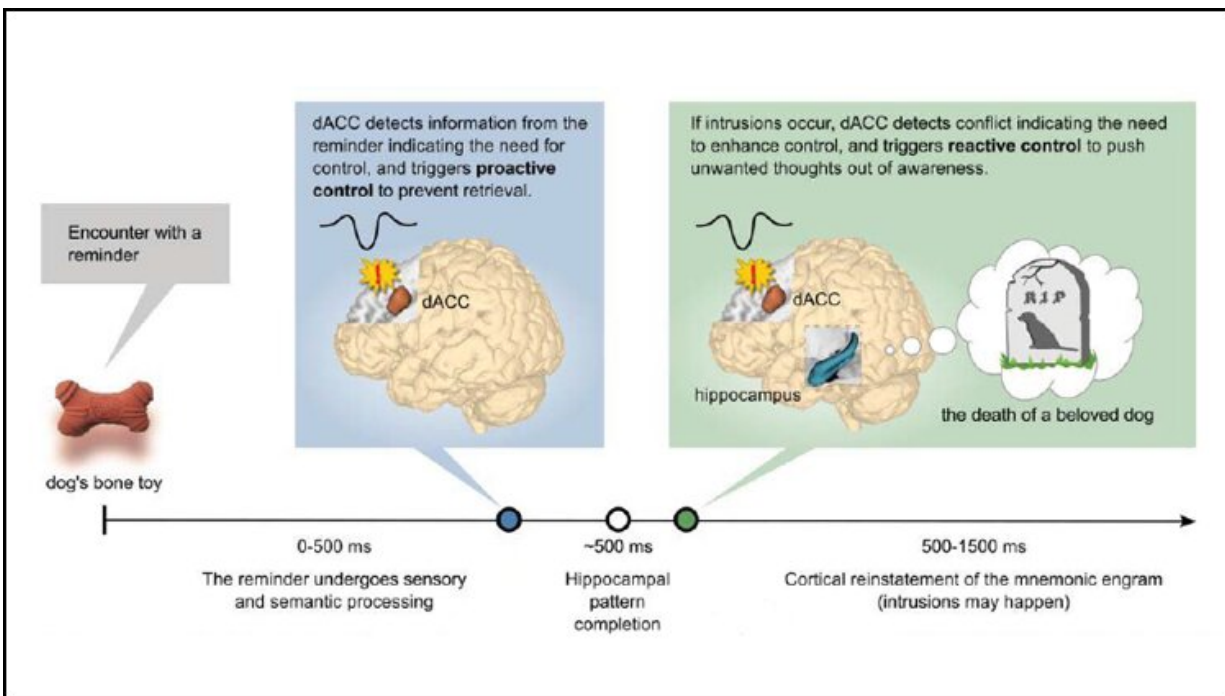


The brain employs an alarm system to suppress intrusive thoughts

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A model of how the ACC proactively and reactively signals the need for thought suppression. Credit: Crespo García et al., *JNeurosci* 2022

Forget what you saw: a brain region detects when you are about to think of an unwanted memory and alerts other regions to suppress it, according to research recently published in *JNeurosci*.

Crespo García et al. measured participants' [brain activity](#) with both EEG

and fMRI while they completed a [memory task](#). The participants memorized sets of words (i.e., gate and train) and were asked to either recall a cue word's pair (see gate, think about train) or only focus on the cue word (see gate, only think about gate). During proactive memory suppression, activity increased in the [anterior cingulate cortex](#) (ACC), a brain region involved in cognitive control, within the first 500 milliseconds of the task.

The ACC relayed information to the [dorsolateral prefrontal cortex](#) (DLPFC), which then inhibited activity in the hippocampus, a key region for memory recall. The activity levels in the ACC and DLPFC remained low for the rest of the trial, a sign of success—the memory was stopped early enough so no more suppression was needed.

If the memory was not suppressed in time, the ACC generated a reactive alarm, increasing its activity to signal to the DLPFC to stop the intrusion.

More information: Anterior Cingulate Cortex Signals the Need to Control Intrusive Thoughts During Motivated Forgetting, *JNeurosci* (2022). [DOI: 10.1523/JNEUROSCI.1711-21.2022](https://doi.org/10.1523/JNEUROSCI.1711-21.2022)

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