

**icare**  
**TONOVET**  
Plus

## BETTER ACCURACY

New, species-specific updated calibrations for cats, dogs, rabbits and horses supply more accurate readings.

Please note the difference in readings with other tonometers – more info behind this page.

## EASIER TO USE

New features make IOP measurement easier than ever. The position lights assure your angle is always correct when measuring.

Device will also instruct the user about the distance by a message on a clear, big display. IOP can be taken by just one press and quality of the measurement is clearly indicated.

Ask for a demo and try it yourself! FIND YOUR LOCAL VENDOR FROM [tonovet.com/where-to-buy](http://tonovet.com/where-to-buy)



Bigger display & user-friendly interface with clear messages - in 11 languages



Positioning assistant lights for the correct alignment of the tonometer



NO ANESTHESIA  
NO CALIBRATION



## WATCH VIDEOS ON YOUTUBE

IOP measuring with the TONOVET



WATCH TONOVET VIDEOS ON [www.tonovet.com](http://www.tonovet.com) OR YouTube!

- TONOVET measuring videos
- TONOVET maintenance videos



## TONOVET TONOMETER STAND

- Table and wall mountable rest
- Available as accessory

NO ANESTHESIA  
NO CALIBRATION



FIND YOUR LOCAL VENDOR FROM  
[tonovet.com/where-to-buy](http://tonovet.com/where-to-buy)



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**icare**  
**TONOVET**

QUICK & EASY  
ANIMAL IOP MEASURING



[www.tonovet.com](http://www.tonovet.com)

# ACCURATE, EASY-TO-USE TONOMETER IS A MUST-HAVE DEVICE FOR EVERY CLINIC.

*How many red eyes do you see at your clinic daily?  
The IOP of every red eye should always be measured.*



"Most eyediseases cause redness of the eye. IOP should always be measured from all red eye patients. IOP measuring is quick and easy with the TONOVET tonometers. Discreet measurement is painless for the animal and does not require topical anaesthetic. Fast, in less than a minute made measurement will give important

information; high or low eye pressure may often be the only distinctive symptom between serious and harmless eye problems."

**Elina Pietilä, DVM, DipECVO**  
Clinical Lecturer in Veterinary Ophthalmology,  
University of Helsinki, Finland



"The measurement of IOP is an important part of the complete ophthalmic examination and is particularly applicable in the diagnosis and management of uveitis and glaucoma. An easy to use and reliable tonometer is thus an essential piece of equipment for both the general practitioner and ophthalmologist alike. The TONOVET has become extremely popular

among veterinary ophthalmologists because it is portable, easy to use, very well tolerated and does not require prior topical anaesthesia or calibration by the operator."

**James Oliver, DVM, BVSc, PhD, CertVOphthal, DipECVO**  
MRCVS, RCVS, EBVS Head of Ophthalmology,  
Dick White Referrals, UK



	icare TONOVET Plus	icare TONOVET
<b>Type name</b>	TV011	TV01
<b>Dimensions</b>	24 - 29 (W) x 35 - 95 (H) x 215 (L) mm	13 - 32 (W) x 45 - 80 (H) x 230 (L) mm
<b>Weight</b>	without batteries	140 g
	with batteries	230 g
<b>Power supply</b>	4 x AA non-rechargeable batteries, 1.5V alkaline LR6	
<b>Display</b>	OLED, in colours	LCD
<b>Error messages</b>	Pictures & clear messages	Error codes
<b>Positioning assistant lights</b>	Yes	No
<b>One press measurement option</b>	Yes	No
<b>Settings / Calibrations</b>	4 settings: dog, cat, rabbit & horse	2 settings: dog/cat & horse
<b>Warranty</b>	2 years	

## NEW TONOVET PLUS CALIBRATIONS ALL EYES ARE NOT THE SAME. SPECIES-SPECIFIC CALIBRATIONS ASSURE THE ACCURACY AND PRECISION

Icare TONOVET tonometer is the only tonometer with species-specific calibrations for animal eyes\*. Species-specific calibrations are needed to assure the accuracy. Animal eyes have species-specific characteristics, eg. corneal thickness, curvature, elasticity vary significantly by species.

