Like open-angle glaucoma, dry eye syndrome becomes more common with aging. Studies suggest that 40-50% of glaucoma patients have dry eye syndrome, and women are more likely than men to have it.

“It’s common for my dry eye patients to complain of tearing, fluctuating vision, or that the eyes feel like sand.”

Treatment of two diseases can be a challenge for the patient and for the doctor. Treating the dry eye syndrome is very important both for the patient’s comfort and for the long-term health of the surface of the eye. But because glaucoma can cause vision loss, when a patient has both dry eye syndrome and glaucoma, the glaucoma is usually treated first. Addressing the glaucoma treatment almost always takes precedence over treating the dry eye disease — even though the dry eye disease bothers the patient more.

Dry eye can be caused or worsened by many different factors such as:
- inflammation of the eyelids
- activities that reduce blinking such as prolonged reading
- using glaucoma eye drops over a long period of time
- low humidity environments

TREATING DRY EYE AND GLAUCOMA

Usually a combination of treatments is helpful, and your eye doctor may try several treatments to find the combination that works best.

Treatments for dry eye include:
- artificial tears
- eyelid cleansing and warm compresses
- reducing tear evaporation by using a humidifier, avoiding air blowing onto the eyes, and taking frequent breaks when reading
- prescription eyedrops such as cyclosporine and lifitegrast

Treatment for glaucoma can be modified when dry eye is also present. For example, your doctor may recommend switching to preservative free glaucoma medications. Other options include using combination eye drops to reduce the amount of preservatives instilled on the ocular surface, and using laser treatment instead of, or as an adjunct to, eye drops.

Both glaucoma and dry eye disease are chronic conditions and it is important to treat both diseases. Because the treatment of both often includes using eye drops, keeping up with the regimen can be challenging for patients. Yet, keeping the tear surface healthy increases comfort, promotes eye health and even increases the success rates of some glaucoma surgeries.

Patients with glaucoma and dry eye disease have a lot to handle. Dry eye, like glaucoma, is not curable but is manageable; the management of both requires a team effort of both the doctor and the patient.
The Quest to Restore Lost Vision and Cure Glaucoma

BY DEREK WELSBIE, MD, PHD

Glaucoma is the leading cause of irreversible blindness worldwide. At its core, glaucoma is an age-related neurodegenerative disease akin to Alzheimer’s and Parkinson’s disease, each of which is characterized by loss of specific nerve cells. In glaucoma, that specific nerve cell is called the retinal ganglion cell (RGC).

Normally, there are approximately one million RGCs in each eye, lining the inside of the retina. Each one is responsible for processing visual information at a given point in the retina and then transmitting that information to the brain via a long nerve fiber in the optic nerve. As the cells slowly die off, parts of the eye become “disconnected” from the brain, resulting in visual field loss. Moreover, since nerve cells do not grow back, the vision loss is permanent. Although lowering eye pressure can help slow or stop the neurodegeneration, there are currently no therapies to regenerate lost RGCs and help patients that have already lost vision.

Replacing lost RGCs is a challenge for several reasons. First, one needs a source of new RGCs. Next, one needs to implant the RGCs into the retina in sufficient numbers and prevent them from dying in response to glaucoma. The new RGCs need to make appropriate connections in the retina and, far more challenging, regrow nerve fibers all the way back to the brain.

In order to tackle these challenges, the Catalyst for a Cure consortium has brought together experts in stem cell technologies (Anna La Torre, PhD, UC Davis), neuroprotection (Derek Welsbie, MD, PhD, UC San Diego) and nerve fiber regeneration (Xin Duan, PhD, UC San Francisco and Yang Hu, MD, PhD, Stanford University). By integrating these complementary areas of expertise, the group is hoping to identify novel methods for “reconnecting” the eye and restoring vision.

Derek Welsbie, MD, PhD is an Assistant Professor of Ophthalmology at the Shiley Eye Institute, University of California, San Diego and a principal investigator in the Catalyst for a Cure Vision Restoration Initiative.
Dr. Cantor discusses how blood pressure is related to glaucoma and explains the treatment possibilities available to optimize eye health.

