

January 2022 Newsletter

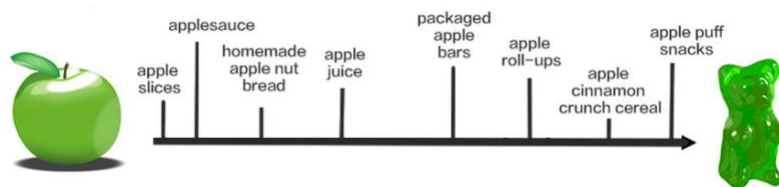


Does Eating Processed Foods Affect My MS?

After a hard day's work or when you're not feeling well, it is tempting to reach for foods that are quick and easy to prepare. For many, this means turning to processed foods, which are usually high in fat, salt, sugar and other additives. Does this convenience factor come with a big price tag for people with MS? The evidence is mixed.



The [U.S. Department of Agriculture](#) (USDA) defines a processed food as one that has undergone any changes to its natural state. This can be due to washing, cutting, heating, pasteurizing, canning, freezing, dehydrating, mixing, packaging or other procedures that alter the food. It may also include the addition of other ingredients like preservatives, sweeteners, spices, oils, or coloring to enhance the flavor, texture and appearance of a meal. Technically, any food that has a nutrition label has been processed. However, the degree of processing varies widely. Minimally processed foods, such as bagged spinach or



cut vegetables are simply packaged for convenience. Fruit and vegetables can also be frozen or canned at their peak to lock in nutritional quality and

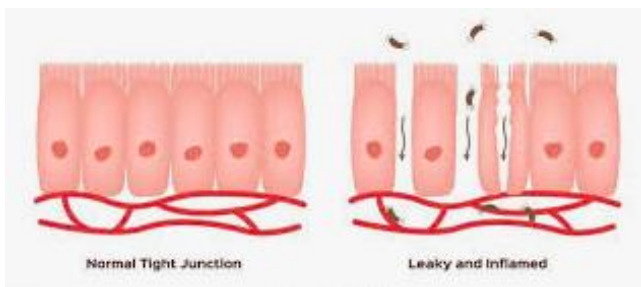
freshness. Ready-to-eat foods, such as crackers, granola and deli meat, are more heavily processed. The most heavily processed foods are pre-made meals, including frozen pizza and microwaveable dinners.

Not all food processing is bad. For example, pasteurization removes harmful bacteria from milk so it is safe to drink. Processing food can help it to be more nutrient-dense. For example, milk and juices are sometimes fortified with calcium and vitamin D, and breakfast cereals may have added fiber. Canned fruit (packed in water or its own juice) is a good option when fresh fruit is not available. Minimally processed foods like pre-cut fruits and vegetables are convenient quality foods for when life is busy.

Over the years, research has shed light on a number of different food additives and their effect on MS risk, disease course and the severity of symptoms. A [2007 study](#) found that sodium benzoate (NaB), a commonly used food additive and an FDA-approved drug for [urea cycle disorders](#), inhibits the disease process in Experimental Allergic Encephalomyelitis (EAE), which is a model of relapsing remitting MS in mice. Treated mice received varying doses of NaB in their drinking water, while untreated mice (controls) drank water without NaB. At higher doses, NaB significantly inhibited clinical symptoms in acute as well as chronic phases of EAE. Disease severity in the NaB-treated group remained at or below baseline, suggesting that this drug also inhibits disease progression. While further study is necessary to determine if these findings apply in humans, researchers suggest that NaB may have some therapeutic benefit in MS.



A [2015 study](#) looked at how certain food additives affect the [gastrointestinal tract](#) and the development of autoimmune diseases. The [intestinal epithelium](#) is the single cell layer that forms the lining of the small and large intestine. It acts as a semi-permeable physical barrier, shielding the inside of the body from invasions of pathogens on the one hand and allowing selective passage of nutrients on the other. This barrier plays a crucial role in the balance of the immune response. Its permeability is controlled by [intercellular tight](#)



[junctions](#), a complex network of proteins that act as sealants between epithelial cells. Any damage to the tight junctions can lead to what is called “leaky gut,” in which toxins can enter the bloodstream, potentially leading to the development of

autoimmune diseases. Investigators identified seven common food additives, listed below, that weaken tight junctions in the intestine and may increase the risk of autoimmune diseases, like MS.

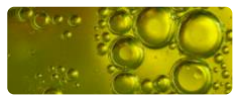
Food additives that may increase the risk of autoimmune diseases:



Sugar



Salt



Emulsifiers are used to help combine foods that otherwise couldn't be mixed (for example, oil and water).



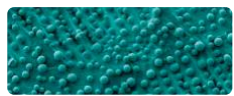
Organic solvents are used mainly as antioxidants, stabilizers, preservatives and to enhance flavoring.



Gluten is the major constituent in wheat. Along with rice, it is considered a staple food worldwide.



Microbial transglutaminase (mTG) is a food protein “glue” added to processed meat, fish, dairy and bakery items.



Nanoparticles are used in food packaging to improve the taste, color, uniformity and texture of foods.

A [2019 study](#) also linked the consumption of sugar to more severe MS symptoms. As part of this research, 135 people with MS completed a questionnaire about their diet. Investigators measured their level of disability using the [Expanded Disability Status Scale](#). Participants that drank soda and sugar-sweetened beverages were divided into five groups based on how much they drank. The people in the top group drank an average of 290 calories of sugar-sweetened beverages per day (about 2 cans of non-diet soda), while the lowest group seldom drank sugar-sweetened beverages. Overall, researchers did not find a link between the sugar content in what participants ate and their level of disability. However, results showed that participants who drank the largest amounts of sugar-sweetened beverages were five times more likely to have more severe symptoms and higher levels of disability than people who seldom drank sugar-sweetened beverages.

Additional studies are needed to evaluate whether sugar-sweetened beverages affect the course of MS.

A [2020 study](#) suggests that propionic acid (PA), a common preservative found in cheese, baked goods or artificial fruit flavors, may positively impact MS. People with MS typically have reduced levels of PA, especially early in the disease course.



As part of the study, treatment naïve participants with MS took PA supplements as an add-on to MS immunotherapy. After 2 weeks of PA intake, there was a significant and sustained increase in the number of functional immune cells in the gut which work to stop excessive inflammatory processes and reduce autoimmune cells in diseases like MS. Results also showed there was a reduced annual relapse rate, disability stabilization, and reduced brain atrophy after 3 years of PA intake. Researchers note that further study is needed to confirm these results.

A nutritious, well-balanced diet combined with other healthy lifestyle choices (exercise and refraining from smoking) is the foundation of good health not only for people with MS, but also for the general public. Healthy eating includes foods that are rich in fiber and low in saturated fat, such as lean proteins, whole grains, vegetables and fruit. According to the National MS Society, “any positive changes you make towards more healthful habits are likely to help your overall health and well-being and are therefore worthwhile. Most MS experts agree that a healthy diet is an important complement to your MS treatment plan for the long-term health of your nervous system.”

Prepare meals at home as much as possible

Some general healthy recommendations agreed upon by health experts include:

Incorporate colorful fresh fruits and vegetables daily

If you choose to eat grains, choose whole grains over refined grains

Avoid/limit processed foods and added sugars as much as possible

Are you interested in the impact of food on your MS? ACP, through its iConquerMS initiative, will soon be launching a survey to gather the insights and experiences of our members on their access to healthy foods. iConquerMS members, watch your email inbox for more information. Not an iConquerMS member? [Join now](#) to get access to this survey and more! Accelerate research by sharing your expertise as a person affected by MS!

