

This guide is intended for healthcare professionals



# RECOGNISING GEOGRAPHIC ATROPHY

A guide to identifying and monitoring  
patients with Geographic Atrophy

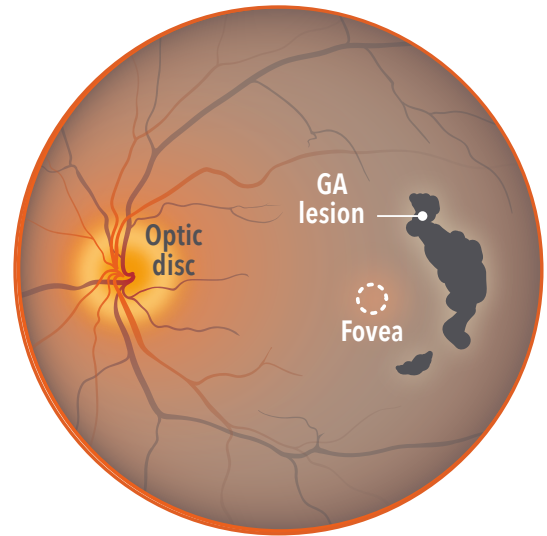
Apellis

# GEOGRAPHIC ATROPHY

## An advanced form of age-related macular degeneration

Geographic Atrophy (GA) is an advanced form of age-related macular degeneration (AMD), a leading cause of significant vision loss worldwide.<sup>1-3</sup>

GA is characterised by progressive loss of the photoreceptors, retinal pigment epithelium (RPE), and underlying choriocapillaris. Regions of atrophy typically start outside the fovea and expand to involve the fovea.<sup>2,4</sup>



It is critical to identify GA early because the damage is progressive and associated with irreversible vision loss<sup>2,4</sup>

# 4 STEPS TO DETECTING GEOGRAPHIC ATROPHY



Consider risk factors & symptoms



Use multimodal imaging



Assess lesion presentation



Monitor for progression

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# CONSIDER RISK FACTORS & SYMPTOMS

The pathogenesis of AMD is multifactorial, with many different genetic and environmental risk factors associated with its development and progression to more advanced forms like GA.<sup>5</sup>

## Risk factors associated with development of AMD and/or progression to GA

### Genetics

- **Family history\*** of AMD<sup>5-7</sup>
- **Genetic predisposition\*** (eg, complement gene variants associated with increased risk)<sup>4-6</sup>



### Physiology

- **Age\*** (greatest risk factor for AMD)<sup>7</sup>
- Obesity<sup>5</sup>
- Certain dyslipidemias<sup>5</sup>
- Cardiovascular disease/hypertension<sup>5</sup>



### Lifestyle/ environment

- History of **smoking**<sup>5,7\*</sup>
- Diet<sup>5</sup>
- High alcohol intake<sup>8,9</sup>



### Clinical factors & imaging findings

- Presence of GA in fellow eye<sup>2</sup>
- Drusen volume<sup>10</sup>



\*Most significant risk factors.

## Patient symptoms that may indicate GA

In the early stages of GA, visual symptoms may be minimal, as central vision is largely preserved until atrophy involves the fovea. Patients may experience some loss of low-light vision, but it may only be noticeable under certain conditions or with designed tests. As the disease progresses, more severe deterioration in central visual acuity occurs.<sup>4,11</sup>

### Visual symptoms<sup>11</sup>

- Delayed dark adaptation
- Reduced contrast sensitivity
- Distorted vision (eg, straight lines that appear wavy or crooked)
- Dull/washed-out colours
- Scotomas (characterised by blurry and/or blind spots)

### Functional symptoms<sup>11</sup>

- Difficulty reading, driving, working, and with daily activities outside the home
- Particular difficulty in low light
- Difficulty recognising familiar faces

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# USE MULTIMODAL IMAGING

GA can be distinguished from other forms of AMD via imaging. It is characterised as cell layer loss with sharply defined borders.<sup>2,12</sup>

