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Hear what doctors have to say about the latest joint relief trick



Immune System Changes Tied to Chronic Fatigue Syndrome

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FRIDAY Feb. 27, 2015, 2015 -- Chronic [fatigue](#) appears to be linked to specific changes in a person's immune system, particularly increased amounts of chemical messengers that regulate immune responses, researchers report.

The study adds to growing evidence that chronic fatigue syndrome is caused by a malfunctioning immune system, said lead

author Dr. Mady Hornig. She is director of Translational Research at the Jerome L. and Dawn Greene Infectious [Disease](#) Laboratory at Columbia University's Mailman School of Public [Health](#), in New York City.

The immune system of a new chronic fatigue syndrome patient appears unable to shut down or reduce its response to an infection that has passed, Hornig said.

Instead, the system continues to pump out large amounts of cytokines -- chemical messengers that coordinate the response of the immune system's many cell types.

"Their immune system is no longer resilient and able to bounce back after this cytokine surge" in response to an infection, Hornig said. "We need the system to be regulated, so it shuts off after the disease is gone, and that isn't happening here."

[Doctors](#) now can look for increased levels of these chemicals in the blood of patients who might have chronic fatigue syndrome, potentially aiding in their diagnosis, she said.

"We may be able to reduce the time it takes to get a diagnosis, and reduce the time it takes to get them some [treatment](#)," Hornig said. Treating chronic fatigue syndrome early could reduce its future impact on patients' lives, she added.

The new study, published Feb. 27 in the journal *Science Advances*, comes on the heels of a new Institute of [Medicine](#) report that declared chronic fatigue syndrome a "legitimate" illness that should be treated by doctors as a disease rather than an emotional problem.

Between 836,000 and 2.5 million Americans suffer from chronic fatigue syndrome, and an estimated 84 percent to 91 percent of people with the disorder are not diagnosed, according to the IOM. Chronic fatigue syndrome tends to strike people in their 40s and 50s, and occurs four times more often in [women](#) than men.

"It is so valuable to be able to find something that can help further validate the disease status of this condition," Hornig said of her team's results. "It's a biological disorder, not a psychological one."

The new study relied on data gathered during two large U.S. studies of chronic fatigue syndrome, involving 298 people diagnosed with CFS and 348 [healthy](#) "control" subjects. As part of these studies, participants provided blood [samples](#).

Researchers analyzed the blood [sample](#) data, looking at the presence of cells and chemicals related to the immune system.

They noted that distinct increases occurred in the cytokine levels of people who'd been diagnosed with chronic fatigue syndrome for fewer than three years, compared with both the "healthy" controls and people with long-term CFS. The changes are only present early on in the course of disease, and don't appear in long-term patients.

The results indicate that there are stages of chronic fatigue syndrome, and that new patients likely need [treatments](#) different from those who have had CFS for a long time, Hornig said.

"It may be possible to prevent the long-term consequences of this illness by intervening early and dampening down these cytokines," she said. "It also has implications for the very large population of people who have had this disease for a long time and for whom a different strategy may be important."

The findings mesh with other recent research that has linked chronic fatigue syndrome to a faulty immune system, said Dr. Jacob Teitelbaum, director of the Fatigue & Fibromyalgia Practitioners Network.

"What we see is an initial overdrive of the immune system, suggesting that one or several infections have become chronic, with the immune system being unable to turn itself off," Teitelbaum said. "So in the early phases of the illness, we see the immune system being on overdrive. As this goes on, the immune system exhausts itself, resulting in widespread, yet ineffective, attacks against many infections."

People with long-term chronic fatigue syndrome, then, are saddled with worn-out immune systems that struggle to combat even the mild infections that healthy immune system would shrug off quickly, he said.

More information

For more information on chronic fatigue syndrome, visit the [U.S. Centers for Disease Control and Prevention](#).

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