

# Visual stress could be a symptom of chronic fatigue syndrome, research suggests

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Credit: George Hodan/public domain

People suffering from chronic fatigue syndrome (CFS) could experience higher levels of visual stress than those without the condition, according to new research from the University of Leicester.

CFS, also known as myalgic encephalomyelitis (ME), is a condition that causes persistent exhaustion that affects everyday life and doesn't go

away with sleep or rest. Diagnosis of the condition is difficult as its symptoms are similar to other illnesses.

A research team from the University of Leicester led by Dr Claire Hutchinson from the Department of Neuroscience, Psychology and Behaviour has examined patients with and without CFS and has found that those suffering from the condition are more vulnerable to pattern-related visual stress, which causes discomfort and exhaustion when viewing repetitive striped patterns, such as when reading text.

The results of the study, which is published in the journal *Perception*, could help in the diagnosis of CFS, as the findings suggest that there are visual system abnormalities in people with ME/CFS that may represent an identifiable and easily measurable behavioural marker of the condition.

Dr Hutchinson explained: "Diagnosis of ME/CFS is controversial. With the exception of disabling fatigue, there are few definitive clinical features of the condition and its core symptoms, overlap with those often prevalent in other conditions. As a result, ME/CFS is often a diagnosis of exclusion, being made as a last resort and possibly after a patient has experienced a series of inappropriate treatments of misdiagnosed disorders.

"It is imperative therefore that research focuses on identifying significant clinical features of CFS/ME with a view to elucidating its underlying pathology and delineating it from other illnesses. Doing so will help researchers and healthcare professionals gain important insights into the condition, aid diagnosis and, in the longer term, inform evidence-based therapeutic interventions."

The study assessed vulnerability of ME/CFS patients to pattern-related visual stress using a standardised test called the pattern glare test, in

which people report the number of visual distortions they experience when looking at three repetitive striped patterns of different levels of detail.

During the study twenty patients with CFS and twenty patients without the condition were recruited.

Participants viewed 3 patterns, the spatial frequencies (SF) of which were either 0.3 (low-SF), 2.3 (mid-SF) and 9.4 (high-SF) cycles per degree (c/deg). They then reported the number of distortions they experienced when viewing each pattern.

Patients with ME/CFS reported more distortions on the intermediate striped pattern (Pattern 2) than people without the condition.

Dr Hutchinson added: "The existence of pattern-related visual stress in ME/CFS may represent an identifiable and easily measurable behavioural marker of ME. This could, in conjunction with other diagnostic tests, help delineate it from other conditions."

The work was funded by ME Research UK who provided funding for a one-year MPhil studentship, awarded to Rachel Wilson, who was supervised by Drs Claire Hutchinson and Kevin Paterson from the University of Leicester's Department of Neuroscience, Psychology and Behaviour.

Dr Neil Abbot, Research & Operations Director at ME Research UK, added: "Around three-quarters of people with ME/CFS report a range of eye and vision-related symptoms that interfere with their everyday lives, yet there has been very little scientific investigation of the problem.

"Dr Claire Hutchinson and her team have previously confirmed the existence of eye movement difficulties in ME/CFS patients, and that

symptoms, including eye pain, can be severe. Her new report in *Perception* extends these findings and raises the possibility that vision anomalies, including pattern-related visual stress, may have a diagnostic role in the disease."

**More information:** "Increased Vulnerability to Pattern-Related Visual Stress in Myalgic Encephalomyelitis," *Perception* 2015, 0(0) 1–5 [DOI: 10.1177/0301006615614467](https://doi.org/10.1177/0301006615614467)

Provided by University of Leicester

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