

**Decreased vagal power during treadmill walking in patients with chronic fatigue syndrome.**

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The purpose of this study was to determine if patients with the chronic fatigue syndrome have less vagal power during walking and rest periods following walking, in comparison to a group of healthy controls. Eleven patients (ten women and one man) who fulfilled the case definition for chronic fatigue syndrome modified to reduce heterogeneity and eleven healthy, but sedentary, age- and sex-matched controls walked on a treadmill at 2.5 mph four times each for 4 min duration. Between each period of walking, subjects were given a 4-min seated rest period. Vagal power, a Fourier-based measure of cardiac, parasympathetic activity in the frequency range of 0.15 to 1.0 Hz, was computed. In each period of walking and in one period of rest, patients had significantly less vagal power than the control subjects despite there being no significant group-wise differences in mean heart rate, tidal volume, minute volume, respiratory rate, oxygen consumption or total spectrum power. Further, patients had a significant decline in resting vagal power after periods of walking. These results suggest a subtle abnormality in vagal activity to the heart in patients with the chronic fatigue syndrome and may explain, in part, their post-exertional symptom exacerbation.