

## **Demonstration of delayed recovery from fatiguing exercise in chronic fatigue syndrome.**

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Patients with the chronic fatigue syndrome (CFS) complain consistently of delay in recovery of peripheral muscle function after exercise. The purpose of this study was to try to confirm this observation. A fatiguing exercise test was carried out on the quadriceps muscle group of ten patients and ten control subjects. The test consisted of 18 maximum voluntary contractions (MVCs) with a 50% duty cycle (10 s contraction, 10 s rest), and the force generated by each contraction was recorded using a KinCom dynamometer. This was followed by a recovery phase lasting 200 min in which quadriceps strength was evaluated at increasing intervals, and a follow-up session at 24 h post-exercise involving three 10 s MVCs. Throughout the exercise period, the MVCs obtained from the control group were significantly higher than those of the patient group ( $P = 0.006$ ), but both groups showed a parallel decline in force over the 18 contractions, in keeping with a similar endurance capacity. Recovery was prolonged in the patient group, however, with a significant difference compared to initial MVCs being evident during the recovery phase after exercise ( $P = 0.001$ ) and also at 24 h ( $P < 0.001$ ). In contrast, the control group achieved MVCs which were not significantly different from initial values during the recovery phase, and maintained these at 24 h. These findings support the clinical complaint of delayed recovery after exercise in patients with CFS. Copyright 1999 Lippincott Williams & Wilkins

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