



Nutritional approaches in MS could support a total treatment approach.

Always seeking more ways to help patients dealing with any neurodegenerative disease, we noted several articles of late regarding nutritional approaches in multiple sclerosis (MS) that may be of help in combatting disease symptoms. So let's take a closer look at the latest information about diets that could be effective as part of a total care plan, especially if they complement a comprehensive protocol aimed at reducing inflammation and oxidative stress.

We really are what we eat.

There is no question that the food choices we make influence health, even in the absence of a neurodegenerative disease. Obesity that results from the Western or standard American diet (SAD), choosing processed foods that contain hidden additives and chemicals or pesticides, eating too many highly inflammatory foods like sugar and refined carbohydrates, and excessive alcohol consumption all contribute to inflammation that is at the root of every disorder, especially autoimmune disease.

A detailed perspective in the National Library of Medicine, "The Role of Diet in Multiple Sclerosis: Mechanistic Connections and Current Evidence" looked at number of dietary approaches and their effect on MS. The publication notes that "Histology in chronic MS demonstrates evidence of smoldering localized inflammation, chronic demyelination, and axonal and neuronal damage at the site of MS lesions as well as more broadly, affecting both white matter and gray matter. According to a model with increasing support, oxidative stress causes mitochondrial dysfunction resulting in chronic energy insufficiency, eventually leading to ion channel redistribution causing cell damage and eventually cell death. Effective disease-modifying therapies in relapsing patients slow

but do not halt this neurodegenerative process. There is therefore a great need for the identification of strategies that are able to protect against chronic demyelination and axonal/neuronal loss. Dietary factors that dampen resident CNS inflammation, combat oxidative stress, or protect mitochondria may help prevent chronic demyelination and axonal/neuronal damage.”¹

Dyslipidemia, which is a well-recognized player in atherosclerosis and in the vascular inflammation underlying cardiovascular diseases (CVDs), also has been suggested in recent years to [play a role in MS](#).

However, despite the potential effects on both immunomodulatory and neurodegenerative processes in MS, it is difficult to conduct clinical trials regarding dietary protocols due to other modifiable risk factors (e.g. smoking and exercise), the ability to identify study participants who will volunteer to make significant dietary changes or be randomized (whereby participants are randomly assigned to either a control group that follows the diet or one that does not, much like drug trials where subjects either get the real medication or a placebo). Additionally, patients who may also be on prescribed disease-modifying drugs make it hard to gauge the effects of diet alone on disease relapse or progression.

What we do know for certain, is that adhering to a healthy lifestyle of which nutrition is an important feature, can certainly aid in controlling MS and other conditions.

A few of the dietary approaches in review for MS.

There are several dietary programs that have been considered as possible therapeutic measures in MS. Studies regarding the Prudent diet, which we discussed [here](#) show this approach may lower the risk of relapse in some patients.

Other nutritional protocols include:

Swank diet

Originally designed in 1990 by neurologist Dr. Roy Swank, this program focuses on limiting fats, especially saturated fats, limiting coffee and inflammatory proteins (e.g. no red meat is allowed the first year and then 3oz of meat/week is permitted), emphasizing fresh produce, lean fish, non-fat dairy products, fruits, vegetables, and whole grains. A cod liver oil and multivitamin supplement is also recommended.

In 1990, Dr. Swank published a 34-year follow-up [study](#) on 144 people with MS. He reported that those who ate less than 20 g of

saturated fat per day had less disease progression and were less likely to die than those who ate more saturated fat.

However, it is important to note that the study had several weaknesses:

- There was no control group for comparison.
- The study lacked strict inclusion criteria.
- There was a high drop-out rate among participants.
- There have been limited follow up studies assessing the Swank Diet, and these follow-up studies suggest either a small positive effect on MS symptoms or no effect at all.²

McDougall Diet

The basic guidelines of the McDougall program include:

- A diet of plant foods, including whole grains and whole-grain products (such as pasta, tortillas, and whole-grain bread), and a wide assortment of vegetables and fruit.
- Plenty of spices and usually small amounts of sugar and salt to enhance the flavor of food.
- Exercise that may be as simple as a daily walk.
- The exclusion of animal foods, including red meat, poultry, dairy products, eggs, and fish. Dr. McDougall, the program's founder, believes that these foods are likely to contain toxic levels of fat, cholesterol, protein and, very often, infectious agents and harmful chemicals and as such advises against consuming them.
- The exclusion of all oils including olive oil, safflower oil, and corn oil. Oils are nothing more than liquid fats that increase obesity, which in turn, depresses immune function and contributes to the most common chronic diseases.

