

Nutritional Factors and Multiple Sclerosis

A Summary

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Introduction- To understand how nutrition plays a critical role in multiple sclerosis (MS) it is essential to understand the basic disease process of MS. Most cases of MS are due to autoimmunity, which means one's own immune system is attacking their body. In MS the white blood cells of the immune system are attacking myelin, which is the substance which wraps around nerve cells in the central nervous system (CNS). The progressive loss of myelin results in a variety of disabilities.

MS Disease Process- Extensive research has revealed that there are three main factors that cause a person's immune system to attack and destroy their myelin.

1. **Genetic Susceptibility-** It appears as if about .5% of northern Europeans carry the genes that make them susceptible to MS. People of other heritages tend to have a much lower susceptibility.
2. **Immune activators-** The immune system is activated by the introduction of foreign proteins into the body. Autoimmune disease is mainly caused by foreign proteins which have a molecular structure similar to self proteins in the body. Thus, when immune cells are activated against such foreign proteins, the immune cells also attack similar-looking self proteins. In MS, self-proteins in myelin in the central nervous system are "mimicked" by foreign proteins and consequently attacked by the immune system.
3. **Immune Suppressants-** The activation of immune cells against one or more self proteins seems to occur in many people, especially following an infection. Thus the immune system has evolved a system of shutting down such autoimmune reactions before they cause any noticeable damage. Persons with MS seem to have a defective immune suppressant mechanism due to various deficiencies. This allows autoimmune reactions to get out of control and to cause damage to the central nervous system.

Nutritional factors play a significant role in MS by contributing to both the deficiency of immune suppressants and an overload of foreign proteins which activate the immune system against the central nervous system. Thus the keys to using nutrition for controlling MS are to:

1. increase the intake of nutrients which help the body suppress autoimmune reactions.
2. avoid eating foods which contribute to the activation of the immune system against self and the occurrence of autoimmune reactions.

Suppressing Autoimmune Reactions- Notably there are two nutrients which are effective in suppressing the immune system in the central nervous system. These are **vitamin D** and **omega three essential fatty acids**. Not surprisingly these nutrients are in very short supply in our society and persons with MS are very deficient in them. By greatly increasing their intake, persons with MS can help the body suppress autoimmune reactions.

Research has shown that a vitamin D supply of about 4000-5000 IU is required every day for optimal functioning. The main source of vitamin D is the sun and Canada is much too far north to allow anyone to obtain an adequate supply of vitamin D from the sun on a yearly basis. A few foods have some synthetic vitamin D added to them but this amount is very small and is no where near enough. Thus to ensure an

adequate supply of vitamin D, a person with MS should take a daily 4000 IU supplement which is readily and cheaply obtained at most drug stores (Jamieson and Natural Factors make a good product). Such an amount has been shown to be safe and to be well below any toxicity level.

Omega three fatty acids are found in substantial quantities in only a few foods. The best source is fish with fatty fish such as salmon and mackerel being the best. Thus persons with MS should eat fish at least three times a week. Salmon oil supplements are also a convenient way of increasing one's supply of these essential fatty acids. Flax also contains a lot of omega three EFA and a tablespoon of flax oil every day is another good way of obtaining such a nutrient.

Avoiding Immune Activators- Infectious agents are one source of foreign proteins which activate one's immune system to attack self. However it is often difficult to avoid contracting common infections. Another main source of foreign proteins, which have the potential to activate the immune system against self, is our food supply. Studies have shown the foods that have the greatest potential to cause autoimmune reactions are dairy, gluten grains (wheat, rye, barley and oats), legumes (beans) and yeast. Thus persons with MS should avoid eating anything which contains these food types.

The types of fats eaten can also affect immune activation and saturated fat (animal fat) and omega six essential fatty acids (vegetable oil) can be problematic. Thus persons with MS should use mainly olive oil (monosaturated fat) in conjunction with fish oils to provide most of their fat intake. In order to greatly reduce saturated fat intake, red meat should be avoided with skinless breast of chicken and fish providing most of the protein supply.

Summary- Nutritional changes can be very effective in controlling MS and slowing or halting disease progression. The key changes are:

1. Take a 4000 IU supplement of vitamin D every day
2. Eat fish at least three times a week and use a flax oil supplement
3. Stop eating any food that contains dairy products, gluten grains (wheat, rye, barley and oats), legumes and yeast
4. Stop eating red meat and greatly reduce the intake of saturated fat.
5. Use mainly olive oil for fat supply
6. Use mainly skinless breast of chicken and fish for protein supply
7. Avoid any food which causes an allergic reaction as determined by either a body reaction or a blood test
8. Take a variety of supplements to enhance health and heal various systems. A suggested list is on the site

This nutritional regime can be used in conjunction with any of the current MS drugs. Notably a lot of people find they do not need the drugs once the nutrients are working.