

Memory insight may prove beneficial for those with brain damage

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Credit: University of Glasgow

Scientists have discovered that there is more than one way to strengthen your memory, opening up the possibility of new treatment strategies for brain damage.

In a new study, published today in *Nature Human Behaviour* and led by the University of Glasgow, researchers have found that multiple parts of the [brain](#) are involved in memory processing, furthering our understanding of how the brain works.

Our brain constantly processes past events, often long after they have occurred. These "offline" processes consolidate and strengthen memories, even leading to the enhancement of memories while you are sleeping.

During learning, a memory for a skill is encoded across a network of [brain areas](#). Scientists already recognise that there are subsequent offline processes that can enhance memories, however until now we have not understood how these mechanisms work.

This study suggests that rather than a single circuit being responsible for memory enhancement there are distinct independent circuits each capable of supporting the same enhancement.

Professor Edwin Robertson, Professor of Brain and Cognitive Sciences and lead author of the study, said: "The same improvement can be achieved through different routes. An important consequence of this organisation is that should one route become damaged due to disease the other remains with the capacity to support [memory](#) enhancement".

The authors believe that rehabilitative strategies for patients of suffers of diseases such as stroke, may be able to exploit this new understanding by encouraging different parts of the brain to support [memory enhancement](#) when other parts have been damaged.

More information: Jocelyn Breton et al. Dual enhancement mechanisms for overnight motor memory consolidation, *Nature Human Behaviour* (2017). [DOI: 10.1038/s41562-017-0111](https://doi.org/10.1038/s41562-017-0111)

Provided by University of Glasgow

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