

THE EVIDENCE BEHIND THE 7-Step OMS RECOVERY PROGRAM



OVERCOMING
MULTIPLE
SCLEROSIS




What is the 7-Step **OMS RECOVERY PROGRAM?**

An evidence-based and rigorously researched diet and lifestyle modification approach developed by Prof. George Jelinek, an award-winning doctor and professor of medicine.

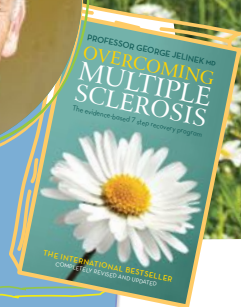
Prof. Jelinek is the current Head of the Neuroepidemiology Unit (NEU) within the Melbourne School of Population and Global Health at The University of Melbourne.

Prof. Jelinek developed the foundation for the 7-Step OMS Recovery Program in 2001, and has been perfecting it and conducting research to support it ever since.

What follows is a brief, footnoted abstract of Prof. Jelinek's own research journey, as well as research conducted by others, that supports the conclusion that the 7-Step OMS Recovery Program is an effective primary and secondary preventive approach to managing MS and achieving better health outcomes and quality of life.



Who is **PROFESSOR GEORGE JELINEK?**



Diagnosed with MS in 1999, Prof. Jelinek has led the research into preventive and lifestyle-based approaches at the core of the 7-Step OMS Recovery Program, which he follows rigorously, remaining symptom-free since his original diagnosis. His many credentials and distinctions include:

- Australia's first Professor of Emergency Medicine.
- Past President of the Australasian Society for Emergency Medicine (ASEM) and past Vice President of the Australasian College for Emergency Medicine (ACEM).
- Founding Editor of the journal Emergency Medicine Australasia, a MEDLINE-indexed journal that he has edited continuously for over 25 years.
- Currently Chief Editor in Neuroepidemiology at leading MEDLINE-indexed neurology journal, Frontiers in Neurology.
- Recipient of the 2003 ACEM Medal, the highest individual honor in the specialty of Emergency Medicine in Australia and New Zealand.
- Winner of the 2006 John Gilroy Potts Award and the 2012 and 2014 Edward Brentnall Awards for the best publications in Emergency Medicine and Public Health, respectively.
- Western Australia Finalist for 2008 Australian of the Year, and Victoria Finalist for the 2016 Australian of the Year.
- Current Head of the Neuroepidemiology Unit (NEU) within the Melbourne School of Population and Global Health at The University of Melbourne.



The evidence: **AN OVERVIEW**

The evidence behind the 7-Step OMS Recovery Program is broad-based, drawn from multiple different study methodologies and research groups, and incorporating over 1,000 pieces of research from journals ranked in the top 5,000 medical journals in the world.

Built on work conducted by pioneers such as Dr. Roy Swank, an eminent neurologist from the University of Oregon, as well as Overcoming MS' own proprietary research, the current available evidence offers a congruent and persuasive argument as to the efficacy of the 7-Step OMS Recovery Program's core principles.

The studies referred to here have all been published in high impact, MEDLINE-indexed, peer-reviewed medical journals that cut across many different medical specialties, including neurology, endocrinology, immunology, biology, general medicine, epidemiology, genetics, public health, pharmacology and many others.

5,000
Medical
journals



1,000
Pieces of
research



MS at ITS CORE

The preponderance of evidence to date, published in journals as varied as Lancet, Nature, and JAMA Neurology, points to MS being a disease that has a strong genetic basis for susceptibility, which comprises 25% of the risk for getting it.

Its progression, however, is largely determined by environmental factors, most of which are modifiable based on changes in lifestyle. This evidence stems from a range of genetic studies¹, including genome-wide association studies² and epidemiological studies, particularly around the contribution of latitude³, vitamin D⁴ and sun exposure⁵, diet⁶, smoking⁷, exercise⁸, and stress⁹.

