

‘Spreading depression’: The silencing of electrical activity in dying brains

Harvard biologist Aristides Leão described finding a sudden silencing of electrical activity in the [exposed brains](#) of his unconscious experimental animals after subjecting them to injuries.

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The “spreading depression,” as he termed it, began at the injured spot within 5 minutes of the injury, before eclipsing more distant parts of the brain. Seven decades later, a paper [published Feb. 15](#) in the journal *Annals of Neurology* reveals just how this process occurs in the dying brain cells of humans.

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With consent from next of kin and other legal representatives, they reported results from nine patients who died with electrodes implanted in their brains, recording how their neurons behaved in their last minutes.

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As much as possible, the neurons go silent, instead using their remaining energy stores to maintain their internal charges, waiting for the return of a blood flow that will never come.

To researchers observing with electrodes, this first wave of darkness doesn’t seem to spread. Instead, they wrote, it happens everywhere at once, as neurons all over the brain react to the sudden drought. The final, spreading wave comes minutes later, as cells run out of their limited chemical stores, and their stored ions leach into the surrounding tissue — and millions of batteries suddenly lose their charge. This marks, for dying patients, the final moments of brain function, the authors wrote.

Read full, original post: [Dying Brains Silence Themselves in a Dark Wave of ‘Spreading Depression’](#)