Exercise capacity and immune function in male and female patients with chronic fatigue syndrome (CFS).

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Hyperactivation of an unwanted cellular cascade by the immune-related protein RNase L has been linked to reduced exercise capacity in persons with chronic fatigue syndrome (CFS). This investigation compares exercise capacities of CFS patients with deregulation of the RNase L pathway and CFS patients with normal regulation, while controlling for potentially confounding gender effects. Thirty-five male and seventy-one female CFS patients performed graded exercise tests to voluntary exhaustion. Measures of peak VO2, peak heart rate, body mass index, perceived exertion, and respiratory quotient were entered into a two-way factorial analysis with gender and immune status as independent variables. A significant multivariate main effect was found for immune status (p < 0.01), with no gender effect or interaction. Follow-up analyses identified VO2(peak) as contributing most to the difference. These results implicate abnormal immune activity in the pathology of exercise intolerance in CFS and are consistent with a channelopathy involving oxidative stress and nitric oxide-related toxicity.

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