

A constellation of symptoms presages first definitive signs of multiple sclerosis

July 16 2018



Demyelination by MS. The CD68 colored tissue shows several macrophages in the area of the lesion. Original scale 1:100. Credit: [CC BY-SA 3.0](#) Marvin 101/Wikipedia

During the five years before people develop the first clinically recognized signs of multiple sclerosis (MS), they are up to four times more likely to be treated for nervous system disorders such as pain or

sleep problems, and are 50 per cent more likely to visit a psychiatrist, according to new research from the University of British Columbia.

The study, the largest-ever effort to document symptoms of people before they know they have MS, could enable physicians to diagnose the disease—and thus start treating it—earlier, thus possibly slowing the damage it causes to the brain and spinal cord.

MS results from the body's immune system attacking myelin, the fatty material that insulates neurons and enables rapid transmission of electrical signals. When myelin is damaged, communication between the brain and other parts of the body is disrupted, leading to vision problems, muscle weakness, difficulty with balance and coordination, and cognitive impairments.

Because the symptoms are varied, often associated with other [disorders](#), and can be transitory, diagnosing MS can be a challenge. Confirmation of the disease usually is done by [magnetic resonance imaging](#) (MRI), a test of nerve impulses, or an examination of spinal fluid.

Canada has one of the highest rate of MS in the world, for reasons that elude scientists.

The researchers, led by Helen Tremlett, a Professor in the Division of Neurology at UBC, examined health records of 14,000 people with [multiple sclerosis](#) from B.C., Saskatchewan, Manitoba and Nova Scotia between 1984 and 2014 and compared them to the [health records](#) of 67,000 people without the disease.

Tremlett and former postdoctoral fellow José Wijnands found that fibromyalgia, a condition involving widespread musculoskeletal pain, was more than three times as common in people who were later diagnosed with MS, and [irritable bowel syndrome](#) was almost twice as

common.

Two other conditions with markedly higher rates among people to be diagnosed with MS: migraine headaches and any mood or anxiety disorder, which includes depression, anxiety and bipolar disorder.

The higher rates of those illnesses also corresponds with higher use of medications for musculoskeletal disorders, [nervous system disorders](#), and disorders of the genito-urinary tract, along with antidepressants and antibiotics.

The study, published in *Multiple Sclerosis Journal*, provides definitive evidence that MS can be preceded by early symptoms—known as a prodrome—that aren't considered "classic" manifestations of the disease, like blurred vision or numbness or weakness in the limbs. As recently as 2000, medical textbooks asserted that MS did not have a prodrome.

"The existence of such 'warning signs' are well-accepted for Alzheimer's disease and Parkinson's [disease](#), but there has been little investigation into a similar pattern for MS," said Tremlett, a Canada Research Chair in Neuroepidemiology and Multiple Sclerosis and member of the Djavad Mowafaghian Centre for Brain Health. "We now need to delve deeper into this phenomenon, perhaps using data-mining techniques. We want to see if there are discernible patterns related to sex, age, or the 'type' of MS they eventually develop."

Provided by University of British Columbia

Citation: A constellation of symptoms presages first definitive signs of multiple sclerosis (2018, July 16) retrieved 7 May 2024 from <https://medicalxpress.com/news/2018-07-constellation-symptoms-presages-definitive-multiple.html>

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