Note regarding these two diets:

Expanding on Dr. Swank's work, a 2016 [study](#) looked at how following another plan, the McDougall Program, for one year affected people with MS. Drawbacks to the Swank diet:

- *It is very restrictive, and some people may find it challenging to follow over a long period.*
- *One [study](#) found that people who followed the diet did not get enough vitamin C, A, E, or folate.*
- *The McDougall diet appeared to have no effect on MS disease activity, as measured by the brain MRI, but it reduced patients' weight, cholesterol and insulin levels, and appeared to reduce fatigue.*
- *Another [small retrospective study](#) on the effects of a seven-day McDougall diet resulted in changes in blood biomarkers used to predict a person's risk for cardiovascular and metabolic diseases.*

Fasting-mimicking diet (FMD)

According to *Multiple Sclerosis News Today*, there is preclinical evidence that supports fasting, or caloric restriction, as potentially beneficial to people with disorders that include MS. Disease severity and inflammation eased in MS mice models fed with 40% less food than normal (caloric restriction) or given a fasting-like diet.^{4,5}

This fasting-mimicking diet (FMD) promotes intermittent fasting (as opposed to a total or more traditional fast). There are many theories that proffer why or how this diet works in regard to reducing inflammation including the idea that it could reduce the intake of the proteins that the body uses to create inflammatory cells. With the FMD, cortisone is produced that initiates destruction of autoimmune cells. Still other theories suggest that eating only during a specific "window" during your typical day, such as with [time-restricted eating](#), may serve to lower food intake while providing beneficial metabolic adaptations.

A five-day, plant-based, and very-low calorie program was originally developed by ProLon, a company founded by Valter Longo, PhD, director of the Longevity Institute at the University of Southern California (USC). Unlike true fasting where you go without any food for a specified period, the fasting-mimicking diet includes 1,090 calories on day 1 and about 725 calories on days 2 through 5, with a focus on high fat, low carbohydrate foods. The basic premise of this diet is to reduce the number of pro-inflammatory T-cells in order to encourage regeneration of the protective myelin sheath.

His laboratory at USC has shown cycles of a similar, but shorter, fasting-mimicking diet when paired with drug treatments for cancer will protect normal cells while weakening cancerous ones.⁵ In a separate study the lab found that the diet can reduce visceral belly fat and markers of aging and disease in both mice models as well as humans.⁶ FMD reverses the immunosuppression, or immunosenescence (changes in the immune system due to aging), of either chemotherapy or aging through hematopoietic stem cell-based regeneration.

Dr. Longo's study conducted in MS mice models found that the FMD promotes regeneration of the myelin, the sheath of proteins and fats that insulate nerve fibers in the spine and brain that was damaged by the autoimmunity. The mice on the FMD exhibited decreased clinical symptoms and 20 percent fully recovered. Chronic caloric restriction, a ketogenic diet and intermittent fasting have been shown to help experimental autoimmune encephalomyelitis (EAE) by reducing inflammation and enhancing neuroprotection when administered prior to induction or signs of disease.

Check out this podcast to learn more:

<https://l-nutra.com/blogs/l-nutra-news/dr-valter-longo-on-resetting-autoimmunity-and-rejuvenating-systems-with-prolonged-fasting-the-fmd>

It is important to note that while some results do seem promising with this approach, limited studies have been not conducted on a large-scale basis and more research in controlled clinical settings is necessary. And it's extremely important that MS patients always consult their physician for guidance before following this or any other diet that dramatically alters their customary eating habits.

Intermittent fasting is becoming popular, but it is not always healthy or advisable, especially in some health-compromised individuals as it can result in lightheadedness, headaches, and dehydration. It is not recommended for those with medical conditions such as diabetes (type 1 or 2), cardiovascular disease, cancer, kidney disease, liver disease, or any history of fainting (syncope) or anyone who is younger than 18 or over 70 years of age.