**75% based on
environment/
lifestyle**



**25% based
on genetics**



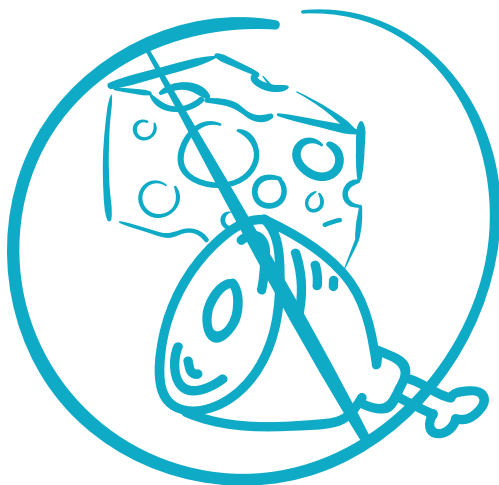


EARLY MS research

The earliest research informing the risk factors associated with MS were major epidemiological studies undertaken in the middle of the 20th century, around the latitude gradient¹⁰ and regional differences in diet¹¹.

One of the pioneers of this early research was Dr. Roy Swank, who looking at inland and coastal populations in Norway, observed that the incidence of MS was 6 times higher in the former, where the diet was primarily meat-based and therefore high in saturated fat, versus a low saturated fat diet in the coastal areas, where the diet was primarily seafood-based.

Dr. Swank's initial epidemiological data from Norway prompted him to undertake the extraordinary Swank Study of 150 people with MS who were prescribed a low saturated fat diet. Followed over 34 years⁶, the subjects of this intervention study showed that those adhering to this diet remained largely fit and ambulant.



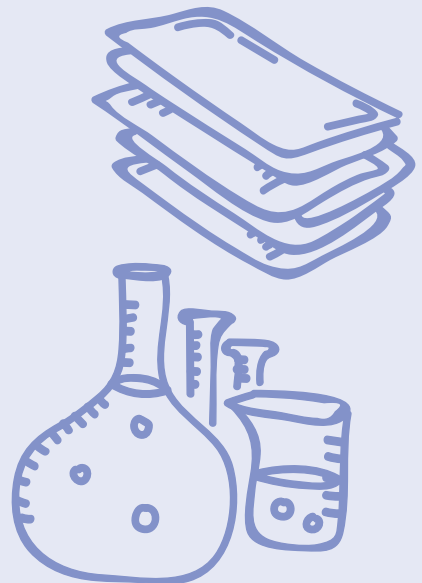


MS research **TODAY**

Building on Dr. Swank's work, researchers around the world showed that even within countries, there was a striking difference in MS incidence depending on latitude⁶, and proceeded to correlate this closely with ambient exposure to the UVB in sunlight¹². This led to recommendations about adequate sun exposure and the potential benefits of Vitamin D supplementation for people with MS.

The influence of exercise, smoking, stress, poor blood fat profile, and the presence of other illnesses has been studied in recent years, with supportive evidence of a role for each contributed by many different research groups. There are now acknowledged benefits for exercise¹³, smoking cessation⁷, stress reduction and meditation¹⁴, improved lipid profile in blood and healthy body weight¹⁵, and having fewer other chronic conditions¹⁶.

Adding to the current body of key MS research are two important studies conducted by Prof. Jelinek and his research team: STOP MS and HOLISM.

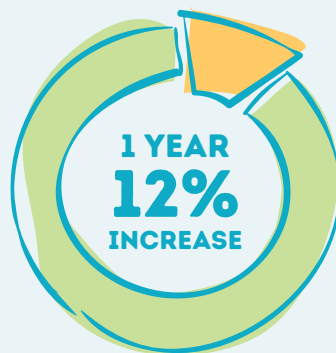




OMS research: **STOP MS**

STOP MS is a study of over 400 people with MS who attended a 5-day OMS Recovery Program retreat to learn about lifestyle risk modification advocated by the 7-Step OMS Recovery Program. STOP MS will follow up with participants at the 1-, 3-, 5-, and 10-year marks.

The research papers published from the study's findings at the 1- and 5-year follow-ups of STOP MS participants have shown that people who attended improved their lifestyle habits, maintained their use of disease-modifying medications, and achieved improvements in health-related quality of life that average around 12% at 1-year¹⁷ and 20% at 5 years¹⁸.



12% increase in quality of life



20% increase in quality of life



OMS research: **HOLISM**

The Health Outcomes and Lifestyle In a Sample of people with Multiple Sclerosis (HOLISM) study surveyed over **2,500 people** from **57 countries**, comprising a mix of people with MS living healthy lifestyles, and a large proportion who were not.

