Myths and Facts: Chronic Fatigue Syndrome

CFS is a legitimate medical condition that needs to be better understood by the medical community to help patients manage their disease and scientists to develop effective treatments.

By Ronale Tucker Rhodes, MS

Some 25 years after chronic fatigue syndrome (CFS) was officially recognized as a legitimate medical condition, many in the healthcare field still doubt whether it truly exists. “This is a disease that is very difficult to diagnose and very difficult to understand and treat,” said Julie Gerberding, MD, a past Centers for Disease Control and Prevention (CDC) director. “[It] has been shrouded in a lot of mystery and controversy.” But the statistics generated from research conducted in 2004 by the CDC speak for themselves: At least one million Americans have been diagnosed with CFS, and it is predicted...
that number represents less than 20 percent of Americans who actually have CFS. CFS is a costly disease, resulting in $9 billion in lost productivity in the U.S. annually, and $20,000 annually in lost wages and income per family.

Also known as myalgic encephalomyelitis (ME), CFS can be as disabling as AIDS or multiple sclerosis, say researchers, and its prevalence is greater than that of ovarian cancer, lung cancer or lupus. In severe cases, patients describe their experience as a “living death.” Not only do their bodies feel like lead, but their symptoms include nausea, headaches, dizziness, cognitive problems, light sensitivity, vertigo and pain. Now, with decades of research, there is a commanding need to put the misconceptions and speculation surrounding this disease to rest.

Separating Myth from Fact

**MYTH:** CFS is a new disease.

**FACT:** Although research focusing on CFS is relatively recent, severe fatigue illnesses of unknown origin have been reported for more than 150 years in countries across the world, and many conditions strikingly similar to CFS go back at least several hundred years. In the mid 1700s, a condition called febricula (little fever) was reported, and in the 1870s, a similar disorder was called Da Costa’s syndrome (named for the American internist who described “utter fatigue with effort”). Since the turn of the last century, fatigue illnesses have been labeled epidemic neuromyasthenia, myalgic encephalomyelitis, atypical poliomyelitis, post-polio syndrome, chronic encephalomyelitis, Iceland disease, royal free disease, chronic brucellosis and hypoglycemia.

In the 1980s, when two cluster outbreaks of chronic Epstein-Barr virus occurred, researchers in the U.S. took a renewed interest in fatigue illnesses, which eventually led to the involvement by the CDC, which named the illness CFS. In 1988, the CDC created a U.S. case definition for diagnosis of CFS, which was refined in 1994 by an international consensus group. It is that definition, commonly called Fukuda definition, that is the basis for most current research in the U.S. Unfortunately, other case definitions across the world, including the Ramsey definition developed in England in 1981, the London criteria of 1992, the 2004 Canadian consensus definition and the 2005 Australian case definition, have clouded the diagnostic, epidemiological and etiological picture worldwide, making research comparisons difficult.

**MYTH:** There are diagnostic and lab tests to diagnose CFS.

**FACT:** There are no diagnostic tests or biomarkers to diagnose CFS. Instead, a diagnosis requires a thorough physical exam.
and health history to identify case-definition symptoms, as well as a mental status screening and a minimum battery of lab tests, including a urinalysis, thyroid function and C-reactive protein test, among others. And, because the main symptoms of CFS — fatigue, pain and headaches — are common to many other illnesses, it’s necessary to exclude other possible treatable causes such as thyroid or neurological disorders, multiple sclerosis, lupus or malignancies.

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It’s important to note that many routine tests that are used to rule out other causes of fatigue such as blood counts, kidney function, liver tests and thyroid tests are normal in those with CFS. This is one reason why some physicians question whether CFS is real. But, there are other tests in those with CFS that routinely are abnormal. For example, the hypothalamus and pituitary gland, key parts of the brain that control a number of hormones and many of the body’s vital functions, frequently demonstrate abnormal activity in people with CFS. In addition, many people with CFS have abnormal blood pressure responses to changes in position, suggesting that brain signals to the nerves controlling blood pressure are not functioning. And, some researchers have found abnormal numbers of types of white blood cells, antibodies and tests of immune function.

