



# Brain Activity and HRV Changes After an Eight-Week Mindfulness Meditation

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## Abstract

Stress is one of the most common health problems in the European Union. It contributes to the deterioration in health and mental health problems, including depression and anxiety. One of the methods of overcoming stress is mindfulness meditation (MBSR). Many studies reveal that MBSR is helpful in the treatment of somatic diseases, as well as anxiety disorders, depression, and chronic pain. Regular practicing mindfulness meditation causes a decrease in the level of stress. Stress could be observed in brain functioning e.g. electrical activity. Stress manifests itself in an increase in high beta activity and frontal alpha asymmetry. On the contrary, practicing meditation causes an increase in the alpha and theta bands and an increase in left hemisphere activity, and also an improvement in HRV. The project aims at assessing changes in brain functioning and in HRV after 8-week mindfulness meditation. Forty people participated in the study in 2 measurements at an 8-week interval (MBSR group and control group). Measurements included: the level of stress, anxiety, and depression symptoms (DASS-21), mindful attention awareness (MAAS), and physiological parameters, i.e. EEG, EKG. The analysis revealed a reduction in stress levels, a decrease in anxiety symptoms and symptoms of eating disorders after MBSR in both groups, as well as an increase in mindful attention. There were no significant differences between the measurements in the control group. Due to the ongoing analysis of physiological data, the overall results will be shown at the conference.

**Keywords:** brain activity, health, HRV, mindfulness meditation, stress