

Eye test to measure fatigue levels

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A gruelling weekend spent by doctors and nurses working in a hospital A&E department could spell successive long shifts with little sleep. [Concerns have been raised](#) that the cumulative effect of long hours and little shut-eye could mean that medics are more likely to make mistakes or wrong decisions when treating patients.

Now, a simple eye test could provide a method of testing if medics are too tired to perform their duties. By measuring saccades, the tiny eye movements made by the eyes as they focus on areas of attention, an international team of researchers has shown they can be used to objectively measure levels of fatigue.



A team of researchers from institutions including the University of Granada in Spain, and the Barrow Neurological Institute in Phoenix, US, found that the speed of saccadic movement slows as a person becomes increasingly fatigued.

The team studied 12 members of the traumatology service at St Joseph's Hospital and Medical Center in Phoenix, US over a 24-hour shift. The medics were tested before and after their shifts. In addition to performing a simulated surgical technique, they had to undergo a guided test to measure the speed of their saccadic movements.

However, the results showed that while saccadic velocity decreased over a long shift, the doctors' ability to carry a basic surgical technique, did not – supporting the theory that fatigue is not the only source of errors.

The authors write: "Our data show, for the first time, that saccadic velocity is a reliable indicator of the subjective fatigue of health care professionals during prolonged time-on-duty."

The test could be used to measure fatigue in other professions with extended working hours, such as aviation.

The research is published in the journal [Annals of Surgery](#).

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