

Diet and supplements

- A plant-based wholefood diet plus seafood, with no saturated fat, as far as is practical
- Omega-3 fatty acid supplements (these make up about 30% of the composition of fish oil and 60% of flaxseed oil): 20g (20mls or 20 capsules) a day (of flaxseed oil or fish oil, or the equivalent amount if fish, concentrating on fish or fish oil when beginning the diet)
- Optional B group vitamins or B12 supplement if needed

Vitamin D

- Sunlight 15 minutes daily 3-5 times a week as close to all over as practical
- Vitamin D3 supplement of at least 5 000IU daily, adjusted to blood level
- Aim to keep blood level of vitamin D high, that is between 150-225nmol/L (may require up to 10 000IU daily)

Meditation

- 30 minutes daily

Exercise

- 20-30 minutes around 5 times a week preferably outdoors

Medication

- In consultation with your doctor, if a wait and see approach is not appropriate, take one of the disease-modifying drugs (many may not need a drug, and drug selection should be carefully weighed against side effects)
- Steroids for any acute relapse that is distressing
- One of the more potent drugs if the disease is rapidly progressive

Foods That Should Not Be Eaten:

- Meat, including processed meat, salami, sausages, canned meat
- Eggs except for egg whites
- Dairy products; that is, avoid milk, cream, butter, ice cream and cheeses. Low fat milk or yoghurt is not acceptable. Cow's milk and dairy products are best avoided altogether as the protein is likely to be as much of a problem as the saturated fat, given recent evidence. Soy products or rice or oat milk are good substitutes.
- Any biscuits, pastries, cakes, muffins, doughnuts or shortening, unless fat-free
- Commercial baked goods
- Prepared mixes
- Snacks like chips, corn chips, party foods
- Margarine, shortening, lard, chocolate, coconut and palm oil.
There is some debate about chocolate as it does have some good antioxidants, but most chocolate is also loaded with saturated fat, so it should be avoided. Cocoa, however, is a natural vegetable product with only a little saturated fat, and the occasional teaspoon in a glass of soy milk for example, as hot chocolate, is fine.
- Fried and deep fried foods except those fried without oil or with just a dash of olive oil. It is important not to heat oils if possible, and if you want to use just a little extra virgin olive oil, the most stable of the oils, it is a good idea to put a little water in with it when frying to keep its temperature down. Things like fish and chips deep fried in, say, sunflower oil, are bad, in that the oil changes its chemical structure when heated in this way, and tends to be left in the vat for days, with all sorts of unpredictable chemical changes happening to the fats.
- Most fast foods (burgers, fried chicken, etc.)
- Other fats and oils

From Theories to Recommendations

There are many theories about what causes MS and worsens MS, and many are quite plausible. When assessing required lifestyle changes for people with MS, it is important to prioritise the research findings. The highest level of research is meta-analysis, ie amalgamation of the results of randomised controlled trials to get an overall idea of the effect of a medical intervention. So testing an intervention, preferably several times, in randomised controlled trials (where one group of people with the disease gets the intervention and the other doesn't and we assess the difference between groups) is the most important research, coming after development of a theory and testing an intervention based on the theory in small uncontrolled studies to show that it is safe. With lectins, for example, we are at the theory stage, ie right at the beginning. The mechanism by which they might cause and exacerbate autoimmune disease seems plausible, ie these proteins get across the intestinal barrier largely intact and incite an immune reaction that can later, through molecular mimicry, cause the immune system to see some of its own tissues as foreign and start an autoimmune reaction. But to date, this is only theory. There are many equally or more compelling theories. Angela Corthals' theory about disordered fat metabolism (see <http://www.overcomingmultiplesclerosis.org/News-And-Events/Archive/Detail/New+theory%3A+MS+is+a+disease+of+fat+metabolism+like+heart+disease/>) is one of the more recent and most compelling, fitting with much more of what we know about MS than other theories. There are many others too, such as the Chlamydia theory, expounded on the Catalyst show in 2012 by Dr Paul Thibault, suggesting that long courses of antibiotics can eradicate MS.