**Myth:** There is no set of diagnostic criteria for CFS.

**Fact:** In 1994, a group of international CFS experts, including the CDC, developed criteria to define the condition to help researchers select appropriate cases for study. Those criteria, which also are used by many clinicians to diagnose CFS, include medically unexplained fatigue of at least six months that is not the result of other disease or conditions; continued fatigue despite rest that leads to a significant reduction in social, personal, educational and job-related activities; and at least four of several characteristic symptoms that present concurrently. Characteristic symptoms include sore throat, muscle pain, joint pain without evidence of swelling or warmth, headaches (either increasing in severity or of recent onset), sore lymph nodes in the neck or under the arms, poor memory or reduced concentration, the need for more sleep despite getting plenty of sleep, and feeling unwell for a day or more after physical activity.

In 2003, a Canadian expert consensus panel developed the first clinical case definition for CFS. According to the panel: “This definition is clearly a vast improvement over the CDC’s 1994 case definition for CFS, which led to misunderstanding in both research and treatment modalities by making ‘fatigue’ a compulsory symptom but by downplaying or making optional the disease’s hallmark of post-exertional sickness and other cardinal ME/CFS symptoms. In sharp contrast to the CDC’s 1994 definition, this new clinical case definition makes it compulsory that in order to be diagnosed with ME/CFS, a patient must become symptomatically ill after exercise and must also have neurological, neurocognitive, neuroendocrine, dysautonomic, circulatory and immune manifestations. In short, symptoms other than fatigue must be present for a patient to meet the criteria.”

**Myth:** CFS is a type of depression or mental illness.

**Fact:** Because CFS can’t be diagnosed with tests and it is often treated with antidepressants, many people often believe it is a form of depression. Antidepressants are a common treatment because they alter the function of certain neurotransmitters that also are involved in multiple nonpsychological functions, including sleep, memory, cognitive ability and some aspects of muscle function. But, several studies have shown that depression is significantly different from CFS, and current diagnostic criteria can tell a difference.

**Myth:** People with CFS are just tired a lot and need more rest.

**Fact:** Individuals with CFS don’t just get tired a lot; they are tired all of the time — for at least six months or longer. And, their tiredness isn’t relieved by rest, which means it doesn’t matter how much they sleep because sleep is not refreshing.

Because of this misbelief about being tired a lot, a few decades ago, CFS was labeled the “yuppie flu,” also known as type-A personality burnout. This label was thought to be the result of type A being the only ones who pushed their doctors hard enough to get a diagnosis. But, research shows that all personality types can end up with CFS.

**Myth:** It is primary middle-aged Caucasian women who get CFS.

**Fact:** While research indicates that the prevalence of CFS is highest in people aged 40 to 59 and it affects women at four times the rate of men, people of any age, gender, ethnicity and socioeconomic group have CFS. The misconception about who CFS affects is due to the first generation of prevalence studies that were obtained by asking physicians and clinics to identify patients who had specific fatigue-related symptoms, the majority of whom identified Caucasian women who were well-educated and middle- or high-income earners. It is now believed that minorities and low-income individuals were underrepresented because these groups tend to have less access to the healthcare system. In fact, later studies show comparable or higher levels of CFS prevalence among minorities. And, several studies showed that people with annual household incomes below $40,000 and lower educational and occupational status had a higher prevalence of CFS-like illness.
MYTH: CFS is not associated with other diseases.  
**FACT:** CFS patients often have comorbid conditions. While the most common one is fibromyalgia, others include depression, irritable bowel syndrome and interstitial cystitis. And, according to a 2005 study, those with Gulf War syndrome often meet criteria for CFS or go on to develop CFS. “In some cases, comorbidities arise because people wait several years to see a doctor for CFS and develop other problems in the meantime,” said Suzanne Vernon, PhD, team leader of the CDC’s molecular epidemiology program and a chronic fatigue expert.

But CFS also may be the result of comorbidities. According to Anthony L. Komaroff, FACP, a Harvard Medical School professor of medicine and CFS expert, more than 4,000 published studies show that patients with CFS have underlying biological abnormalities, many of which center on brain hormones and the autonomic nervous system. Komaroff identified three research areas as the most promising: 1) evidence that the immune system is chronically activated and that pro-inflammatory cytokine production is increased, 2) evidence that there is something wrong with energy metabolism and the oxidative electron transport chain in mitochondria and 3) evidence that CFS develops following several different kinds of infections, and people with genetic vulnerability are most likely to get CFS when infected with certain kinds of infectious agents.¹

