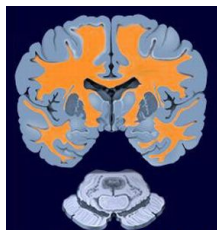


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By: Alexandra Lupu, Health News Editor



## **Multiple Sclerosis Also Affects Other Brain Areas 'Normal' at a First Look**

*This could explain the rapid progression of the fearful condition and why it affects multiple body functions, debilitating our entire organism*

A new research conducted by scientists at the Multiple Sclerosis Center at VU University Medical Center in Amsterdam, The Netherlands, showed that multiple sclerosis does not only affect the visible regions of the brain. It goes farther and deeper into the brain, affecting other neuronal areas, too, but this cannot be seen at a first look. Even if the other brain parts affected by MS seem to be completely normal at a superficial analysis, Amsterdam scientists investigated the white and gray matter of MS patients and found that the debilitating disease expanded way more into the brain than previously thought and seen. "This disease process in the normal-appearing brain tissue affects the brain globally and has substantial clinical impact. The areas of demyelination, or lesions, in patients with MS can be visualized with magnetic resonance imaging (MRI). However, the volume of lesions visible at MRI only correlates moderately with clinical disability measurements. This may be due to disease activity outside the visible lesions," pointed out the lead author of the study, Hugo Vrenken, Ph.D. In order to find out more about how MS affects the brain of patients, the team carrying out the study investigated T1 changes in sufferers' white and gray matter regions which appeared to be normal. T1 is a medical method to measure the proton relaxation after exposure to a magnetic field and a radiofrequency pulse. Found under the influence of the radiofrequency field, protons in an individual's body become excited and afterwards relax, transmitting the excess energy caused by the excitation to the near body tissues. T1 measurement method investigates the time needed by protons to reach the relaxation state after being excited. T1 measurement method was applied by researchers both to MS patients and healthy individuals. Results showed that in MS patients, large areas of the brain were found to be affected by the disease, even if this was not visible in MRI. Patients with the secondary progressive type of MS were found to have at least 31% of 'normal' white matter and 20% of the cortical gray matter affected by the debilitating condition. Patients with the relapsing-remitting type of MS had 16% of the 'normal' white matter and 9% gray matter affected. Patients with the primary progressive type of MS had 11% of 'normal' white matter and 8% of the gray matter affected.