Automated pupillometry provides more precise readings of pupil size and reactivity, these data offer a paradigm shift from the historic method of reporting pupil findings. The intent of this study was to collect a large sample of patient pupill data, using the NeurOptics pupillometer, characterize pupil observations and physiological data, and to report the central tendencies of these findings.

Automated pupillometers have gained wide acceptance as a critical care assessment tool to aid practitioners when assessing pupillary function. While pupillometers provide higher precision and reliability than subjective pupil assessments (human observation), there are no data defining what counts as ‘normal.’ The Neurological Pupil Index (NPi®) is a relatively new value describes the size and constriction velocity of pupil reactivity in one value. The normative data (e.g., mean, standard deviation) have not yet been established for the neurocritical care population.

These data, while observational, provide an insight towards what clinicians may expect to find when conducting pupillary exams. The group mean constriction velocity was similar for OS (NPi=3.8(1.3]) and OD (NPi=3.8(1.3]). Mean (s.d.) pupil size was also similar for OS (size=3.5(1.2) mm) and OD (size=3.5(1.2) mm). The group mean (s.d.) for constriction velocity was also similar for OS (CV=1.6(0.8)mm/sec) and OD (CV=1.5(0.9)mm/sec). These data suggest that there are no significant differences between left and right eye for size, NPi, and constriction velocity.