

# Researchers identify an early predictor for glaucoma

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A new study finds that certain changes in blood vessels in the eye's retina can be an early warning that a person is at increased risk for glaucoma, an eye disease that slowly robs people of their peripheral vision. Using diagnostic photos and other data from the Australian Blue Mountains Eye Study, the researchers showed that patients who had abnormally narrow retinal arteries when the study began were also those who were most likely to have glaucoma at its 10-year end point. If confirmed by future research, this finding could give ophthalmologists a new way to identify and treat those who are most vulnerable to vision loss from glaucoma. The study was recently published online by *Ophthalmology*, the journal of the American Academy of Ophthalmology.

Open-angle glaucoma (OAG), the most common form of the disease, affects nearly three million people in the U.S and 60 million worldwide. [Vision loss](#) occurs when glaucoma damages the [optic nerve](#), the part of the eye that transmits images from the retina to the brain. Unfortunately, because glaucoma does not have symptoms, many people don't know they have the disease until a good portion of their sight has been lost. Early detection is critical to treating glaucoma in time to preserve vision.

The findings of the new study, led by Paul Mitchell, M.D., PhD, of the Centre for Vision Research, University of Sydney, supports the concept that abnormal narrowing of [retinal blood vessels](#) is an important factor in the earliest stages of OAG. Tracking nearly 2,500 participants, the study found that the OAG risk at the 10-year mark was about four times higher in patients whose retinal arteries had been narrowest when the

study began, compared with those who had had the widest arteries.

None of the participants had a diagnosis of OAG at the study's outset. Compared with the study group as a whole, the patients who were diagnosed with OAG by the 10-year mark were older, had had higher blood pressure or higher [intraocular pressure](#) at the study's baseline, and were more likely to be female. Elevated intraocular pressure, or pressure within the eye, is often found in patients with OAG. Study results were adjusted for age, family history of glaucoma, smoking, diabetes, hypertension, and other relevant factors.

"Our results suggest that a computer-based imaging tool designed to detect narrowing of the retinal artery caliber, or diameter, could effectively identify those who are most at risk for open-angle glaucoma," said Dr. Mitchell. "Such a tool would also need to account for blood pressure and other factors that can contribute to blood vessel changes. Early detection would allow ophthalmologists to treat patients before optic nerve damage occurs and would give us the best chance of protecting their vision."

A symptomless [eye disease](#) like glaucoma highlights the importance of regular eye exams. The American Academy of Ophthalmology recommends that everyone have a complete eye exam by an ophthalmologist at age 40 and stick to the follow-up exam schedule advised by their doctor.

This January during Glaucoma Awareness Month, the Academy encourages people to learn more about the disease known as "the sneak thief of sight." People who have a family history of glaucoma, or who are African-American or Hispanic, may be at higher risk.

**More information:** For more information on glaucoma, its risk factors and treatment options, visit [www.geteyesmart.org](http://www.geteyesmart.org).

Provided by American Academy of Ophthalmology

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