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DYNAMIC AND STATIC POSTURE INFLUENCED BY MUSIC ENTRAINMENT

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A sedentary lifestyle is the domain of modern times. Abnormal posture results from minimizing energy effort and is unavoidable due to a lack of focused attention. It is more likely than the correct one that requires deliberate action. Among preventive recommendations, maintaining a correct posture while sitting is pointed out. However, it happens that a person engaged in other activities stops focusing enough on his posture. The article describes a system of stimulating attention to perform activities leading to correct body alignment. The correction activity requires energy input, invested consciously, especially in achieving the needed muscle tensions and arranging body parts adequately according to physiotherapeutic recommendations, but conditioned by the user's capabilities. In this context, there are two problems: the phase of learning movement using feedback signals informing the user about the current results of motor actions and developing an appropriate reflex initiated by a readily available signal. The first task is solved in the study in question using a camera and software that compares images of activities with an instructional video, and the second is solved by musical entrainment, in general, based on triggering a neuromotor reflex that can be associated with a specific task. A key role in the learning phase is played by an external observer, instructing the user and guiding the exercise in an optimal way for the specific case. The learning phase is linked to movement sonification, i.e., assigning particular sounds to specific phases relevant to memorized movement patterns. Activities are repeated until the conditioned reflexes are fixed. The exploitation phase involves the daily use of a fixed, personalized auditory signal, repeated periodically at intervals determined by the physiotherapist and psychologist. The task of mathematical modelling and musicians is to design the auditory stimuli so that the effect of initiating the reflex is acceptable and unobtrusive.