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Luckily for Sheila, her doctor told her about research at a local university comparing treatments for chronic fatigue syndrome (CFS). As a study volunteer, she had weekly assessments, 24-hour urine collections, blood tests, and questionnaires. She learned that her magnesium level had been extremely low, but after supplementing with 300 mg of this mineral twice daily, her fatigue lessened, and poor concentration, mood, and muscle weakness improved.

## Exhausted?

What's clear is that this condition is not the same as feeling rundown from overwork. While symptoms and solutions for chronic fatigue vary from person to person, the following characterize this condition:

- · persistent fatigue that bed rest does not
- · inability to perform even half of one's normal daily activities for at least six
- · no other chronic conditions that might explain such severe fatigue.

Between one and four million Americans have CFS. Of that number, four times more women than men suffer chronic fatigue. Fibromyalgia, or muscle pain all over the body (i.e., tenderness in 11 out of 18 possible trigger points), commonly accompanies CFS, as can anxiety, brain fog, candidiasis, decreased libido, frequent fevers, headaches, intestinal problems and pain, night sweats, recurrent upper respiratory tract infections, sensitivity to heat and light, sleep disturbances, swollen lymph nodes, unexplained sore throat, and weight gain.

Dan Kenner, PhD, OMD, finds chronic fatigue symptoms correspond with low NK (natural killer) cell function. Like sentinels at a fort, NK cells are the first to encounter invading pathogens, he explains. "When NK cell function is high, pathogens are nipped in the bud," before they can take hold, "and the rest of the immune system tends to be downregulated, rested, and better prepared to respond if called upon."

### Possible Causes

Some experts link CFS to infection with Epstein-Barr and/or cytomegalovirus (CMV), members of the herpes virus family. "Immune system difficulty somehow pulls down hormonal function," adds integrative practitioner Martin Feldman, MD. "Almost all patients with this syndrome have low adrenal function, and many have low thyroid function."

Researchers at Emory University School of Medicine in Atlanta have found that 62 percent of chronic fatigue sufferers experienced some form of childhood trauma as well as glandular fever, Lyme disease, gastroenteritis, chickenpox, salmonella, or viral meningitis. "Allopathic drugs, conventional drugs, antibiotics, and steroids are major influences," notes homeopathic physician Michele Galante, MD. "The use and abuse of these drugs in childhood, for example, sets up chronically weakened conditions that will extend into adulthood" and predispose that individual to chronic fatigue.

Environmental factors-including chlorine in water, air pollution, and electromagnetism from cell phones and similar devices-may also be culprits, possibly helping to explain the recent "outbreak" of chronic fatigue. A new study in the United Kingdom suggests that aluminum-containing adjuvants



in vaccines can trigger the cascade of immunological events associated with CFS, for example.

Other likely causes include anemia, allergies, arthritis, food additives, gluten, heavy metal toxicity, hypoglycemia, hypothyroidism, poor diet, nutritional deficiencies, and stress. "The patients I've seen have been very allergic," adds Dr. Galante, not just to pollens and airborne agents but especially to foods and harmful chemicals. Intestinal parasites are also fairly common among people with chronic fatigue.

#### Diagnosis & Support

Sheila was fortunate to find a healthcare provider who recognized her problem early on. Medically, CFS can only be diagnosed by ruling out other conditions including HIV, lupus, Lyme disease, rheumatoid arthritis, thyroid problems, and tuberculosis. In addition to a thorough

medical history and physical, conventional physicians will usually perform a complete blood count, erythrocyte sedimentation rate to measure inflammation, blood glucose tests, thyroid-stimulating hormone tests, and more.

People with CFS are as sick and functionally impaired as those with AIDS, breast cancer, or chronic obstructive pulmonary disease, finds William Reeves, MD, at the Centers for Disease Control. "Which treatments work varies from person to person," adds Jacob Teitelbaum, MD, a researcher who trains other healthcare personnel about this condition. Overall, he recommends the following approach (SHINE) to CFS and fibromyalgia:

- Sleep, preferably eight to nine hours a night
- Hormone testing and treatment if needed
- Infections prevented and treated

- Nutritional supplements, as recommended by a nutritionally trained practitioner
- · Exercise as able, starting slowly.

