

# Shedding Light on Fatigue and Pain

Until recently fatigue and pain have been thought of primarily as symptoms rather than physiology. But what if the biochemistry of fatigue and pain could actually be detected and quantified in the blood? **Kathleen Light, PhD**, made that preliminary finding in her recent NIH-funded research of CFS, and now the CFIDS Association is enabling her group to expand its work.

Light is an established scientist in pain research. In the NIH-funded study, she and her research partner and husband Alan Light, PhD, found preliminary evidence of increased expression of pain receptors (called acid-sensing and ion-channel receptors) in the blood of CFS patients after an exercise challenge designed to replicate normal daily activity. The increase in these fatigue- and pain- sensing receptors lasted for two days following the 30-minute exercise, corresponding with the CFS patient's reports of more intense fatigue and pain.

With the new grant from the CFIDS Association, Light and her team will expand their observations from the earlier study by examining a larger group of CFS patients.

The investigation could also have diagnostic significance. According to Light, "We can explore whether increased expression of specific receptors following exercise could be blood-based biomarkers for CFS that would help identify patients with this disorder through a safe and unbiased medical test."

The study also has treatment implications since it will explore whether CFS patients who exercise more or use certain medications show closer to normal levels of these post-exercise blood biomarkers, and if they experience less fatigue and pain. That could prove helpful in determining whether specific treatment regimens are likely to be effective or not.

Another interesting feature of this study is Light's collaboration with well-known CFS clinician Lucinda Bateman, MD, who'll be providing subjects for the investigation. Bateman's clinical expertise will ensure that the patients are well-characterized for the study, and she'll lend additional clinical insight to the analysis of study data.

With Bateman and both Lights working on this investigation, the potential to illuminate the postexertional fatigue and pain of CFS is high.



**Perspective**  
from our scientific director  
Suzanne Vernon, PhD

**"Light's preliminary findings of blood-based biomarkers for postexertional fatigue and pain in CFS is groundbreaking, putting these elements of CFS on physiologic footing. Because postexertional symptoms are a hallmark of CFS, this study could lead to a specific CFS blood test."**

**Kathleen Light, PhD**

**Study:** Novel ion channel-based biomarkers in CFS

**Institution:** University of Utah Health Sciences Center

**Collaborators:** Alan Light, PhD, Lucinda Bateman, MD