

# NADH:

## *energy incarnate*

Three generations of Birkmayers have dedicated their lives to solving some of the most grievous maladies of mankind—Parkinson's, Alzheimer's and depression.

Now, a new study shows that the misunderstood,

Hill Hospital showed that NADH had applications for endurance athletes as well. By taking 5 mg. of the co-enzyme daily, the study group showed improved oxygen capacity, decreased reaction time and great mental acuity and alertness.

"That's why we call it the energy co-enzyme,"

Birkmayer said. "Anyone can take it and will have increased energy. There have been no reported adverse side effects from NADH and it's even safe to take along with antidepressants."

Of course, his explanation is backed up by clinical studies done both abroad and in the United States. Ongoing tests include studies on attention deficit disorder in children and depression.

### **Vital energy**

Energy levels play a key role in many types of disease. The amount of energy a cell has determines if the cell lives or dies.

Cell death leads to tissue degeneration, which is a major precursor to Alzheimer's, Parkinson's, depression and other neurological disorders.

"NADH is a very potent antioxidant, one of the most potent ones," Birkmayer said. "You hear a lot about vitamin C, which is very important, but it's much further down the scale than NADH. And beta-carotene is even further down, when you measure antioxidants by chemical methods."

### **The history of NADH**

Knowledge of NADH predates much of Birkmayer's research. It had been used for blood tests but was considered too unstable.

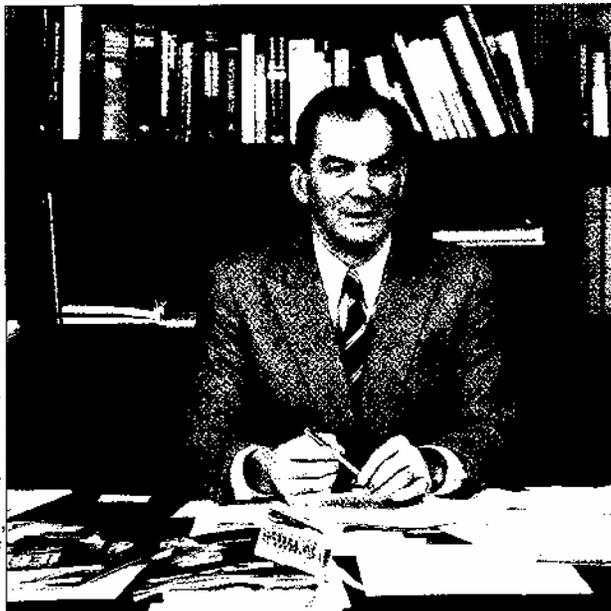
Walther Birkmayer, a leading researcher on L-Dopamine

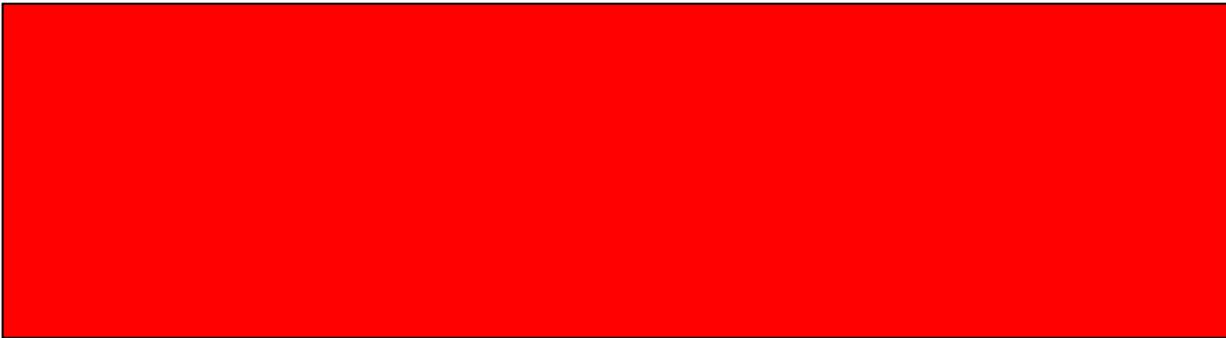
A new study by Georgetown University done on nicotinamide adenine dinucleotide (NADH), a co-enzyme found in all living cells, revealed that a "significant number of patients with CFS showed marked improvement." The double-blind clinical trial began in April 1996 and is ongoing. The initial results show that NADH replenishes the depleted cellular stores of adenosine tri-phosphate (ATP), the body's storehouse of energy, easing fatigue and improving cognitive functions.

