

# Researchers hope to provide chronic fatigue syndrome answers

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One of the most difficult things for people suffering from Chronic Fatigue Syndrome (CFS) is that many believe the condition to be a psychological, not physical affliction.

New research by the Faculty of Kinesiology hopes to measure one of the syndrome's most obvious symptoms — information that could help doctors in the diagnosis CFS.

“Diagnosis of the syndrome, generally follows eliminating every other possible cause, which leads some to speculate that the condition isn't real,” says Dr. Brian MacIntosh. “One thing we know is that CFS sufferers feel profound fatigue and worsening of other symptoms following even moderate physical activity. Using our expertise in the field of exercise physiology we believe we can measure this post exertion malaise and say with certainty if an individual has recovered from exercise or if that activity is making them even more fatigued.”

MacIntosh, who is the Faculty of Kinesiology's Associate Dean of Graduate Studies, is an expert in the area of muscle fatigue. Much of his research has centered on high-performance athletes in peak physical condition, however he says that this research fits in well with his overall area of interest.

“The tools we have developed in high performance sport are perfectly suited to track muscle fatigue in this application so without question we will be able to get some concrete answers,” he says.

The research trial will put CFS patients on a stationary bike to perform a VO2 Max test – similar to trials used to evaluate the fitness level of professional athletes. The individual will pedal to the point of fatigue, at which point researchers will take several measurements including a blood sample in which lactate will be quantified. The next day the patient will return and follow the same workout protocol.

“Most healthy individuals should be able to easily match their performance from the previous day,” MacIntosh explains. “Since CFS patients by definition report profound fatigue from even moderate physical exertion and take greater than 24 hours to recover, we would expect to see a decrease in their physical performance and we should be able to measure that in several ways.”

This work may shed some light on whether the fatigue experienced by people with CFS is primarily in the muscles or in the nervous system. MacIntosh believes that the results of this work could lead to a definitive diagnosis of CFS, giving another tool in the otherwise limited toolbox of diagnostic tests and perhaps, more importantly, shed some light on the broader issue of human muscle fatigue.

“We've all experienced fatigue in our lives," says MacIntosh. "For example when we have the flu or any similar illness, we feel that fatigue makes our arms and legs feel like they're made of lead... I'm hoping that this research may lead to a greater understanding of human muscle fatigue in general.”

Source: University of Calgary

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