**Individuals with CFS don’t just get tired a lot; they are tired all of the time — for at least six months or longer.**

MYTH: CFS is not a infectious disease.  
**FACT:** While infection has not been proved to cause CFS, it is a prime theory. CFS presents in two ways: sudden or gradual onset. Patients with sudden onset are more likely to experience symptoms of an infectious nature, including fever, sore throat, chills and tender lymph nodes, suggesting that sudden onset CFS may be indicative of a viral/infectious illness.¹ In fact, many infectious diseases can cause prominent fatigue for prolonged periods, including mononucleosis and hepatitis B and C.¹ In 2007, researchers in California found that CFS may be linked to the presence of enteroviruses (viral microorganisms that reside in the gut). Using endoscopies, the researchers analyzed stomach tissue biopsy samples from patients with CFS and found that more than 80 percent of them had high levels of viruses in their digestive system (all had gastrointestinal complaints as part of their symptoms).³

A focus of recent research has been on the HHV-6 herpes virus, a common cause of rash and fever in infants and young children that can persist in the body for many years. It is thought that the virus is contained enough in the body to prevent damage to vital organs, but that its persistence might cause symptoms of low-grade fever, fatigue and other symptoms of CFS.⁴

MYTH: CFS is not fatal.  
**FACT:** A 2011 study reported that over 10 years, the mortality rate among patients with CFS was 12.5 percent, which is higher than the population at large. However, the cause of death may be related to comorbidities. In a 2006 study of 166 deceased CFS patients, there was an increased risk of premature death from cancer (47.8 patients versus 72 in the general population), heart failure (58.7 patients versus 83.1 in the general population) and suicide (39.3 patients versus 48 in the general population). Another study published in 2009 suggests the immune system abnormalities seen in CFS patients could explain the increased risk for cardiac failure. And, yet another study published in 2009 suggests that low Coenzyme Q10 may be a factor in cardiac failure.⁷

MYTH: Most people with CFS recover within a year.  
**FACT:** Recovery rates for CFS are unclear, with some people sick with CFS for less than two years and others ill for decades.⁶ In a 2005 review of published studies, improvement rates varied from 8 percent to 63 percent with a median of 40 percent of patients improving during follow-up.³ But the follow-up period may be important. Because of the relapsing-remitting nature
of the illness, some patients may be in remission at follow-up, suggesting their illness duration is shorter than it actually is unless the follow-up period extends for a period of years and detects any relapses.5

Recovery also may be influenced by many factors. Older age at illness onset, greater symptom severity, gradual onset, longer duration of illness, depression, less education, being unemployed, higher use of sedating and antidepressant drugs, poor coping skills and a belief that the illness is due to psychological rather than physical causes have all been implicated as possible risks for a poorer outcome. And, full recovery from CFS is rare; it is estimated that only 5 percent to 10 percent actually sustain total remission.5

MYTH: There are medications approved to treat CFS.

FACT: There are no FDA-approved medications to treat CFS. However, there are certain classes of drugs that are prescribed off-label to treat CFS. Because researchers say the bodies of CFS patients act as if they’re fighting a viral infection, antimicrobial drugs, including antivirals, antibiotics, antifungals and antiprotozoals, often are prescribed. One example is the antiviral Valcyte (valganciclovir) that treats HHV-6, which has produced encouraging results in small studies, but researchers say larger and better-designed studies are needed for reliable conclusions.7

Another antiviral that shows great promise is Ampligen (poly Ipoly C12U) that works by jump-starting the body’s natural antiviral pathway and regulating levels of RNase L (a substance in the cells that attacks viruses), which can be high in people with CFS. However, this year, after Phase 3 clinical trials that resulted in significant improvements in patients with CFS who were prescribed Ampligen versus a placebo, the FDA declined to approve Hemispherx Biopharma’s new drug application, and requested the company conduct at least one additional clinical trial, as well as complete various nonclinical studies and perform a number of data analyses.9

Antidepressants, most commonly selective serotonin reuptake inhibitors (SSRIs) or serotonin norepinephrine reuptake inhibitors (SNRIs) and tricyclic agents, also are prescribed to treat CFS. Serotonin helps process pain signals and is important to the sleep-wake cycle, while norepinephrine (a type of adrenaline) is involved in the stress response and bursts of energy. Examples of SSRIs and SNRIs are Cymbalta ( duloxetine), Prozac (fluroxetine), Zoloft (sertraline), Paxil (paroxetine), Effexor (venlafaxine), Desyrel (trazodone) and Wellbutrin (bupropion). Tricyclic agents sometimes improve sleep and relieve mild, widespread pain in people with CFS. Examples of tricyclics include Adapin and Sinequan (doxepin); Elavil, Etrafon, Libitrol and Triavil (amitriptyline); Norpramin (desipramine); and Pamelor (nortriptyline).7

