No effects of eye movements on the encoding of the visuospatial sketchpad and the phonological loop in healthy participants: possible implications for Eye Movement Desensitization and Reprocessing therapy

Keywords: eye movements, EMDR, immediate recall, working memory, experiment

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Abstract: Background: Horizontal eye movement is an essential component of the psychological intervention "Eye Movement Desensitization and Reprocessing" (EMDR) used in Posttraumatic Stress Disorder. A hypothesized mechanism of action is an overload of the visuospatial sketchpad and/or the phonological loop of the working memory.
Aim: To explore how eye movements affect the information encoding of the visuospatial sketchpad and the phonological loop.
Method: Thirty-six healthy young adults (females=25) performed two immediate recall tasks from the Wechsler Memory Scale: "Corsi Cubes" and "Digits". Using a within-participants design, up to 16 repetitions of eight seconds of eye-movement and an eye-rest condition were performed.
Results: There were no statistically significant differences between the eye movement and eye rest conditions for either recall task.
Conclusions: In our sample of healthy participants, eye movements did not improve the immediate auditory and visual consolidation memory, undermining this hypothesized mechanism of action of EMDR. However, these findings might also be explained by our exclusion of tests that would stimulate