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# Effects of lateral lesions on medial activation during autobiographical remembering

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# Effects of lateral lesions on medial activation during autobiographical remembering

## **Abstract**

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# Effects of lateral lesions on medial activation during autobiographical remembering

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There is suggestion in the neuroimaging literature that autobiographical episodic memory (AM) retrieval is defined by a medial network of regions that includes ventromedial prefrontal cortex (vmPFC), and less so by a lateral network that includes dorsolateral prefrontal cortex (dlPFC). To investigate the potential contributions of lateral regions to AM, we used event-related fMRI to examine changes to activation patterns during AM retrieval in 6 focal lesion patients, 4 with lesions to dlPFC and 2 with lesions to temporoparietal junction, and 15 healthy controls. Participants were scanned as they retrieved events experienced in the recent past (< 5 years ago) and remote past (> 15 years ago) in response to viewing personal photographs. No significant differences were found between patients and controls in the vividness of recollected memories. A spatiotemporal partial-least-squares analysis indicated that a largely medial network, including medial PFC regions, was engaged in both patients and controls during AM retrieval, but to a greater extent in the patients during remote memory retrieval. This may reflect increasing demands on retrieval processes with increasing age of memory. Nonetheless, the findings suggest that the core medial network identified previously in studies of AM remains even when lateral regions are compromised.

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