A multimodal analysis of sustained attention in younger and older adults

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Introduction and Method

- Recent evidence suggests sustained attention may be intact, if not better, in older adults compared to younger adults¹
- Older adults also report less mind-wandering than younger adults²
- We used a 30-minute simple reaction time task to compare younger (M age = 20 years, SD = 1.8) and older (M age = 75 years, SD = 7.5, 65% college-educated) adults in sustained attention, processing speed, and mind-wandering
- Participants self-reported their attentional state 30 times throughout the 150-trial task
- We measured pupil diameter at 1000 Hz to track tonic and phasic pupillary responses

Results

- Older adults sustained their attention significantly better than younger adults, despite slight delays in overall responding (Figure A)
- Most of the age differences in RT were in the slow tail of the distribution (Figure B)
- Older adults reported significantly fewer off-task thoughts (Figure C)
- Older adults showed significantly larger, yet later peaking, evoked pupillary responses (Figure D)

Conclusions

- Sustained attention is an intact cognitive ability in older adulthood
- Pupillary responsiveness may provide a physiological index of processing speed delays

References


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