

For Latinos, African ancestry adds to risk of glaucoma

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Latinos with African ancestry are at a higher risk for high pressure within the eye, a condition that if untreated can damage the optic nerve and impair vision, according to a report in the journal *Ophthalmology*.

Greater African ancestry carried more risk for high intraocular pressure than high [body mass index](#), older age and [high blood pressure](#) - factors known to contribute to increased pressure inside the eye.

Researchers led by Xiaoyi Gao, associate professor of ophthalmology and visual sciences in the UIC College of Medicine, analyzed the genomes of 3,541 participants 40 and older from the Mexican American Glaucoma Genetic Study, part of the Los Angeles Latino Eye Study.

Gao and his colleagues estimated the percentage of each subject's genetic makeup that could be traced to African ancestors.

"Latinos are an admixture of Native American, European and African ancestry," says Gao. "On average, about 3 percent of Latinos' genomes can be traced back to African ancestry," he said, but with considerable variation.

Within the study group, the researchers found that as the percent of African ancestry went up, intraocular pressure rose. Among participants with hypertension, the rise was even steeper.

The researchers used a technique called admixture mapping to determine the ancestral origin of segments of the genome by comparing them to databases from specific populations, like Native Americans or Europeans. Gao hopes the technique will help him to zero in on the specific genes responsible.

"If we know that people with more African ancestry have higher risk for high intraocular pressure—and we know which genome segments have been

passed down from African ancestors—then we may be able to get closer to identifying individual genes that contribute to the condition," Gao said. "We still have a long way to go, but it gets us a step closer."

Gao and his colleagues previously used admixture mapping to determine that Latinos with higher Native American ancestry were at increased risk for diabetic retinopathy.

For the individual patient, Gao says ancestry should be considered along with other factors.

"High blood pressure, [older age](#), female gender, type 2 diabetes, and higher body mass index are all risk factors for [high intraocular pressure](#), which contributes to glaucoma and blindness," said Gao, "but genetic [ancestry](#) should also be considered a major factor when assessing risk."

Provided by University of Illinois at Chicago

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