

A new player in brain disease and stroke

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In degenerative brain diseases and after stroke, nerve cells die while their support cells activate the brain's immune system to cause further damage. Now Jonathan Gilthorpe, Adrian Pini and Andrew Lumsden at the MRC Centre for Developmental Neurobiology at King's College London, have found that a single protein, histone H1, causes these distinct outcomes.

The research passed peer review within a week of being published in *F1000Research*, where Jan-Marino Ramirez, of the University of Washington, called the work "a very important contribution to our understanding of neurodegenerative disease and the response of the brain to injury" in his public referee report. He also noted that he is "confident that this study will be a much cited contribution to the field of [traumatic brain injury](#)".

The most unexpected finding in this study is that a histone protein is responsible for neuronal damage. "Histone H1 partners with DNA in the [cell nucleus](#) and has been thought of as harmless," explain the authors, "The surprise came when we discovered that it can be released from brain cells upon injury, killing healthy [nerve cells](#) and activating the damaging immune response".

The research team is now working on ways to suppress these harmful actions, which may lead to the development of new treatments for neurodegenerative disease and stroke.

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