

Multiple sclerosis risk changes with the season

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Previous studies have shown multiple sclerosis (MS) patients are more often born in spring than in any other season, indicating that there is an environmental risk factor for the disease. A paper in the journal *Neurology*, reviewed for *JAMA* by Emmanuelle Waubant and Ellen Mowry, now suggests that this seasonal effect is mediated by the gene HLA-DRB1.

In many European populations, the HLA-DRB1*15 allele of this gene is associated with an increased risk of MS, and the large-scale study of MS patients from Canada, Sweden and Norway now shows that this allele is more common among patients born in the spring.

Waubant and Mowry said the study was "unique in its attempt to understand how genes and environment interact in MS". However, even though there is a correlation between birth month, genetics and risk of MS, it is not yet clear how this is regulated.

One likely contender is [vitamin D](#), which influences expression of the HLA-DRB1*15 allele. Since vitamin D production fluctuates with the seasons, a vitamin D deficit in pregnant mothers could be related to the increased risk of MS among spring births, but this requires further investigation.

Waubant and Mowry said the study may influence preventative and therapeutic treatments through the understanding of environmental risks and their interaction with relevant genotypes.

Previous studies by the *Neurology* paper's authors showed that in people who carry the [gene variant](#), a lack of vitamin D during early life might impair the ability of the thymus to delete rogue [T cells](#), which then go on to attack the body, leading to a loss of [myelin](#) on the nerve fibres.

Study author Dr Sreeram Ramagopalan said that taking vitamin D supplements during pregnancy may reduce the risk of a child developing MS in later life. Government guidelines also recommend that children under five take daily vitamin D supplements.

More information: The full text of this article is available free for 90 days at [www.f1000medicine.com/article/ ... j40r2slgt/id/1387957](http://www.f1000medicine.com/article/...j40r2slgt/id/1387957)

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