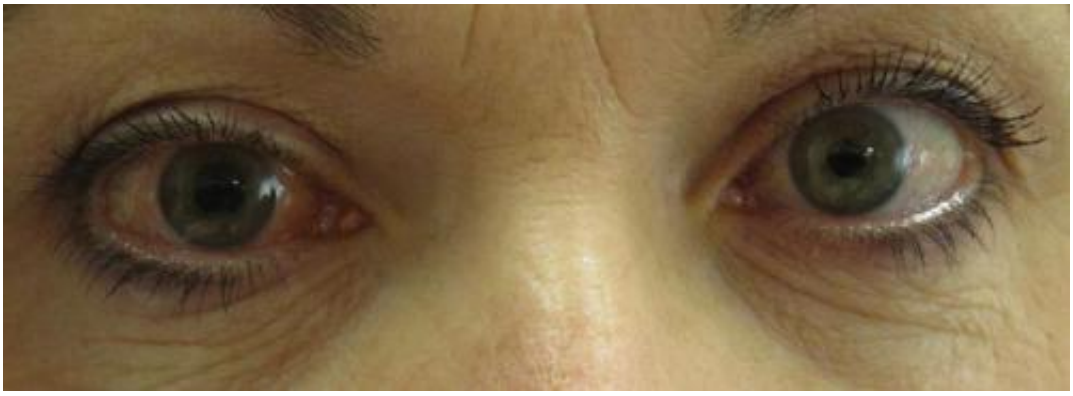
# Scientists uncover five genetic markers for glaucoma

April 5 2016



Acute angle closure glaucoma of the right eye (intraocular pressure was 42 in the right eye). Credit: James Heilman, MD/Wikipedia

Scientists have discovered new genetic areas linked to an increased risk of glaucoma - the leading cause of irreversible blindness worldwide.

The investigation studied the genetic make up of about 40,000 people and identified five previously unknown genetic areas linked to an increased risk of primary angle closure glaucoma (PACG).

Co-author of the study Professor Jamie Craig from Flinders University in South Australia said PACG symptoms occurred quickly and required immediate medical attention.

"This new discovery provides a handle, to gain an understanding of the mechanisms of the disease. This will help to work out who is at risk of developing angle closure glaucoma so they can have preventative laser treatment before an emergency situation develops," Prof Craig said.

"We also expect in time, that the improved understanding of the pathways of this disease to lead to new ways to more effectively prevent and treat this serious condition, so that permanent loss of vision does not occur."

The genetic analysis is by far the largest genome wide association study to date on this condition. It used a combined total of 10,404 cases of angle closure glaucoma and 29,343 normal controls to identify five novel glaucoma markers.

Researchers at Flinders University, using the Australian and New Zealand Registry of Advanced Glaucoma (ANZRAG), led by Prof Craig guided international research across 23 countries in Asia, Australia, Europe and the Americas to make the discovery.

Up to 80 per cent of the estimated 15 million people afflicted with PACG live in Asia, where the disease is responsible for a high proportion of blindness.

Glaucoma generally develops later in life, initially causes loss of peripheral vision and can lead to complete blindness if untreated.

Angle closure glaucoma is a less common form of the disease than open angle glaucoma. It is caused by blocked drainage canals in the eye and is characterised by a narrow angle between the iris and cornea.

"With (PACG) it comes on quite rapidly, so they are aware something is happening. But if something is not done quickly, they can lose their

vision," Prof Craig said.

"All types of glaucoma have a strong hereditary or family influence and if there are any cases of glaucoma in the family, then people should be checked every two years from the age of 40."

The study on angle closure glaucoma is published in *Nature Genetics* and was completed in association with the University of Melbourne, the University of Sydney and the Genome Institute of Singapore.

**More information:** Genome-wide association study identifies five new susceptibility loci for primary angle closure glaucoma. *Nature Genetics* (2016) DOI: 10.1038/ng.3540

Provided by The Lead