

Eating habits



Scientists are exploring how specific foods and diets affect MS.

by **Mary E. King, PhD**

We know what we eat affects our health. But does diet also influence multiple sclerosis?

There is currently no single dietary guideline recommended for people with MS, but these three researchers are investigating overall eating habits and specific foods, looking for possible impacts on MS.

How what we eat might affect MS

Pavan Bhargava, MD, assistant professor of neurology at Johns Hopkins School of Medicine, has reviewed the available scientific evidence about five popular “diets”—or eating plans—in MS. He summarized available research on:



• **Pavan Bhargava, MD.** Photo courtesy of Pavan Bhargava, MD

the Paleolithic, or “paleo,” diet (emphasis on protein, more polyunsaturated fat, no dairy/eggs/gluten)

- the Mediterranean diet (emphasis on whole grains, vegetables, fruits, legumes, olive oil and fish)
- the McDougall diet (low-fat, high-carbohydrate, vegan and gluten-free)
- the Swank diet (low saturated and unsaturated fat)

Dr. Bhargava points out that diet may affect MS in at least three different ways.

1. Direct effects on the immune system. For example, some immune cells interact directly with specific dietary components like vitamin D or fatty acids. A higher intake of polyunsaturated fats has been linked to less inflammation, while eating saturated fats has been linked to greater inflammation.
2. Indirect effects on the bacteria in our intestines—the gut “microbiome.” Changes in diet affect the numbers and types of bacteria in the gut, which can shift the immune system to be more or less inflammatory.
3. Protective effects on neurons and myelin-making cells and other cells in the brain. Foods rich in biotin, or vitamin B-7, may have a direct effect on brain cells, he says.

“There is, unfortunately, a real lack of evidence currently to say that any one diet has a significant impact on the course of MS, and, therefore, to recommend for people with MS,”

Dr. Bhargava emphasizes. He also found that three of these eating plans—paleo, McDougall and Swank—could lead to significant dietary deficiencies in such things as folic acid; vitamins D, B6, or B12; calcium; iron; or omega-3 fatty acids, depending on the specific dietary restrictions. “It is important to talk with your doctors before adopting a new eating plan,” Dr. Bhargava says.

However, Dr. Bhargava does recommend some general dietary steps that are linked to good health overall. “Eat fresh food, predominantly plant-based food and avoid highly processed foods and those that are high in saturated fat,” he tells his patients.

Healthier eating—less disability and depression?

Kathryn C. Fitzgerald, ScD, postdoctoral research fellow at Johns Hopkins School of Medicine in Baltimore, administered a dietary screening questionnaire to participants in the North American Research Committee on MS (NARCOMS) Registry and received a total of 6,989 responses. “We developed a dietary quality score from each individual’s responses. Higher scores were given for high intakes of fruits, vegetables and whole grains, and lower intakes of red and processed meats and lower added sugar,” she explains.



Kathryn C. Fitzgerald, ScD.

Photo courtesy of Kathryn C. Fitzgerald

“We found that individuals with higher-quality diets had lower levels of MS disability relative to those with lower-quality diets. We also found that people with higher-quality diets had less severe depression relative to those with lower-quality diets.”

Because previous studies have shown that people with MS have an increased risk of several other heart or metabolic health conditions (like high blood pressure and high cholesterol) that can adversely affect MS outcomes, “It is possible that a healthy diet may impact MS disability through its beneficial effects on cardio-metabolic risk,” Fitzgerald says.

“We can’t say for certain from this study alone how diet impacts MS disability—only that there appears to be an association,” Fitzgerald says. One factor that might confuse the results, she adds, is that it is possible that more severe disease can affect an individual’s ability to engage in a healthy diet. “We’re currently working on a follow-up to this study looking at if diet can impact future disability to address this potential pitfall,” Fitzgerald says. “There is a lot of anecdotal evidence about diet in MS, but scientific evidence investigating diet in MS is pretty sparse, so there’s a lot of room for this field to grow.”

Does more seafood lower risk of having MS/CIS?

Annette Langer-Gould, MD, PhD, neurologist and MS regional lead, Kaiser Permanente Southern California, Los Angeles, found an association between eating more fish and a lower risk of having MS or clinically isolated syndrome (CIS) using data about the eating habits of 1,153 people. About half of the study participants had been diagnosed with MS or CIS, and about half were healthy control subjects. “We defined a high fish intake as either eating one serving of fish per week or eating one to three servings per month in addition to taking daily fish oil supplements,” she explains.



Anette Langer-Gould, MD, PhD. Photo courtesy of Anette Langer-Gould, MD

The researchers defined “low intake” as eating fish less than once a month and not taking fish oil supplements. “We compared the risk of having MS in participants who said they had a high fish intake compared with those who reported a low fish intake,” she says. Dr. Langer-Gould discovered that study participants with a high fish intake had a 45 percent reduced risk of having MS or CIS diagnoses when compared with the ones with a low fish intake.

“We know from other studies that being a good source of omega-3 polyunsaturated fatty acids is one way that fish is protective in MS,” Dr. Langer-Gould says. “These results add more evidence that a diet rich in fish may reduce the risk of developing MS,” she adds. However, Dr. Langer-Gould emphasizes that this study shows an association, not cause and effect. She points out that more research is needed to confirm these results and to further pinpoint the way in which omega-3 fatty acids act to reduce risk of developing MS, possibly on inflammation, metabolism or nerve function.

Dr. Langer-Gould adds that most of her patients change their diet after receiving a diagnosis of MS, and that she recommends increasing their fish consumption (especially salmon, sardines, lake trout and albacore tuna) or adding fish oil supplements, as well as eating more plant-based foods. She also cautions, “What you are not eating is also important. So, for example, perhaps reducing saturated fat from meat, which also occurs naturally when you eat more fish instead of red meat, is another factor.”

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Learn more about healthy eating at [Diet & Nutrition](#) and [Weighing a healthy diet](#).