Chronic fatigue, defined as having persistent fatigue for a duration of over six months, may be reported by up to 30% of the population. Chronic fatigue syndrome (CFS) has an incidence of 4 per 1,000 in the United States. Center for Disease Control criteria for diagnosis include fatigue that is of new onset, not related to exertion, not alleviated by rest, resulting in reduced activity levels. Additional requirements for diagnosis are cognitive dysfunction, sore throat, swollen lymph nodes, headaches, muscle and joint pain, poor sleep, and post exertional malaise lasting more than 24 hours.

Causative factors related to chronic fatigue are numerous and varied. Chronic sinusitis can be a common trigger for chronic fatigue in polluted urban environments. Outcome measures after endoscopic sinus surgery have shown reduced body pain and fatigue as positive responses to treatment.

In addition to headaches and musculoskeletal pain, hypoglycemia can be induced from the effects of sinus drainage, causing pancreatic irritation and hyperinsulinism. The sinusitis-gastrointestinal-hypoglycemia syndrome can be addressed by combining Chinese herbs with antibacterial, antifungal, antiulcer, and pancreases protecting effects, clearing infection, inflammation, and stabilizing blood sugar. *Xin Yi Hua* (Flos Magnoliale), *Bai Zhi* (Radix Angelicae Dahuricae), *Fu Rong* (Radix Hibisci), *Jing Jie* (Herba Schizonepetae), and *Jin Yin Hua* (Flos Lonicerae Japonicae), inhibit bacterial growth, combined with *Yan Hu Suo* (Rhizoma Corydalis), *Chen Pi* (Pericarpium Citri Reticulatae), *Dang Shen* (Radix Codonopsis), and *Huang Qin* (Radix Scutellariae) to alleviate gastritis and stabilize blood sugar.

Viral infections including influenza, enteroviruses, Epstein Barr virus, Human Herpes Virus 6 and 7, Parvovirus B19, and XMRV (xenotropic murine leukemia virus-related virus) are all identified as potential causative factors for chronic fatigue. Chronic fatigue patients with high levels of EBV and HHV6 responded to valgancyclovir in 75% of cases, allowing them to return to normal activity. Chinese herbal medicines with antiEBV effects include *Ju Hua* (Flos Chrysanthemi), *Ji Xue Teng* (Caulis Spatholobi), and *Hu Huang Lian* (Rhizoma Picrorhizae). *Ku Shen* (Radix Sophorae Flavescentis) reduces replication of HHV6, and *Xiang Ru* (Herba Moslae) inhibits CMV and ECHO viruses.
A comprehensive analysis of immune function in chronic fatigue syndrome patients demonstrates multiple abnormalities. Increased lymphotoxin alpha, IL-1alpha, IL-1beta, IL-4, IL-5, IL-6 and IL-12, decreased IL-8, IL-13 and IL-15, with no difference in TNFalpha, IFNgamma, IL-2, IL-10, IL-23 and IL-17 characterizes the imbalances in CFS related immunity. This immune dysfunction may be triggered by vaccination and chemical exposures. Hepatitis B vaccine and silicone breast implant reactions are documented triggers. Macrophagic myofasciitis has been described due to local deposition of aluminum hydroxide after vaccines.

Muscle biopsies from CFS patients demonstrate multiple abnormalities in gene expression and mitochondrial function. Mitochondria are the cellular substrate of the production of qi, and therefore herbs that protect and enhance mitochondrial function are essential in the management of chronic fatigue. *Tian Dong* (Radix Asparagi), *Jiang Huang* (Rhizoma Curcumae Longae), and *Gou Qi Zi* (Fructus Lycii) have protective effects on mitochondria. ATP production, the molecular substrate of qi, can be enhanced by *Dong Chong Xia Cao* (Cordyceps) and *Tu Si Zi* (Semen Cuscutae).

Neurological symptoms comprise an important component of chronic fatigue syndrome. CFS patients have reduced blood flow to the cerebral cortex, and increased flow in the thalamus, pallidum, and putamen. Depressed patients can be differentiated from CFS patients by the presence of less perfusion of the right prefrontal cortex. Magnetic resonance spectroscopy has revealed elevated choline/creatine ratios in the brains of CFS patients. This pathology may indicate disrupted cell membranes and dysfunctional acetylcholine based nerve transmission. Neuroprotective herbs that enhance cerebral circulation include *Tian Ma* (Rhizoma Gastrodiae) and *Ge Gen* (Radix Puerariae Lobatae).

Acupuncture and Chinese herbal medicine can improve quality of life and function in chronic fatigue patients. A study using a combination of qi tonics and blood stasis herbs including *Huang Qi* (Radix Astragali), *Ge Gen* (Radix Puerariae Lobatae), *Dan Shen* (Radix et Rhizoma Salviae Miltiorrhizae), and *Yin Yang Huo* (Herba Epimedii), showed significant improvement in T cell measurements. The logic of using blood stasis herbs in chronic fatigue is supported by laboratory data indicating a 95% incidence of anticardiolipin antibodies in CFS patients, indicating autoimmune circulatory dysfunction as an important part of the pathogenesis. Anticardiolipin antibody production can be suppressed by *Dan Shen* (Radix et Rhizoma Salviae Miltiorrhizae) and *Chai Ling Tang* (Bupleurum and Poria Decoction) ([*Xiao Chai Hu Tang* (Minor Bupleurum Decoction) plus Wu Ling San (Five-Ingredient Powder with Poria)]).

Patients with CFS were observed for quality of life when undergoing acupuncture treatments. Patients in the treatment group were treated with acupuncture at *Baihui* (GV 20), *Shanzhong* (CV 17), *Zhongwan* (CV 12), *Qihai* (CV 6), *Guanyuan* (CV 4), *Hegu* (LI 4), and *Zusanli* (ST 36), while the control group patients were treated with acupuncture at non-meridian points, three times a week for a total of 14 times. Results indicated that, based on the World Health Organization Quality of Life scale, quality of life for CFS patients were significantly improved in the physiological field, while control group patients did not experience any positive or beneficial effects from their treatments.
About the Author

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Dr. Van Benschoten is a graduate of the California Acupuncture College of Los Angeles, with over 30 years of clinical, research, and teaching experience in acupuncture, Chinese herbal medicine, and medical Qi Gong. He is the author of more than fifty papers on acupoint diagnostic methods, chronic fatigue syndrome, AIDS, autoimmune disease, breast cancer, mercury toxicity, and indoor mold exposure. His clinical practice focuses on multidrug resistant infections, immune dysfunction, and environmental illness.

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