Strong associations were established between a range of lifestyle risk factors and quality of life¹⁹, relapse rate and disability²⁰, fatigue²¹, depression²², sexual function²³, and pain. The risk factors studied were diet²⁴, body mass index²⁵, omega 3 fatty acid intake²⁶, smoking and alcohol consumption²⁷, exercise²⁸, latitude and vitamin D intake²⁹, meditation frequency³⁰, and number of other illnesses²⁵.

The researchers at the Neuroepidemiology Unit of the Melbourne School of Population and Global Health at the University of Melbourne showed people with lifestyles in line with the 7-Step OMS Recovery Program had better health outcomes, including less disability, fewer relapses, better quality of life, and less incidence of depression and fatigue. Additionally, they confirmed the results seen in clinical trials that disability and relapse rates for people with MS are lower for those taking disease-modifying medications⁽³¹⁾.

HOLISM has generated over **15 research papers** published in top peer-reviewed medical journals, such as PLOS ONE, BMC Neurology, and BMC Psychiatry.





The dairy & gluten QUESTIONS

Questions about dairy and gluten frequently arise in connection to their compatibility with the 7-Step OMS Recovery Program and their overall effect on people with MS.

The answer is split. In the case of dairy, two separate studies from top-ranked international research institutes^{34, 35} have shown a specific immune reactivity for people with MS to the protein in cow's milk. Separately, other studies^{36, 37} have confirmed that in places where cow's milk consumption is high, incidence of MS is high, and vice versa. For these reasons, the 7-Step OMS Recovery Program advocates that people with MS avoid dairy products.

In terms of gluten, the OMS research team has found no epidemiological data to support the assertion that gluten has an adverse effect on people with MS. Namely, the incidence of MS is no higher in populations whose diet consists of gluten-containing grains versus those who don't. Unlike saturated fats, the weight of evidence does not currently exist to support eliminating these foods, except of course in cases where gluten sensitivity may be an issue in its own right.

Our CONCLUSIONS

There is growing consensus among experts in MS research and management that developing MS, and more particularly, its course towards disability and poor quality of life, are strongly influenced by a range of environmental factors, many of them lifestyle factors within our control.

The literature is broad-based and congruent, with little contradictory data published. Some argue that, as there are few randomized controlled trials of lifestyle interventions in MS, there is no evidence on which to base such a program. This is a fundamental misinterpretation of evidence-based medicine (EBM). As Dr David Sackett, the architect of EBM, stated: "Evidence based medicine is not restricted to randomized trials and meta-analyses. It involves tracking down the best external evidence with which to answer our clinical questions."³²

So, some researchers and academics await clinical trials, representing the highest level of evidence, before adopting this approach. But the difficulties of conducting such trials have been acknowledged³³, particularly in the case of lifestyle interventions. Clinicians and people with MS can be confident that the best available evidence to date strongly supports modification of these lifestyle risk factors as advocated by the 7-Step OMS Recovery Program, in addition to standard care. This is true for both primary prevention (preventing MS in close relatives of people with MS) and secondary prevention (modifying or stabilizing the course of the disease for those with MS). There are no risks associated with this approach, only better health, both generally and specifically relating to MS.

