

Abstract:

Recently, the literature concerned with the possibilities and limitations of working memory training has been growing rapidly. Nonetheless, there are still no clear answers about the principles of its effectiveness or transfer effect. The main questions we ask are about effectiveness of cognitive training in patients after stroke or TBI. To our knowledge this group hasn't been studied in this context yet. To do this, we compare two types of cognitive training – extensively studied *N*-back training (n=11) and still more popular group cognitive therapy (n=9) with a placebo control group (n=5) who receives „training“ in a simple computer game. The placebo control group then continues in *N*-back training. Our hypothesis is that after 3 weeks the two trainings should lead to significantly higher gains in cognitive tests scores than the placebo condition. Also, we expected *N*-back to be more effective than group cognitive training in domains more closely related to executive control. We tested attention, fluid intelligence, short-term and working memory. We also recorded participants well-being. Following training, there were no significant differences between *N*-back and group training. *N*-back group scored significantly higher on Trail Making Test A than control group ($p=0,026$). Although our study doesn't lead to unequivocal conclusions, partly due to small sample size, there are some typical tendencies in performance changes occurring after *N*-back training.

Keywords: cognitive training, traumatic brain injury, stroke, *N*-back, working memory