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Silk brain implant could aid spinal injuries, epilepsy



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Sun Apr 18, 1:16 pm ET

WASHINGTON (Reuters) – A brain implant made partly of silk can melt onto the surface of the brain, providing an "intimate" connection for recording signals, researchers reported on Sunday.

Tests of their device showed the thin, flexible electrodes recorded signals from a cat's brain more accurately than thicker, stiff devices.

Such devices might help people with epilepsy, spinal cord injuries and even help operate artificial arms and legs, the researchers report in the journal Nature Materials.

John Rogers of the University of Illinois, Urbana and colleagues at the University of Pennsylvania and Tufts University in Boston made the electrode arrays using protein from silk and thin metal electrodes.

The silk is biocompatible and water-soluble, dissolving into the brain and leaving the electrodes draped over its contours, the researchers reported.

They tested them on cats who were anesthetized but whose eyes were functioning. The electrodes recorded the signals from the eyes of the cats as they were shown visual images.

"These implants have the potential to maximize the contact between electrodes and brain tissue, while minimizing damage to the brain," said Dr. Walter Koroshetz of the National Institute of Neurological Disorders and Stroke, part of the National Institutes of Health, which helped pay for the study.

"They could provide a platform for a range of devices with applications in epilepsy, spinal cord injuries and other neurological disorders."

For instance, such a sensitive electrode could detect a seizure as it starts and deliver pulses to counter it. Brain signals might be routed to prosthetics for people with spinal cord and other injuries.

Silk is also transparent, strong and flexible, and it is possible to control the rate at which it dissolves.

(Reporting by Maggie Fox, Editing by Jackie Frank)

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Everett 15 hours ago | [Report Abuse](#)

173 18

This is the type of project that the federal government should be pouring billions into.

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Willy 15 hours ago | [Report Abuse](#)

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Spiderman. Spiderman. Friendly, neighborhood, Spiderman.

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I wonder what the Cats thought of the ordeal.

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Who cares what the cats thought about? This research can help save human lives.

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Line up folks. A brain transplant? Wow!!

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Michael F 15 hours ago | [Report Abuse](#) 144 17

I'm not sure of the billions,, but it really deserves a large federal grant,,and I'm sure the Defense Dept, should be looking into it too, as a way to help our injured Veterans,, I have watched the progress of medicine over the years,, and I'm glad people are still thinking out of the box,, let's hope that the peta people don't try to block further experimentation

[Replies \(9\)](#)

SSG Wiklund 15 hours ago | [Report Abuse](#) 72 13

If we can drape the silk across the brain and make connections, could we also use this for, say, bio computers? Cyberpunk style enhancements are getting closer and closer. I read about a set of contacts that will allow us to pull data from Google maps directly into our field of vision, allowing us to see addresses, GPS coordinates and restaurant reviews. What an exciting time to be alive.

[Replies \(10\)](#)

K 15 hours ago | [Report Abuse](#) 18 65

disgusting what we do to animals. we could prevent these things from taking place but it would mess with our corporate structure

instead we need to torture animals

just disgusting what we do to animals

Innocent animals who do nothing wrong and have to feel the pain of us selfish humans

[Replies \(11\)](#)

Martha 6 34

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