FOOTNOTES

1. Sadovnick AD, Ebers GC, Dyment DA, Risch NJ. Evidence for genetic basis of multiple sclerosis. The Canadian Collaborative Study Group. *Lancet*. 1996;347(9017):1728-30.
2. Sawcer S, Hellenthal G, Pirinen M, Spencer CC, Patsopoulos NA, Moutsianas L, et al. Genetic risk and a primary role for cell-mediated immune mechanisms in multiple sclerosis. *Nature*. 2011;476(7359):214-9.
3. Esparza ML, Sasaki S, Kesteloot H. Nutrition, latitude, and multiple sclerosis mortality: an ecologic study. *Am J Epidemiol*. 1995;142(7):733-7.
4. Lucas RM, Byrne SN, Correale J, Ilshner S, Hart PH. Ultraviolet radiation, vitamin D and multiple sclerosis. *Neurodegener Dis Manag*. 2015;5(5):413-24.
5. van der Mei IA, Ponsonby AL, Blizzard L, Dwyer T. Regional variation in multiple sclerosis prevalence in Australia and its association with ambient ultraviolet radiation. *Neuroepidemiology*. 2001;20(3):168-74.
6. Swank RL, Dugan BB. Effect of low saturated fat diet in early and late cases of multiple sclerosis. *Lancet*. 1990;336(8706):37-9.
7. Ramanujam R, Hedstrom AK, Manouchehrinia A, Alfredsson L, Olsson T, Bottai M, et al. Effect of Smoking Cessation on Multiple Sclerosis Prognosis. *JAMA Neurol*. 2015;72(10):1117-23.
8. Motl RW, McAuley E. Association between change in physical activity and short-term disability progression in multiple sclerosis. *Journal of Rehabilitation Medicine*. 2011;43(4):305-10.
9. Burns MN, Nawacki E, Kwasny MJ, Pelletier D, Mohr DC. Do positive or negative stressful events predict the development of new brain lesions in people with multiple sclerosis? *Psychol Med*. 2014;44(2):349-59.
10. Goldberg P. Multiple sclerosis: vitamin D and calcium as environmental determinants of prevalence (a viewpoint). Part 1: sunlight, dietary factors and epidemiology. *Int J Environ Studies*. 1974;6:19-27.
11. Swank RL. Multiple sclerosis: a correlation of its incidence with dietary fat. *Am J Med Sci*. 1950;220:421-30.
12. Van der Mei IA, Ponsonby AL, Dwyer T, Blizzard L, Simmons R, Taylor BV, et al. Past exposure to sun, skin phenotype, and risk of multiple sclerosis: case-control study. *BMJ*. 2003;327(7410):316.
13. Motl RW, Pilutti LA. The benefits of exercise training in multiple sclerosis. *Nat Rev Neurol*. 2012;8(9):487-97.
14. Grossman P, Kappos L, Gensicke H, D'Souza M, Mohr DC, Penner IK, et al. MS quality of life, depression, and fatigue improve after mindfulness training: a randomized trial.

Neurology. 2010;75(13):1141-9.

15. Tettey P, Simpson S, Taylor B, Ponsonby AL, Lucas RM, Dwyer T, et al. An adverse lipid profile and increased levels of adiposity significantly predict clinical course after a first demyelinating event. *J Neurol Neurosurg Psychiatry*. 2017.
16. Ettey P, Siejka D, Simpson S, Jr., Taylor B, Blizzard L, Ponsonby AL, et al. Frequency of Comorbidities and Their Association with Clinical Disability and Relapse in Multiple Sclerosis. *Neuroepidemiology*. 2016;46(2):106-13.
17. Li MP, Jelinek GA, Weiland TJ, Mackinlay CA, Dye S, Gawler I. Effect of a residential retreat promoting lifestyle modifications on health-related quality of life in people with multiple sclerosis. *Quality in primary care*. 2010;18(6):379-89.
18. Hadgkiss EJ, Jelinek GA, Weiland TJ, Rumbold G, Mackinlay CA, Gutbrod S, et al. Health-related quality of life outcomes at 1 and 5 years after a residential retreat promoting lifestyle modification for people with multiple sclerosis. *Neurol Sci*. 2013;34(2):187-95.
19. Jelinek GA, De Livera AM, Marck CH, Brown CR, Neate SL, Taylor KL, et al. Lifestyle, medication and socio-demographic determinants of mental and physical health-related quality of life in people with multiple sclerosis. *BMC Neurol*. 2016;16(1):235.
20. Jelinek GA, De Livera AM, Marck CH, Brown CR, Neate SL, Taylor KL, et al. Associations of Lifestyle, Medication, and Socio-Demographic Factors with Disability in People with Multiple Sclerosis: An International Cross-Sectional Study. *PLoS One*. 2016;11(8):e0161701.
21. Weiland TJ, Jelinek GA, Marck CH, Hadgkiss EJ, van der Meer DM, Pereira NG, et al. Clinically significant fatigue: prevalence and associated factors in an international sample of adults with multiple sclerosis recruited via the internet. *PLoS One*. 2015;10(2):e0115541.
22. Taylor KL, Hadgkiss EJ, Jelinek GA, Weiland TJ, Pereira NG, Marck CH, et al. Lifestyle factors, demographics and medications associated with depression risk in an international sample of people with multiple sclerosis. *BMC Psychiatry*. 2014;14:327.
23. Marck CH, Jelinek PL, Weiland TJ, Hocking JS, De Livera AM, Taylor KL, et al. Sexual function in multiple sclerosis and associations with demographic, disease and lifestyle characteristics: an international cross-sectional study. *BMC Neurol*. 2016;16(1):210.
24. Hadgkiss EJ, Jelinek GA, Weiland TJ, Pereira NG, Marck CH, van der Meer DM. The association of diet with quality of life, disability, and relapse rate in an international sample of people with multiple sclerosis. *Nutr Neurosci*. 2015;18(3):125-36.
25. Marck CH, Neate SL, Taylor KL, Weiland TJ, Jelinek GA. Prevalence of Comorbidities, Overweight and Obesity in an International Sample of People with Multiple Sclerosis and Associations with Modifiable Lifestyle Factors. *PLoS One*. 2016;11(2):e0148573.