In some cases, anti-anxiety drugs are prescribed, and to relieve the pain and fever associated with CFS, nonsteroidal anti-inflammatory drugs such as ibuprofen, naproxen and piroxicam can be used.7

What’s important to note is that a medicine that relieves one symptom may aggravate another. For instance, a stimulant prescribed for cognition difficulties can exacerbate restless sleep, and sleep medications may cause daytime sedation. Since so many patients are particularly sensitive to medication, the CDC advises starting at low doses and increasing slowly.1

MYTH: Many supplements are effective in treating CFS.

FACT: There is no proof that supplements definitively improve symptoms of CFS. However, many patients and physicians do claim that some do help. Supplements shown to reduce the symptoms of CFS include magnesium (300 to 1,000 mg per day) to reduce fatigue; essential fatty acids such as those found in fish oil (1,000 mg three times per day) and primrose oil (3,000 to 6,000 mg per day) to help reduce

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fatigue; NADH (5 to 20 mg per day), a naturally occurring chemical involved in energy production in the body; DHEA (50 to 200 mg per day), a hormone produced by the body that may improve energy levels; vitamin B12 (2,500 to 5,000 mcg by injection every two to three days for several weeks) to improve energy in people not getting enough B12; beta-carotene (50,000 IU per day) to strengthen immune function; L-carnitine (500 to 1,000 mg three times per day for eight weeks) to support energy production in the cells; and vitamin D (600 to 1,000 IU daily).

**One of the most effective ways to manage CFS is with exercise.**

Recent research suggests that Coenzyme Q10 (CoQ10) might have a very helpful antiviral effect. In a 2009 study, researchers found highly reduced levels of CoQ10 in CFS and that low CoQ10 levels were associated with increased symptoms. In another study conducted in 2011, researchers found highly reduced CoQ10 levels in people with depression and CFS and tied the lower CoQ10 levels to cardiovascular and inflammatory issues in depression and ME/CFS.10

While herbs can trigger side effects, they also have been shown to help with symptoms of CFS. These include ginseng (100 to 300 mg two times per day) to improve energy and echinacea (200 mg two times per day) to boost the immune system. Essential oils such as jasmine, peppermint and rosemary can help reduce stress when used as aromatherapy by placing several drops in a warm bath or on a cotton ball.11

**MYTH:** Exercise and other lifestyle changes don’t help to manage CFS.

**FACT:** One of the most effective ways to manage CFS is with exercise. While some people with CFS can’t tolerate minimal amounts of exercise, supervised physical therapy can help. For many others, exercise often makes symptoms worse in the short term, but it is a mainstay of treatment if patients start slowly and gradually increase the amount of exercise over time.4

In fact, exercise and cognitive behavior therapy are the best documented treatments for CFS. Research shows that cognitive behavioral therapy can help people with CFS to improve by learning about their ability to control their health and then taking steps to do so. Therapists teach self-help strategies, such as performing gentle exercise, improving sleep habits, learning to pace daily activities, getting support from others, and performing daily meditation and relaxation exercises.12

Many other lifestyle changes also can help CFS patients manage their disease. These include trying not to do too much when feeling energetic and less tired; improving sleep habits by going to bed only when sleepy and getting up every day at the same time; avoiding alcohol, caffeine and tobacco before bed; taking naps if needed; and joining a support group.13

**Dispelling the Myths Now**

One of the most common and inaccurate stereotypes about CFS patients “is that this is a bunch of hysterical, upper-class professional white women who are seeing physicians and have mass hysteria,” said Dr. William Reeves, the previous Centers for Disease Control and Prevention chief of the chronic viral disease branch.1 But as research shows, this myth has been debunked. CFS is a disease that affects all kinds of people, and far more patients are afflicted with CFS than those who are diagnosed. While CFS can’t be cured and there are no known effective treatments to date, understanding the facts about CFS will help dispel misinformation about the disease so that patients can receive attentive medical care to adjust to their illness, and scientists can get the support they need to develop effective treatments. ♦

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**References**


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