

DON'T ASK ME ABOUT YOUR NUMBER

IOP is just one piece of a complex puzzle.



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During a busy day of glaucoma clinic, it is not uncommon for several patients' first question to be, "What is my eye pressure today?" Never mind the myriad diagnostic evaluations they may undergo that day, including visual field testing and optic nerve imaging. Our response often starts with, "You shouldn't care so much about your eye pressure today, and here's why."

THE DEAL WITH IOP

Glaucoma is a chronic, progressive, optic neuropathy characterized by optic disc or retinal nerve fiber structural abnormalities and corresponding visual field deficits. It is the number-one leading cause of irreversible blindness in the world, affecting more than 70 million individuals globally and 4 million individuals in the United States. Numerous risk factors for glaucoma have been identified, including age, race, and family history. IOP, however, is the primary modifiable risk factor we know of, and thus it has become the focus of glaucoma management.

Current glaucoma treatment strategies—including drops, laser therapy, microinvasive glaucoma surgery, and traditional surgery—universally have the same goal of lowering IOP. This emphasis on pressure can often cause patients to fixate on a number, as it

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is an easy variable and concept for them to latch on to. Clinicians, too, can easily become laser-focused on IOP and forget to adequately reevaluate the full clinical picture. Although the pathophysiology is still not fully understood, we know that glaucoma is a complex disease that involves a multitude of factors in addition to IOP. In many cases, optic nerve damage continues to occur in the setting of so-called *normal* IOP, leading many patients with normal-tension glaucoma to be diagnosed later in the course of their disease. Conversely, we know that many patients with ocular hypertension never develop glaucoma.

ONE PIECE OF THE PUZZLE

We emphasize to our patients that IOP is just one piece of the complex puzzle that is glaucoma. Additionally, we discuss with them that a single in-office IOP reading may not be

representative of their IOP throughout the day. A single IOP measurement provides only one data point in a continuous disease process, similar to a finger-stick blood sugar reading. This can sometimes be especially challenging in normal-tension glaucoma patients whose pressures have never been highly elevated. A normal-tension glaucoma patient who consistently presents with low IOP at a certain time of day may have dramatic diurnal fluctuations with damaging IOP at a different time of day. We must not forget to address other risk factors, including systemic vascular abnormalities (eg, Raynaud disease), migraines, and obstructive sleep apnea, as well as any medication changes causing low perfusion pressure such as antihypertensive agents.

Although IOP reduction will remain central to glaucoma treatment, new research findings support the theory that glaucoma is truly

a systemic disease, with multiple variables contributing to the health of the optic nerve.¹ Along with traditional eye examinations and diagnostic testing, evaluation of systemic factors such as symptoms of vascular dysregulation and metabolic changes may help us treat glaucoma more comprehensively.

A NEW FOCUS

From the perspectives of patient care and education, a paradigm shift is needed to draw patients' attention away from a singular IOP measurement and toward a more comprehensive analysis of their optic

nerve health, as evaluated by optic nerve imaging and perimetric testing. This emphasis would be similar to that placed on hemoglobin A1c over a finger-stick blood sugar level in patients with diabetes. In doing so, we could not only help allay patients' stress about their "number" at clinic appointments but also enable them to gain greater insights into their disease process and the fight to preserve their sight. Then perhaps more of our patients will start asking, "How is my *glaucoma* doing?"

1. Wey S, Amanullah S, Spaeth GL, Ustaoglu M, Rahmatnejad L, Katz JL. Is primary open-angle glaucoma an ocular manifestation of systemic disease? *Graefes Arch Clin Exp Ophthalmol*. 2019;257(4):665-673.

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