

What Is the Best Diet for Patients with Multiple Sclerosis?

Restorative Medicine Digest

September 8, 2020

The etiology of multiple sclerosis (MS) is still poorly understood, but it's likely that a complex interplay of both genetic and environmental factors contributes to its development. Interestingly, no definitive evidence has been found for a genetic association with the clinical course of MS, suggesting that environmental factors might play a key role in prognosis.¹ Diet is an obvious modifiable factor for physicians to explore with their MS patients given that food can have a powerful effect on the inflammatory process.

Diet and Inflammation

The typical Western diet is low in fiber, and high in calories, animal fat, red meat, trans fats, refined carbohydrates, and sugar. This kind of diet can prime the body to upregulate cellular metabolism in the direction of increased biosynthesis of proinflammatory mediators. This, in turn, promotes gut dysbiosis and altered intestinal immunity, making the gut barrier overly permeable. The net effect is persistent low-grade systemic inflammation. Persistent systemic inflammation will also cause the body to produce excessive amounts of free radicals. These reactive oxygen species are implicated in the demyelination and axonal damage seen in MS.

Many studies have looked at the impact of diet on MS. Epidemiological and prospective cohort studies tend to find beneficial effects of diet, whereas controlled clinical trials have generally been less conclusive. In large part this is because controlled dietary studies are challenging to carry out in a way that yields meaningful results. For results to be meaningful and applicable to people's lives, whole nutritional approaches rather than single dietary ingredients need to be studied, and this is difficult to do in a controlled way. While it's not fully understood to what extent diet may be a risk factor for developing MS, there's enough evidence, including some controlled studies, to suggest that dietary factors can improve or worsen MS symptoms. And many MS patients will attest to this from their own experience.

Summary of Recent Research

A 2019 cross-sectional study of 261 patients with MS found that a diet emphasizing vegetables, fruit, legumes, fish, prebiotics, and probiotics reduced systemic inflammation, severity of fatigue, and MS flares. It also improved quality of life measures, and lowered BMI and Percent Body Fat. These last two points are notable because obesity itself is associated with gut dysbiosis, altered intestinal immunity, and low-grade systemic inflammation.²

A large international study that followed over 2000 people with MS for five years found that high consumption of fruits, vegetables, and omega-3 fatty acids was positively associated with improvements in both mental and physical quality of life measures, as well as with decreased disability overall including lower relapse rates. This study concluded that along with healthy fat intake, the polyphenols and carotenoids (such as quercetin and catechin) in fruits and vegetables had bioactive roles in promoting antioxidant, anti-inflammatory, and

immunomodulating effects.³

Even though this study did not look at MS, it's worth considering that a cross-sectional analysis of the Framingham Heart Study found people who consumed the highest amounts of fruits and vegetables had inflammation scores 73% lower overall than those in groups with the lowest consumption.⁴

Fatigue is one of the most common symptoms of MS, and it has a huge impact on quality of life. A 2020 randomized clinical trial found that an anti-inflammatory diet improved fatigue, quality of life, and inflammatory biomarkers in people with MS compared to those in the control group who were given "healthy diet recommendations" based on the World Health Organization's suggestions.⁵

A large study that examined dietary habits of about 7000 people diagnosed with MS concluded that a healthy diet is associated with less disability and less severe symptoms.⁶

What Diet Should Healthcare Providers Recommend to MS Patients?

Contrary to the popularity of the term, there's actually no single, definitive anti-inflammatory diet. But anti-inflammatory dietary approaches do have many principles in common. When making dietary recommendations, healthcare providers need to consider not only the potential benefits of various diets but also what individual patients are able and willing to do, because some diets are much stricter than others.

A healthy diet for a person with MS, (and indeed for anyone with an inflammatory neurodegenerative condition) is one that can:

- Downregulate proinflammatory pathways
- Upregulate oxidative metabolism
- Support and maintain beneficial composition of gut microbiota

Many dietary approaches purport to accomplish these outcomes, but some are much easier than others for patients to adhere to in the long run.

Ketogenic Diet

The Ketogenic (Keto) diet comes in several versions, but they all require a stringent ratio of high fat, moderate protein, and low carbohydrate intake. Fruits and vegetables are considered carbohydrates and therefore restricted. The Keto diet steers the body away from using glucose for fuel, and toward using ketones from lipid catabolism instead. This process is beneficial for weight loss and blood glucose levels. It may also be neuroprotective. Ketosis is, however, challenging to achieve and maintain, and generally requires eating no more than 50 grams of carbohydrates each day. It seems like the Keto diet could be helpful for MS, but it is complicated and restrictive, and consequently difficult to maintain long term. It may also increase the risk of nutritional deficiencies by strongly limiting fruits and vegetables, which are actually associated with beneficial health outcomes for people with MS.

