

diet, the Paleo diet, the Wahls diet), megadose vitamins, calcium orotate, bee stings, cow colostrum, hyperbaric oxygen, procain (a combination of histamine and caffeine), chelation, acupuncture, acupressure, various Chinese herbal remedies, and removal of mercury-amalgam tooth fillings, among many others. Patients should avoid costly or potentially hazardous unproven treatments. Many such treatments lack biologic plausibility. No reliable case of mercury poisoning resembling typical MS has ever been described, therefore challenging the notion that removal of mercury-amalgam tooth fillings would be beneficial. Although potential roles for EBV, human herpesvirus (HHV) 6, or chlamydia have been suggested for MS, treatment with antiviral agents or antibiotics is not recommended. A chronic cerebrospinal insufficiency (CCSVI) was proposed as a cause of MS with vascular-surgical intervention recommended. However, multiple independent studies have failed to even approximate the initial claims, and patients should be strongly advised to avoid diagnostic procedures and potentially dangerous surgery for this condition. A double-blind trial of high-dose biotin to improve disability in progressive forms of MS found no benefit.

SYMPTOMATIC THERAPY

For all patients, it is important to encourage attention to a healthy lifestyle, including maintaining an optimistic outlook, a healthy diet, and regular exercise as tolerated (swimming is often well-tolerated because of the cooling effect of cold water). It is reasonable also to correct vitamin D deficiency with oral vitamin D.

Ataxia/tremor is often intractable. Clonazepam, 1.5–20 mg/d; primidone, 50–250 mg/d; propranolol, 40–200 mg/d; or ondansetron, 8–16 mg/d, may help. Wrist weights occasionally reduce tremor in the arm or hand. Thalamotomy and deep-brain stimulation have been tried with mixed success.

Spasticity and *spasms* may improve with physical therapy, regular exercise, and stretching. Avoidance of triggers (e.g., infections, fecal impactions, bed sores) is extremely important. Effective medications include baclofen (20–120 mg/d), diazepam (2–40 mg/d), tizanidine (8–32 mg/d), dantrolene (25–400 mg/d), and