mascha\_vant\_Wout@brown.edu

## Citation

van 't Wout-Frank, M., Philip, N.S. Simultaneous Application of Transcranial Direct Current Stimulation during Virtual Reality Exposure. *J. Vis. Exp.* (), e61795, doi:10.3791/61795 (2021).

## Date Published

January 18, 2021

## DOI

10.3791/61795

## URL

jove.com/video/61795

## Materials

Name	Company	Catalog Number	Comments
ECG data acquisition module	Biopac	Part #: ECG100C	ECG100C Electrocardiogram Amplifier records electrical activity generated by the heart to record ECG.
ECG electrode patches	Biopac	Part #: EL503, EL503-10	These pre-gelled disposable electrodes have a circular contact and are most suitable for short-term recordings, including surface EMG, ECG, EOG, etc
ECG leads	Biopac	2 x Part #: LEAD110	These electrode leads are used with the EL500 series disposable snap electrodes.
EDA/GSR acquisition module	Biopac	Part #: EDA100C	The EDA100C Electrodermal Activity Amplifier measures both the skin conductance level (SCL) and skin conductance response (SCR) as they vary with sweat gland (eccrine) activity due to stress, arousal or emotional excitement.
EDA/GSR electrode patches	Biopac	Part #: EL507, EL507-10	These disposable snap electrodes are designed for electrodermal activity studies and are pre-gelled with isotonic gel. The latex-free electrodes conform and adhere well to fingers/hands. Use with LEAD110A or SS57L unshielded electrode lead.
EDA/GSR leads	Biopac	2 x Part #: LEAD110, LEAD110A, LEAD110S-R, LEAD110S-W	These electrode leads are used with the EL500 series disposable snap electrodes.
HD/tDCS-Explore Neurotargeting Software	Soterix Medical	Contact Soterix Medical	Software to assist in electrical field modeling and optimization of electrode montages for brain targeting. Free available options include ROAST and SIMNibs that run in Matlab.

Psychophysiology (ECG & EDA/GSR) analysis software	Biopac	Part #: ACK100W, ACK100M	Biopac AcqKnowledge software data acquisition and analysis software allows for waveform analysis and instantly view, measure, analyze, and transform data.
Psychophysiology measuring equipment for ECG and EDA/GSR	Biopac	Part #: MP160WSW, MP160WS	MP160 data acquisition system; needs connected EDA/GSR and ECG modules ordered separately, see next two entries.
Randomization and data capture software	Redcap	<a href="https://www.project-redcap.org/">https://www.project-redcap.org/</a>	REDCap software and consortium support are available at no charge to non-profit organizations that join the REDCap consortium. Joining requires submission of a standard, online license agreement.
Saline - 0.9% NaCl	e.g Vitality Medical	e.g. #37-6280	Regular saline can be purchased from different vendors.
tDCS electrodes and sponges	Jali Medical (USA)	Contact Jali Medical	tDCS electrodes and sponges sold separately - contact vendor to order correct size (e.g. 5x5 cm)
Transcranial direct current stimulator (tDCS)	Jali Medical (USA)	Contact Jali Medical	The neuroConn DC-STIMULATOR PLUS* is a single-channel programmable direct and alternating Current Stimulator.
Virtual reality system	Virtually Better	Contact Virtually better	PTSD Suite from Virtually better "Bravemind" is an application for clinicians specializing in treating Posttraumatic Stress Disorder (PTSD).