"Optimal nutritional supplementation is essential," he adds, as many nutrients can be depleted. "B12, magnesium, acetyl-L-carnitine, glutathione, as well as your basic A, B, C, and D vitamins need to be supplemented at a level that your average over-the-counter multivitamin cannot provide." Some people with CFS may also benefit from intravenous nutritional therapy.

"Although I strongly recommend taking nutritional supplements to ensure obtaining the necessary nutrients," Dr. Teitelbaum adds, "I also want to stress that a healthy diet is important." Fresh fruits and vegetables plus whole grains are best, but you don't need a hard-to-follow regimen. "The more unprocessed your diet is, the healthier you will be," he says.



# Magnesium for CHRONIC FATIGUE

by Carolyn Dean, MD, ND

Our sedentary lifestyles, processed foods, antibiotics, environmental chemicals, and polluted atmosphere have coincided with a greater frequency of chronic fatigue than ever before. At the same time, our bodies' stores of magnesium and other nutrients have become woefully depleted. This leaves our immune systems weakened and unable to protect our bodies and brains from harmful chemicals, yeast overgrowth, toxins, food additives, and viruses said to be triggering factors in chronic fatigue syndrome (CFS).

Several clinical studies have shown that magnesium deficiency is common in chronic fatigue syndrome sufferers. Given the depletion of minerals from our soils and the fact that most Americans do not get the RDA for magnesium, it's no surprise that over 75 percent of Americans are magnesium deficient.

Nutritional magnesium is a natural detoxifier and antistress mineral. It ameliorates the fatigue, muscle pain, and chemical sensitivity associated with chronic fatigue syndrome. Try the following tips:

- 1. Strengthen your immune system by avoiding added sugars, processed foods, and environmental toxins. Eat organic foods, produced without antibiotics, pesticides, and other immune-weakening agents.
- 2. Avoid stress, both physical and emotional. It further depletes nutrient stores and lowers your health defenses.
- 3. Supplement with nutritional magnesium. One of the most bioabsorbable choices is mail nesium citrate in a powder form, found in most natural food stores or vitamin shops. Just mix with hot or cold water.



Chronic fatigue expert Carolyn Dean, MD, ND, is the medical director of the Nutritional Magnesium Association and author of The Magnesium Miracle. To learn more about chronic fatigue, go to www.nutritional magnesium.org.

#### FATIGUE-FIGHTING SUPPLEMENTS

SUPPLEMENT	USES	NOTES
5HTP (5-hydroxy-l- tryptophan)	Reduces anxiety, fatigue, and pain while improving sleep quality.	Discuss first with a practitioner if taking antidepressants.
AHCC (active hexose correlated compound)	Fermented mushroom extract found to improve energy and mood, while relieving pain.	Widely used in Japan for immune support.
Arsenicum album	Homeopathic remedy for exhaustion combined with anxiety and depression.	Often the person has trouble sleeping from midnight to 2 a.m.
Curcumin	Anti-inflammatory in turmeric that may help fight fatigue.	Also enhances immunity in animal research.
D-ribose	Simple sugar that helps restore energy and support sleep.	Provides key building block of adenosine triphosphate (ATP), which provides cellular energy.
Fish oil	Improves symptoms within 12 weeks.	Anti-inflammatory omega 3s are low in people with CFS/fibromyalgia (FMS).
L-theanine	Helps form GABA; improves deep sleep while supporting calm alertness during the day.	Found in green tea, an immune enhancer.
Magnesium	Alleviates fatigue, muscle pain, and chemical sensitivity.	Deficiency is common in CFS/FMS.
Melatonin	Hormone that supports sleep.	0.5 mg is sufficient for most people.
Oregano oil	Useful for chronic infections.	A natural antibacterial.
NADH (nicotinamide adenine dinucleotide)	Increases energy and fights depression.	Relieves symptoms.
Passionflower	Calming herb that supports sleep.	May help reduce fibromyalgia pain.
Probiotics	Support immunity and aid healthy digestion.	Take at least 4 billion live organisms daily.
Proteolytic enzymes	Relieve inflammation and pain.	Take on an empty stomach as directed.
Reishi	Adaptogenic herb that supports energy and mental function.	Also relieves stress and supports immune system.
Silica	Homeopathy for fatigue and lack of stamina.	Often advised for people who get sick easily.
Valerian	Herb that improves sleep without next-day drowsiness.	May have reverse effect on a small number of people.

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