Science & Technology

Select Memories Can be Erased

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Neuroscientists from Columbia and McGill have found a way to selectively erase memories in sea slugs — an advance they say could eventually lead to the development of new treatments for anxiety or posttraumatic stress disorder (PTSD).

The scientists' breakthrough, which they report in the journal *Current Biology*, relies on a distinction in how brain cells encode different types of memories. They discovered that brain cells use one kind of protein to encode memories that are central to traumatic experiences (say, walking down a dark alley and being mugged) and another to encode memories that are peripheral to such events (hearing a dog bark in the alley). By manipulating levels of these proteins in sea slugs, the scientists were able to erase incidental memories that could trigger past traumas — a procedure that they say could one day provide relief to PTSD patients and others for whom seemingly mundane events, like hearing a dog bark or a door slam, can cause anxiety attacks.

The researchers, led by Columbia neuroscientists Samuel Schacher '71SEAS, '76GSAS and Jiangyuan Hu, hope to begin human trials within a few years.

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