

## Age differences in N170 amplitude modulation by selective attention and working memory load.

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The ability to remain focused in the setting of both distracting and relevant information requires an orchestration of neural resources that are limited by working memory (WM) capacity. Recent evidence has indicated that perceptual load can eliminate distractor processing, whereas a high cognitive load increases distractor processing. Older adults have been found to have a selective deficit in processing irrelevant information. However, it is unclear how WM load impacts distractor processing in normal cognitive aging.

To address this, electroencephalographic recordings in younger (aged 18-30 years) and older adults (aged 60-80 years) were collected to examine effects of WM load (0, 1, or 2 items) on attention to relevant faces and ignoring irrelevant faces using early visual ERPs. Participants viewed four sequential cue stimuli (two faces and two scenes), followed by a delay period and a probe stimulus. Instructions informed participants of the category (i.e. face or scene) and temporal position (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>) for the two stimuli to be attended.

Results indicate a significant WM-load dependent modulation of N170 amplitude in young adults, such that increased WM load results in decreased evoked N170 amplitudes for both relevant and irrelevant stimuli. Further evaluation will be necessary to place this finding in the context of existing load theories. Neural recordings from older adults indicate an absence of N170 amplitude modulation by WM-load. We are exploring the potential that age-related deficits in WM capacity result in a generalized decrease in WM-load modulation of stimulus processing in cognitive aging.

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