

Bar-Ilan University

**The Interactive Effect of Cognitive
Flexibility and Playing a Visuospatial Game (i.e.,
'Tetris')
on the Tendency to Develop PTSD Symptoms
Following Exposure to Traumatic Incidents**

Ariel Perel

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Abstract

Background: Flashbacks are the hallmark feature of Post-Traumatic Stress Disorder (PTSD). Recently, several studies have found that playing a visuospatial game (i.e., ‘Tetris’) after viewing traumatic films reduces involuntary memory flashbacks in healthy individuals. However, many individuals still exhibit high levels of symptoms after the visuospatial intervention, warranting a continued investigation into specific characteristics that may moderate the relationship between the visuospatial intervention and the level of symptoms. One such candidate is cognitive flexibility, defined as the ability to update behavior in accordance with contextual demands. To date, no study has examined whether individual differences in cognitive flexibility affect the effectiveness of the visuospatial intervention. The aim of the present study was to examine the interactive effects of cognitive flexibility and visuospatial game on levels of intrusive PTSD symptoms. **Methods:** Sixty participants (mean age=29.07, SD=4.23) participated in three laboratory testing sessions. In these sessions they watched traumatic films, completed a performance-based paradigm evaluating cognitive flexibility and were assessed for intrusive symptoms, depression, anxiety, and recognition memory. **Results:** Higher cognitive flexibility was associated with lower levels of intrusive symptoms. Additionally, an interactive effect of cognitive flexibility and visuospatial intervention on the level of intrusive symptoms was found. Specifically, for participants who played the visuospatial game, higher levels of cognitive flexibility predicted lower levels of intrusive symptoms. For participants who did not play, higher levels of cognitive flexibility predicted higher levels of intrusive symptoms. **Discussion:** The results highlight the significant role of cognitive flexibility, suggesting that while in some conditions increased cognitive flexibility may lead to

adaptive behavior, in other circumstances cognitive flexibility may have detrimental effects.