

October 2002

## **Study shows that Coenzyme Q10 may slow progression of Parkinson's**

For the first time a study has shown strong evidence that a dietary supplement may slow the onset of Parkinson's disease. This was the outcome of a clinical study designed at Emory University to test the hypothesis that supplementation with Coenzyme Q10 would slow the progression of the disease.

Parkinson's disease is a degenerative neurological disorder characterized by slowness of movement, tremors and muscular rigidity. It affects roughly 1% of Americans older than 65 years. While the causes of Parkinson's remain unknown, both genetic abnormalities and environmental factors have been associated with the disease.<sup>1,2</sup>

Coenzyme Q10 is a fat-soluble antioxidant that protects the cells' energy-producing machinery, known as mitochondria, from free radical damage. Mitochondria are tiny string-like structures that process food for energy and exist in nearly all plant and animal cells. The prevailing supplementation use for Coenzyme Q10 is for the treatment and prevention of cardiovascular disease and related disorders that involve the heart, including atherosclerosis.<sup>3,4</sup> However, new roles for Coenzyme Q10 in cellular functioning are becoming recognized. The key findings suggest that it is an essential antioxidant that regenerates other antioxidants and that it stimulates cell growth and inhibits cell death.<sup>5</sup>

The study, conducted under the direction of Dr. Clifford W. Shults, of the University of California, San Diego, was reported in the October issue of the Archives of Neurology ([www.archneurol.com](http://www.archneurol.com)). Eighty subjects with early Parkinson's who were not taking any treatment for the disease were randomly assigned placebo or Coenzyme Q10 at dosages of 300, 600, or 1200 mg/d. During the trial, subjects underwent evaluation based on the Unified Parkinson Disease Rating Scale (UPDRS) -- an overall assessment scale that numerically quantifies motor and behavioral aspects of the disease -- at intervals up to 16 months after the start of the trial, or until disability had developed requiring treatment by Levodopa, the most common drug used for treating Parkinson's.

The conclusions reported were that Coenzyme Q10 was safe and well tolerated at dosages of up to 1200 mg/d and that less disability developed in those who were assigned Coenzyme Q10 than in those assigned the placebo. The benefits were highest for those receiving the highest dosage.<sup>6</sup>

While Shults cautioned that there is insufficient proof to formally recommend that patients take Coenzyme Q10 supplementation, the findings of the Emory University study are, in his words, "tremendously encouraging." He adds, "We really need to do a definitive study" to confirm the findings.

This is a view echoed by Ray Watts, M.D., professor of neurology, Emory University School of Medicine, who also took part in the study: "This is a very important study with positive results for Parkinson's patients but we are not at the stage yet where we feel comfortable telling patients to go to their local health food store and purchase Coenzyme Q10 as a treatment for the disease. Right now, we know this study shows vitamin-type therapy may slow the progression of movement and motor disabilities associated with the disease, but more studies are needed to determine the true effects of the compound." He added: "Emory will be involved in some larger Coenzyme Q10 studies in the near future, in hopes of finding out these specific effects."<sup>7</sup>

Ten centers, including Emory, took part in this study, which was funded by the National Institute of Neurological Disorders and Stroke of the National Institutes of Health. All centers are members of the Parkinson Study Group, a non-profit, North American organization consisting of Parkinson's disease and movement disorder specialists.<sup>8</sup>

### References:

<sup>1</sup> Tanner CM, Goldman SM. *Epidemiology of Parkinson's Disease*. Neurol Clin. 1996; 14:317-335

<sup>2</sup> Braak H, Braak E. *Pathoanatomy of Parkinson's disease*. J Neurol. 2000; 247 (suppl 2):113-1110.

<sup>3</sup> Oda T. *Effect of Coenzyme Q10 on Stress-induced Cardiac Dysfunction in Paediatric Patients with Mitral Valve Prolapse: A Study by Stress Echocardiography*. Drugs Exp Clin Res. 1985; 11(8): 557-76.

<sup>4</sup> Mortensen SA, Leth A, Agner E, Rohde M. *Dose-related decrease of serum coenzyme Q10 during treatment with HMG-CoA reductase inhibitors*. Mol Aspects Med. 1997; 18 Suppl: S137-44.

<sup>5</sup> Crane RL. *Biochemical Functions of Coenzyme Q10*. J Am Coll Nutr. Vol 20, No 6, 591-598, 2001.

<sup>6</sup> Shults CW, et al. *Effects of Coenzyme Q10 in Early Parkinson Disease: Evidence of Slowing of the Functional Decline*, Arch Neurol, Vol 59, Oct 2002.

<sup>7</sup> [http://www.emory.edu/WHSC/HSNEWS/releases/oct02/coenzyme\\_study.html](http://www.emory.edu/WHSC/HSNEWS/releases/oct02/coenzyme_study.html).

<sup>8</sup> Ibid.