## Imaging modality

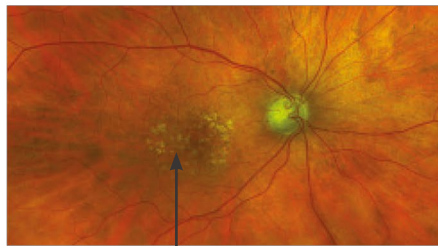
### Colour fundus photography (CFP)<sup>2,12</sup>

- GA lesions are defined as sharply demarcated areas of RPE hypopigmentation
- Clear visibility of underlying choroidal vessels

#### NORMAL EYE



#### EYES WITH GA



Choroidal vessels  
Small multifocal non-subfoveal GA

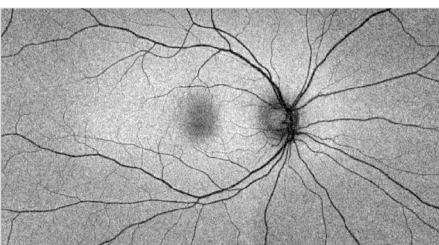


Choroidal vessels  
Large multifocal subfoveal GA

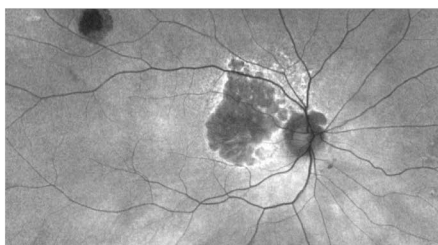
### Fundus autofluorescence (FAF)<sup>2,13</sup>

- GA lesions appear as distinct areas of decreased autofluorescence due to loss of lipofuscin-containing RPE cells
- Hyperautofluorescence in the junctional zone indicates areas at high risk for atrophy

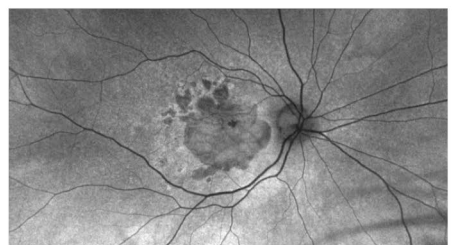
#### NORMAL EYE



#### EYES WITH GA



Medium unifocal subfoveal GA



Large multifocal subfoveal GA

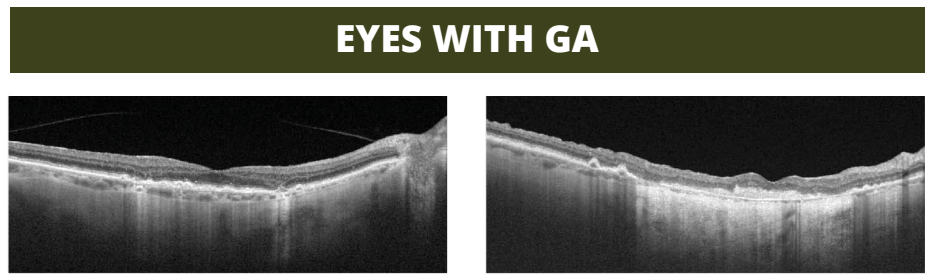
FAF is the current standard imaging technology for morphological assessment of GA<sup>13</sup>

The following diagnostic imaging techniques can be used to identify GA. Each modality provides insight into different aspects of GA lesions and disease progression.<sup>4</sup>

## Imaging modality

### Optical coherence tomography (OCT) – structural B scan<sup>2,13</sup>

- GA appears as sharply demarcated region(s) of degradation in the RPE and photoreceptor layers
- Increased reflectivity from underlying choroid and choriocapillaris

