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## Home self-monitoring of intraocular pressure using the ICare home rebound tonometer

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**Purpose:** To establish whether patients can perform accurate and reliable home self-monitoring of their intraocular pressures (IOPs) using the ICare Home.

**Methods:** 20 patients had their IOPs measured by the study team using the Goldmann applanation tonometer (GAT) and the ICare Home. They were then trained to use the ICare Home which was loaned to them for a period of 7 days. They measured IOPs for both eyes twice a day, taking 3 readings each time. A week later, GAT & ICare readings were again taken by the study team and the patients. The IOP readings were downloaded and analyzed. Bland-Altman difference analysis was used to assess agreement between GAT and ICare Home. Intraclass correlation (ICC) compared ICare Home measurements by the study team and patients, and test-retest variability for the patient's readings over the 7-day period were analyzed by taking the standard deviation of the 6 readings taken per day.

**Results:** There was good agreement between GAT and ICare Home readings obtained by the study team for the left eye (mean IOP difference  $1 \pm 3.70$  mm Hg,  $P=0.242$ ) but less so for the right eye ( $1.75 \pm 3.32$  mm Hg,  $P=0.029$ ), with ICare Home readings slightly higher for both eyes. Intraclass correlation coefficient (ICC) between ICare Home readings obtained by the study team and the patients at the first visit was 0.759 (95% confidence interval (CI), 0.474-0.900) for the right eye, and 0.783 (95% CI, 0.529 – 0.908) for the left eye. ICC at the final visit was 0.784 (95% CI 0.532-0.909) for the right eye, and 0.833 (95% CI 0.617-0.932) for the left eye, showing good agreement. Test-retest variability did not show any significant trend over the 7-day period.

**Conclusions:** Glaucoma patients can perform reasonably accurate self-tonometry using the ICare Home tonometer although the readings are generally higher compared to GAT.

### Biography

Jeanne Ogle is a Principal Resident Physician at the Department of Ophthalmology, Tan Tock Seng Hospital. She obtained her Fellowship from the Royal College of Surgeons, Edinburgh in 1999 and Master's degree in Surgery (Ophthalmology) at National University of Malaysia in 2000. Her primary clinical & research interests are in Glaucoma and she is currently involved in research investigating the analysis of ocular inflammatory cytokines and proteins in Glaucoma, as well as novel methods for imaging, risk assessment and screening for angle closure glaucoma.

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