



Clinicals Summary for CATS™ Tonometer Prism

Topic / Purpose	Key Findings	Author, Title, Journal
A methods paper covering the design of CATS Tonometer Prism	Mathematical modeling of the CATS Tonometer Prism indicates a significant reduction in corneal biomechanical and tear film errors on Goldmann measured IOP	McCafferty S, Lim G, Duncan W, et al. Goldmann tonometer prism with an optimized error correcting applanation surface. <i>Transl Vis Sci Technol</i> 2016;5:4–5.
Clinically evaluate intraocular pressure (IOP) measurements taken with a Goldmann applanation tonometer (GAT) prism and CATS Tonometer Prism and examine measurement differences correlated to central corneal thickness (CCT) and corneal hysteresis (CH) values.	CATS Tonometer Prism significantly improves IOP measurement accuracy by minimizing corneal biomechanical errors associated with Corneal Thickness (CCT) and Corneal Hysteresis (CH)	McCafferty S, Tetrault K, McColgin A, et al. Modified Goldmann prism intraocular pressure measurement accuracy and correlation to corneal biomechanical metrics: multicentre randomized clinical trial. <i>Br J Ophthalmol</i> . 2019 Dec;103(12):1840-1844. doi: 10.1136/bjophthalmol-2018-313470.
Clinically evaluate a modified applanating surface Goldmann tonometer prism designed to substantially negate errors due to patient variability in biomechanics.	CATS demonstrates improved accuracy and reduced sensitivity to Goldmann errors. The CATS replacement for the Goldmann prism does not change Goldmann measurement technique or interpretation.	McCafferty S, Lim G, Duncan W, et al. Goldmann tonometer error correcting prism: clinical evaluation. <i>Clin Ophthalmol</i> 2017;11:835–40.
To quantify the isolated tear film adhesion error in a Goldmann applanation tonometer (GAT) prism and in a correcting applanation tonometry surface (CATS Tonometer Prism).	GAT tear film adhesion error is more than previously predicted. The CATS Tonometer Prism significantly reduced tear film adhesion error on IOP measurements	McCafferty S, Enikov E, Schwiegerling J, et al. Goldmann tonometry tear-film error and partial correction with a shaped applanation surface. <i>Clin Ophthal</i> 2018;12:71–8.
To clinically evaluate a modified surface Goldmann applanation tonometer (GAT) prism for intraocular pressure (IOP) accuracy, repeatability, and safety.	In normal eyes with average corneal thickness, CATS Tonometer Prism is statistically equivalent to a traditional GAT prism with respect to accuracy, repeatability, and safety.	McCafferty S, Tetrault K, McColgin A, Chue W, Levine J, Muller M. Intraocular Pressure Measurement Accuracy and Repeatability of a Modified Goldmann Prism: Multicenter Randomized Clinical Trial. <i>Am J Ophthalmol</i> . 2018 Dec;196:145-153. doi: 10.1016/j.ajo.2018.08.051.
To examine Goldmann applanation tonometry (GAT) error relative to intracameral intraocular pressure (IOP) in both human cadaver eyes and in live human eyes and evaluate the effect of corneal biomechanics and thickness on GAT accuracy	Goldmann IOP measures significantly lower than true IOP. CCT appears to significantly affect the error.	McCafferty S, Levine J, Schwiegerling J, et al. Goldmann applanation tonometry error relative to true intracameral intraocular pressure in vitro and in vivo. <i>BMC Ophthalmol</i> 2017;17
Compare Goldmann applanation tonometer (GAT) prism and correcting applanation tonometry surface (CATS) prism to intracameral intraocular pressure (IOP), in vivo and in vitro.	CATS significantly improves the accuracy of IOP measurement compared to true pressure across a wide range of IOP values. The CATS prism is significantly more accurate compared to the GAT prism in thin and less rigid corneas.	McCafferty S, Levine J, Schwiegerling J, et al. Goldmann and error correcting tonometry prisms compared to intracameral pressure. <i>BMC Ophthalmol</i> 2018;18.