

## Continuous IOP fluctuation recording in normal tension glaucoma patients.

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### **ABSTRACT:**

**Background:** Intraocular pressure (IOP) remains the only treatable risk factor of progressive glaucoma. Recently a device became available to continuously record IOP fluctuation in contrast to classical, discreet IOP measurements.

**Objectives:** To perform 24-h IOP fluctuation monitoring using a CE-marked silicone lens-embedded strain gauge sensor (SENSIMED Triggerfish) in five normal tension glaucoma patients in the presence and absence of anti-glaucomatous treatment and to show the clinical importance of this diagnostic tool. **Methods:** 24-h continuous IOP fluctuation monitoring was performed on two occasions separated by at least 6 weeks in each patient. In the control session patients were untreated or previous IOP-lowering medication was washed-out for at least 6 weeks. In the treatment session patients received IOP-lowering medication for at least 6 weeks. The continuous recordings were analyzed for differences between daytime and nighttime data and for repeatability over time. Furthermore, profiles recorded in each patient in treated and non-treated conditions were compared.

**Results:** Highly individual and repeatable profiles were obtained. Data recorded during daytime portions of the recordings showed higher coefficients of variation than nighttime data. Positive and significant linear slopes for the transition period from wake time to sleep time were detected in all patients in the absence of anti-glaucomatous treatment, while in three patients of five no significant slopes were detected under treated conditions.

**Conclusion:** Our data suggest that the continuous IOP fluctuation monitoring device is sensitive to individual IOP rhythms and to differences in such rhythms due to anti-glaucomatous drug therapy.