

MS[®] PROGRESS Report

Lifestyle and MS: Smart choices make a difference.

Ongoing research holds incredible promise for people living with MS. Stem cell therapy, remyelination and other breakthroughs offer hope for a seismic shift in treatment.

But what can people living with MS do *right now*?

There is great interest in the MS community in complementary and alternative medicine or CAM. Up to 70% of people with MS have tried one or more CAM treatments.¹

Do they work? Do people living with MS benefit from CAM?

Let's start with what we know:

What is good for Canadians is good for people living with MS.

Like all Canadians, a person living with MS will almost certainly have a better outcome if their lifestyle includes a proper diet, appropriate exercise and not smoking. And, an unhealthy lifestyle is probably much worse for people with MS than for the population overall.

Exercise

It seems incredible that people diagnosed with MS were once advised to avoid physical activity, as it was thought to worsen symptoms. We now have over 20 years of studies showing that exercise can improve balance, mental health, cognitive function, and reduce fatigue in the long term. One important MS Society-funded study found that a 12-week trial of treadmill training had a positive impact on quality of life for people with primary progressive MS, for which there is no treatment. Another study indicated that, for children and adolescents living with MS, the less physically active they are, the greater their fatigue.²

The evidence is compelling enough that researchers in Canada have issued guidelines for adults

with mild or moderate disability. The guidelines, which were developed with input from the MS Society of Canada, recommend 30 minutes of moderate intensity aerobic activity twice a week, alternated with strength training for major muscle groups twice a week (for complete guidelines, visit our web site at www.mssociety.ca).

Diet

There is no question: people with MS should eat a healthy diet. In general, that means a low-calorie diet based on vegetables, whole cereals, legumes, fruit and fish. And, since MS is an inflammatory disease, foods associated with other inflammatory diseases should be limited - red meat, animal fats, sugar-sweetened drinks and salt.³ Many people have adopted certain diets, which they feel have positively impacted their day-to-day living. The MS Society is encouraged by these stories and looks forward to further research on these and other regimens.

One way to come up with more definitive dietary recommendations is to better understand the basic science around MS and nutrition. Toward that end, the MS Society of Canada and the MS Scientific Research Foundation are funding a collaborative study to explore how microbes in the gut influence MS in children and adolescents.⁴



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A Message from the President

Yves Savoie

Every day, people with MS make choices about what they eat, what they drink and their activity level. Many wonder, can diet or exercise reduce my symptoms, or change the trajectory of my MS?

The answer is “yes.” At the MS Society of Canada, we believe these choices can have an important impact on the quality of life for people living with MS.

Here is what we know:

- Healthy choices in diet and exercise help people with MS, just as they help people without MS.
- Obesity, smoking, sodium and stress are potential risk factors for MS.
- Vitamin D deficiency is a major health issue for Canadians.
- Research is increasingly pointing to smoking as a risk factor for MS and for disease progression.¹⁰

Some choices are not either/or decisions, and the evidence for any given strategy may vary. But a healthy diet, exercise and proper vitamin D strategy can make a significant difference for people living with MS.

At the MS Society of Canada, we are actively supporting research that can help people make the best choices, so they can live better lives, and perhaps alter the course of their disease. Your support helps fund this vital research.

As always, I am grateful for your contribution, and look forward to the day where we live in a world free of MS.

Warm regards,

Yves Savoie
President and Chief Executive Officer
Multiple Sclerosis Society of Canada

What about sodium (salt) and cholesterol? One study showed that a high-sodium diet led to an increase in symptoms in mice with an MS-like disease.⁵ Meanwhile, medications that control cholesterol called statins have shown promise in MS clinical trials – in one study, statins reduced the rate of brain shrinkage in people with progressive MS by 43 percent.⁶

So, where does that leave us? In general, eat a healthy diet, avoid excessive salt and maintain a healthy weight – similar to the health-promoting advice that everyone should follow.

