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In vivo magnetic resonance spectroscopy in chronic fatigue syndrome.

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The pathogenic mechanisms of chronic fatigue syndrome (CFS) are not clearly known. Fatigue, poor short-term memory and muscle pain are the most disabling symptoms in CFS. Research data on magnetic resonance spectroscopy (MRS) of muscles and brain in CFS patients suggest a cellular metabolic abnormality in some cases. ³¹P MRS of skeletal muscles in a subset of patients indicate early intracellular acidosis in the exercising muscles. ¹H MRS of the regional brain areas in CFS have shown increased peaks of choline derived from the cell membrane phospholipids. Cell membrane oxidative stress may offer a common explanation for the observed MRS changes in the muscles and brain of CFS patients and this may have important therapeutic implications. As a research tool, MRS may be used as an objective outcome measure in the intervention studies. In addition, regional brain ¹H MRS has the potential for wider use to substantiate a clinical diagnosis of CFS from other disorders of unexplained chronic fatigue.

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