

A CLASSICAL VIEW OF THE “ERROR PROCESSING EFFECT”

M.O. Welcome, V.A. Pereverzev

Belarusian State Medical University, Minsk, Belarus

Recent literature data suggests that the system that is necessary for the monitoring and processing of error is a dynamic one. Importantly, the number of brain regions involved in error monitoring and processing varies with age [for review, see Pontifex et al., 2010]. Two major reasons are possible: maturation of the neural systems that identifies different errors (see Stevens et al., 2009); and neural plasticity. While, the other factors might determine the capacity of the brain's error monitoring and processing, present research does not provide adequate evidence for this relationship. Frankly, the vast aspect of brain error monitoring and processing research is still barren and much is needed to be unraveled. Here, we only focus on a recent study we conducted on university students as regards to error processing dynamics relationship with glycemia. The involved determination of cognitive abilities based on a model we had earlier designed revealed important results in this area of research. Conducted correlation and regression analyses reveal important findings. The phenomenon of increased error commission following decrease in blood glucose level, we refer to the “error processing effect”. We also suggest a mechanism (of complex systems) for this phenomenon.

References: Pontifex MB, et al. Psychophysiology. 2010; 47: 767-773. Stevens MC, et al. Hum Brain Mapp. 2009; 30 (1): 24-37.