One of the first steps when one comes up with a theory is to check epidemiologically if it is sound, ie studies of populations can help decide whether a theory is worth testing as an intervention study. So with saturated fat being one of the causes and aggravating factors of MS for example, one can look at population incidence of MS, and confirm that indeed the disease is markedly more common where saturated fat consumption is highest, and vice versa. That is what Swank did in his early studies. Following his work in Norway showing that the incidence of MS was 6 fold higher in inland parts where dairy and meat consumption were highest than in coastal parts where fish consumption was highest, he found that countries where saturated fat consumption was highest had the highest incidence of MS. He then set about testing this with an intervention study. This is the landmark Swank study, where the intervention tested was an ultra-low saturated fat diet. He studied this meticulously over 34 years, and found that those consuming the lowest amount of saturated fat had the best outcome. Ideally, we would now have many randomised controlled trials confirming this, but for several reasons we don't. Firstly, by the time this was published in the Lancet in 1990, we had reached the drug therapy era in MS management, and there was strong motivation for investigators to study drugs in MS, as this research was heavily backed by industry, which stood to make billions (the MS drug industry is worth over \$9b annually now). Secondly, randomised controlled trials of lifestyle interventions are difficult. Look at <http://www.overcomingmultiplesclerosis.org/News-And-Events/Our-News/Detail/Prof+Jelinek+publishes+new+paper+showing+the+difficulty+of+lifestyle-related+research/> to see the difficulties our research team had in trying to do this kind of research.

So there are many theories, and many therapies out there based on the theories. This website tries to, relatively objectively, weigh up the evidence for and against all the major theories. Our distilled guidance for people wishing to overcome MS is what you find in these pages and in the book *Overcoming Multiple Sclerosis*. That is why we call it 'An Evidence-Based Guide to Recovery'. The theories often sound very plausible, but if there isn't good evidence from intervention studies we generally don't recommend adopting a particular intervention. There is the occasional exception to this rule. If we find something that has really solid experimental evidence in the laboratory, and sound epidemiological data to back it up, particularly if it is some factor that can be seen as posing particular risk for people with MS, then we will recommend people avoid it, even if there is no hard intervention evidence.

This is the case for cow's milk, see <http://www.overcomingmultiplesclerosis.org/About-MS/Causes-of-MS/Cows-Milk-Connection/>. Two separate studies from highly ranked international research institutes have shown a specific immune reactivity for people with MS to the protein in cow's milk. Epidemiological studies confirm that in populations where cow's milk consumption is high, the incidence of MS is high, and vice versa. The world maps of MS incidence and cow's milk consumption are essentially identical. So for that reason, we advocate that people with MS avoid cow's milk products, as the potential risk of ingesting these products outweighs the lack of clinical trial evidence to support the negative effect. Additionally, it is unlikely that any research funding body will fund large scale trials of cow's milk vs no cow's milk.

Some may ask why don't we make the same recommendation for gluten or lectins as we make for cow's milk. While the theories about these possible causes of MS are plausible, at the first pass of checking these theories with the epidemiological data, we find that there is no real population data to support the theories. ie, in populations who eat lots of wholegrains, nuts and seeds, the incidence of MS is no higher than in populations that don't; indeed the reverse seems to be true. And without any intervention studies to support the theories, it is difficult to recommend that people avoid these things, especially when avoiding them is an onerous lifestyle change, given how many of our foods we find them in. So while some theories about MS causation and progression will in time be shown to be true and some false, the weight of evidence to date does not support making major lifestyle changes omitting grains, nuts and seeds, but in our view does support omitting saturated fat as much as possible and not taking the risk of consuming dairy products.

The ultimate test, of course, is the one in which there is only one participant (you) and no control group. The OMS recommendations are meant to be generic and suitable for most people based on the best available evidence. But for some people, there may well be other factors involved, and if the OMS recommendations, rigorously applied, don't seem to be working, it may help to look for other triggers, like gluten sensitivity, or use medication. While we hope that most people with MS will benefit from the OMS program, the journey remains yours, and naturally, after suitable searching and consideration, you may choose to use other modalities to assist in your own recovery. Many of these are mentioned here in the Forum.

We have however given serious consideration to most of the commonly discussed factors involved in MS disease progression, our recommendations are based on this rigorous analysis, but can change as new evidence becomes available. We did for instance in 1999 suggest multivitamin supplementation, and supplementation with particular vitamins such as vitamin E. Since the major meta-analyses subsequently showed harm from such supplementation, we changed our position, and now advise people to avoid these supplements. Similarly we recommended in 1999 that people with MS didn't wait for evidence from intervention studies about the potential benefit of sun exposure and vitamin D supplementation, based on compelling laboratory, animal and epidemiological data. We felt that the risk of waiting was too great, having given due consideration to the safety of vitamin D supplementation. Many OMS followers subsequently prevented relapses over many years before the randomised controlled data appeared. While some neurologists still do not advocate vitamin D in MS, most mainstream MS centres now regard it as the standard of care. However, if the data coming in from clinical trials had been neutral or negative, we would have moved quickly to change our recommendations.

We don't pretend to have all the answers, as the evidence base in MS, as with other diseases, is continually growing. This is how science works. Our recommendations are based on the best available evidence, and may change over time as the evidence grows. So it is possible that some of what we currently recommend may change in the future. For now, the OMS Recovery Program represents what we consider to be a sound plan for recovery of good health for people with MS.