# Nutrition Factors and Multiple Sclerosis

## Part one: Identifying the Prime Suspects

Dietary factors are an important part of many chronic diseases, including heart disease, hypertension, osteoporosis, diabetes, and even cancer. With this in mind, one may ask if dietary factors are also part of the MS disease process. Currently, no clear-cut scientific data demonstrate, beyond a reasonable doubt, that various components of diet do or do not play a significant role in MS. Therefore, no definitive statements may be made regarding the diet's effect on MS, and whether or not dietary changes can help slow MS progression.

This is the first of a series of articles that will objectively look at the scientific data that implicate a variety of nutritional factors in the MS disease process. On the basis of this information, suggestions will be provided for dietary revision that could have the potential to positively affect the MS disease process and slow the addition of disabilities.

By providing such information, individuals with MS are given a dietary strategy that may be helpful; however, anyone considering any changes to his or her diet should do so only under the guidance of his or her physician. Please note that while much data is available, no rigorous clinical trials have been conducted to definitively determine if dietary changes can affect the onset and progression of MS. Plans are now underway for a clinical trial which will look at the effects of diet on MS. It will involve MRI scans, neurological exams, and immune markers carried out over a two-year period.

Many scientific articles have been published on various aspects of nutrition and MS, as well as closely related diseases. These allow a reasonable assessment of the possibility for various nutritional factors to be involved in MS. Currently, nutritional factors that have been determined as "prime suspects" in MS include: various common protein-bearing foods such as dairy products, gluten grains (wheat, rye, barley), and legumes; as well as chronic deficiencies in vitamin D, fish oil, and anti-oxidant vitamins, minerals, and phytochemicals.

These "prime suspects" were identified by utilizing the scientific database in two different ways. The first way is best described as logical deductions from the current understanding of the MS disease process, that is, the way Sherlock Holmes would solve a crime. A great deal of research over the past 30 years has left little doubt that MS is an autoimmune disease in which a person's own immune cells attack and damage tissue in their central nervous system (CNS). Thus a key question is, "What nutritional factors have the potential to help the immune cells to attack the central nervous system?"

Potential candidates are both nutritional factors that can stimulate immune cells to attack the CNS, and those factors that can decrease the body's ability to suppress such an attack. All of the above named nutritional factors seemed to "fit the bill" at this stage of analysis. Various proteins in foods clearly had the potential to stimulate immune cells, while deficiencies in vitamin D, fish oil, and antioxidants can hinder the suppression of harmful immune reactions.

This next task involved a thorough review of the MS scientific literature to find out what reliable data existed to support or deny the involvement of the initially identified, nutritional "prime suspects." Such scientific information included data on animal experiments as well as studies of the

molecular composition of various food components (vitamin D and dairy proteins for example) and their effect on the immune system. Also of great importance were the studies of the nutritional habits and status of various populations and the rates of MS in those populations.

Finally, important data came from a number of small clinical trials that used a nutritional factor as the tested therapy for MS along with closely related autoimmune diseases such as rheumatoid arthritis. When all of these data are considered together, a reasonable assessment can be made as to whether or not a reasonable chance exists that a given nutritional factor plays a role in MS. If the available science points the finger at a given nutritional factor, for example a deficiency in a certain vitamin, then individuals with MS may potentially benefit from a strategy that ensures they are getting an adequate intake of that vitamin.

The continuing series on nutritional factors and MS will look at each of the identified ”prime suspects” – common protein-bearing foods as well as chronic deficiencies in vitamin D, fish oil, and anti-oxidants – and present the scientific data which implicate each one in the MS disease process. Strategies on how one might change his or her dietary habits (under the guidance of a physician) to offset the effects of each of the “prime suspects” will be given. In the next issue of The Motivator, evidence linking vitamin D deficiency to MS onset and progression will be reviewed, along with the controversial claim that MS could be a vitamin D deficiency disease.

Editor’s note: Any vitamin which is not water-soluble, including vitamin D, may be stored in the body if too much is taken, and this may result in toxicity. Readers are cautioned to contact their physician before making any changes to their diet or supplement regimens.