

Psychophysiological mechanisms of balance control

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Postural control emerges as the expression of both feed-forward, centrally driven and feed-back peripherally dependent mechanisms. The first part of this symposium will start with presentations of Semyon Slobunov (USA) and Anastasiya Kovalyova (Russia) about the role of cerebral cortex and EEG endophenotype in human postural control. Then, two talks of Anna Kondratenko (FRJM), and Renzo Pozzo (Italy) will discuss the question how postural control could affect cognitive and psychomotor performance in musicians.

Since postural control is affected by brain dysfunctions, its modulation can be used as an indicator of both cognitive and psychomotor disorders. In the light of these considerations we propose a second part of the symposium that will be focused on discussion of the following questions:

- *what are the influences of affective disorders on postural stability and psychomotor performance in depressive subjects?
- *what is the difference of dual-task performance mechanisms in healthy persons and patients with brain lesions (traumatic brain injury and affective disorders)?
- *how is it possible to use neurocognitive tools for improvement of postural control?

Presenters

Semyon Slobunov (USA) will speak on the role of cerebral cortex in human postural control.

Anastasiya Kovaleva (Russia) will present differences in postural control in students with high and low individual alpha peak frequency.

Anna Konrtatenko (Macedonia) will talk about postural control and psychomotor performance in violinists.

Renzo Pozzo (Italy) will present a study of postural and arm control in pianists with different musical performance levels.

Zhavoronkova L.A. (Russia) will present data on EEG markers of compensatory brain mechanisms of dual-task performance efficiency in healthy subjects and in patients with traumatic brain injury.

Olga Bazanova will suggest neurophysiological mechanisms of postural control influenced by affective disorders.

Yisi Liu, et al. (Singapore) will discuss neurocognitive tools for enhancement of focused attention in elite rifle shooters.

Henriette Gaertner(Germany) will present how feedback on force could improve piano playing.