



---

October 9, 2009

## Has science found the cause of ME?

By Steve Connor, Science Editor

### *Breakthrough offers hope to millions of sufferers around the world*

Scientists say they have made a dramatic breakthrough in understanding the cause of chronic fatigue syndrome - a debilitating condition affecting 250,000 people in Britain which for decades has defied a rational medical explanation.

The researchers have discovered a strong link between chronic fatigue syndrome, which is sometimes known as ME or myalgic encephalomyelitis, and an obscure retrovirus related to a group of viruses found to infect mice.

Although the published data falls short of proving a definitive cause-and-effect, one of the scientists behind the study said last night that she was confident that further unpublished data she had gathered over the past few weeks implicated the retrovirus as an important and perhaps sole cause of the condition.

Chronic fatigue syndrome has blighted the lives of an estimated 17 million people worldwide because its symptoms, long-term tiredness and aching limbs, do not go away with sleep or rest. Famous sufferers have included the author and yachtswoman Clare Francis, the film director Lord Puttnam, the pop singer Suzanne Shaw and the Labour politician Yvette Cooper, who has made a full recovery.

The condition initially generated much controversy in the 1980s, when it was known as "yuppie flu", because some medical authorities even doubted whether it was a genuine physical illness. In the absence of a proven cause, many scientists have questioned whether there could ever be one reason behind so many different symptoms, so the latest research showing a strong link to a single virus has generated intense excitement among experts.

The study, published in the journal *Science*, shows that the virus, called murine leukaemia virus-related virus (XMRV), was found in 68 of 101 patients from around the US with chronic fatigue syndrome. This compared with just eight of 218 healthy "controls" drawn at random from the same parts of the US, the scientists said.

But the senior author of the study, Judy Mikovits, director of research at the Whittmore Peterson Institute in Reno, Nevada, said further blood tests have revealed that more than 95 per cent of patients with the syndrome have antibodies to the virus - indicating they have been infected with XMRV, which can lie dormant within a patient's DNA. "With those numbers, I would say, yes we've found the cause of chronic fatigue syndrome. We also have data showing that the virus attacks the human immune system," said Dr Mikovits. She is testing a further 500 blood samples gathered from chronic fatigue patients

diagnosed in London. "The same percentages are holding up," she said.

If the findings are replicated by other groups and the XMRV virus is accepted as a cause of chronic fatigue syndrome then it could be possible to treat patients with antivirals, just like treating HIV, or to develop a vaccine against the virus to protect people from developing the condition, said Dr Mikovits.

"We now have compelling proof that a retrovirus named XMRV is present in more than two-thirds of patient samples with chronic fatigue syndrome. This finding could be a major step in the discovery of vital treatment options for millions of patients," she said.

The genetic structure of the XMRV virus indicates that it has evolved from a similar virus found in wild field mice. Dr Mikovits suggested it could have jumped the "species barrier" from mouse to man like many other human viruses, such as HIV, another retrovirus, which is thought to have infected humans from monkeys or apes.

XMRV was originally found in men suffering from prostate cancer and it was this discovery that led Dr Mikovits and her collaborators at the US National Institutes of Health to test blood samples stored from patients with chronic fatigue syndrome. "The discovery of XMRV in two major diseases, prostate cancer and now chronic fatigue syndrome, is very exciting. If cause-and-effect is established, there would be a new opportunity for prevention and treatment of these diseases," said Professor Robert Silverman, of the Cleveland Clinic in Ohio, who worked on the fatigue syndrome study.

However, other researchers emphasised that the numbers published so far are too small to conclude anything about the cause of chronic fatigue syndrome. "It's spectacular but needs replication. And I hope that no one is thinking of prescribing anti-retrovirals on the basis of this," said Simon Wessely, professor of psychological medicine at King's College London. "It's very preliminary and there no evidence to say this is relevant to the vast majority of people in the UK with the condition."

Independent News and Media Limited



2009 Independent News and Media. Permission granted for up to 5 copies. All rights reserved.

You may forward this article or get additional permissions by typing [http://license.icopyright.net/3.7463?icx\\_id=news/science/has-science-found-the-cause-of-me-](http://license.icopyright.net/3.7463?icx_id=news/science/has-science-found-the-cause-of-me-1799944.html?service=PrintICopyright)

[1799944.html?service=PrintICopyright](http://license.icopyright.net/3.7463?icx_id=news/science/has-science-found-the-cause-of-me-1799944.html?service=PrintICopyright) into any web browser. Independent News and Media Limited and The Independent logos are registered trademarks of Independent News and Media Limited . The iCopyright logo is a registered trademark of iCopyright, Inc.