

# Long Covid blood clues could prompt future trials



People with long Covid have evidence of continuing inflammation in their blood, which could help understanding of the condition and how it may be treated, a UK study suggests.

It found the presence of certain proteins increased the risk of specific symptoms, such as fatigue, in people sick enough to need hospital treatment.

It is unclear whether milder cases of Covid have the same effect on the body.

A test remains a long way off - but the findings may prompt future trials.

Long Covid - symptoms lasting at least 12 weeks after a Covid infection - is thought to have affected millions of people around the world.

Some of the most common symptoms are:

- extreme tiredness
- feeling short of breath
- problems with memory and concentration - or brain fog

Others can include:

- sleeping problems
- loss of smell
- anxiety

The chances of developing long-term symptoms do not seem linked to how ill people were when first infected - many people who had mild symptoms say they are affected.

The UK's largest long Covid study, led by Imperial College London, followed up 650 hospital patients with severe Covid.

Six months later, 426 said they still had at least one long Covid symptom while 233 had completely recovered.

And those with long Covid showed evidence of a continuing and active pattern of inflammatory proteins in their blood.

The researchers said the presence of these chemicals in the blood, which are usually a sign of the body fighting off infection, was unusual when the initial infection occurred so long before.



Tracy Evans, 59, from Bridlington, N Yorks, worked as a care assistant and support worker before catching Covid in early 2021.

She spent three months in hospital and six weeks in intensive care, and still finds it traumatic to think of that time.

"I was so close to death, because they were going to turn me off," she says.

Tracy has been unable to work since because of continuing symptoms, including severe fatigue and brain fog.

**'An existence'**

"Any exertion, I am breathless," she says.

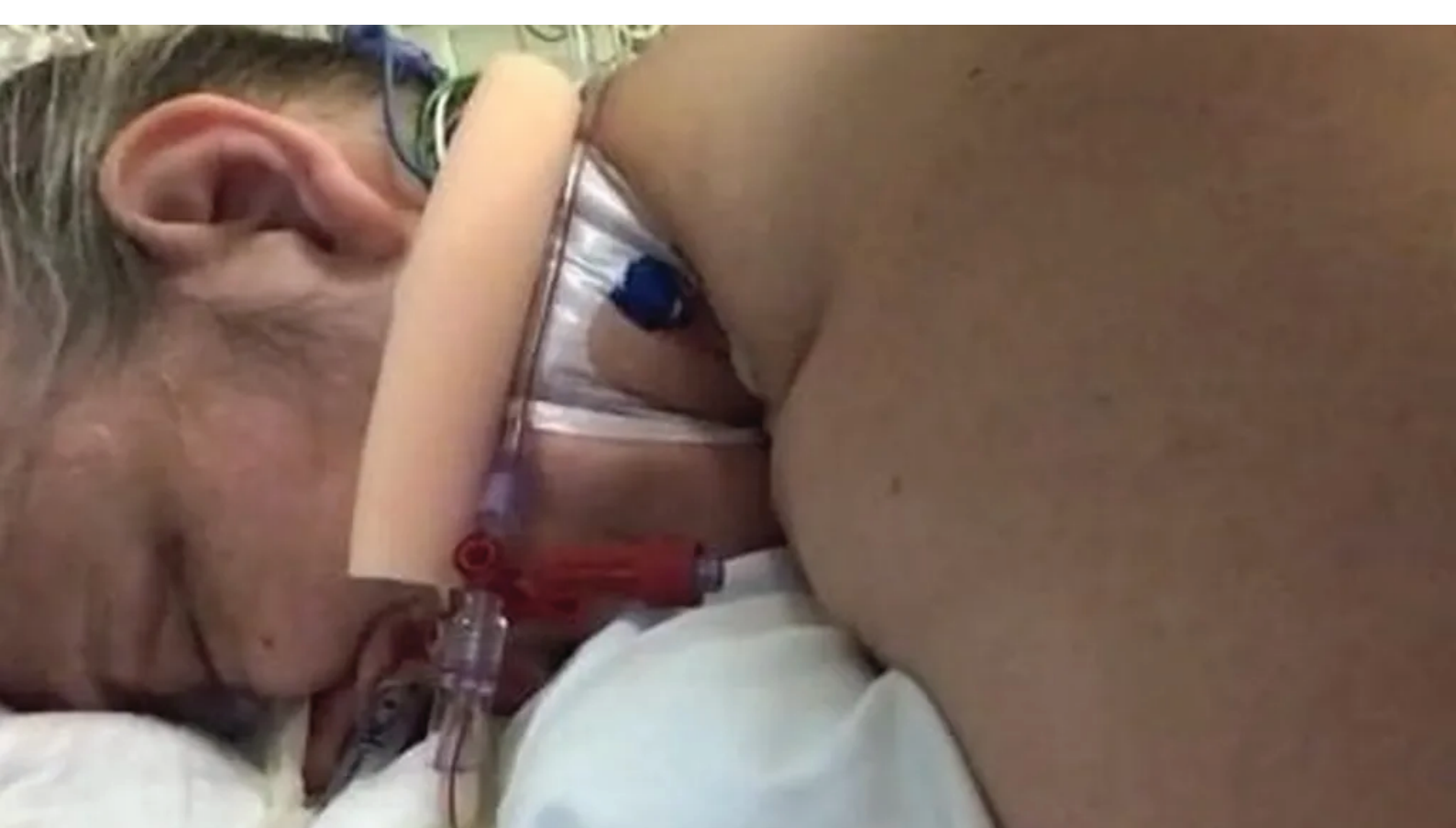
"I'm tired just having a shower or getting dressed. I can't make a bed without people thinking I've run a marathon.