Q What’s the connection between blood pressure and eye pressure in glaucoma?
A Evidence suggests that low ocular perfusion pressure is a strong risk factor for glaucoma. Ocular perfusion pressure is a complex parameter that can be considered as the difference between the blood pressure and the eye pressure. If the blood pressure is low and the eye pressure is elevated, blood has difficulty getting into the eye to supply oxygen and important nutrients.

However, even in individuals with average eye pressure, the blood pressure may be low enough naturally, or as a result of treatment for high blood pressure, to deprive the eye of adequate blood flow. Normally, our bodies adapt to changes in blood pressure, body position, or other factors in order to maintain constant circulation to important areas such as our brain or our eyes. For some individuals, their bodies may lack the ability to adjust the circulation appropriately, so the tissue may not be properly nourished and may suffer damage over time.

Q Does high blood pressure cause glaucoma?
A High blood pressure is not directly linked as a cause of glaucoma, but it is a risk factor for glaucoma, especially if untreated over many years.

Q What can be done if the ocular perfusion pressure is too low?
A Low ocular perfusion pressure may be improved by lowering eye pressure and/or by increasing blood pressure. While there is strong evidence to support the treatment of glaucoma by lowering eye pressure, there is not enough data to support increasing blood pressure, and in fact, this could have detrimental effects in other parts of the body. If you are on blood pressure lowering medications, your treating physician might consider evaluating your blood pressure control to determine if perhaps less blood pressure medication is appropriate. Monitoring blood pressure can be helpful, especially in patients who are getting worse despite adequately controlled eye pressure. Your glaucoma doctor may discuss blood pressure concerns with your internist or primary care physician to maintain the optimum health of your eye.
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Please consult with your tax professional if you are contemplating this type of charitable gift.
FIRST ANNUAL GLAUCOMA PATIENT SUMMIT
Inspires and Empowers Patients and Caregivers

The First Annual Glaucoma Research Foundation Patient Summit on Saturday, March 16, 2019 in San Francisco, California welcomed a large group of attendees. The summit highlighted advances in treatment options and practical information to help patients understand and live with glaucoma. Summit speakers included leading glaucoma specialists, patients, and caregivers. Throughout the day, participants had an opportunity to come together and share their stories, ask questions to glaucoma leaders, and listen to engaging presentations.

SAVE THE DATE: The next Glaucoma Patient Summit will take place on Saturday, May 2, 2020 at The Hyatt Lodge in Oak Brook, Illinois. For more information, please visit our website at www.glaucoma.org/summit. (Registration will open November 2019.) If you are interested in volunteering at the Summit, please email Christopher Wiseman at christopher@glaucoma.org.

Session breaks during the Glaucoma Patient Summit were a great opportunity for families to come together and discuss their experiences with glaucoma. Pictured: Lawrence and Elizabeth Ngu attended with their daughter.

Amanda Eddy (right) presented her glaucoma story in the session “Living with Glaucoma – A Patient’s Perspective.” Amanda was joined by her father Emile Sahliyeh (center) and friend Barbara Lindley (left).
Ruth D. Williams, MD, GRF Board member and speaker for the session “Glaucoma Overview: what’s pressure got to do with it?” shared important information with a focused audience of glaucoma patients and caregivers.

GRF Board member Adrienne Graves, PhD (left) poses with Gena Harper (center), who presented during the panel “Ask the Experts: Managing Glaucoma and Your Health” and Hannah Eckstein (right), the speaker who closed the Patient Summit and left the audience feeling hopeful and energized.

Attendees came to San Francisco from all over the United States to listen to the dynamic presentations at the First Annual Glaucoma Patient Summit.

GRF President and CEO, Thomas Brunner, GRF Board Chair and panelist, Andrew Iwach, MD, and panelist A. Sydney Williams, MD from the University of California, San Francisco, participated in a lively conversation about “Creating Your Own ‘A’ Team for Care.”
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