Swank Diet

One of the best-known diets for MS was created by Dr Roy Swank over 50 years ago. Dr. Swank theorized that a diet high in saturated fats causes more rapid progression of MS. The Swank

diet emphasizes fruits, vegetables, and whole grains, but severely restricts fats to no more than 50 grams per day, of which no more than 20 grams can be saturated fat. Given that fat is essential for hormone biosynthesis,

neurological function, and neuronal repair, it's hard to make physiological sense of depriving a person with MS of healthy, unsaturated fats high in omega-3s. Even though his longitudinal trial showed promising results, it is limited by not having had a control group or brain imaging studies. It's important to note that in practice some people do well on the Swank diet while others experience a worsening of their MS symptoms.

The Paleo Diet/ Wahls Protocol

The Paleo diet is based on eating foods that our ancestors likely consumed during the Paleolithic era. It emphasizes lean meat, fish, fruit, and nuts, and eliminates many foods that can trigger an inflammatory response such as grains, most dairy products, processed foods, and refined sugar. Terry Wahls, MD adapted the Paleo diet when she was diagnosed with MS. Her modified dietary protocol emphasizes fruits, vegetables, and grass-fed meat to ensure the body gets optimal nutrition. Her protocol specifies 9 cups of fruits and vegetables a day in the form of 3 cups each of greens; darkly pigmented fruits and vegetables; and vegetables high in sulfur (such as broccoli, cabbage, and onions). Dr. Wahls has published two small studies on her complete protocol for MS, which includes supplements, meditation, and several other lifestyle interventions. In both studies, participants reported improvements in fatigue, mood, and cognitive symptoms. She is currently conducting a controlled clinical study of her dietary protocol without the other components of her program. In this study, her modified Paleo diet will be compared to a control group on the Swank diet.⁷ The Wahls Paleo diet is much more flexible and potentially more nutritious than the Keto diet, because it doesn't require complicated calculations, and it allows for fruits and vegetables.

Mediterranean Diet

The Mediterranean diet is considered to be one of the healthiest dietary approaches there is for the prevention and improvement of inflammation. It is flexible, allowing for consumption of vegetables, fruits, legumes, nuts, fish, lean meat, whole grains, and some dairy. And it doesn't involve calculations or having to keep track of ratios. Saturated fat is kept to a minimum, and instead emphasis is placed on eating cold-water, oily fish, which are rich in neuroprotective omega-3 fatty acids and vitamin D. A randomized controlled pilot study of a modified Mediterranean diet for people with MS found that it reduced fatigue. Participants in the intervention group also reported that their health was improved overall.⁸

Intermittent Fasting

Intermittent fasting (IF) protocols come in several permutations, but they all involve restricting food intake to a specific number of hours during a 24-hour period. IF is a behavioral approach to eating that may reduce inflammatory markers, it is not a type of diet. Your MS patients can incorporate caloric restriction into any dietary approach. One of the most manageable ways to practice IF is the 16/8 method. In this method, eating is restricted to 8 hours during the day, and fasting takes place during the 16 hours in between, a good deal of which is spent sleeping! Furthermore, there is some evidence to suggest that avoiding eating at night rather than caloric restriction *per se* is beneficial, as it synchronizes metabolism with our circadian rhythms.⁹

What About Gluten?

One study reported that a cross-section of MS patients and their immediate family members had a higher incidence of gluten intolerance than was observed in the general population. This means that some of your MS patients will benefit from being gluten free. If a patient is willing to try being gluten free for a trial period, they may see favorable results. As a practitioner, you may need to weigh up a patient's willingness and enthusiasm for doing this compared with adopting other beneficial dietary protocols.¹⁰

In Summary

When making dietary recommendations to your MS patients, bear in mind how restrictive a dietary approach is because significant benefits likely come from being in it for the long haul. Remember also that lipids are important for brain function, which means people with MS may benefit from having saturated as well as unsaturated fats in their diet. The following list summarizes an approach that you can tailor for individual patient needs.

- Make sure any red meat is grass-fed and organic.
- Increase polyunsaturated omega-3 fats found in oily fish like salmon, sardines, trout, and mackerel.
- Eat monounsaturated fats found in olive oil, nuts, seeds, and avocados.
- Eat at least 3 servings *each* per day (for 9 total servings) of leafy green vegetables; brightly colored fruit and vegetables (like berries, carrots and squash); and high-sulfur containing vegetables (such as cabbage, broccoli, onion, garlic).
- If you are not sensitive to gluten, eat only whole grains.
- Avoid hydrogenated fats (eat butter not margarine).
- Avoid refined sugar and diet drinks.

For more invaluable health information about living with MS, see Dr. Michaël Friedman's latest book *There's No Pill for This*.

References

1. <https://doi.org/10.1038/nature10251>
2. <https://doi.org/10.1080/1028415X.2019.1580831>
3. <https://doi.org/10.1179/1476830514Y.0000000117>
4. <https://doi.org/10.3945/ajcn.115.108555>
5. <https://doi.org/10.1080/00207454.2020.1750398>
6. <https://pubmed.ncbi.nlm.nih.gov/29212827/>
7. <https://link.springer.com/article/10.1186/s13063-018-2680-x>
8. <https://www.sciencedirect.com/science/article/abs/pii/S2211034819303839>
9. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2837202/>
10. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3065402/>

Categories: Restorative Medicine Digest