All calibrations (settings) have been updated in the new TONOVET Plus tonometer (vs. 'original' TONOVET tonometer). Dog and cat calibrations were separated and rabbit added as new calibration.

With more accurate and specific calibration for **dog only**, the TONOVET Plus typically yields IOP readings about 4 mmHg higher than the original TONOVET dog calibration, which was a composite of both cat and dog calibrations.

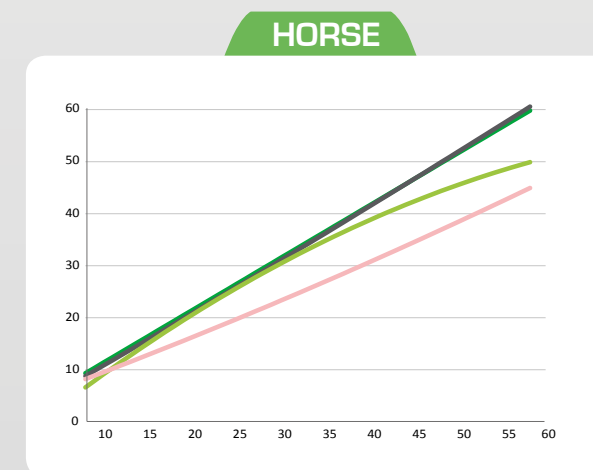
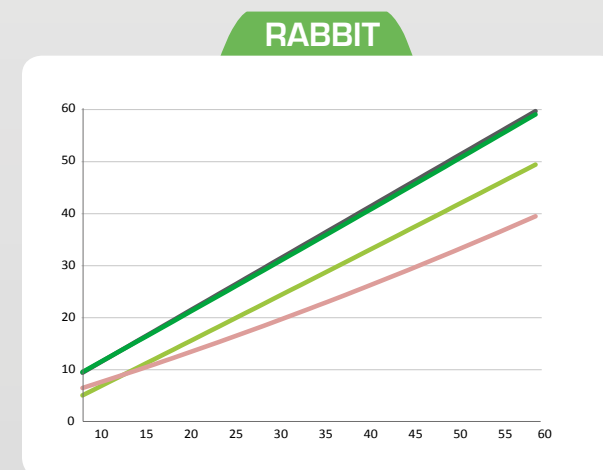
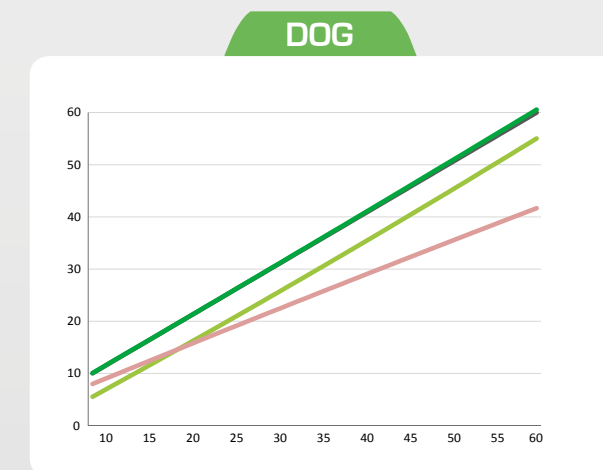
New calibrations were developed in co-operation with the University of Wisconsin-Madison, the Iowa State University and the University of Georgia.

Development studies were done on enucleated eyes (species-specific) by experienced ophthalmologists.

Manometry by cannulating the eye represents the true IOP (intraocular pressure).

TONOVET Plus is calibrated to correlate with species-specific manometrical values.

