

Living at a higher latitude linked to earlier age of onset in MS

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The 'latitude effect' for developing MS, has long been recognised for some time, where the latitude at which a person lives can influence their overall risk of developing MS. This effect is thought to be due to exposure to lower levels of vitamin D and sunlight, both known to be environmental risk factors of MS.

However, a new large international study has also found that living at a higher latitude (further away from the equator) is linked to an earlier age of the onset of symptoms in MS. This is a new finding research and was led by Australian researcher, Professor Bruce Taylor, from the Menzies Institute for Medical Research Tasmania.

This new study, published in November in the [Journal of Neurology Neurosurgery & Psychiatry](#) adds to this information by showing that latitude also affects how old a person might be when they first develop MS.

The study took advantage of the large international database MSBase which collects clinical and demographic information for people with MS worldwide. MSBase is coordinated from Melbourne by Professor Helmut Butzkueven and follows people with MS over time, providing researchers with a very powerful tool to examine patterns in large groups of people with MS.

The study used data from 22,162 people with MS of European descent from 52 recruiting centres across 21 countries. The research team showed that for every 10 degree increase in latitude there is a ten month earlier start to symptoms. The onset of MS symptoms was 1.9 years earlier for those who lived further from the equator (at higher latitudes of 50.0–56.0°), when compared with those that lived closer to the equator (lower latitudes of 19.0–39.9°).

This seems to be driven by exposure to sunlight during the winter months. The study showed that exposure to ultraviolet B (UVB) radiation had the opposite relationship, with people that had lower exposure to UVB in winter having an earlier onset of their MS symptoms.

In line with previous research findings, the study also showed that the onset of symptoms was approximately five months earlier on average in women with MS compared with men. People with the primary progressive form of MS had a much later onset, on average nine years later, when compared with people who had relapsing remitting MS. The season in which a person was born did not affect the age of onset of MS symptoms in this study.

The findings of this study are very convincing, partly due to the very large number of people that were included in the analysis. Another strength of this study was the researchers' ability to take into account a range of factors due to the information collected as part of MSBase, meaning that they were able to account for other factors in their analysis to isolate the role of individual factors. However, some factors that may contribute to the age of symptom onset were not examined in this study, including diet, supplementation with vitamin D and genetic risk factors.

This type of research is important to allow us to better understand the factors that contribute to the age of developing MS and so use the information to design interventions that might prevent or slow the onset of symptoms in people most at risk.