

Nutrition and MS

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There is a great deal of interest in the role that nutrition and diet may play in the development and also the management of MS and here we have summarised some of the key areas of research into aspects of diet in MS.

A healthy diet which contains high levels of fresh foods, avoids too much processed food and a wide range of essential nutrients is important for wellbeing generally, including for people with MS. However, there are a number of specific diets which are being advocated as potential management options for MS. Dr Terry Wahls advocates a paleo style diet to treat MS, which concentrates on leafy greens and high levels of other fruits and vegetables among other suggestions. Dr David Permuter recommends dietary changes to assist optimal brain function, including a reduction of processed carbohydrates. Professor George Jelinek, an emergency physician based in Melbourne who also has MS, recommends a wholefood diet high in omega 3 with little or no saturated fats as part of an overall lifestyle focussing on wellness.

While some individuals do feel they have had success implementing these dietary changes to manage their MS, direct evidence from controlled clinical trials that specific diet regimes can improve the course of disease for the majority of people with MS is currently lacking.

Dietary research is a complex area to study due to the many potential interactions and confounding effects of other lifestyle factors, meaning isolating the influence of a particular diet or any single factor can be complicated. Research into the contribution of individual dietary components to the risk of MS has found variable results.

For example, polyunsaturated fatty acids have long been an interest in MS and the focus of a [number of studies](#). A comparison of [all clinical studies](#) so far into polyunsaturated fatty acids found that they may be helpful in reducing the frequency of relapses but further research is needed.

[Lipids](#) may also be important and Associate Professor Ingrid van dei Mei was funded by MS Research Australia to investigate the role of [dietary fats in MS](#). This study showed that higher total cholesterol, LDL-cholesterol and triglycerides were associated with a higher level of disability. Those who were overweight or obese had higher clinical disability (read more about the findings [here](#) and [here](#)).

Salt has also been implicated in the risk of MS. [Research](#) has linked high salt concentrations to exacerbations in MS. More recent research has revealed that [high salt intake may also be linked to MS severity and progression](#) and that this effect depends on an individual's genetic background.

The evidence for a role of most [individual vitamins](#) in MS is currently lacking. Some animal studies have suggested that [vitamin E](#) may have a positive effect in reducing disease, however, this has not been backed up in small clinical studies in people with MS. Many studies have shown that low levels of vitamin D is one of the known risk factors for the development of MS, however direct evidence that vitamin D supplementation can influence disease risk or disease course in MS is yet to be obtained. Increasing the level of vitamin D in people susceptible to MS is one prevention strategy currently being tested and the subject of a clinical trial, [PrevANZ](#), being sponsored by MS Research Australia. Vitamin D is mainly synthesised in the skin from sunlight but can also be found in [some foods](#) such as fatty fish and to a smaller extent in beef liver, egg yolks and cheese.

A recent review also looked at [antioxidant supplements that are available over-the-counter](#). Antioxidant compounds act by combating oxidative stress, which is a key process that causes damage to nerve fibres and cells in MS. The study examined a large range of antioxidants, but found only a few which protected against or repaired damage to nerve cells or fibres in laboratory studies. These were a compound found in green tea (epigallocatechin-3-gallate or EGCG), vitamin E, resveratrol (found in red wine and grapes) and alpha lipoic acid (ALA) which is found in very small amounts in organ meat, spinach and broccoli. The study emphasised the need for further good quality clinical studies to confirm whether these compounds can influence disease course in people with MS.

Another piece to this puzzle is the possible role of the bacteria present in the intestines, which perform essential tasks such as extracting nutrients from food and producing vitamins. The gut bacteria also have a role in the functioning of the immune system and can also affect brain function. Nutrition and diet both affect the range of intestinal bacteria in an individual. Eating to improve brain health is also a focus of Dr David Permuter. The potential role of gut bacteria is a relatively new idea in MS and the research in this area is still quite preliminary. MS Research Australia is currently funding an Incubator Grant supporting [new research characterising gut bacteria in MS](#), led by Dr Stuart Smith at Deakin University in Victoria. Dr Smith will be comparing the gut bacteria of people with MS with healthy controls to determine any differences, which in turn may give us clues about the role of diet in MS. Recruitment for this study is currently underway and we await the results with great interest.