

# Heartbeat evoked potentials mirror altered body perception in depressed patients.

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**OBJECTIVE:** Awareness of stimuli originating inside of the body (interoceptive awareness) is thought to have an impact on psychopathology. The aim of the present study was to analyze whether heartbeat perception accuracy is reduced in depressed patients. Furthermore, we investigated whether putative differences are reflected in heartbeat-evoked potentials. **METHOD:** We assessed the heartbeat perception score in 16 depressed patients and in matched healthy controls. A 63-channel EEG was recorded while participants counted pseudo-randomly presented target tones or heartbeats during a fixed number of cardiac cycles. ECG R-waves served as the trigger for EEG averaging. The cardiac-field artifact was minimized using independent component analysis and current-source density. **RESULTS:** Behaviorally, the depressed sample showed less accurate heartbeat perception in comparison to the control group ( $p=.011$ ). The two groups also demonstrated psychophysiological differences, showing that heartbeat-evoked potentials were significantly reduced in depressed patients. **CONCLUSIONS:** Our results suggest that heartbeat evoked potentials are objective markers of altered bodily awareness. Reduced interoception during depression may be linked to alexithymia, as well as to both decreased capacity for decision-making and for cognitive processing. **SIGNIFICANCE:** It may be helpful to practice interoceptive awareness to improve depressive symptoms, for example by practicing meditation. Clin Neurophysiol. 2012 Apr 25. Terhaar J, Viola FC, Bär KJ, Debener S. Pain and Autonomics - Integrative Research (PAIR), Department of Psychiatry and Psychotherapy, Philosophenweg 3, University Hospital, Jena, Germany.

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