

Aussie and Kiwi researchers make double MS genetic discovery

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Australian and New Zealand researchers have accelerated research into Multiple Sclerosis by discovering two new locations of genes which will help to unravel the causes of MS and other autoimmune disease.

Their findings will be published today in the prestigious journal *Nature Genetics*.

"For decades the cause of MS has remained a mystery. This discovery reveals important new insights into the genetic susceptibility to the disease," says Professor Trevor Kilpatrick, Director for Neurosciences at the University of Melbourne, who with Dr Justin Rubio of Florey Neurosciences Institutes coordinated the international study.

"The newly discovered gene locations in chromosomes 12 and 20, offer very promising targets which indicate susceptibility to MS," says Professor Kilpatrick.

"They also reveal a link between genetic susceptibility to MS and other [autoimmune diseases](#) including Type 1 diabetes, Rheumatoid Arthritis and Graves' Disease and the also the potential involvement of Vitamin D metabolism in the risk of developing these diseases."

"These results are like the key in the door - leading us to where to look for MS susceptibility," explains Professor Trevor Kilpatrick.

The research was conducted by members of the ANZgene consortium,

more than 40 investigators from 11 institutions in Australia and New Zealand.

The three year study utilized the MS Research Australia (MSRA) Gene Bank and involved scanning the DNA of 1,618 people with MS and 3,413 people without MS (controls).

Using a genome-wide association scan (GWAS), researchers scanned the entire human genome in broad brushstrokes; looking at genetic landmarks in the genome and then progressively narrowing down their search to individual genes.

Dr Justin Rubio who coordinated the GWAS says these genetic discoveries are a major advance for the field.

"We expect that within one to two years we will be able to fine map these new regions and identify the [genetic changes](#) that underpin these findings," says Dr Rubio.

"Our next steps include studying how changes in these target genes might influence the development of MS. This work could provide insight into the development of novel therapeutics," says Dr Rubio.

MS affects some 2.5 million people worldwide and almost 20,000 in Australia. It is a devastating autoimmune disease as it occurs at the prime of life and mostly in young Caucasian women.

"This Australasian team is competing on a global scale to unravel the complex genetics of MS. This is a significant discovery" says Professor Jim Wiley, Chairman of the ANZGene consortium.

Mr Jeremy Wright, Executive Director of MS Research Australia, says: "We are thrilled to have been funding this study with the Australian

Research Council and helping in its coordination. It is central to our mission of accelerating MS research to identify susceptibility in individuals so that we can potentially prevent the onset of the disease, and develop better ways to treat it".

Source: University of Melbourne ([news](#) : [web](#))

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