



## Letter to the Editor

**Reply to “Current source density approaches improve spatial resolution in event related potential analysis in people with Parkinson’s disease”**



We appreciate and thank the authors for their time and effort to comment on our paper.

**Declaration of Competing Interest**

No conflict of interest.

**References**

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We read the “Letter to the Editor” by [Fearon et al. \(2019\)](#) with great interest and found the comments very important and relevant. We would like to note that our auditory oddball task didn't include a direct motor response when the oddball tone was heard. To avoid possible motor interference the participants were instructed to count the odd tones silently and report the total number of the odd tones at the end of the task. Therefore, we believe that the current source density (CSD) approach was not required in our analysis and the altered amplitude that was found in the group of patients with Parkinson's disease (PD) reflects true differences in P300 between healthy subjects and patients with PD ([Maidan et al., 2019](#)).

In addition, it is important to emphasize that the performance of source localization requires a large number of channels. Our EEG system included 20 channels as compared to 128 channels system that were available in the study of [Butler et al. \(2017\)](#), therefore, our ability to use CSD was limited. Using a wireless EEG system with a small number of channels makes the setting of the EEG assessment much easier to implement, especially in older adults and patients with neurodegenerative diseases.

Inbal Maidan

Tel Aviv Medical Center, Neurology, 6 Weitzman Street,  
Tel Aviv 6203305, Israel  
E-mail address: [inbalm@tlvmc.gov.il](mailto:inbalm@tlvmc.gov.il)

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