



**National  
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Chapter

# MS Progress Notes...

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## **LIVE WELL, FEEL WELL:**

### **COMPLEMENTARY AND ALTERNATIVE THERAPIES IN MS**

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Complementary and alternative therapies can successfully improve many MS symptoms (fatigue, pain, stiffness, imbalance, depression, cognition) and overall quality of life (QOL). Lifestyle and psychosocial factors influence relapses and disease progression, thus opening the door to mind-body interventions.

#### **EXERCISE**

“Use it or lose it”: MS patients are often deconditioned and avoid physical activity for fear of overheating and increasing fatigue. Moderate resistance and aerobic endurance exercise is encouraged in patients to maintain strength, balance, function and general fitness, in addition to benefiting mental health, social engagement and overall quality of life. A minimum of 30 minutes most days is recommended.

Several clinical trials suggest that specific exercise programs may improve fatigue, strength, pain, mood disorders, balance and reduce fall fear and rate in MS patients without worsening its symptoms. Regular physical activity can decrease systemic inflammation. Exercise may also induce production of brain and nerve growth factors with potentially protective and regenerative effects, and the release of endorphins (chemicals believed to improve mood).

#### **MIND-BODY THERAPIES**

Mind-body disciplines promote a balanced “whole” in which one influences the other, leading to improved physical and mental health at many levels. Through strengthening and endurance building, fatigue may be reduced; stretching and relaxation can improve flexibility and spasticity; meditation can improve mood and cognition.

Breathing, relaxation and meditation. Some physiologic responses to stress (blood pressure and heart rate increase) can be modulated through voluntary breathing and muscular relaxation. Meditation involves a conscious mental process using certain techniques—such as self-observation, internal/external attention focusing, posture holding, repetition of a mantra—to suspend the stream of thoughts in the present, leading to body and mind relaxation, and achieving self-acceptance. Formal clinical meditation/relaxation interventions include Mindfulness Based Stress Reduction, Mindfulness Based Cognitive Therapy and Relaxation Response Therapy.

Yoga, Tai-Chi/Qi-gong. Focusing on mindful flowing postures and physical movement, body alignment, dynamic breathing, and cognitive tools (visualization, meditation), these disciplines can strengthen the body and soothe the mind. Yoga, Tai-Chi, and similar approaches, are complete mind-body techniques that promote muscle strength, stamina and vigor, flexibility, postural stability balance, positive mood,

and concentration. These core principles also underlie acupuncture. All practices can be tailored to individual needs, age, and limitations. Training should be done under certified instructor supervision, so that safe modifications can be made for specific problems.

Acupuncture. Traditional Chinese Medicine (TCM) views a healthy body as a fine equilibrium between two opposing yet complementary and inseparable forces: yin and yang. Disease is caused by internal imbalance blocking Qi (vital energy) flow. Passing through twelve main pathways (meridians), Qi regulates spiritual, emotional, mental, and physical health. Acupuncture aims at unblocking the vital energy flow by stimulating key body points connecting with these meridians. Acupuncture involves manual insertion and manipulation of thin, metallic needles on the skin. Variants include electroacupuncture, cupping, moxibustion, and acupressure/shiatshu. Acupuncture is generally well tolerated. Potential side effects include injection site pain, mild bleeding, drowsiness, leg muscle spasms in patients with spasticity, vasovagal syncope, and pace-marker interference.

In MS, two large self-assessment surveys (Rocky Mountain MS center and British Columbia) suggested improvement of pain, anxiety, depression, sensory symptoms, fatigue, weakness, spasticity, walking, coordination, bowel/bladder dysfunction and sleep problems in about two-thirds of respondents.

Massage and reflexology. Massage involves pressing, rubbing, kneading and manipulation of muscles and other soft tissues of the body. Preliminary research studies suggest a benefit from massage in chronic pain, spasticity, and depression. An additional benefit on self-esteem and QOL may be achieved through the “healing touch” act.

Swedish massage, the most popular form in the U.S., combines different muscle stroke techniques to relax them and encourage circulation. Deep tissue massage focuses on deep muscle and connective tissue, aiming at releasing chronic tension or tightness. Reflexology uses pressure to the feet, hands or ears to promote relaxation or healing in other body parts. Myotherapy and neuromuscular therapy use deep pressure to reduce myofascial trigger points (sensitive, irritable knots of tight muscle that may cause pain or limited range of motion).

#### **NUTRITION**

More is not better. Dietary balance is key. “Miracle” diets and supplements are easily available nowadays. There rarely have a scientific basis, while often being exaggerated or dangerously misleading. Maintaining a well-balanced diet is a key nutritional recommendation for health promotion in MS patients (see USDA

dietary guidelines revised in 2010, [www.mypyramid.gov](http://www.mypyramid.gov)).

