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When memory and motivation fade in brain disorders

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Abstract

Cognitive and behavioural syndromes are common across brain disorders. Yet we understand very little about the mechanisms underlying them. Here I focus on an example of each of these syndromes – forgetfulness and apathy – which are pervasive across many neurological diseases, including Parkinson’s disease, stroke and Alzheimer’s disease.

Recent findings suggest that it might be possible to apply principles and techniques developed to study memory and motivation in healthy brains to unlock what’s going wrong in brain disorders and provide ways to detect these changes early.

The results show that memories can be lost over just seconds, but with different types of mechanism underlying their corruption in different brain disorders. Similarly, lack of motivation – or apathy – can arise from many different mechanisms including difficulty with evaluating whether rewards are worth the effort required to obtain them. Promising new developments are beginning to suggest that it might be possible to modulate both memory and motivation in brain disorders.