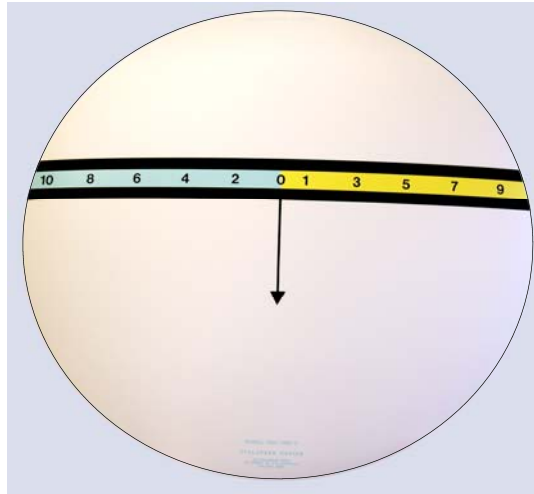


HOWELL PHORIA CARD*



A direct reading phoria measurement technique using vertical prism dissociation. Designed by Dr Edwin Howell BScOptom PhD and based on the principle attributed to Prentice and Thorington. A horizontal row of numbers is doubled vertically by the prism. An arrow from the top row points down to a number on the bottom indicating the instantaneous phoria value.

Horizontal prism “neutralisation” is not required.

Moment-by-moment changes in the phoria can be monitored.

Can be used in association with a trial frame or a phoropter.

“Free-space” phoria determination with optimisation of proximal Accommodation and Convergence factors, particularly when used with large aperture trial lenses in a trial frame.

Special design features for accurate accommodation stimulation and monitoring.

The gradient AC/A ration for positive and negative lens challenge can be determined using +1/1D and +2/2D lens flippers.

Conceptually simple. Most four year olds can cope with the task if they know their numbers.

Two cards are available. The small card is calibrated for measurements at 33cm. A larger card is calibrated for measurements at 3M.

The reverse side of the small card contains a X-Cyl target and a variety of letter and word targets useful for near acuity, accommodation amplitude and facility, near retinoscopy and vergence challenge testing.

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RECOMMENDED PROCEDURE

The recommended procedure for the measurement of dissociated phoria under 'natural' 'free-space' viewing conditions involves the use of large aperture trial lenses in a trial frame. The patient is then able to relax with a normal posture, either sitting or standing. The phoria card may still be used in association with a phoropter, but the reduced peripheral visual field in the phoropter may bias the findings in favour of the more central factors involved in the control of accommodation and convergence.

The recommended dissociating prism is 6 Base Down Right eye inserted into the trial frame. The prism can be held by the practitioner, but the trial frame frees both hands for other tasks. If desired, the prism can be divided between the eyes, 3 BD, 3 BU. If the vision in the left eye is poor, the dissociation may be changed to Base Down left eye, but note that the ESO-EXO and the YELLOW ODD numbers indicate ESOPHORIA.

With Base Down Right dissociation, the BLUE EVEN numbers indicate EXOPHORIA and the YELLOW ODD numbers indicate ESOPHORIA.

The smaller 'Near Phoria' card should be held at a distance of 33cm. The patient is invited to indicate the number on the bottom line that is nearest to the top arrow. The card is calibrated in prism dioptres at the appropriate distance. Instability in the phoria relationships can be quantified by the patient describing the relative movement of the two targets. Note: an accurate phoria determination requires that the patient makes an appropriate Identification/Accommodative response into the plane of the target. Always ask if the numbers on the bottom line are clear or blurry.

Proprioceptive cues for proximal awareness may be investigated by comparing the finding when the practitioner holds the card compared to when the patient holds the card.

The gradient AC/A ratio for plus and minus lens challenge may be measured by introducing a pair of lenses conveniently held in a flipper frame and the change in the phoria value noted. The AC/A ratio is then indicated by the change in the phoria per dioptre of lens value. The recommended lens values are pairs of +1.00D, -1.00D, +2.00D, -2.00D lenses.

The phoria at distance may be measured by inviting the patient to similarly report the number on the bottom line nearest to the top arrow when the patient is viewing the large phoria card at a distance of 3 metres.

Normative Expected Values

Distance Phoria (3m): 0(Ortho)

Near Phoria (33cm): 0 - 2XO. Plus and Minus Gradient AC/A 2/1 to 3/1