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1: [Optom Vis Sci.](#) 2006 Feb;83(2):102-7.

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Accuracy of the new ICare rebound tonometer vs. other portable tonometers in healthy eyes.

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PURPOSE: The ICare (Tiolat Oy, Helsinki, Finland) is a new portable tonometer that measures intraocular pressure (IOP) with a new rebound method, in which a very light probe is used to make momentary contact with the cornea in slow motion. The purpose of this study is to assess the accuracy of the ICare IOP measurements by comparing them against other portable tonometers: Perkins applanation tonometer and Tono-Pen XL digital tonometer (Medtronic Solan, Jacksonville, FL). **METHODS:** Sixty-five young subjects were assessed with each of the tonometers. ICare tonometry was performed first, followed by Perkins applanation tonometry and Tono-Pen XL in a random order. Regression analysis was used to evaluate the relationship between the Perkins tonometer and the remaining tonometers used in this study. Tonometers were also compared by plotting the difference between the methods against the mean. The hypothesis of zero bias was examined by a paired t test and the 95% limits of agreement (LoA) were calculated. **RESULTS:** ICare and Tono-Pen XL significantly overestimate IOP when compared with Perkins applanation tonometry. The mean of the difference between Perkins and ICare and Perkins and Tono-Pen XL was (mean +/- standard deviation) -3.35 +/- 2.28 mm Hg and -2.78 +/- 2.53 mm Hg, respectively. The 95% LoA between Perkins tonometry and ICare tonometry were between -7.81 and +1.12 and between Perkins tonometry and Tono-Pen XL tonometry between -7.74 and +2.18. **CONCLUSIONS:** Compared with Perkins tonometry, the ICare tonometer allows clinicians to estimate IOP with a portable,

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Tonometry in pediatric patients: a comparative study among Tono-pen, Perkins, and Schiottz tonometers. [J Pediatr Ophthalmol Strabismus. 1995]

Clinical comparison of the ProTon and Tono-Pen tonometers with the Goldmann applanation tonometer. [Br J Ophthalmol. 1994]

Comparison of the rebound tonometer (ICare) to the applanation tonometer (Tonopen XL) in normotensive dogs. [Vet Ophthalmol. 2006]

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rapid, and noninvasive method with similar reliability to that offered by Tono-Pen XL. Clinicians should be aware of the systematic overestimation of IOP with the ICare. Further research is needed to evaluate the performance of rebound tonometry in populations with higher IOP and assess the reliability of this technique in the early detection and follow up of glaucomatous patients.

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