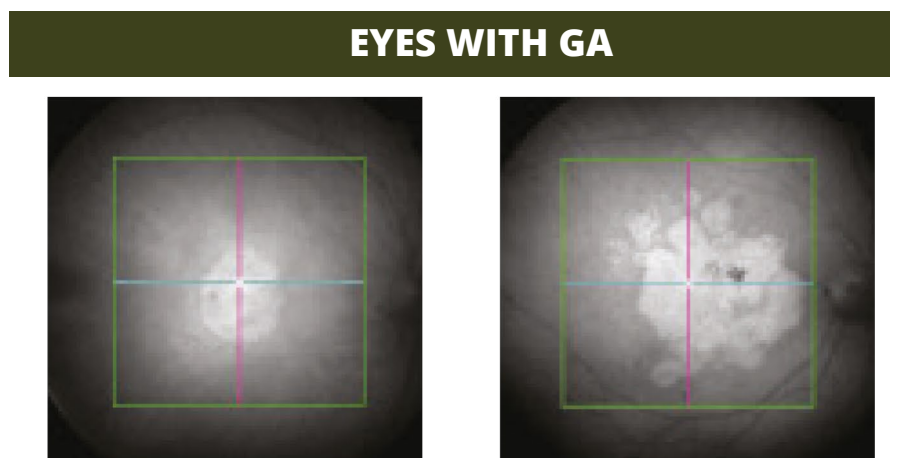
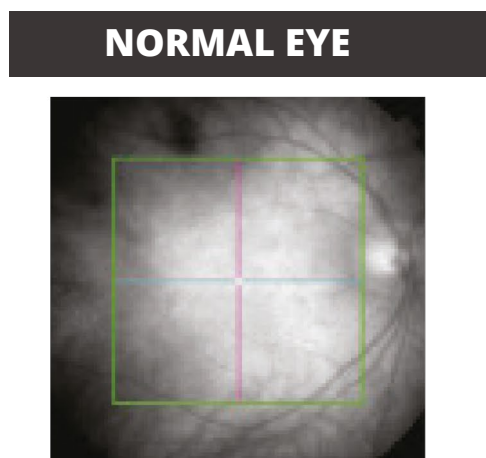


Small multifocal non-subfoveal GA

Large multifocal subfoveal GA

### Optical coherence tomography (OCT) – *en face*<sup>12</sup>

- Structural B scans can be combined with *en face* views of OCT scans to more easily identify lesion borders and measure lesion growth



Medium unifocal subfoveal GA

Large multifocal subfoveal GA

The earliest diagnosis of GA can be obtained using OCT imaging<sup>12</sup>

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# ASSESS LESION PRESENTATION

GA lesions can present in several different patterns. While the rate and nature of GA progression vary considerably among individual patients, some factors have been shown to be associated with rate of progression. Awareness of specific lesion features that could predict faster GA progression is important.<sup>2</sup>

GA lesions grow at a rate of **~2 mm<sup>2</sup> per year** on average (~0.53 to 2.6 mm<sup>2</sup> per year)<sup>2,14-16</sup>

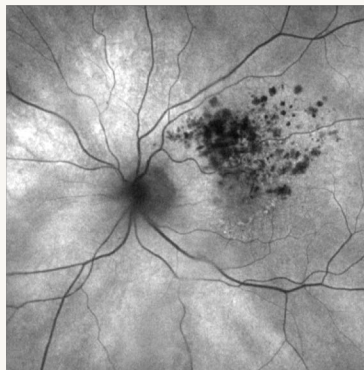
## Lesion features associated with rate of GA progression<sup>2,17,18</sup>

