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Specific oxidative alterations in vastus lateralis muscle of patients with the diagnosis of chronic fatigue syndrome.

Fulle S, Mecocci P, Fano G, Vecchiet I, Vecchini A, Racciotti D, Cherubini A, Pizzigallo E, Vecchiet L, Senin U, Beal MF.

Lab. Interuniversitario di Miologia, Dip. Biologia Cellulare e Molecolare, Universita di Perugia, Perugia, Italy.

Chronic fatigue syndrome (CFS) is a poorly understood disease characterized by mental and physical fatigue, most often observed in young white females. Muscle pain at rest, exacerbated by exercise, is a common symptom. Although a specific defect in muscle metabolism has not been clearly defined, yet several studies report altered oxidative metabolism. In this study, we detected oxidative damage to DNA and lipids in muscle specimens of CFS patients as compared to age-matched controls, as well as increased activity of the antioxidant enzymes catalase, glutathione peroxidase, and transferase, and increases in total glutathione plasma levels. From these results we hypothesize that in CFS there is oxidative stress in muscle, which results in an increase in antioxidant defenses. Furthermore, in muscle membranes, fluidity and fatty acid composition are significantly different in specimens from CFS patients as compared to controls and to patients suffering from fibromyalgia. These data support an organic origin of CFS, in which muscle suffers oxidative damage.

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