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**FILE: ■ Chronic Fatigue Syndrome**

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**RE: Physiological Processes and Treatment of Chronic Fatigue Syndrome**

Spelman K. Chronic fatigue syndrome: a look at physiological processes and therapeutics. *Journal of the American Herbalists Guild*. 2007;7(1):39-48.

Chronic fatigue syndrome (CFS) has been a health issue for centuries. The Centers for Disease Control and Prevention (CDC) described eight symptoms related to CFS: substantial impairment in short-term memory or concentration; sore throat; tender lymph nodes; muscle pain; multijoint pain without swelling or redness; headaches of a new type, pattern, or severity; unrefreshing sleep; and postexertional malaise lasting more than 24 hours. The person with CFS suffers from severe chronic fatigue for at least six months, concurrently with four of these eight symptoms. This article examines theories of etiology of CFS, nutritional factors in the condition, and treatment.

As many of the symptoms of CFS are subjective and cannot be observed or confirmed by a physician, the condition is referred to as medically unexplained or "functional" and falls within a grouping of conditions called functional somatic syndromes (so called because the medical specialty labeling the condition is unable to find aberrant biochemical processes).

Recent evidence suggests that neurological and psychological factors, as well as endocrine and immune factors, are keys in functional somatic syndromes. Neurotransmitter alterations, as well as metabolic shifts in the brain, occur in patients with CFS. Additionally, says the author, these patients appear to have diffuse cerebral perfusion, suggesting a rationale behind their decline in cognitive function, sleep quality, and energy levels. Other possible etiologies of the condition include a dysfunction in the hypothalamic-pituitary-adrenal axis and altered mitochondrial function. To make CFS more difficult to understand, it can have a number of causes, such as infection, exposure to toxic chemicals, and psychosocial stressors.

Because CFS has a multifactorial etiology, treatment by one therapeutic molecule is unlikely to be effective and therapy should be tailored to the individual. A central therapeutic theme for CFS would focus on reducing the oxidative "load" on the system. Decreasing exposure to oxidative triggers and enhancing the antioxidant capacity are obvious clinical strategies; other steps might include modulation of the hypothalamus-pituitary-adrenal axis, quieting

excessive sensory and immunologic stimulation of the central nervous system, and stimulating hepatic detoxification.

Since conventional medicine offers little treatment, many CFS sufferers use phytotherapeutic modalities. After citing several studies proposing that multicomponent pharmacological agents hit multiple targets and impact the complex equilibrium of whole cellular networks more favorably than drugs that act on a single target, Spelman notes that medicinal plants are "quite sensible at dealing with the complexity of human physiology, whether it involves neuroendocrine processes, detoxification process, or immunological factors."

Because of the dysregulation of immune function in CFS, immunomodulators are indicated. The botanical immunomodulators may be defined as "herbs that through the dynamical regulation of informational molecules (cytokines, hormones, neurotransmitters, other peptides, etc.) alter the activities of the immune system." Among those listed are astragalus (*Astragalus membranaceus*), cordyceps (*Cordyceps sinensis*), maitake (*Grifola frondosa*), and Indian tinospora (*Tinospora cordifolia*).

The endocrine system can be addressed through the addition of the adaptogens. Adaptogens are often associated with plants rich in phytosterols such as protodioscine. Among the adaptogens listed are *Aralia* spp., eleuthero (*Eleutherococcus senticosus*), schisandra (*Schisandra chinensis*), sarsaparilla (*Smilax regeii* syn. *S. officinalis*), and ashwagandha (*Withania somnifera*).

Nervines may be key in some patients to support the neurological dysregulation of CFS. The author named oat (*Avena sativa*), ginkgo (*Ginkgo biloba*), lobelia (*Lobelia inflata*), passionflower (*Passiflora incarnata*), and kava (*Piper methysticum*), among other nervines.

The gut should also be addressed in the treatment of those with CFS. According to Spelman, "the gut is best viewed as an immunoendocrine organ influencing messaging to the other organs and body systems." Hepatics that support detoxification in the gut and liver include burdock (*Arctium lappa*), *Berberis* spp., blue flag (*Iris versicolor*), and European vervain (*Verbena officinalis*), among others listed.

"Choosing herbs that modulate the function of the immune system, the endocrine system, the central nervous system, and hepatic detoxification drawn from adaptogens, immunomodulators, nervines, and hepatics may offer the best clinical strategy." No one plant or one protocol will improve CFS or other functional somatic syndromes. Persons with CFS have different physiological and psychological responses to the environment because of the complexity of the syndrome, and they should be inspired to create a healing environment.

Dietary modification has demonstrated improvement in the signs and symptoms of functional somatic syndromes. The author cites researchers that suggest the elimination of dietary excitotoxins (e.g., MSG), decreasing the inflammatory milieu, building positive colonic flora, decreasing microglial activation, and reducing oxidative stress, as well as improving gastrointestinal and hepatic detoxification and mitochondrial resuscitation by the use of

antioxidants. Other nutritional strategies include supplementing with omega-3 fatty acids, magnesium, N-acetyl carnitine, and B complex.

Interestingly, herbs not often used for CFS are the focus and many common herbs are not mentioned in the article. More common herbs for CFS include Jamaican dogwood (*Picrasma excelsa*), passionflower (*Passiflora incarnata*), and hops (*Humulus lupulus*) for sleep and muscle relaxing properties; licorice (*Glycyrrhiza glabra*) for adrenal support; black cohosh (*Actaea racemosa* syn. *Cimicifuga racemosa*) for autonomic dysfunction associated with estrogen deficiency; willow (*Salix* spp.) bark, ginger (*Zingiber officinale*), and frankincense (*Boswellia* spp.) for pain; and garlic (*Allium sativum*) and oregano (*Origanum vulgare* ssp. *hirtum*) for their anti-infection properties.

—Shari Henson

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