

# REPORT

*Better Health Through Research*

February 2009



## Diabetes Linked to Higher Incidence of Glaucoma

*Study shows Hispanics to be particularly at risk*

The mounting incidence of diabetes in the U.S. population could trigger a significant upswell in glaucoma and other major eye diseases by 2050, according to a study by the Centers for Disease Control and Prevention in Atlanta.

Published in the December issue of Archives of Ophthalmology, the study collated data from the 2004 National Health Interview Survey and the U.S. Census Bureau to estimate how many Americans will be at greater risk of vision loss. Among the study's findings: glaucoma cases among Hispanics 65 or older with diabetes will increase twelvefold by 2050.

“People with diabetes mellitus also have a higher prevalence of other eye diseases, such as cataracts and glaucoma, than the general population,” the study says. “Vision loss related to eye disease among people with diabetes is an important disability that threatens independence and can lead to depression, reduced mobility and reduced quality of life.”

“Efforts to prevent diabetes and to optimally manage diabetes and its complications are needed,” the study authors concluded.



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# Bad Night's Sleep Could Also Be Bad for Eyes

*Sleep apnea tied to glaucoma, other eye disorders*



Researchers with the Mayo Clinic have found that sleep apnea could raise the chances of developing glaucoma and other eye conditions, as well as a range of cardiovascular disease and metabolic disorders.

More than 12 million people currently suffer from sleep apnea, a potentially dangerous condition in which breathing repeatedly stops and starts in the course of sleeping. The most common form of the condition is obstructive sleep apnea (OSA), which causes throat muscles to relax, blocking airways.

The Mayo Clinic study found that people with longer and more frequent episodes of OSA were more likely to contract both primary open-angle glaucoma and normal-tension glaucoma. OSA was also tied to higher risk of obesity, diabetes and high blood pressure.

The study's lead author, E. Andrew Waller, M.D., noted that eyes can often signal larger vascular problems. He added that understanding the linkages between sleep apnea and vision loss could be important to early diagnosis and treatment.

“For patients with OSA, a routine eye examination to evaluate for early signs of glaucoma, particularly in the setting of visual loss or change, should be recommended. Patients with ophthalmologic diseases known to be associated with sleep apnea should be screened clinically for sleep apnea and referred to a sleep center if signs or symptoms are present.”

## “Smart” Contact Lenses?

A new material developed by engineers at the University of California, Davis, could pave the way for “smart” contact lenses that gauge pressure within the eye and dispense medication as needed.

Researchers Tingrui Pan and Hailin Cong were able to create conductive wires by attaching powdered silver to a material called polydimethylsiloxane. Once shaped into contact lenses, these wires can sense the buildup of pressure that is a primary feature of glaucoma. By relaying the information to computers, these “smart” lenses could ultimately allow doctors to learn more about glaucoma and devise more informed treatments.

U. Cal. researchers are now applying for approval to test the lenses on humans.

Learn more online at  
[www.ahaf.org](http://www.ahaf.org)

Log onto our website at [www.ahaf.org](http://www.ahaf.org), then simply click on the National Glaucoma Research link to learn more about what's new in the world of research, as well as important information about risk factors for glaucoma.

## President's Corner

### *Opening up new fields of vision*

Sometimes all it takes to make people healthier is to make them a little more comfortable.

The visual field test, for example, is critical to diagnosing glaucoma and other optic conditions. Unfortunately, in its current format, it can be bulky, uncomfortable, difficult — and, worst of all, inaccurate.

Now researchers with Tel Aviv University in Israel have developed a compact and cost-effective new technology that uses special goggles to instantly and accurately check the health of the retina, optic nerve and visual pathway.

This new test will be a particular godsend for people over 60, who are at greater risk of glaucoma and who have greater trouble using the current test.

We know how important it is to detect glaucoma in its earliest stages. With the help of supporters like you, we can catch this terrible disease all the earlier — and give people that much more of a chance against it.



Brian K. Regan, Ph.D., President

## Healthy Living

### *Frequently asked questions about glaucoma*

**Q:** What is childhood glaucoma and how can I prevent the disease from progressing?

**A:** Childhood glaucoma, also known as infantile or congenital glaucoma, is a disease of infants and is sometimes inherited. It involves a developmental abnormality of the trabecular meshwork, which is the drainage tissue of the eye. Treatment options include medications to lower intraocular pressure and/or anterior chamber angle surgery. Some patients may also need other types of glaucoma surgery. The goal of treatment is to lower the intraocular pressure to prevent permanent visual loss. It is also important to monitor the visual function and to treat any delay

in the affected eye's visual development.

**Q:** I have been given a variety of eye drops in a failed attempt to control elevated eye pressure that was apparently caused by retinal vein occlusion in my left eye. I had many problems with the eye drops, including a terribly upset stomach, nausea, indigestion, heartburn and gas. My doctor changed my prescription to Xalatan and Timolol. I have noticed that the pupil in my left eye has become significantly larger than the pupil in my right eye, which is not being treated. Can Timolol cause this symptom and is it safe to continue to use it?

**A:** Timolol is a topical beta-blocker that acts to

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reduce intraocular pressure and is very commonly prescribed for the treatment of glaucoma.

Timolol has not been shown to cause pupillary dilation. The size of your left pupil may be related to the prior retinal vein occlusion. Other causes of pupillary dilation include topical medications, iris neovascularization, prior intraocular surgery, and others. Your eye doctor should be able to determine the cause of your pupillary asymmetry.

**Q:** Is it true that glaucoma patients cannot take medications like Actifed or Sudafed for relief of cold symptoms because they can cause a dangerous increase in eye pressure?

**A:** Cold medicines such as Actifed and Sudafed can cause mild pupil dilation, which can affect eye pressure. Patients with very narrow angles or untreated angle-closure should not take cold medications. Patients who have been treated for narrow-angle glaucoma or open-angle glaucoma can take cold medicines safely. Your eye care provider should be able to advise you as to the

safety of this medication class in your particular case.

**Q:** My husband is 36 years old and was just diagnosed with early-stage glaucoma in his left eye. There is no history in his family. Why did he develop this condition and will he be OK? He is now being treated with eye drops. Can you help me?

**A:** Primary open-angle glaucoma is a multi-factorial disease that can affect patients in their 30s. Some patients have no family history of the disease. Glaucoma that affects only one eye may be related to other conditions such as trauma and pseudoexfoliation. Glaucoma that is detected in the early stages carries a better prognosis than glaucoma that is diagnosed at an advanced stage. Treatment involves reduction of the intraocular pressure and monitoring of the optic nerve function. With diligent treatment and follow-up, your husband should maintain vision throughout his lifetime.

## Feel Good About Your Gift:

### *Estate Planning Can Help Fight Glaucoma*

Through thoughtful planned giving, you can help us search for a glaucoma cure while also passing along the values that have guided your life.

Whether you send a check, donate stock or include National Glaucoma Research in your will, your gifts will put you front and center in the fight to discover treatments that will benefit millions. You may also be able to reduce your estate taxes and leave a larger inheritance for your loved ones.

For additional information, or if you would like to discuss the many giving options available, please contact Barbara Spitzer, Development Coordinator, at 1-800-437-2423 or via e-mail at [bspitzer@ahaf.org](mailto:bspitzer@ahaf.org).

**Thank you for thinking of National Glaucoma Research!**

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