Vitamin D. "Vitamin D"(VitD) refers to two precursors. VitD3 (colecalciferol) is endogenously produced in the skin induced by UVB sun radiation. VitD2 (ergocalciferol) is plant derived, and enters the blood stream through diet. Both are available from foods (dark fish, fish liver oil fortified products) and supplements.

Active VitD regulates calcium balance to maintain bone mass and it also participates in immune system regulation. Levels of 25-OH-VitD <20-25 nmol/L are associated with deficiency, while levels >50 nmol/L are generally considered sufficient, evidence recommends levels >70 nmol/L for optimal health. VitD appears to be major environmental risk factor in MS. The incidence of MS inversely relates to sunlight exposure. VitD serum concentrations of 25-OH-vitD (>100 nmol/L) predicted lower risk of developing MS. Blood levels of 25-OH-vitD are higher, and MS development lower in U.S. women taking 400 IU daily. Blood 25-OH-vitD levels are lower during MS relapses than during remissions and inversely correlate with disease severity. Preliminary safety trials suggest that VitD supplementation in MS patients may decrease relapse rate and number of MRI gadolinium-enhancing lesions.

VitD intake of 400-1000IU can be obtained from supplements, VitD-rich foods (egg yolks, saltwater fish, liver, and fortified cereal and dairy) or, alternatively, fifteen minutes of sun exposure few times a week without sunscreen (sunlight/UVB exposure can increase skin cancer risk). The Institute of Medicine recommends no more than 2,000IU VitD daily to avoid potential toxicity. Higher dose supplementation in people with VitD deficiency should be done under physician supervision.

Antioxidants: Vit. A,C,E & alpha-lipoic acid. Antioxidants counteract free radical-induced cell damage. In MS, free radicals contribute nerve cell damage and perpetuate auto-inflammation. Caution is needed regarding antioxidant supplementation. To date, there is only limited scientific evidence of the potential antioxidant benefits in MS. On the other hand, antioxidants stimulate some of the immune mediators known to be over-active and harmful in MS. In addition, high daily doses of antioxidant vitamins A, C, E can cause serious toxicity. As a general rule, a well-balanced diet will provide adequate antioxidant daily intake, without need for additional supplementation.

B12 / B vitamins. Vitamin B12 Cobalamin plays a key role in brain and nerve function. Its deficiency causes optic nerve, spinal cord and cognitive and psychiatric dysfunction, with symptoms that mimic MS. Vitamin B12 is present in fish and shellfish, meat/liver, poultry, eggs, dairy. Except for a small MS patient subpopulation with low vitamin B12 at baseline, most MS patients have normal B12 levels and do not need vitamin B12 supplementation.

Other B vitamins include B1 (thiamine) B2 (riboflavin), B3 (niacin), B5 (panthotenic acid), B6 (pyridoxine), B7 (biotin), and folic acid. No evidence supports supplementation as long as a well-balanced diet is maintained. Particular caution is needed to avoid excessive vit B6 (>50 mg/day may cause peripheral nerve injury, which may mimic some MS symptoms), and vit B3 intake (>35 mg/day may induce nausea, liver injury, and hyperglycemia)

Polyunsaturated Omega-3 and Omega-6 fatty acids. Fatty acids are the building blocks of fats. Two omega-6 polyunsaturated fatty acids (PUFA) are often used as dietary supplements: linoleic and gamma-linolenic acid(GLA). Of caution, linoleic acid supplements may cause gastrointestinal upset, lead to vit E deficiency, and may be linked to

increased cancer risk. Primrose oil, a source of GLA, may cause blood thinning and, when given concomitantly with antipsychotics, it may induce seizures

Some studies suggest a modest association between consumption of low levels of unsaturated fat and an increased incidence of MS. Clinical trials of PUFA supplementation in MS, however, show conflicting results to date.

Minerals. Multivitamin compounds typically include seven minerals: Calcium, copper, magnesium, phosphorus, potassium, selenium and zinc. Except for calcium, currently there is no evidence to recommend mineral supplementation. In fact, in some may actually be harmful in MS. Selenium may worsen disease course presumably through unwanted immune stimulation. Similarly, zinc activates immune cells and can worsen nervous system inflammation. Excess zinc intake can cause copper deficiency manifesting as a severe myelopathy.

Smoking. Smoking increases risk of developing MS, more so with cumulative tobacco dose. Strong evidence also suggests that smoking can worsen disease progression.

In summary, in our modern fast-paced society, a push for "quick returns" has somehow taken the spotlight, in detriment of basic commonsense lifestyle habits. Health promotion and maintenance require conscious planning, effort and perseverance. A call is due for a change towards a "back to the basics" philosophy: daily living including stress reduction mind-body therapies, physical exercise, a well-balanced natural low fat diet rich PUFA, vitaminD supplementation, tobacco avoidance, healthy emotions and fulfilling social and intellectual activities. The goal is to promote sustained lifestyle changes (rather than mere symptom control), to achieve wellness as a whole.

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