"I'm in pain all the time - constantly in pain."

When Tracy wrote down her symptoms, for a doctor, they filled an A4 piece of paper.

"Sometimes with the brain fog, it feels like you've got dementia," she says.

"It's not a life - it's an existence."



The researchers behind the study, in Nature Immunology, also found some proteins in the blood of those with long Covid could be linked to their specific symptoms.

For example, those with gastrointestinal symptoms had increased levels of a marker called SCG3, previously linked to impaired communication between the gut and the brain.

This could help divide long Covid patients into different sub-groups and be useful for designing clinical trials, especially for treatments targeting immune responses and inflammation, the researchers said.

Imperial College London clinical-research fellow Dr Felicity Liew said the findings suggested inflammation "could be a common feature of long Covid after hospitalisation, regardless of symptom type".

And this may open the door to existing drugs being tried against long Covid, such as those for rheumatoid arthritis, an auto-immune condition causing inflammation of the joints.

Lead research Prof Peter Openshaw said: "This work provides strong evidence that long Covid is caused by post-viral inflammation but shows layers of complexity.

"We hope that our work opens the way to the development of specific tests and treatments for the various types of long Covid and believe that a 'one size fits all' approach to treatment may not work."

**Targeting inflammation**

The researchers will continue to look for the signs of inflammation as the symptoms improve and disappear, as they do for most people with long Covid.

Dr Liew said she hoped the study would also lead to identification of new treatments for the long-lasting symptoms of other illnesses found to affect people in the same way.

University of Edinburgh honorary professor of immunology and infectious disease Prof Eleanor Riley said the data "should usher in a series of clinical trials for treatment of long Covid" using several licensed drugs targeting inflammation.

She said the study findings opened up new avenues for the investigation of the very poorly understood myalgic encephalomyelitis, or chronic fatigue syndrome, (ME/CFS), because many of the symptoms appeared to overlap.

A spokesperson for the Department of Health and Social Care said: "Long Covid can have a debilitating impact on people's physical and mental health, that's why we have backed our world-leading scientists with over £50 million to better understand it and identify new treatments, including this government-funded study."