\*Ben-Shlomo et al. Evaluation of three hand-held tonometers in normal canine eyes. *The Veterinary Journal* 224 (2017) 7-10



■ Manometer ■ TONOVET Plus trend ■ TONOVET trend ■ Applanation trend

## VALIDATION OF THE TONOVET PLUS® AND TONO-PEN AVIA™ TONOMETERS IN NOR- MAL CANINE EYES

(AL Minella,1 JA Kiland,2 and GJ McLellan,2-4) UW Veterinary Care, University of Wisconsin - Madison

**Purpose.** To validate the TonoVet Plus® rebound tonometer and the Tono-Pen AVIA™ applanation tonometer, for estimating intraocular pressure (IOP) and to compare their accuracy and precision to their predecessors, the TonoVet® and the Tono-Pen VET™. **Methods.** The anterior chambers of six normal dog eyes were cannulated ex vivo. Tonometry readings with all four tonometers were recorded in triplicate at manometric IOPs at increments from 5 mmHg to 70 mmHg. Data were analyzed by linear regression, ANOVA, and Bland-Altman plots. Significance was set as  $P < 0.05$ . **Results.** All tonometers provided readings with strong linear correlation to true IOP but slopes of all devices were  $< 1$  across the full IOP range (5-70 mmHg). In the low to normal physiological IOP range (5-25 mmHg), both TonoVet tonometers yielded estimates that were not significantly different from manometry but both Tono-Pen tonometers significantly underestimated IOP. All tonometers underestimated IOP relative to manometry at higher IOPs (30-70 mmHg). High  $R^2$  values indicated good precision for all devices. **Conclusions.** All evaluated tonometers provide clinically useful estimates of IOP within the normal, physiological range. The Tono-Pen AVIA™ and the TonoVet Plus® were not statistically different than their predecessors, but the **TonoVet Plus® trended towards increased accuracy and precision.** All devices underestimated IOP at higher IOP. This was most pronounced for applanation devices. It is imperative that clinicians consider the entire clinical picture with IOP readings when evaluating patients with suspected ocular disease, and that a consistent type of device be used for serial readings. *Supported in part by an unrestricted award to the UW-Madison Department of Ophthalmology and Visual Sciences from Research to Prevent Blindness. (C).*

## COMPARISON OF TONOMETRY VALUES OBTAINED BY THE TONOVET, TONOVET PLUS, AND THE TONOPEN AVIA VET IN NORMAL DOGS

(SF Muirhead, G Ben-Shlomo) Department of Veterinary Clinical Sciences, College of Veterinary Medicine, Iowa State University

**Purpose.** Different tonometers are used for estimation of intraocular pressure (IOP) in veterinary patients. The purpose of this study was to compare the IOP values obtained by two tonometers which are popular among veterinary ophthalmologists, the TonoVet® (TV; ICare Oy, Finland) and the TonoPen AVIA Vet® (TP; Reichert, NY) and a new tonometer, the TonoVet® Plus (TVP; ICare Oy, Finland) in normal canine patients. **Methods.** Tonometry was performed bilaterally in 50 dogs (age 1-11 years). The rebound tonometers (TV and TVP) were used first (in a random order) to avoid the tonographic effect. Then, one drop of tetracaine hydrochloride (Bausch & Lomb, USA) was applied to each eye, and approximately one minute later, the IOP was estimated using the TP. Statistical analysis was performed by a paired Student's t-test, and  $P < 0.05$  was considered significant. **Results.** The average IOP values were  $15.0 \pm 3.2$  mmHg (range 7-22 mmHg),  $19.2 \pm 3.1$  mmHg (range 11-25 mmHg), and  $12.8 \pm 2.9$  mmHg (range 6-19 mmHg) for the TV, TVP and TP, respectively. The IOP values obtained by each tonometer were significantly different statistically compared to the other two ( $P < 0.001$ ). The correlation coefficients were 0.76 (TVP vs TV), 0.51 (TVP vs TP), and 0.55 (TV vs TP). **Conclusions.** The TVP values were significantly higher than the TV, which were significantly higher than the TP. Knowing the differences between these tonometers will help the clinician with the interpretation of IOP values obtained by different tonometers. *None.*



**IMPROVE THE QUALITY  
OF PATIENT CARE BY PROVIDING BETTER PRIMARY EYE CARE.  
DON'T JUST GUESS THE PRESSURE. MAKE SURE YOU KNOW IT.**