

Multiple Sclerosis Changes With the Seasons

MRI-detected brain lesions more common in spring, summer, study finds

By Serena Gordon

HealthDay Reporter

MONDAY, Aug. 30 (HealthDay News) -- Multiple sclerosis may be more active in the spring and summer months, new research shows.

In a study using MRI scans to detect brain lesions tied to MS, researchers from Brigham and Women's Hospital in Boston found that new lesions occurred two to three times more often in the spring and summer compared to colder times of the year.

"We found significantly increased levels of disease activity, as defined by new T2 lesion occurrence, during the spring and summer seasons," the study authors wrote in the Aug. 31 issue of *Neurology*.

About 400,000 people in the United States have MS, according to the National Multiple Sclerosis Society (NMSS), and as many as 2.1 million people may be affected by the illness worldwide.

The exact cause of MS is unknown, but it is believed to be an autoimmune disease. That means the body's immune system mistakenly turns on itself and damages or destroys healthy cells instead of diseased ones. Both genetic and environmental factors are believed to play a role in the development of the disease. Environmental factors that have been implicated include geography and vitamin D, a nutrient that is primarily manufactured by the skin when it comes into contact with sunlight.

In general, more cases of MS occur the farther you get from the equator, according to the NMSS. People with lower levels of vitamin D may also be more at heightened risk of developing MS.

The current study included 939 brain scans from 44 people with MS from the Boston area. At the time of the study (1991 through 1993), the volunteers weren't receiving any treatment for MS. Each person had an average of 22 scans during the study period.

The researchers also collected information on daily temperatures, solar radiation and precipitation for the Boston area.

After one year, 310 new brain lesions were found in 31 people. The remaining 13 study volunteers didn't develop new lesions during the study.

They found that from March to August, the occurrence of new lesions was two to three times as high versus the fall and winter months. They also found that warmer temperatures and solar radiation were associated with more disease activity. Rainfall was not associated with new lesions.

"The environment has, for many decades, been implicated in MS, especially in the development of the disease. Now, here's another piece of evidence," said Dr. Anne Cross, a professor of neurology at the Washington University School of Medicine in St. Louis, and the co-author of an accompanying editorial in the same issue of the journal.

"The big question, of course, is if spring and summer are the times these new lesions appear, what are some of the possibilities behind this?" said Nicholas LaRocca, vice president of healthcare delivery and policy research for the NMSS.

For example, he said, since heat has an effect on the symptoms of MS, perhaps warmer temperatures might have an effect on disease activity.

"The other intriguing issue is that while new lesions are likely to appear in the spring and summer, that doesn't mean a causal agent is operating at that time. It could be something going on prior to those seasons that takes a longer time to manifest. In the fall and winter, there is less exposure to ultraviolet light, so there's less vitamin D. Also, in the fall and winter, there is greater exposure to viral infections. Or, maybe it's dietary. People may eat different things in different seasons," LaRocca said.

He added that this study will generate new research ideas and may provide additional clues about the cause of MS.

For people living with MS, Cross suggested making sure that your vitamin D levels are within range throughout the year, and to get an inactivated flu vaccine each year (that means a shot, not the inhalable vaccine).

LaRocca said that during the warmer months, people with MS are likely already taking steps to avoid the heat because warmer temperatures can exacerbate their symptoms. It's helpful to "develop strategies to cope with the warm weather," he said. "Make sure you have air conditioning and try to avoid significant activity during the warmer parts of the day."