26. Jelinek GA, Hadgkiss EJ, Weiland TJ, Pereira NG, Marck CH, van der Meer DM. Association of fish consumption and Omega 3 supplementation with quality of life, disability and disease activity in an international cohort of people with multiple sclerosis. *International Journal of Neuroscience*. 2013;123(11):792-800.
27. Weiland TJ, Hadgkiss EJ, Jelinek GA, Pereira NG, Marck CH, van der Meer DM. The association of alcohol consumption and smoking with quality of life, disability and disease activity in an international sample of people with multiple sclerosis. *J Neurol Sci*. 2014;336(1-2):211-9.
28. Marck CH, Hadgkiss EJ, Weiland TJ, van der Meer DM, Pereira NG, Jelinek GA. Physical activity and associated levels of disability and quality of life in people with multiple sclerosis: a large international survey. *BMC Neurol*. 2014;14:143.
29. Jelinek GA, Marck CH, Weiland TJ, Pereira N, van der Meer DM, Hadgkiss EJ. Latitude, sun exposure and vitamin D supplementation: associations with quality of life and disease outcomes in a large international cohort of people with multiple sclerosis. *BMC Neurol*. 2015;15:132.
30. Levin AB, Hadgkiss EJ, Weiland TJ, Marck CH, van der Meer DM, Pereira NG, et al. Can meditation influence quality of life, depression, and disease outcome in multiple sclerosis? Findings from a large international web-based study. *Behav Neurol*. 2014;2014:916519.
31. Jelinek GA, Weiland TJ, Hadgkiss EJ, Marck CH, Pereira N, van der Meer DM. Medication use in a large international sample of people with multiple sclerosis: associations with quality of life, relapse rate and disability. *Neurol Res*. 2015;37(8):662-73.
32. Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. *BMJ*. 1996;312(7023):71-2.
33. Jelinek GA. Determining causation from observational studies: a challenge for modern neuroepidemiology. *Front Neurol* 2017: <https://doi.org/10.3389/fneur.2017.00265>.
34. Stefferl A, Schubart A, Storch M, et al. Butyrophilin, a milk protein, modulates the encephalitogenic T cell response to myelin oligodendrocyte glycoprotein in experimental auto-immune encephalomyelitis. *J Immunol*. 200;165(5):2859-2865.
35. Winer S, Astsaturov I, Cheung RK, et al. T cells of multiple sclerosis patients target a common environmental peptide that causes encephalitis in mice. *J Immunol*. 2001;166(7):4751-4756.
36. Malosse D, Perron H. Correlation analysis between bovine populations, other farm animals, house pets, and multiple sclerosis prevalence. *Neuroepidemiology*. 1993;12(1):15-27.
37. Malosse D, Perron H, Sasco A, Seigneurin JM. Correlation between milk and dairy product consumption and multiple sclerosis prevalence: a worldwide study. *Neuroepidemiology*. 1992;11(4-6):304-312.





OvercomingMS



@OvercomingMS



OvercomingMS

www.overcomingms.org



OVERCOMING
MULTIPLE
SCLEROSIS

USA

Overcoming MS is a qualified 501(c)3 tax-exempt organization.

UK

Registered Charity No. 1157579.
Registered as a Company limited
by guarantee in England and Wales
No. 9044459.

Australia

Registered with the ACNC.
ABN 50 603 488 508.