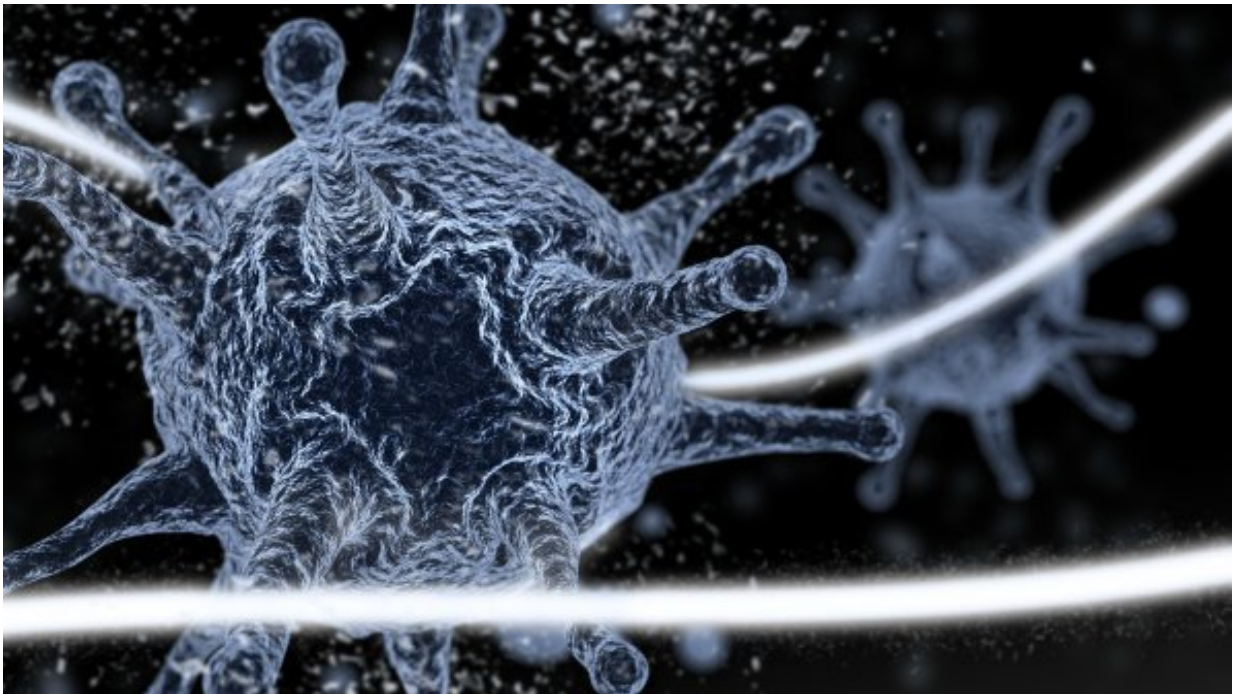


Genetic variant linked to overactive inflammatory response

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Credit: Cardiff University

Researchers at Cardiff University have discovered that genetic variation is the reason why some immune systems overreact to viruses.

Previous research had already revealed that a gene called *Ifitm3* influences how sensitive people are to the [influenza virus](#), with a variant form of the gene making cells more susceptible to viral infection. The

new research reveals that Ifitm3 also plays an important role in controlling the extent of the inflammatory response triggered by [virus infection](#).

The study suggests that individuals with deficiencies in Ifitm3 may have an overactive immune response to viral infection and may therefore be helped by a combination of anti-inflammatory drugs in addition to medicine that directly targets the virus.

World-wide the frequency of the variant Ifitm3 gene is 1 in 400, although it is much more common in certain ethnicities.

Dr Ian Humphreys from Cardiff University's School of Medicine said: "Now we know that genetic make-up influences how the [immune system](#) copes with infections, not only by influencing how the body controls an infection but also by controlling how strongly the body's immune system reacts, we can design therapeutic strategies for individuals who are seriously ill with infections, which are tailored to the individual based on their genetic profile."

The data were collected using [immune cells](#) from mice with and without the variant form of Ifitm3, to observe how the immune system responds to a virus called cytomegalovirus. The results could also be relevant for other [viral infections](#) such as influenza epidemics/pandemics.

More information: Maria A. Stacey et al. The antiviral restriction factor IFN-induced transmembrane protein 3 prevents cytokine-driven CMV pathogenesis, *Journal of Clinical Investigation* (2017). [DOI: 10.1172/JCI84889](https://doi.org/10.1172/JCI84889)

Provided by Cardiff University

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