

Psychophysiological methods in clinical studies and rehabilitation

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ABSTRACT

The crucial question for medical assessment and, especially, intervention is if the assessment enough specific and sensible and if the intervention is capable to produce a significant improvement in the patient's condition. However, many therapeutic methods have just a little or unknown effectiveness. The gold standard of evidence-based medicine is a large double-blind placebo-controlled study. But, besides the clinical studies organization, it's important to use the most sensitive approach for assessment of patient's condition changes. The neovascularization and other physiological measurements allow us to evaluate even slight differences in the activity of Central or Peripheral Nervous systems, that cannot be detected by behavioural or self-report diagnostic. Moreover, neovascularization is particularly useful for assessment of people with severe mental conditions, which makes verbal report impossible. Objective. We are going to review several valid and reliable ERP paradigms that have been used for evaluation of brain response changes. Furthermore, the emerging approaches will be described. Another useful application of physiological methods is stimulation of nervous system to enhance or suppress the specific neuronal activity. Despite these methods are common practice in many clinics, the last research results provide a great view to improvement the effectiveness of nervous system stimulation methods. We will describe the new approaches for improvement of current methods of brain stimulation.