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It's not your brain melting, it's your brain implant

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Scientists have developed a brain implant that essentially melts into place, snugly fitting to the brain's surface. The technology could pave the way for better devices to monitor and control seizures, and to transmit signals from the brain past damaged parts of the spinal cord.



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"These implants have the potential to maximize the contact between electrodes and brain tissue, while minimizing damage to the brain. They could provide a platform for a range of devices with applications in epilepsy, spinal cord injuries and other neurological disorders," said Walter Koroshetz, M.D., deputy director of the National Institute of Neurological Disorders and Stroke (NINDS), part of the National Institutes of Health.



Neural electrode array wrapped onto a model of the brain. The wrapping process occurs spontaneously, driven by dissolution

The study, published in *Nature Materials*^{*}, shows that the ultrathin flexible implants, made partly from silk, can record brain activity more faithfully than thicker implants embedded with similar electronics.

The simplest devices for recording from the brain are needle-like electrodes that can penetrate deep into brain tissue. More state-of-the-art devices, called micro-electrode arrays, consist of dozens of semi-flexible wire electrodes, usually fixed to rigid silicon grids that do not conform to the brain's shape.

In people with epilepsy, the arrays could be used to detect when seizures first begin, and deliver pulses to shut the seizures down. In people with spinal cord injuries, the technology has promise for reading complex signals in the brain that direct movement, and routing those signals to healthy muscles or prosthetic devices.