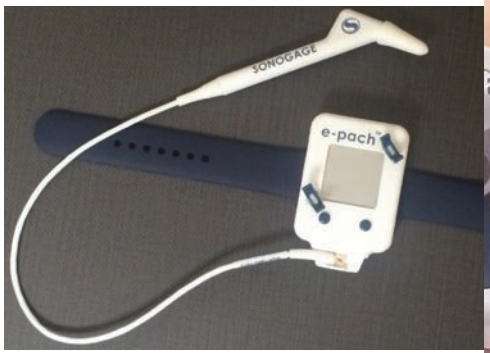
PACHYMETRY AND GLAUCOMA RISK ASSESSMENT

Since the 2002 Ocular Hypertension Treatment Study (OHTS) revealed the critical importance of corneal thickness (or corneal thinness) in assessing the risk of glaucoma development or progression, most eye doctors have acquired such (relatively inexpensive) technology, and use it routinely in their practices. For those who have not yet come to materially appreciate the virtues of corneal pachymetry, there is a new device now available from SonoGage. It looks and wears like a large wristwatch and is uniquely convenient. We encourage you to evaluate it at www.sonogage.com. If you do not have a corneal pachymetric instrument in your office or offices, we urge you to bring your diagnostic armamentarium up to state-of-the-art.



normal range to be between 10mm Hg to 21mm Hg.

Diurnal IOP variation is well documented to be higher in the mornings and lower in the evenings in most patients. Normal diurnal variation is less than 3mm Hg; fluctuations greater than 6mm Hg necessitate taking a few more IOP measurements to try to establish the IOP profile for such patients.

• ***Check central corneal thickness. Having a pachymeter readily available is crucial in establishing a true measure of IOP.*** We regularly see referrals for a glaucoma evaluation in patients who have an IOP in the mid- to upper 20s, with 0.2 or 0.3 central cups and corneal thicknesses of 620µm to 640µm. These patients most commonly have a 100% normal workup. If all optometrists would simply measure the central corneal thickness in these pseudo-ocular hypertensives, it would be an immense service to patients and our profession. According to the Ocular Hypertensive Treatment Study (OHTS), central corneal thickness has a major effect on IOP readings. Without a pachymeter, IOP is relatively meaningless.

Keep in mind that a physiologically thin cornea appears to be an independent risk factor for glaucomatous optic neuropathy, and this needs to be factored into the patient risk assessment.

• ***Evaluate the neuroretinal rim.*** Remember the ISNT rule? It goes like this: inferior > superior > nasal > temporal. Let's refresh:

In a normal optic nerve head, the inferior tissues are usually the thickest, followed by slightly thinner superior rim tissues, then slightly thinnernasal rim, with the temporal rim being the thinnest. This is not a bulletproof concept, but it is a good general guide.

Even in much larger cup-to-disc ratios, the focal rim tissue can still be healthy and well-perfused, with no pathological process present. If erosion of the rim tissue is found, it is most commonly seen at the inferotemporal (macular vulnerability zone) and/or superotemporal rim tissues. This is primarily a result of the relatively sparse glial support in this area.

• ***Bring up the patient's history.*** Glaucoma tends to be familial. When we see patients who have glaucoma or who are labeled as high-risk glaucoma suspects, we always ask about siblings. We have found that siblings of glaucoma patients have an increased risk of developing glaucoma, with the risk increasing with age. We strongly urge our patients to recommend to their siblings that they seek an optometric glaucoma evaluation in the area where they live. Such screening has been shown to yield additional diagnoses, and to positively impact public health.

• ***Check blood pressure in-office.*** Carefully assess the patient's systemic conditions, especially treatment for systemic hypertension. It has been found, particularly in low-tension glaucoma patients, that when blood pressure medicines are taken in the evening or at bedtime, they can pathologically lower nocturnal blood pressure, which can exacerbate glaucomatous progression by decreasing optic nerve head perfusion.[4] We find ourselves more and more often writing letters to primary care physicians explaining this relatively new knowledge and asking them to consider having patients take blood pressure medicines in the morning. Once the PCPs have this scientific explanation, good cooperation is generally the rule.

Along the same line, many patients with asthma can use a topical beta-blocker very successfully. However, we never prescribe a topical beta-blocker for such patients without first writing to the primary care physician for clearance, and securing written documentation from that doctor to place in our medical records attesting to such. We have, with proper consultative advice, used topical beta-blockers for a handful of patients with asthma without incident, and