Mediterranean diet

Originally recommended for cardiovascular disease, the [Mediterranean diet](#) may have efficacy in neurodegenerative disease as well. Emphasizing an abundance of fresh vegetables and fruit, fish, beans and legumes and whole grains, the diet is based as well on the inflammation-reducing benefit of olive oil. It additionally limits sugars, sodium, highly processed foods, refined carbohydrates, saturated fats, and fatty or processed meats. Researchers have found that eating a Mediterranean diet slows some changes in the brain that may indicate early Alzheimer's disease with results pointing to a lifestyle change that could help reduce the risk of this type of age-related dementia.⁷

The Mediterranean diet has been studied relevant to structural measures of neurodegeneration and the presence of Alzheimer's disease or mild cognitive impairment as well as related to degree of cognitive decline longitudinally. Researchers in the population study, called [The Northern Manhattan Study](#), examined group of 966 people to determine if a Mediterranean-style diet might be associated with white matter hyper-intensity volume (WMHV), as measured by brain magnetic resonance imaging (MRI). Study participants, all older than age 55, were followed for a mean 7.2 years. Results suggested, the researchers said, that those who most closely adhered to the Mediterranean diet had "a lower burden of WMHV" and this association "was independent of sociodemographic and vascular risk factors, including physical activity, smoking, blood lipid levels, hypertension, diabetes, history of cardiac disease, and BMI (body-mass index, a measure of weight)." In addition, a [randomized controlled study](#) with 36 MS patients suggested that six months of a Mediterranean-type diet can lessen fatigue, and help to ease other MS symptoms, more than a conventional diet.

There have been other studies as well regarding the benefits of variations on the Mediterranean diet, including the [Pesco-Mediterranean diet](#) with intermittent fasting, for optimizing cardiovascular health and likely offering brain health benefits.

Read more about olive oil and its brain-boosting [benefits here](#) and find links to additional information about related studies.

The Atkins diet

Another single-site study put 20 relapsing MS patients on a modified Atkins diet, a type of ketogenic diet (a high-fat, low-carbohydrate diet that mimics fasting), for six months. Researchers found this diet to be safe and well-tolerated, and concluded it lessens fatigue and depression in patients, while promoting [weight loss](#) and reducing pro-inflammatory markers.⁸ Note though that the lack of a non-diet patient group for comparison, however, weakens the value of its findings as evidence.

The Wahls Elimination (WahlsElim) Diet

Based on principles of the Paleo diet, the Wahls diet calls for the elimination of gluten, dairy, and eggs and consists mainly of fish, grass-fed and pasture-raised meats, vegetables, fruits, fungi, roots, and nuts. It excludes grains, legumes, and dairy products and limits refined sugars, starches, processed foods, and oils. The Paleo diet is relatively high in vitamins B, D, E, and K, polyunsaturated fatty acids, coenzyme Q10, Alpha-lipoic acid, polyphenols, carotenoids, zinc, and selenium, which all support mitochondrial function in addition to myelin growth and repair, studies have observed reductions of perceived fatigue, increases in serum vitamin K (a proxy for reductions in oxidative cell and mitochondrial damage), and improvements in exercise capacity, mental and physical QOL, and motor function, which suggest using a Paleo diet may improve overall well-being in individuals diagnosed with RRMS.^{9,10}

If you aren't familiar with the [remarkable story](#) of Dr. Terry Wahls, she was first diagnosed in 2000 with multiple sclerosis. Despite her career in academic medicine and access to the best conventional medical doctors and treatments, by 2006 her condition declined to where she was restricted to a wheelchair. She tried the Paleo diet and then by chance, after she discovered the principles of Functional Medicine and through research as well as self-experimentation, she perfected what is known today as [The Wahls Protocol](#). Within a year she was riding her bike again and continues to this day to educate, inform and help more people thrive as well.

The basics of the Wahls diet include:

- Nine cups of fruits and vegetables daily (3 green, 3 colored, 3 sulfur varieties)
- Eliminate processed foods, especially sugar, as well as gluten and dairy.
- Improve the quality and the freshness of the food you eat (whole, non-GMO, organic if accessible).

The Paleo diet can result in deficiencies in folic acid, thiamine and vitamin B6 (due to reduced intake of cereals), calcium and vitamin D (due to lack of dairy intake) and insufficient caloric intake if patients

don't seek appropriate nutritional advice. So be sure to work with your physician and ideally a nutrition specialist, whether you follow this or any diet.