### Predictors of faster GA progression

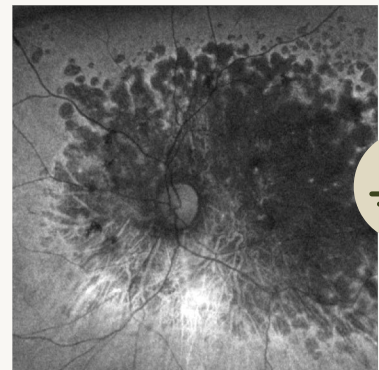


#### SIZE

Small

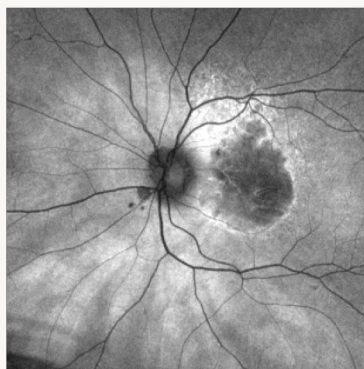


Medium/large

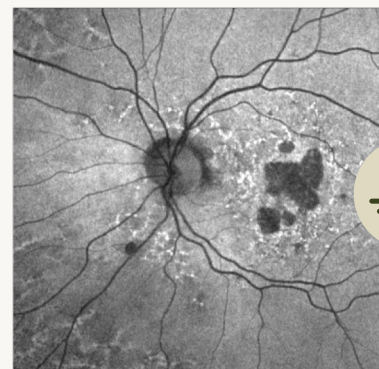


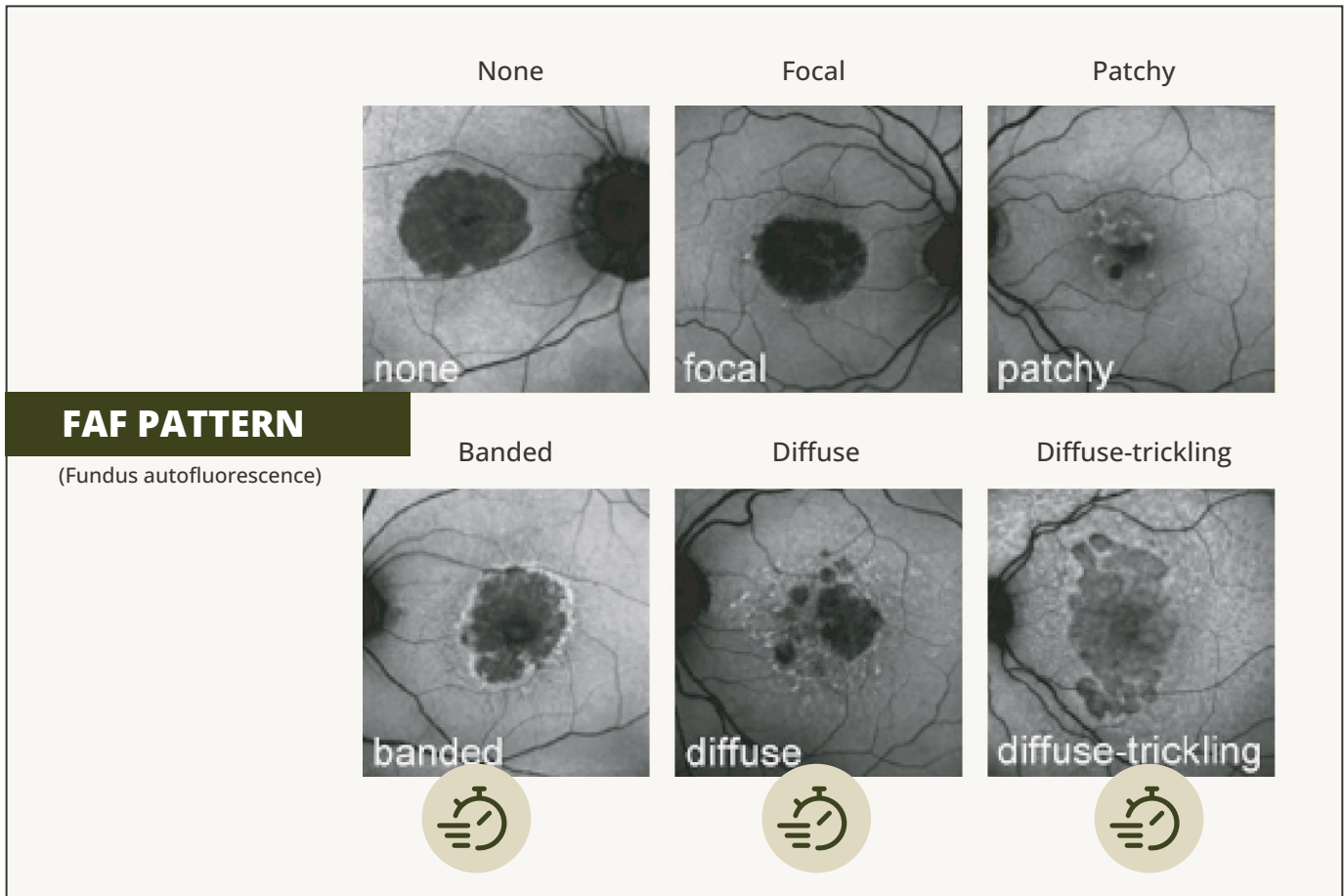
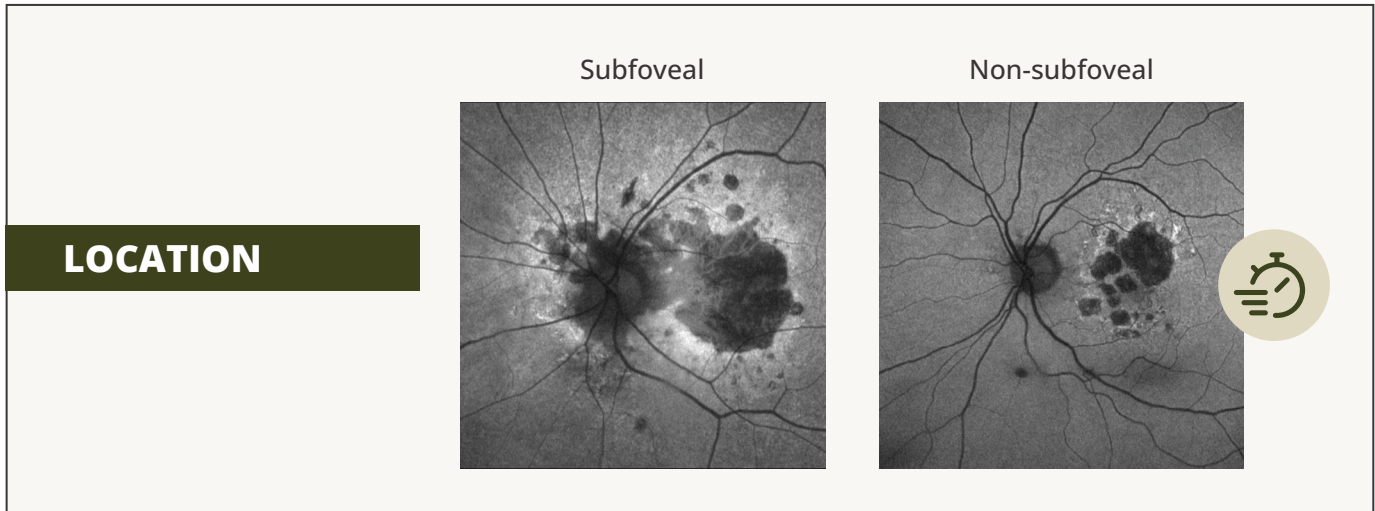
#### CONFIGURATION

