

# Genetic clue to fighting new strains of flu

December 24 2013, by Anne Rahilly

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(Medical Xpress)—Researchers at the University of Melbourne have discovered a genetic marker that can accurately predict which patients will experience more severe disease in a new strain of influenza (H7N9) currently found in China.

Published in the Journal *Proceedings of the National Academy of Sciences*, senior author, Associate Professor Katherine Kedzierska from the Department of Microbiology and Immunology said that being able to predict which patients will be more susceptible to the emerging [influenza strain](#), will allow clinicians to better manage an early intervention

strategy.

"By using genetic markers to blood and lung samples, we have discovered that there are certain indicators that signal increased susceptibility to this influenza. Higher than normal levels of cytokines, driven by a genetic variant of a protein called IFITM3, tells us that the severe disease is likely," she said.

"We call this a Cytokine Storm and people with the defective genetic variant of the protein IFITM3 are more likely to succumb to severe influenza infection.

Professor Peter Doherty, AC, Laureate Professor and a lead author of the study from the University of Melbourne said predicting how influenza works in individuals has implications for the management of disease and the resources on our health system.

"We are exploring how genetic sequencing and early identification can allow us to intervene in treating patients before they become too unwell. As new cases of [influenza](#) emerge in the Northern Hemisphere, we try to keep a season ahead and prepare to protect the most vulnerable in our community," he said.

Though the H7N9 strain has not been found in Australia, researchers from the University of Melbourne are collaborating closely with Prof Jianqing Xu and his group from the Shanghai Public Health Clinical Center in China. In addition to this, Dr Zhongfang Wang, an NHMRC Australian-China Exchange Fellow is also working closely with Melbourne experts.

**More information:** "Early hypercytokinemia is associated with interferon-induced transmembrane protein-3 dysfunction and predictive of fatal H7N9 infection," by Zhongfang Wang et al.

[www.pnas.org/cgi/doi/10.1073/pnas.1321748111](http://www.pnas.org/cgi/doi/10.1073/pnas.1321748111)

Provided by University of Melbourne

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