MS Consult

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The Benefits of Exercise for Patients With Multiple Sclerosis

Q Should I recommend exercise to my patients living with MS?

Multiple sclerosis (MS) causes varied symptoms and functional impairment, depending on what part of the central nervous system is involved. Currently, many patients living with MS have sedentary lifestyles, which increases the risk for comorbidities such as cardiovascular disease, type 2 diabetes, and osteoporosis.[1-3]

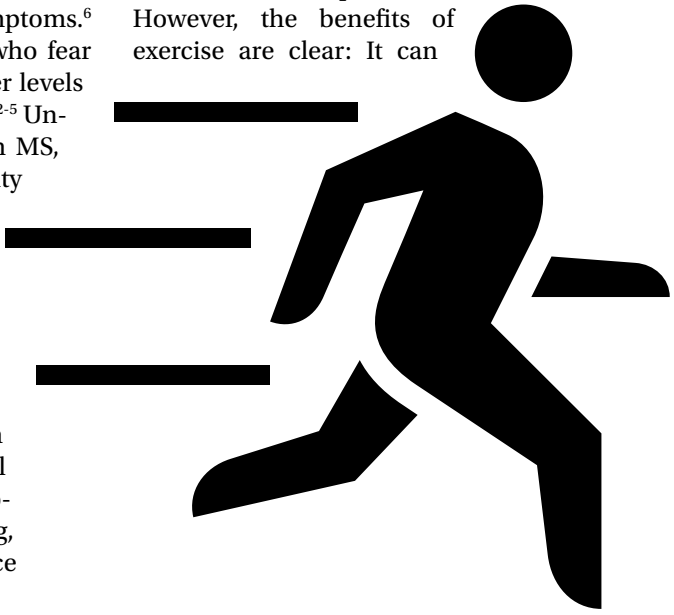
Some MS symptoms—ambulatory difficulty, balance impairment, heat intolerance, muscle weakness, spasticity, visual impairment, and fatigue—act as obstacles to routine physical exercise; they also typically worsen over the course of the disease.[2-5] In addition, psychosocial factors such as lower levels of education, single status, smoking, and depression or anxiety have been shown to increase the likelihood that a patient will not meet the World Health Organization's recommendations on physical activity for health.[1]

For many years, MS patients were advised against physical activity out of concern that it would exacerbate symptoms.[6] It is likely still true that patients who fear worsened symptoms or have higher levels of disability avoid physical activity.[2-5] Unfortunately, for persons living with MS, this cycle of fear and reduced activity perpetuates itself, resulting in increased disability and decreased quality of life. Thankfully, many of the physical and social factors that prevent patients from exercising are modifiable.[1,4]

Many types of exercise have been studied in patients living with MS; those shown to be beneficial include regimens focused on cardiovascular fitness, resistance training, balance, and flexibility. Evidence supports the benefits of exercise training for improving overall fitness, muscle strength, ambulation, cognition, spasticity, fatigue, and anxiety and depression in patients with MS.[2-4,6-9] Exercise with aerobic, anaerobic, or resistance training has been considered an important nonpharmacologic treatment for MS patients to improve quality of life without worsening disease symptoms.[9] There is increasing evidence that engaging in more physical activity and improving physical fitness is an important modality to improve disease course and slow progression over time.

Any increase in symptoms related to exercise is transient, and there is no evidence of lasting harmful effects on overall day-to-day functioning or association with disease progression.[6,10] Patient reports of the perceived benefits of exercise include maintenance of physical function, increased social involvement, and feelings of self-management and control.[5] Thus, if patients can comply with an exercise regimen, much of the initial disability that limited their activity may be reduced.

More research is needed to fully elucidate what type of exercise is most beneficial for an individual patient.[4,5,8,9] However, the benefits of exercise are clear: It can



significantly improve quality of life by enhancing psychologic and physical functioning.[1,3,5,6,8] Given this information, patients living with MS have incentives to exercise. Health care providers should endorse the benefits of exercise and work to help patients reduce barriers to physical activity.[1-5]
—RR

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Does Diet Matter in Multiple Sclerosis?

Q What is known about the impact of diet on multiple sclerosis? How can I advise my patients with MS?

Multiple sclerosis (MS) is a chronic inflammatory and degenerative central nervous system disease affecting more than 2.5 million people worldwide. Today, if a Google search is performed for "diet and MS," more than 67 million results are obtained. Many tout specific protocols as beneficial for MS but have no substantial data to support these claims. This can be confusing for patients as well as providers. How should you advise those who ask for advice on dietary modifications to help control symptoms or disease course?

First, it's important to remember that individuals with MS have a reduced median lifespan (by about seven years), compared to healthy controls. Furthermore, patients with MS commonly have comorbid conditions—such as diabetes, obesity, and ischemic heart disease—that increase mortality risk.[1,2] Diet and nutrition are significant factors that impact the course of these diseases.

We must also bear in mind that patients with MS experience symptoms that may impede their efforts to prepare meals. In a 2008 study of 123 MS patients (more than 50% of whom were overweight or obese), fatigue was cited as a significant factor that limited cooking and food preparation. Cognitive impairment and depression also may affect dietary intake. Interestingly, the average recorded intake for all food groups was less than that recommended in the Dietary Guidelines for Americans.[3]

A web-based survey conducted by the German MS Society in 2011 revealed that 42% of the 337 respondents had modified their diet due to MS. These modifications included change in intake of fatty acids; decrease or elimination of meat, sugar, and additives; and introduction of a low-carb or Paleo diet.[4]

Among an international sample of 2,087 MS patients, a significant association was found between a healthy diet and improved quality of life (both physical and mental) and reduced disability. This "healthy consumption" of fruits, vegetables, and dietary fat was also associated with a marginally decreased risk for relapse. Patients who demonstrated increased disease activity were more likely to have poor consumption of

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International Organization of Multiple Sclerosis Nurses (IOMSN) is the first and only international organization focusing solely on the needs and goals of nurses involved with the care, education, research, and advocacy for multiple sclerosis and related autoimmune disorders of the central nervous system. For more information on IOMSN, visit www.iomsn.org.

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fruits, vegetables, and fats and to consume more meat and dairy products.[5]

There has also been research on specific components of dietary intake. Antioxidant-containing foods, for example, may have an anti-inflammatory effect.[6] Vitamin B_{12} deficiency plays a role in immunomodulatory effect, as well as formation of the myelin sheath, although its role (and the effect of biotin supplementation) in MS disease progression requires further study.[7] Also ongoing is research into various calorie-restriction protocols, altering both timing and amount of caloric intake, since some data suggest this strategy reduces leptin, a satiety hormone that increases inflammation and has been shown to promote more aggressive MS in a mouse model.[8]

In the meantime, what can we conclude about diet and MS? A recent review determined that, although there is insufficient data to support one specific diet, there *is* sufficient evidence to recommend consumption of fish, foods lower in fat, whole grains, vitamin D, and supplemental omega fatty acids.[5]

It is important to discuss diet with our MS patients. In the German survey, 82% of patients felt that diet was important, yet only 10% had asked a provider for nutritional advice.[4] In another study, patients indicated that food labels were their top source for nutrition information; only 20% sought advice from a nutritionist.[3] We need to ask our MS patients if they are following a particular diet and be prepared to discuss potentially beneficial dietary choices with them—and offer referral to a nutritionist to those who require additional direction and support.—**SP** **CR**

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