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AUTOMATED PUPILLOMETRY IN SPACE NEUROSCIENCE

**Abstract**

Modern pupillometers are automated, thereby providing an objective, accurate, and reliable evaluation of various aspects of the pupillary light reflex at precision levels that were previously unobtainable. There are many gaps in knowledge regarding pupil size and pupillary light reflex in nervous system changes related to space travel given the previous lack of a precise method to quantitatively measure it. Automated pupillometry has not been used previously in space. This novel tool has promising uses in altered gravity environments as a sensitive non-invasive tool to determine alterations due to headward fluid shifts and elevated intracranial pressure. This study discusses the potential use of automated pupillometry in space for monitoring of astronaut health and neurological pathology.