Vitamin D

Vitamin D is an essential nutrient, which people normally get from diet and exposure to sunlight. MS researchers first became interested in vitamin D when they found a correlation between latitude and MS frequency (higher latitude = higher frequency of MS). Perhaps less exposure to sunlight means lower levels of vitamin D and thus more MS, which helps explain the high incidence of MS in Canada. Observational studies support this.



While controlled clinical trials have been inconclusive, increasing intake of vitamin D is a sound strategy – vitamin D levels are easy to check, and can be increased with vitamin D-rich foods (fortified milk, egg yolks, oily fish)⁷ with little risk. Safe exposure to sunlight and taking a vitamin D supplement are other ways to raise levels of vitamin D.

Alcohol use and smoking

Is it OK to drink if you are living with MS? While some research suggests that moderate drinking could impact risk of MS, scientists are still trying to determine if alcohol affects the disease itself.⁸ Generally, physicians recommend enjoying alcohol responsibly, since intoxication can worsen some symptoms of MS, such as loss of balance and cognitive impairment.

On the other hand, the evidence on smoking is clear. Smoking has been shown to increase the likelihood of developing MS and accelerating disease progression. One study found that conversion from relapsing remitting MS to secondary progressive MS was accelerated in smokers.⁹ The effect was dramatic – smokers who did not quit upon being diagnosed experienced disease progression eight years sooner than those who did.

So, how much exercise? Which diet?

As we’ve seen, a healthy diet and regular exercise are important for people with MS. Still, disagreement on specific recommendations continues. Why? Why can’t we just say “eat these foods” and “do this exercise?” The answer is in the way these things are studied.

The gold standard in medical research is a clinical trial in which a population is divided, at random, into two groups. One group gets the treatment being studied, the other gets a mock treatment. Neither the researcher nor the subject knows which is which. The difference between the two groups is the effect of the treatment. Simple.

But the impact of CAM treatments can be hard to isolate, even when they are effective.

Take yoga, for example. Several studies associate yoga with reduced depression in people with MS. However, the results are not consistent. Is this due to the yoga, or to some other complicating factor? You can’t do a true “double-blind” study as you would for a drug; participants know whether they are receiving the treatment (they are either doing yoga or they are not), so there may be a psychological component. Or perhaps the effect comes from the social interaction of group exercise rather than the yoga itself. A direct, causal relationship is hard to tease out.

And yet, yoga seems to help. There are no negative effects that we know of. So, by all means, if you choose to, do yoga. The fact is, you don’t need definitive scientific proof to make smart, healthy choices. And for people living with MS, a healthy lifestyle can make a profound difference.

What do the experts say?



“Properly used, exercise seems to help everyone.”

Audrey Hicks, PhD, Professor of Kinesiology at McMaster University, sees the impact of exercise on people living with MS every day in her lab. She helped develop the Physical Activity Guidelines mentioned in this newsletter, and recommends exercise across the board. “I have yet to read any report of exercise doing damage to anyone with MS.”

“Some people are surprised that exercise can reduce their level of fatigue. Fatigue is a debilitating symptom and many assume exercise will make it worse. In fact, the opposite is true. They just need to give it a chance.”

Dr. Hicks continues to explore how exercise can make a difference for people living with MS. Her study funded by the MS Society is looking at ways to help people stick with a program. “People are more likely to adhere to an exercise regimen if it’s prescribed by a physician,” she notes.



“Exercise is part of a whole lifestyle approach.”

Michelle Ploughman, PhD, Canada Research Chair at Memorial University, first became interested in the relationship between MS and exercise as a clinician. “I noticed anecdotally that people with MS who lived to be 70 or 80 had healthier lifestyles - they smoke less, drink less, exercise more.”

Now we know why, she asserts. When you exercise, you increase neurotrophins that are needed to keep nerve cells alive and healthy. “Exercise also promotes growth of new [brain connections], new blood vessels, even new neurons in the brain,” she says.

Dr. Ploughman has some advice for people who are beginning an exercise program. “First, the benefit of exercise goes away if you stop doing it. So, it’s important to find something you can stick with. Second, people often wonder about intensity. Everyone is different but, one rule of thumb is to exercise hard enough so that you will be a little out of breath when you’re finished.”

