

ENADA NADH: Trial Establishes Efficacy as Treatment for CFS

By John W. Addington

02-02-1999 Sufferers of Chronic Fatigue Syndrome (CFS) can be heartened by the favorable results of clinical trials of the nutritional supplement Enada NADH for use in the treatment of their debilitating disorder. The outcome of the Enada NADH study has recently been published in the respected medical journal *Annals of Allergy, Asthma & Immunology*. (Vol. 82, pp. 185-191, Feb. 1999). Healthwatch and The CFIDS & FM Health Resource published preliminary results of this study, which was conducted at the prestigious Georgetown University Medical Center in Washington, D.C. This trial marks one of the first times the FDA has approved a nutritional supplement for evaluation as a medical treatment.

Benefits Seen in the Double-blind, Placebo-Controlled Study Twenty-six patients who met The Centers for Disease Control and Prevention's (CDC) criteria for CFS completed the 12-week double-blind, placebo-controlled study. Double-blind is a scientific term meaning neither the investigating doctors or the patients knew who was given Enada NADH or the placebo. During weeks one through four, patients received either 10 mg of Enada NADH or a placebo, whereas weeks five through eight were a 'wash-out' period during which patients received no active treatment. During weeks nine through twelve, patients' treatment was switched so they received the alternate treatment - either placebo or Enada NADH - relative to their first four weeks. Laboratory tests were completed at the beginning and end of the study, and symptoms were evaluated based on patients' response to an extensive questionnaire given prior to the study, as well as at the conclusion of weeks four, eight and twelve.

Eight of the patients showed at least a 10% improvement while taking Enada NADH, as opposed to only two of those taking the placebo. The success rate after only four weeks of Enada NADH treatment was 31% versus only 8% for patients given the placebo. Presented statistically, patients receiving Enada NADH were four times more likely than those taking a placebo to experience a reduction in symptoms.

A Longer Open Label Study Yields Greater Results The authors of this published study feel there is cause for optimism as to even potentially greater benefits of Enada NADH, a safe, naturally- occurring antioxidant, in the treatment of CFS. These doctors believe that a longer pe-riod of treatment may result in a higher percentage of patients responding favorably. To test this theory, doctors enrolled patients in a longer, open label (as opposed to double-blind, placebo) follow-up study. The *Annals of Allergy, Asthma & Immunology* journal article reports that to date 72% of patients in this open study have reported significant improvement of their symptoms and energy levels. However, Matthew Fitzsimmons, the president of Menuco Corporation, which supplied the patented form of Enada NADH used in the study, recently revealed that up to 80% of patients in the longer (ongoing) study have responded favorably.

Study Reveals Possible Markers for CFS A particularly interesting finding brought to light by Georgetown's Enada NADH study was the discovery of un-usually high urinary concentrations of 5-hydroxyindole acetic acid (5-HIAA), a substance produced in the metabo-lism of the brain neurotransmitter serotonin. Laboratory tests conducted on the patients prior to the study revealed 50% showed this

biological anomaly. Tests conducted after Enada NADH treatment showed 5-HIAA levels had returned to normal in all patients. The study's authors theorize that abnormal 5-HIAA urinary concentrations may serve not only as a diagnostic indicator of CFS, but may also be predictive of particular CFS symptoms.

The study also revealed the discovery of another potential biological marker for CFS, the presence of high antibody levels of Human Herpes Virus-6 (HHV-6) in 40% of the study's participants. Researchers at the international AACSF conference in October, 1998 presented research indicating HHV-6 may be active in as many as 70% of CFS patients at any point in time.

The More Enada NADH The Better

NADH is an abbreviation for the reduced form of nicotinamide adenine dinucleotide, also called coenzyme-1. The fact that our bodies must have NADH to convert food into energy illustrates Enada NADH's fundamental importance. Through this process each molecule of Enada NADH yields three molecules of adenosine triphosphate (ATP), the body's primary source of cellular energy. Professor George Birkmayer, M.D., Ph.D., a world renowned biochemical researcher and co-author of the published Georgetown study, illustrates the function of coenzymes and Enada NADH as follows: "You can compare enzymes and coenzymes with an engine and its fuel. The enzyme is the engine and the fuel is the coenzyme. Without its coenzyme the enzyme will not work. The deficiency of a needed coenzyme will actually slow down the enzymatic production process. A deficiency of NADH is the same as a car running out of gasoline. The more Enada NADH a cell has available, the more energy it can produce".

In his text, *NADH: The Energizing Coenzyme*, Professor Birkmayer outlines four other main functions of NADH, aside from its energizing ability. 1. Cell regulation and DNA repair, which aids in the repair of genetic damage, retarding disease perpetuation from chronic illnesses such as cancer, rheumatoid arthritis and immunodeficiencies. 2. Enhancement of the immune system by increasing the effectiveness of white blood cell function. 3. NADH is the foremost antioxidant, having an enormous capacity to destroy free radicals that have been implicated in neurodegenerative disorders such as Parkinson's, Alzheimer's, as well as numerous autoimmune diseases. 4. NADH can significantly increase the production of adrenaline, as well as dopamine, another important neurotransmitter, by as much as 600%. Since dopamine and adrenaline stimulate strength, movement, coordination, alertness, cognitive functions, mood, sex drive, and growth hormone secretions, the need for NADH is readily apparent.

This quick overview of NADH's functions may help explain why CFS symptoms improve with the supplementation of Enada NADH. Those involved in the Georgetown study feel these improvements are ultimately attributable to Enada NADH's energy production through ATP generation. Also, the study's unanticipated findings on high levels of urinary 5-HIAA may also demonstrate the importance of NADH in the improvement and evaluation of chronic fatigue syndrome patients.

Enada, The Only Therapeutic Form of NADH NADH disintegrates rapidly without proper stabilization, rendering it biologically inactive. Professor George Birkmayer overcame this challenge in 1993 by developing a stabilization process that yields the

only stable, biologically active form of NADH, patented under the name Enada. The Georgetown study utilized the Enada NADH in its study because of its bioavailability.

In the Georgetown study, patients took 10 mg (two 5 mg tablets) with water on an empty stomach in the morning, 45 minutes before breakfast. The study notes that different patients may require dosage adjustments based on response. Patients that do not respond to 10 mg may require an increased dosage, while a lower dosage may be sufficient for others. Menuco Corporation states in the package flyer that the suggested dosage for therapeutic use is 5 to 10 mg daily, depending upon individual requirements and the guidance of your physician or health-care professional.

It is likely that more studies will be conducted to determine Enada NADH's benefits in the treatment of CFS and other diseases. However, many CFS patients have already begun to use Enada and are delighted with the results. Given the recently published positive findings of the Georgetown study, there are even stronger grounds for CFS sufferers to add Enada NADH to the arsenal of weapons they currently use to manage their symptoms.