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Brain's blood re-routes round clots

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AN IN-BUILT design feature helps protect our brains against damage caused by blood clots.

Chris Schaffer of the University of California, San Diego, and colleagues injected a photoactive chemical into the blood of a rat then used a laser to activate the compound once it reached a particular small blood vessel on the surface of the rat's brain. The chemical damaged the vessel wall, triggering a clotting cascade that blocked the vessel. The researchers also injected a fluorescent dye that allowed them to measure the speed and flow of blood within the surrounding network of blood vessels.

The design of this network, where there are many connections between the vessels, allowed the blood to be quickly re-routed. What's more, the blood flow in vessels downstream of the clot reversed within one second of the clot being induced, allowing the tissue on either side of the clot to get a continual supply of oxygen (*PLoS Biology*, DOI: 10.1371/journal.pbio.0040022).

The finding helps explain why such clots, which are common in elderly people, do not cause strokes, says team member David Kleinfeld, also at the University of California. These tend to be triggered by clots that form deeper in the brain, he says.

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