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Age-related Differences in Brain Activity during True and False Memory Retrieval.

Dennis NA, Kim H, Cabeza R

J Cogn Neurosci 2008 Aug **20**(8):1390-402 [abstract on PubMed]
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Alumit Ishai University of Zurich, Switzerland NEUROSCIENCE Confirmation Hypothesis New Finding	**This functional magnetic resonance imaging (fMRI) study compares the neural correlates of true and false memory retrieval in young and old adults and provides empirical evidence for the 'fuzzy trace theory'.** Behaviorally, old adults made more high-confidence "old" responses to related lures than did younger adults and showed reduced activation in the hippocampus, but enhanced activation in retrosplenial cortex during correct recognition of studied words (true memory), as well as increased activation in left lateral temporal cortex during incorrect recognition of critical lures (false memory). Importantly, activated regions were identified based on contrasting high- with low-confidence memory ratings. These findings suggest that age-related memory decline is manifested by both reduced recollection and increased reliance on semantic gist. As the retrosplenial cortex is part of the contextual association network (see Bar & Aminoff, Neuron 2003, 38:347-358 [PMID:12718867]) it's highly likely that older adults rely more on associations during memory retrieval.

Competing interests: None declared
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