

Enhancing cardiac parasympathetic nervous activity using a posture respiration ambient biofeedback system: a pilot study

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Abstract

A respiration–posture feedback system was developed to control breathing involuntarily. A small air chamber placed under a subject’s back deflates and inflates to make a subject’s upper body move vertically while lying on a bed. By regulating the deflation/inflation of the air chamber in synchronization with actual respiration, the subject’s respiration was successfully lengthened and deepened. The modulation of the respiration acted as a physiological sedative for the subject as the heart rate variability index suggested that the subject’s parasympathetic nervous system activity was enhanced.

Keywords

Respiration Posture regulation Bio-feedback Ambient feedback system

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