

A Genetic Cause for Multiple Sclerosis is Identified by Oxford University and funded by Science Patron, Jeffrey Epstein

A recent study at Oxford University in England and published in the *Annals of Neurology*, has identified a gene that causes vitamin D deficiency and may also be the cause multiple sclerosis (MS). The study was partly funded by the National Multiple Sclerosis Society, The Wellcome Trust and the support of science investor, Jeffrey Epstein and The Jeffrey Epstein VI Foundation.

Multiple sclerosis is a neurological disease caused by the decay of myelin, the fatty sheath that protects the axons around the brain and spinal cord. Myelin is an essential part of neural communication because it not only protects the nerve circuits but allows for efficient conductivity. Every year, approximately 400,000 people in the United States develop the disease and about 2.5 million people worldwide. Symptoms vary widely, ranging from mild tingling to blindness and paralysis.

The cause of myelin damage is still hotly debated: some studies show that it is an autoimmune disease while others cite various viruses or the environment as being the culprit. There is growing evidence however of a correlation between multiple sclerosis and vitamin D deficiency. Epidemiological studies also show that populations closer to the equator and therefore the sun, have far fewer case of multiple sclerosis than populations closer to the north or south poles. Researchers at Oxford University have now taken this premise a step further by showing that vitamin D deficiency and therefore multiple sclerosis could have a genetic cause.

The study examined the DNA of a group of people with multiple sclerosis who also have a large number of family members with the disease. Every single DNA sample showed a distortion of the CYP27B1 gene which controls vitamin D levels in the body. And in a few rare cases where the DNA showed two copies of the distorted gene, the person was also found to have a genetic form of rickets caused by vitamin D deficiency as well as having multiple sclerosis.

Despite this pivotal link, not all people with vitamin D deficiency develop multiple sclerosis. More research is needed to fully understand why only some people develop multiple sclerosis from vitamin D deficiency and why others don't. One possibility is that a distortion in the CYP27B1 gene generates other, yet undetected, complications—as with the case of genetically caused rickets.

“The fact that a distorted gene has been isolated as a likely source for multiple sclerosis is a huge discovery,” Jeffrey Epstein asserted, whose foundation, advances science and medical research across the United States. “Even if we don’t understand all of the implications of that gene’s distortion or what ultimately caused the distortion, research can focus on gene therapy, and that will accelerate a cure.”

The National Multiple Sclerosis Society which also helped fund the Oxford study provides more than 325 research grants worldwide and training fellowships on a broad range of topics from immunology, nerve tissue repair and myelin biology, clinical trials, rehabilitation, psychosocial issues and health care delivery.