Foods to Avoid: high salt, gluten, dairy and SUGAR

According to the *American Heart Association* (heart.org):

- American adults consume an average of 77 grams of sugar per day, totaling nearly 152 pounds of sugar in one year!
- Men should consume no more than 9 teaspoons (36 grams or 150 calories) of added sugar per day.
- For women, the number is lower...no more than 6 teaspoons (25 grams or 100 calories) per day. Considering that one 12-ounce can of soda contains 8 teaspoons (32 grams) of added sugar, it's definitely one item to leave off your shopping list!



Sugar basically constitutes empty calories that can lead to weight gain and obesity and no doubt those added pounds also contribute to fatigue. Just as concerning, previous research also indicates that immune system activity is suppressed following the consumption of free sugars, particularly fructose.¹¹ Sugar can additionally trigger low-grade inflammation in the body; a review from 2018 reported that several studies have linked consuming more dietary sugar, especially from sugary drinks, with chronic inflammation and having more inflammatory markers in their blood, including C-reactive protein.¹²

For MS patients, a diet high in processed sugar and simple carbohydrates can cause frequent swings between high and low blood sugar, and these swings can worsen fatigue that is already a problematic symptom in the disease. [One study](#) looked at the relationship between the consumption of sugar-sweetened beverages and noted worse MS outcomes the more sugar was consumed.



Dairy

There has been a great deal of research as to dairy and the effects on MS disease progression. Studies have found that cow's milk is not only high in saturated fat, but contains two proteins (butyrophilin and bovine serum albumin or BSA) that can negatively affect the immune system in MS patients.¹³ Some proteins in cow's milk mimic part of myelin oligodendrocyte glycoprotein (MOG), the part of myelin thought to initiate the autoimmune reaction in MS. This can trick the immune system into initiating an attack on MOG and hence cause demyelination.¹⁴

As a rule in our own practice, we advise against consuming ANY dairy products.



Gluten

Studies have shown a link between gluten consumption and MS disease progression and improvement in neurologic symptoms following adoption of a gluten-free diet. Lectins, which are found in grains and legumes, have an apparently similar contributing mechanism to MS much like the mechanism associated with dairy consumption.



Low salt diet

Americans eat on average about 3,400 mg of sodium per day, which far exceeds the U.S. dietary guidelines that recommend limiting sodium intake to less than 2,300 mg per day. That's the equivalent of just about 1 teaspoon of salt – so please consider that next time you reach for the salt shaker at the dinner table! These recommendations make it tricky when it comes to almost all

processed food. Typical fast food is loaded with salt: just one slice of pizza contains roughly 700 mg; the Dunkin' Donuts Salt Bagel has almost 3,500 mg of sodium; a half package of prepared ramen noodles has 1,000 mg of salt; and most commercially prepared soups can have as much as 1,000 mg of salt per serving (it's important to read the labels because there is usually more than one serving per can or package).

For MS patients in particular there is ample evidence that points to the benefits of following a low-salt diet especially when you look at the findings from several studies that show the health risks of high sodium consumption. For example, a study published in the 2014 issue of *Neurology* showed an increase risk of disease relapse in patients whose diets contained excessive sodium. The American Heart Association recommends no more than 2,300 milligrams a day with an ideal limit of no more than 1,500 mgs per day for most adults – again, this is especially important for those dealing with most health problems including MS. Results are also conflicting regarding salt or sodium intake. An Argentinian study found an association between a high-salt diet and worse clinical and radiological disease activity in relapsing-remitting MS (RRMS) patients.¹⁵

On the other hand, a [U.S. study](#) in pediatric patients with clinically isolated syndrome (CIS) and RRMS and data from the BENEFIT trial, which was a randomized clinical trial comparing early versus delayed interferon beta-1b treatment in 465 patients with a CIS, found no such links.¹⁶

In general, we know there are identified health risks associated with excessive sodium especially if consumed on a regular basis. As an integral component of your wellness goals, it just stands to reason to limit your salt even in the absence of a medical condition.

Why diet truly matters.

Diet has a significant impact on body weight, cholesterol levels, and other vascular risk factors that affect MS risk and disease course and have previously [written](#) about the increased risk of MS and potential for disease progression associated with obesity in both adults and [children](#). And we now understand far more about the gut microbiome and how it is intimately linked with our immune system, overall health and wellness.¹⁷

The Western Diet, or the standard American diet (SAD), has

dominated menus for over a half a century and literally wreaked havoc on our health in a myriad of ways as it also contributes to a compromised microbiome. According to the Centers for Disease Control and Prevention (CDC), fully six in ten adults in the U.S., or about 117 million people, suffer at least one diet-related disease, and four in ten adults suffer two or more. And poor diet is the leading cause of illness, disability, and premature death. Many researchers are concerned that today's generation of youth who have grown up on a diet of fast food or have had less access to whole fresh foods will experience far worse health and shorter lifespans as compared to that of their parents.

