



# GEOGRAPHIC ATROPHY (GA)

## What is geographic atrophy?

When patients with age-related macular degeneration (AMD) begin to lose vision, it becomes known as **'advanced' AMD**. Vision loss can happen in two ways: (1) abnormal blood vessels grow into the eye and destroy the retina with bleeding and scarring (**neovascular**, or **'wet' AMD**), and (2) the retina permanently dies (**geographic atrophy** or **advanced 'dry' AMD**). Patients can have either form, or have both in the same eye.

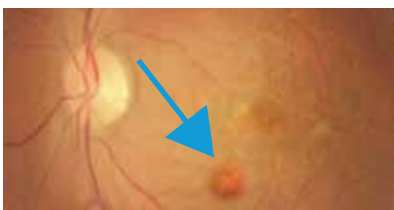
## How geographic atrophy affects vision

Light enters your eye and is detected by the retina, the light-sensing nerve tissue lining the inside of your eye. The information it receives is transmitted through the optic nerve to the brain, where it is interpreted as the images you see. The macula is the part of the retina responsible for sharp, central vision that you use to read, recognize faces and drive.

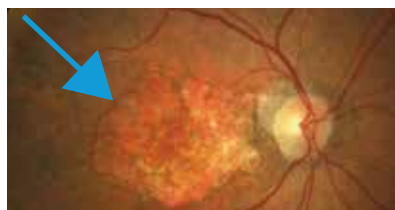
**Geographic atrophy** appears as distinct patches of dead retina within the macula. Once it starts, the dead patches will expand over time and eventually affect your central vision. It does not normally affect far, peripheral vision.

### DISEASE PROGRESSION

Geographic atrophy starts slowly, and may not be noticeable in the early stages. But studies have found that once diagnosed, about 1/3 of patients will lose about three lines of vision on the eye chart from their baseline vision over just two years.\* This is significant; it can mean a patient can go from seeing almost perfectly to being unable to drive in just that short time.

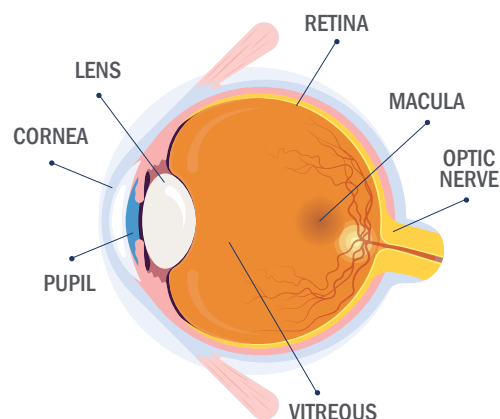


Small area of geographic atrophy

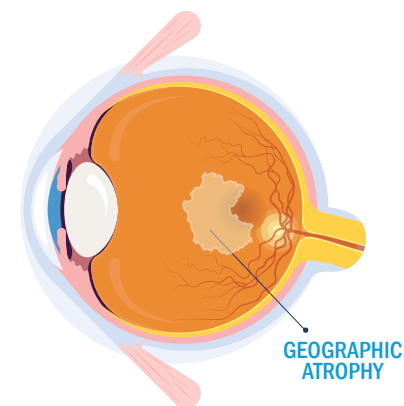


Large area of geographic atrophy

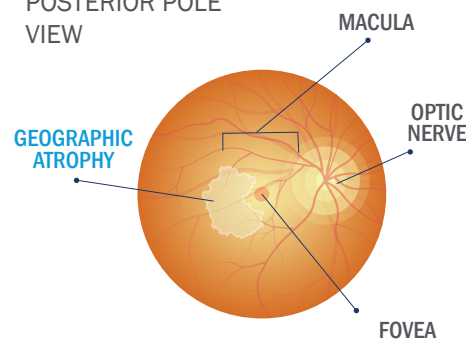
## HEALTHY EYE



## AFFECTED EYE



## POSTERIOR POLE VIEW



## Symptoms of geographic atrophy

Because GA is often symmetric, most patients experience symptoms in both eyes. Even in the early stages, with central vision still intact, it often affects the quality of vision, including:

- Trouble seeing at night and in dim light
- Vision that is not as clear or sharp
- Numbers or letters disappearing when reading
- Changes in color, contrast and/or perception
- Straight lines that appear distorted, making it difficult to read, text, drive or watch TV

## Risk factors for geographic atrophy

Patients with AMD are at risk of developing both advanced forms of AMD: neovascular AMD and GA. The following can help slow progression:

- Smoking promotes AMD progression. Quitting, or reducing your exposure to second-hand smoke, can slow progression.
- Taking an **AREDS2 supplement** can slow the development of neovascular AMD
- Optimal cardiovascular risk factor control, including blood pressure, blood sugar and cholesterol may slow progression

## Examination and diagnostic testing

If you have AMD, regular eye exams are important in disease progression and identifying if you develop either of the two advanced forms of AMD. Your doctor can catch early signs of geographic atrophy and track its progression with a dilated eye exam. Photos, **optical coherence tomography (OCT)** and **fundus autofluorescence (FAF) photos** can also help your retinal specialist track the progression.

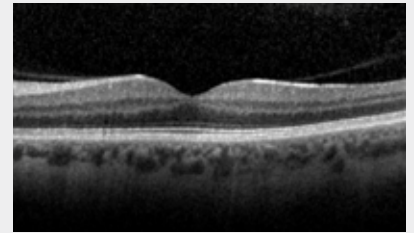
## Treating geographic atrophy

The complement pathway, part of the immune system, has been found to contribute to the progression of AMD, including GA. Before 2023, there was no treatment for GA. However, more than a decade of research has led to a new FDA-approved medication. Given every 4 to 8 weeks, this medicine slows the growth of areas of dead retina that make up GA by inhibiting the complement system.

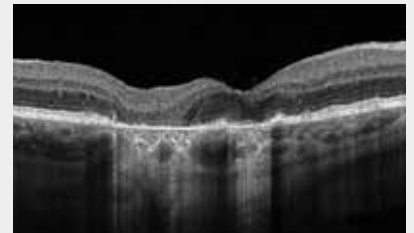
\*Sunnes JS, Margalit E, Srikanth D, Applegate CA, Tian Y, Perry D, Hawkins B, Bressler NM. The Long-term Natural History of Geographic Atrophy from Age-Related Macular Degeneration: Enlargement of Atrophy and Implications for Interventional Clinical Trials. *Ophthalmology* 2007;114(2):271-277.

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## WHAT YOUR DOCTOR SEES ON OCT



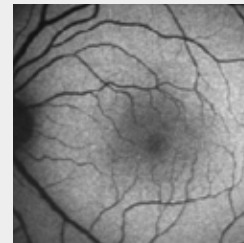
Normal retina with intact retinal layers



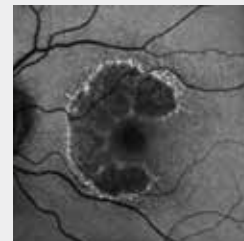
Geographic atrophy with loss of outer-retinal layers

## WHAT YOUR DOCTOR SEES ON FAF

### Fundus Autofluorescence in Normal Eye and Eye with GA



Normal retina with blood vessels arching from the optic nerve, a bright healthy macula, and central dark zone that is a normal fovea



Geographic atrophy: dark zones of dead retina surrounded by brighter areas indicating dying retina



Retina  
Consultants  
of Texas



RCA  
Research