

Vitamin D Fights MS: Johns Hopkins

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By Nick Tate

Johns Hopkins researchers have found that vitamin D may help fight multiple sclerosis, based on new studies involving mice with a rodent form of the disease.

In new research published in the *Proceedings of the National Academy of Sciences*, the so-called "sunshine vitamin" appeared to block damage-causing immune cells from migrating to the central nervous system, offering a potential explanation for why it may prevent or ease symptoms of the neurodegenerative disease.

Researchers said the study was prompted by observations that MS is more prevalent in regions of the world where there is less sunshine, the main natural source of vitamin D.

"With this research, we learned vitamin D might be working not by altering the function of damaging immune cells but by preventing their journey into the brain," said lead researcher Anne R. Gocke, an assistant professor of neurology at the Johns Hopkins University School of Medicine. "If we are right, and we can exploit Mother Nature's natural protective mechanism, an approach like this could be as effective as and safer than existing drugs that treat MS."

MS causes the immune system to wrongly attack a person's own cells — specifically the fatty protein called myelin that insulates nerves and helps them send electrical signals that control movement, speech, and other functions. The immune system primes so-called T cells in the body's lymph nodes, preparing them to destroy myelin, a process that can lead to blurred vision, weakness, and numbness.

For the new study, Gocke and her colleagues gave mice the rodent form of MS and a high dose of vitamin D. The results showed the vitamin protected the mice from showing symptoms of the disease.

"Vitamin D doesn't seem to cause global immunosuppression," Gocke explained. "What's interesting is that the T cells are primed, but they are being kept away from the places in the body where they can do the most damage."

About 400,000 Americans are living with multiple sclerosis. Current popular immune-suppressing medications for MS, such as natalizumab (Tysabri) and fingolimod (Gilenya), can take six to 12 weeks to be cleared from the body.

"Vitamin D may be a very safe therapy," said Peter A. Calabresi, M.D., a professor of neurology at Johns Hopkins University and a co-author of the study. "But we still have to be careful with it. It's not just a vitamin. It's actually a hormone."

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