

Gene variant affects stroke prognosis in humans

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A small difference in DNA sequence predicts the degree of disability after a stroke, according to a paper published online on February 28 in the *Journal of Experimental Medicine*. Stroke, the consequence of disturbed blood flow to the brain, can impair speech, movement and vision, but it is currently difficult for clinicians to predict the severity of these side effects or the long-term prognosis.

Strokes result in the death of brain cells called neurons. Angeles Almeida and co-workers found that variations in a gene known to control [cell death](#)—Tp53—influence stroke outcome.

Tp53 comes in two flavors in humans: R and P. The R variant triggers cell death more efficiently. In two distinct groups of stroke patients, those exclusively expressing the R variant suffered more severe disability several months after the stroke. Neurons expressing the R variant were more vulnerable to death caused by oxygen deprivation, a condition that mimics the brain environment during [stroke](#).

Future work is needed to determine if this Tp53 variation can also predict prognosis of patients with other disorders characterized by neuronal death, such as Alzheimer's or Parkinson's disease.

More information: Gomez-Sanchez, J.C., et al. 2011. *J. Exp. Med.*
[doi:10.1084/jem.20101523](https://doi.org/10.1084/jem.20101523)

Provided by Rockefeller University

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