Unifocal



Multifocal





# MONITOR FOR PROGRESSION

- Recommended monitoring schedule for patients with GA<sup>6</sup>:
- **Regular monitoring at least every 6 to 12 months** by an optometrist (OD) or ophthalmologist
  - **Consider referral to a specialist** for patients at high risk of progression

Images courtesy of Mohammad Rafieetary, OD, FAAO, FORS, Dipl ABO & ABCMO mrafieetary@charlesretina.com (Lesion location).  
 Images reprinted from Fleckenstein M, et al. Ophthalmology. 2018;125(3):369-390. © 2018, with permission from the American Academy of Ophthalmology (FAF pattern).  
 FAF=fundus autofluorescence; GA=geographic atrophy.

You play a key role in early detection and ongoing monitoring of patients with GA

# DISCOVER GEOGRAPHIC ATROPHY



Visit [www.geographicatrophy.uk](http://www.geographicatrophy.uk)



WHAT IS GA?



GA PROGRESSION



UNMET NEED IN GA

Apellis is a global biopharmaceutical company that leverages courageous science and compassion. We are committed to addressing the unmet needs of patients and eye care professionals worldwide.

Developed in collaboration with Netan Choudhry, MD, FRCS(C), DABO  
Co-founder and medical director of the Vitreous Retina Macula Specialists of Toronto  
GA=geographic atrophy.

#### References:

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