If on a regular basis you tend to follow the SAD or Western diet, that means you're undoubtedly consuming high saturated fats, trans fats, processed foods, excessive salt and sugar. These unhealthy combinations directly impact the innate immune system through activation of pro-inflammatory toll-like receptors, leading to downstream consequences including increased NF- κ B and dramatically alter the health of the gut microbiome. There has been sound research in mice models where subjects were fed the SAD were more likely to develop MS like Symptoms.¹⁸

As for the influence of diet on our health and on MS disease status, it really is clear: many experts believe all disease starts in our gut. So common sense tells us that eating nutritious, whole foods (organic and non-GMO if at all possible) is good for overall health and supports a healthy [microbiome](#) that can be instrumental as a potential preventative in MS and any disease. Since we know there's a connection between a leaky gut and leaky blood-brain barrier, whatever we can do to promote resilience will ideally help heal our microbiome and bolster our neural functions as well. And any diet we follow must consider this gut-brain connection.



Dr. Gazda's recommendations:

I believe food is medicine and that all MS patients should follow a diet recommended especially for their particular health needs and which should be periodically reevaluated. In general, I advise patients to:

- *Eat real food. Dump the junk!* ³ RMIT University - Australia <https://www.rmit.edu.au/news/all-news/2016/sep/five-ways-junk-food-changes-your-brain>
- *Eat more vegetables than red meat, which can be inflammatory in autoimmune disease.*
- *If you are following a vegan or vegetarian program, make sure to supplement with B vitamins such as B12 as well as vitamin D, calcium, omega 3 fatty acids and, in some cases, iron.*
- *Eat organic and non-GMO if possible. Understanding that these foods may be inaccessible or not always available in your area, it's still vital to choose fresh whole foods over processed.*
- *My preferred diet for MS patients is the Wahls protocol, but I believe that other diets as described above may be helpful as well. As always, and even if you don't have MS or another disorder, please consult a physician before you begin ANY dietary regimen.*
- *Some of our MS patients do well on the FMD (fasting-mimicking diet) and I will continue to follow the research as well as individual patient progress going forward.*
- *Given how nutritionally depleted our soil has become over the last few decades, I recommend nutritional supplements in almost all cases based on individual health needs. We simply can't obtain all the nutrients we need from food anymore.*

We can all relate to how eating "bad" food makes us feel – in a nutshell, we feel rotten! From brain fog to fatigue (often problematic in MS) to sluggish digestive systems, impaired memory and even dementia, junk food is just bad news for the brain.¹⁹ Healthy food really does make us feel better whether or not we have a diagnosed neurological or other condition. A "meal that can heal", based on solid nutritional principles, should be a way of life for all of us!

We've included links to additional reading following the references below, but feel free to "search" on our website at <https://www.suzannegazdamd.com/> for more related topics and blogs.

References:

¹ Katz Sand I. (2018). The Role of Diet in Multiple Sclerosis: Mechanistic Connections and Current Evidence. *Current nutrition reports*, 7(3), 150-160.

<https://doi.org/10.1007/s13668-018-0236-z>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6132382/>

² [Healthline.com](https://www.healthline.com) – A beginner's guide to the Swank MS diet.

<https://www.healthline.com/health/multiple-sclerosis/a-beginners-guide-to-the-swank-ms-diet#potential-benefits>

³ RMIT University - Australia

<https://www.rmit.edu.au/news/all-news/2016/sep/five-ways-junk-food-changes-your-brain>

³ Piccio, L., Stark, J.L. and Cross, A.H. (2008), Chronic calorie restriction attenuates experimental autoimmune encephalomyelitis. *Journal of Leukocyte Biology*, 84: 940-948. <https://doi.org/10.1189/jlb.0208133>

⁴ Choi, I. Y., Piccio, L., Childress, P., Bollman, B., Ghosh, A., Brandhorst, S., Suarez, J., Michalsen, A., Cross, A. H., Morgan, T. E., Wei, M., Paul, F., Bock, M., & Longo, V. D. (2016). A Diet Mimicking Fasting Promotes Regeneration and Reduces Autoimmunity and Multiple Sclerosis Symptoms. *Cell reports*, 15(10), 2136-2146. <https://doi.org/10.1016/j.celrep.2016.05.009>

