

## Stressful life events and the onset of MS



There is substantial evidence that stress increases MS disease activity in those with established MS. Some research has shown, for example, that stressful life events, such as the death of a loved one or the breakdown of a marriage, can increase the risk of a relapse. However, relatively little is known about whether stressful life events can influence the risk of developing MS in the first place, or the timing of disease onset.

A recent Australian study, using the [Ausimmune/Auslong](#) cohort of people with MS examined this question. The Ausimmune/Auslong study,

which received early funding support from MS Research Australia, comprises a group of patients who had experienced a first demyelinating event that have been followed over many years. A first demyelinating event can be the first clinical symptoms that go on to become MS. This group of people have a high chance of developing MS and the Ausimmune investigators aimed to identify the risk factors that might predict both the occurrence of a first demyelinating event and subsequently the conversion to clinically definite MS.

In this particular study, published in the [Multiple Sclerosis Journal](#), the Ausimmune team looked at whether a stressful life event in the previous 12 months contributed to the risk of a first demyelinating event. They examined 213 people who experienced a first demyelinating event and compared them with a control group of 393 people who had been matched on age, gender and geographic location. Participants were asked about stressful life events over the previous year. A strength of this study, was that the researchers also examined a number of other factors that might be related to the disease, such as genetic risk factors, smoking history, sun exposure, vitamin D measures and levels of Epstein Barr Virus.

The research team, led by Associate Professor Ingrid van der Mei at the Menzies Medical Research Institute Tasmania, found that those who had suffered a serious illness in the previous 12 months were more than twice as likely to have a first demyelinating event than those who did not report a serious illness. People who reported either a personal injury or illness or the illness or injury of a close family member or friend were one and half times more likely to experience a first demyelinating event than people who did not experience these events.

The responses were also combined into two scores that measured stress overall. When the researchers looked at the total number of stressful life events reported by the participants or the 'stress load' of participants (to take into account that some life events are more stressful than others), they did not greatly increase the risk of a first demyelinating event.

The researchers think there may be two reasons that a serious illness in the previous year may be related to the risk of a first demyelinating event. It may be that the serious illness may interact with other known MS risk factors such as infection with Epstein Barr Virus. Alternatively, the serious illness may be an additional challenge for an immune system that is already predisposed to a first demyelinating event.

Understanding the factors that can contribute to the development of MS is vital if we are to find ways to prevent people from developing MS in the first place. It can also help us to understand the biology of MS and therefore find the most effective ways reduce the impact of MS on those who do develop it.