Safe, dissolvable brain sensors monitor pressure in skull

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“I just took out a bullet from the back of a guy’s head an hour ago,” says Rory Murphy.

As a neurosurgeon at the Washington University School of Medicine, Murphy “deals with brain trauma all the time.” Between bullets, blunt forces, and blood clots, traumatic brain injuries kill around 50,000 people in the United States every year. These kinds of injuries often cause the brain to swell, which constricts the flow of blood and oxygen, and can lead to permanent damage. So surgeons like Murphy need reliable ways of monitoring the pressure inside their patients’ skulls. Sensors exist, but they are large, clunky, and must be removed once the patient has recovered.

Together with a team of engineers, Murphy is developing a better option: a dissolvable pressure sensor. Thinner than the tip of a needle, it can be left in a patient’s brain to take accurate readings for several days, before completely disappearing. You don’t need to remove them because there’s nothing to remove. They just get absorbed into the body.

When Murphy implanted the device in rats, he found that it’s as accurate as the best pressure sensors on the market. It’s also cost-effective, since it uses traditional materials with no precious metals. And most importantly, it seems to be safe. It didn’t trigger any inflammation or immune responses while it was intact, or after it had dissolved.

Read full, original post: Dissolvable Brain Sensors Disintegrate Once Their Job Is Done