The links between attentional networks, episodic memory encoding and trait mindfulness in the context of aging.

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Background and objectives: Many studies indicate a link between attentional processing and episodic memory encoding. Both of these processes decline with aging. However, the contribution of each attentional network (i.e., alerting, orienting and executive control) on episodic memory decline has been less investigated. Mindfulness, defined as the ability to be fully aware of the present moment, has, on the other hand, a positive impact on executive control and episodic memory. Thus, it could play a protective role against the age-related cognitive decline. Methods: A group of young and a group of elderly volunteers attended to our study. An original task, inspired by the Attentional Network Task, was used. 48 images of objects were presented in the encoding phase in 3 cuing conditions: no cue, double cue and spatial cue. Moreover, stimuli could be surrounded by congruent or incongruent flankers. The subjects had to indicate, as fast as possible, the direction of the central target image. After 20 minutes, a surprise recognition test was presented, including target items and distractors, followed by two source memory questions, allowing us to calculate a binding score (number of target items accompanied by correct answers on both source questions). Trait mindfulness was assessed by the FFMQ. Results: For the recognition performances, we found an interaction between age and flanker condition: for incongruent trials (flankers facing in the opposite direction of the target item), compared to congruent ones, young subjects presented a higher source memory for the context of presentation of the item. On the contrary, elders did not show this pattern. Moreover, in the elders group, we reported that dispositional mindfulness mediated the relationship between alerting and binding scores. Discussion and conclusion: Our results indicate that elders do not benefit from the facilitating effect of executive control (context incongruency) on source memory. Interestingly, we found that trait mindfulness could act as a mediator between attention and memory, and could positively impact cognitive reserve in aging. Thus, these results can lead to encouraging perspectives for mindfulness-based cognitive remediation interventions for elderly people.