

CONTROLLING OUR THOUGHTS IS "FUNDAMENTAL TO WELLBEING" SCIENTISTS FIND KEY TO DIMINISHING UNWANTED THOUGHTS



Have you ever wanted to stop ruminating on something and just been unable to?

Scientists could have the secret. They have identified a chemical in the brain's "memory" region that allows us to suppress unwanted thoughts.

The discovery may help explain why some people can't shift persistent intrusive thoughts - a common symptom of anxiety, post-traumatic stress disorder (PTSD), depression and schizophrenia. Researchers say controlling our thoughts is "fundamental to wellbeing".

Associated words

Prof Michael Anderson, from the University of Cambridge, who **conducted the study**, said: "When this capacity breaks down, it causes some of the most debilitating symptoms of psychiatric diseases - intrusive memories, images, hallucinations, ruminations, and pathological and persistent worries."

Participants were asked to learn to associate a series of words with a paired, but otherwise unconnected, word - for example ordeal/roach and moss/north.

After this, they had to respond to either a red or green signal. If it was green, they were expected to recall the associated word but if it was red, they were asked to stop themselves from doing so.

Their brains were monitored using both functional magnetic resonance imaging (fMRI), which detects changes in blood flow, and magnetic resonance spectroscopy, which measures chemical changes in the brain.



Researchers found a particular chemical, or neurotransmitter, known as Gaba, held the key.

Gaba is the brain's main "inhibitory" neurotransmitter. That means, when it's released by one nerve cell it suppresses the activities of other cells to which it is connected.

They found people who had the highest concentrations of Gaba in their brain's hippocampus (or memory hub) were best at blocking unwanted thoughts or memories.

"What's exciting about this is that now we're getting very specific," said Prof Anderson.

"Before, we could only say 'this part of the brain acts on that part', but now we can say which neurotransmitters are likely to be important."

New approaches to treatment

The discovery might shed light on a number of conditions, from schizophrenia to PTSD, in which sufferers have a pathological inability to control thoughts - such as excessive worrying or rumination.

Prof Anderson believes the findings could offer a new approach to treating these disorders. "Most of the focus has been on improving functioning of the prefrontal cortex," he said.

"Our study suggests that if you could improve Gaba activity within the hippocampus, this may help people to stop unwanted and intrusive thoughts."



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