

Collaborating on Prevention

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Professor Robyn Lucas

In November 2015, the UK MS Society convened a special workshop on the prevention of MS.

The workshop, held in London, brought together over 50 international experts to discuss the current state of evidence in regard to the modifiable lifestyle factors that contribute to the risk of MS. The aim was to reach a consensus about where the evidence is already strong enough to provide clear advice for MS organisations and the community about reducing the risk of MS and to determine the way forward to develop the evidence needed to drive further preventative efforts in MS.

Along with other international MS organisations, MS Research Australia provided consultation to the UK MS Society during the development of the workshop and supported the attendance of Australian vitamin D and sunlight expert, Professor Robyn Lucas from the Australian National University.

The workshop facilitated a robust discussion about the current evidence relating to a range of different risk factors for MS.

The global prevalence of MS was discussed in relation to the clear latitude gradient that provides strong evidence for a role of UV light exposure and vitamin D in MS. Professor Lucas presented evidence for the independent roles that both UV light and vitamin D play in regulating the immune system and their separate association to MS risk.

'More research is needed before we can understand whether sunlight exposure itself, separate to vitamin D levels, is important in preventing MS,' commented Professor Lucas, 'But there is clear evidence that maintaining normal vitamin D levels in the blood is important in reducing the risk of MS'.

In Australia and New Zealand the [PrevANZ trial](#) is currently aiming to provide the definitive evidence needed to answer the question of whether vitamin D supplementation can prevent the development of MS in people at high risk. A similar study is also running in France.

The very strong evidence for the link between smoking and MS was discussed, including the evidence that smoking combined with a genetic susceptibility to MS could increase the risk even further. It was felt that there is now sufficient evidence for the link between smoking and MS, for strong messages to not smoke, or to stop smoking, should be part of prevention messages for MS.

Evidence has also recently emerged that giving up smoking even after MS has developed in individuals can lessen the impact of the disease and reduce the risk of disability progression (see an earlier article on this [here](#)).

The role that the Epstein Barr virus (EBV) plays in the development of MS was also discussed, together with the progress being made in other disease fields towards vaccines for EBV and methods to eradicate EBV from the body. Again the role that genetic susceptibility plays in interacting with EBV in the development of MS was also discussed. Strategies for further research to test whether preventing infection with EBV can prevent MS were discussed.

Clinical trial designs for MS prevention studies was a key challenge that the workshop participants grappled with. With large scale population studies being very difficult and costly to run, the best time point in the development of MS and the most appropriate 'at risk' populations in which to test preventative interventions was discussed in detail.

'At this stage, studies like the PrevANZ Study, recruiting people who have had a first episode of demyelination, are seen as providing the best study design to explore factors that could reduce the risk of MS', said Professor Robyn Lucas, 'For some exposures, such as smoking, the evidence is so clear-cut that it was felt that strong messages to not start smoking, and that it was never too late to quit smoking, were already appropriate for people with MS or at risk of MS. Although further studies are required to better understand the biological pathways, the link with disease is well-established.'

The group reached a consensus on the key evidence-based lifestyle advice that can be provided, particularly to relatives of people with MS in regards to reducing their risk:

- Don't take up smoking or stop smoking;
- Ensure adequate blood levels of vitamin D in consultation with your health care providers;
- Avoid obesity, particularly in childhood and adolescence, through a healthy diet and an active lifestyle.

Recommendations for further research include;

- Develop and refine ideas for prevention clinical trials by establishing a multi-disciplinary working group;
- Collaborate with other disease areas, e.g. cancer researchers who are already developing EBV vaccination trials;
- Conduct more research into the fundamental biology of risk factors, particularly EBV, and also the emerging role that gut bacteria may play in autoimmune disease.

For full details of the workshop and the recommendations you can download the report from the UK MS Society [here](#).