¹<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2901236/> ²<https://beta.mssociety.ca/research-news/article/ms-scientific-research-foundation-funded-research-draws-links-between-exercise-and-disease-severity-in-children-living-with-ms> ³<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4342365/> ⁴<https://beta.mssociety.ca/research-news/article/new-collaborative-study-funded-by-the-ms-scientific-research-foundation-will-explore-how-the-microbes-in-the-gut-influence-ms-in-children-and-adolescents> ⁵<http://www.ncbi.nlm.nih.gov/pubmed/24655729> ⁷<https://beta.mssociety.ca/uploads/files/vitamin-d-fact-sheet-draft-final-en.pdf> ⁸<http://archneur.jamanetwork.com/article.aspx?articleid=1812407> ⁹<https://beta.mssociety.ca/research-news/article/researchers-link-continued-smoking-to-accelerated-ms-progression> ¹⁰<https://mssociety.ca/research-news/article/researchers-link-continued-smoking-to-accelerated-ms-progression>

Research funded by donors like you offers HOPE



CANADIANS
have a higher risk of getting MS than in any other country. Right now, 100,000 Canadians are living with MS.

Research:
Stem cell treatments show promise MS attacks myelin surrounding nerves; stem cells may offer protection or repair.



Research:
Pregnancy’s impact on MS
The hormones estradiol and prolactin increase during pregnancy, and may offer clues for treatment.



ECTRIMS 2015

The annual European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) Congress is one of the most eagerly anticipated events for MS researchers and clinicians each year. Important announcements at ECTRIMS this year included:

Potential treatment for progressive MS?

A research team led by Dr. Xavier Montalban (which also includes Canadians Dr. Amit Bar-Or and Dr. Anthony Traboulsee who oversaw study sites in Canada) reported positive results from a Phase III clinical trial of a drug called ocrelizumab that targets specific white blood cells called B cells. This is particularly exciting because the drug significantly reduced the progression of disability in people with primary progressive MS, for which there is currently no approved treatment. The study followed the participants over 120 weeks, and showed that ocrelizumab led to improvements in clinical disability while reducing brain lesions and slowing brain shrinkage compared to a mock treatment.

Same drug, different usage

A second study of ocrelizumab showed important benefits for people with relapsing-remitting MS. In this study, treatment with ocrelizumab significantly reduced relapse rate, delayed disability progression and reduced the number of brain lesions compared to the first-line disease modifying therapy interferon beta-1a.

MD1003

Another drug with promising results was MD1003, which is a high dose formulation of biotin. A Phase III clinical trial demonstrated that when administered to people with primary or secondary progressive MS, MD1003 showed less disability in some of the participants compared to a mock treatment, and was well tolerated.

New findings on Tysabri

Despite being an effective treatment for relapsing remitting MS, natalizumab (Tysabri) is known to increase the risk of progressive multifocal leukoencephalopathy (PML), a dangerous infection of the brain, in some individuals. Dr. Lana Zhovtis Ryerson (NYU Langone Medical Center, New York, NY) presented preliminary data showing that an extended dose schedule with less frequent dosing of natalizumab maintained the efficacy of the drug while reducing the risk of PML by that point in the study.



Exercise, the virtual way

For some people living with MS, accessing a gym or trainer on a regular basis may be a difficult proposition, and tools to improve physical activity at home are a welcome alternative. Dr. Francesca Tona (Sapienza University, Rome, Italy) and her team demonstrated that high intensity training over 12 weeks using a Nintendo Wii balance board can significantly improve balance impairment in people living with MS.

UPCOMING Events

World MS Day
is May 25



World MS Day is when the world comes together to share stories, raise awareness and campaign for people affected by MS. Events are held in nearly 80 countries around the world. The theme this year is "Independence" - join us as we celebrate the many ways people with MS achieve independence in employment, lifestyle and daily activities.

Gear Up to Fight MS

It's not too early to start thinking about MS Bike! This year, we will hold more than 20 events in nine provinces. The events start in June, so plan ahead to join the 10,000+ riders who support MS research. Register today at msbike.ca.



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