

MS-like disease discovered in monkeys

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Researchers at Oregon Health & Science University have discovered a naturally occurring disease in monkeys that is very much like multiple sclerosis in humans -- a discovery that could have a major impact on efforts to understand the cause of multiple sclerosis.

The disease that the researchers discovered in monkeys at OHSU's Oregon National Primate Research Center is associated with a herpes virus that could give significant clues into how multiple sclerosis develops in humans. MS researchers have long believed that a type of herpes virus may trigger multiple sclerosis in people who are genetically susceptible to the disease.

The OHSU researchers' findings were published online today in the [Annals of Neurology](#).

"These findings could have a huge impact on our understanding of MS and could be a landmark in someday developing more effective treatments for the disease, or even methods to prevent the onset of MS," said Scott Wong, Ph.D., senior author of the study and a scientist at the Vaccine and Gene Therapy Institute and the Oregon National Primate Research Center.

Both elements of the OHSU discovery are important for MS researchers.

Before the OHSU findings, researchers had been able to study MS-like diseases in nonhuman primates only after the disease had been artificially induced. A naturally occurring disease, such as the one

discovered at OHSU, can give researchers many more clues into the causes and development of the disease.

"Now, we may be able to tease apart what's triggering the onset of the disease," Wong said.

And the fact that the disease, found in a small percentage of the Japanese macaques at OHSU each year, came from a herpes virus could prove hugely important to MS researchers worldwide.

Researchers can now search for a similar virus in MS patients.

The cause of MS, which affects about 400,000 people in the United States, is unknown. But researchers have long believed that a virus, possibly a herpes virus, might trigger the disease in people who are genetically susceptible.

"Understanding how this herpes virus causes the MS-like disease in the monkeys will give us important new knowledge — and drive new research that could lead to significant advancements in finding and preventing the virus that might cause MS," said Dennis Bourdette, M.D., a co-author of the study, director of the [Multiple Sclerosis](#) Center of Oregon and professor and chairman of the OHSU Department of Neurology.

From 1986 through 2010, 56 of the Japanese macaque monkeys at the Oregon National Primate Research Center at OHSU spontaneously developed paralysis in their hind limbs, along with other symptoms. The monkeys were humanely euthanized because they could not have been returned to the monkey colony safely. Researchers later did necropsies on the their bodies and performed MRI scans on eight of the animals.

That work and other testing allowed researchers to discover that an MS-

like disease called Japanese macaque encephalomyelitis was causing the paralysis. While the disease typically afflicted young adult animals, it also was present in juveniles and older animals, and was present in both males and females.

About 1 to 3 percent of the more than 300 Japanese macaques at the primate center develop the disease each year, according to the researchers.

With this discovery, MS researchers now will be able to move toward trying to prevent or treat the virus in [monkeys](#), which might help scientists make progress in treating MS in humans.

Provided by Oregon Health & Science University

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