The good news is just the latest in a long list of positive results. Georg Birkmayer, M.D., has received about NADH. The clinical director of Birkmayer Institute for Parkinson's Therapy and the chairman of Birkmayer Pharmaceuticals and Birkmayer Laboratories, Birkmayer believes in research and spends a small fortune to sponsor clinical trials for his products.

"There are so many myths and junk around," the soft-spoken doctor said. "We feel consumers should insist on solid scientific evidence. All products should have scientific evidence, clinical trials and be FDA approved."

In addition to the CFS study, a current study by the Nicholas Institute of Sports Medicine and Athletic Trauma at Lenox





in the '50s and '60s and its effects on brain-injured people, asked his son, Georg, to come up with a substance to help Parkinson's patients. Georg suggested NADH, as it is involved in L-dopa production in the body.

"It worked in the very first patient," Georg Birkmayer said. "We had luck. It worked in the next five, too."

The problem with the co-enzyme was that it was unstable and could only be used as an injection. Therefore, it was not available outside of a clinical setting. "The tablet we developed no one could guarantee that it was absorbed," Georg Birkmayer said. "It took us three years of research to come up with galenic formulation that was stable for a longer period of time."

Father and son established the Birkmayer Institute for Parkinson's Therapy in 1983 in Vienna, Austria. The elder Birkmayer's mother had died of the disease and he dedicated his lifetime of work to helping Parkinson's patients.

Stabilized, oral NADH, was patented in 1993 as ENADA. A patent for sublingual application of NADH was awarded to Birkmayer Pharmaceuticals Corp. in August 1997.

### **Biology of NADH**

DNA, although protected by histones and other macromolecules in the cell, can be damaged by exposure to radiation, UV light, ozone, chemical toxins or antibiotics. And with more than 20,000 new chemical compounds introduced every year, often without toxicological studies, we are exposed more and more to their toxic potential.

If the DNA is hit and damaged by these agents,

genetic material can be altered. The greater the DNA damage, the more extensive alteration in the cell and tissue occur. Genetic damage is the biochemical basis for a number of chronic diseases such as cancer, rheumatoid arthritis, immunodeficiencies and arteriosclerosis.

NADH works as a cellular immune response enhancer. The "killing mechanism" of the immune system against foreign bodies are fueled by NADH and its precursor, NADPH.

Its antioxidant effects also help prevent free radical damage. The free radicals, extremely reactive molecules that interact with many compounds at the cellular level, are involved in the development of cancer, coronary disease, arteriosclerosis, diabetes, Alzheimer's and Parkinson's.

### **Additional uses**

Clinical trials are under way on attention deficit disorder and depression. Some new applications for sexual dysfunction are also being studied.

In addition to its applications for Alzheimer's and Parkinson's diseases, NADH has been effective in:

- Protecting the liver from alcohol damage
- Lowering blood cholesterol levels
- Protecting against cellular damage of AZT

The average person can benefit from NADH taken as a daily supplement. It energizes body and brain activity, improves alertness, concentration, emotions, drive and overall mood. Birkmayer said people seeking nutritional energy enhancement can obtain excellent results with 2.5 to 5 mg. daily.

"NADH is a safe, natural compound that has shown much promise," concluded Henry Preuss, M.D., Georgetown University Medical Center."

*To find out more about Enada NADH, call the Birkmayer Corporation at (800)5182207*