


Vertex

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refractor. It just physically can't take the measurement," he said.

"The practice of assuming an 'average' vertex distance of 12 to 14 mm for all refractive patients will underestimate the vertex distance in many patients refracted at the Phoropter, resulting in overcorrecting minus and undercorrecting plus refractions. Precise measurements of true refractor vertex differences will improve the accuracy of all refractive surgical procedures," Dr. Weiss concluded.

Oasis has agreed to donate 1% of the profits to the One World Sight Project, a charitable organization founded by Dr. Weiss. Dr. Weiss said the percentage of the sale price of the device will go to treating cataracts and to cataract surgery in the developing world. 

by Michael Piechocki

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A note from the editors:

Dr. Weiss should be commended for addressing an important subject that, as he says, is generally disregarded. Precision in refractive surgery is the ultimate goal and if paying attention to back vertex distance (BVD) can improve calculations and treatments in the higher range of refractive errors, the the device would be an effective addition to the surgical armamentarium.

There are other means available to gauge BVD. For higher prescriptions it is worthwhile considering the use of a trial frame for refraction. Many modern trial frames come equipped with a ruler placed along the temple for easier measurement of the vertex distance. During the refraction the strongest power trial lens should be placed in the rear lens cell.

Alternatively, a stenopaic slit can be placed in the rear cell, a thin piece of

paper threaded through the gap toward the patient's closed eyelid, the vertex distance marked and measured upon removal. When the Phoropter is used, the ruler marked on the inbuilt prism or window can be used in conjunction with the adjustable forehead rest to ensure the correct alignment and estimation of the vertex distance.

When including corneal and refractive values in the treatment plan, it is essential to perform all treatment calculations at the corneal plane. Ensuring consistent vertex distances is a requirement of manifest refraction testing; if this is not physically possible, then the BVD should have the facility for variation in any planning software.

Further, I find it preferable to enter only corneal plane values into the laser and set the treatment parameters for a BVD of 0 mm, thus avoiding the arbitrary conversion values highlighted by Dr. Weiss that are not easily overridden. Stratifying nomogram refinement to various ranges of refractive error can recognize any systemic bias in the BVD. Keeping in mind the nonlinearity of the conversion formula, this would substantially identify the greater effect of BVD in the higher corrections to see if this is a problem in any refractive practice.

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