⁵ University of Southern California

<https://news.usc.edu/78953/fasting-and-less-toxic-cancer-drug-could-be-alternative-to-chemotherapy/>

⁶ University of Southern California

<https://news.usc.edu/82959/diet-that-mimics-fasting-appears-to-slow-aging/>

⁷ National Institutes of Health - News

<https://www.nih.gov/news-events/nih-research-matters/mediterranean-diet-may-slow-development-alzheimers-disease>

⁸ J. Nicholas Brenton, Brenda Banwell, A.G. Christina Bergqvist, Diana Lehner-Gulotta, Lauren Gampper, Emily Leytham, Rachael Coleman, Myla D. Goldman (2019) Pilot study of a ketogenic diet in relapsing-remitting MS. *Neurol Neuroimmunol Neuroinflamm*. 6 (4) e565; DOI: 10.1212/NXI.0000000000000565

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<https://doi.org/10.2147/DNND.S116949>

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<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6470485/>

¹¹ Albert Sanchez, J. L. Reeser, H. S. Lau, P. Y. Yahiku, R. E. Willard, P. J. McMillan, S. Y. Cho, A. R. Magie, U. D. Register, Role of sugars in human neutrophilic phagocytosis, *The American Journal of Clinical Nutrition*, Volume 26, Issue 11, November 1973, Pages 1180-1184, <https://doi.org/10.1093/ajcn/26.11.1180>

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¹³ Overcoming MS
<https://overcomingms.org/recovery-program/diet/dairy-and-ms>

¹⁴ Katz Sand I. (2018). The Role of Diet in Multiple Sclerosis: Mechanistic Connections and Current Evidence. *Current nutrition reports*, 7(3), 150-160. <https://doi.org/10.1007/s13668-018-0236-z>

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Sodium intake is associated with increased disease activity in multiple sclerosis
Journal of Neurology, Neurosurgery & Psychiatry 2015;**86**:26-31.

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¹⁷ Does all disease begin in the gut?
<https://www.suzannegazdamd.com/blog/does-all-disease-begin-in-the-gut>

¹⁸ Anette Christ, Mario Lauterbach, Eicke Latz. (2019) Western Diet and the Immune System: An Inflammatory Connection. *Immunity*. Volume 51, Issue 5. Pages 794-811. ISSN 1074-7613.
<https://doi.org/10.1016/j.immuni.2019.09.020>. <http://www.sciencedirect.com/science/article/pii/S1074761319304169>

¹⁹ RMIT University - Australia
<https://www.rmit.edu.au/news/all-news/2016/sep/five-ways-junk-food-changes-your-brain>

Additional reading and resources:

Clinical trials for FMD
<https://l-nutra.com/pages/clinical-trials>

Fasting and MS
<https://multiplesclerosisnewstoday.com/health-insights/2019/11/15/fasting-and-ms>

Healthline – A guide to the Swank MS diet
<https://www.healthline.com/health/multiple-sclerosis/a-beginners-guide-to-the-swank-ms-diet#potential-benefits>

The fasting-mimicking diet
<https://www.healthline.com/health/multiple-sclerosis/fasting-mimicking-diet-for-ms#what-it-is>

<https://cdn.shopify.com/s/files/1/0085/3272/1726/files/cell-press-may-2016.pdf?478959250220646739>

Health Write-ups – More about the fasting-mimicking diet
<https://multiplesclerosisnewstoday.com/news-posts/2020/03/03/actrims2020-caloric-restriction-and-dietary-interventions-in-ms/>

Healthline – A guide to the Swank MS diet
<https://www.healthline.com/health/multiple-sclerosis/a-beginners-guide-to-the-swank-ms-diet#potential-benefits>

For more about the Wahls diet (terrywahls.com)

The Wahls elimination diet, study results presented at the 8th Joint ACTRIMS-ECTRIMS meeting. <https://www.neurologyadvisor.com/conference-highlights/msvirtual2020/wahls-elimination-diet-reduces-fatigue-and-improves-quality-of-life-for-ms-patients/>

View Dr. Terry Wahls talk, Minding Your Mitochondria, to learn more about her multiple sclerosis healing journey: <https://www.youtube.com/watch?v=KLjgBLwH3Wc>