

Age-related macular degeneration

Category(ies): Retina / Vitreous

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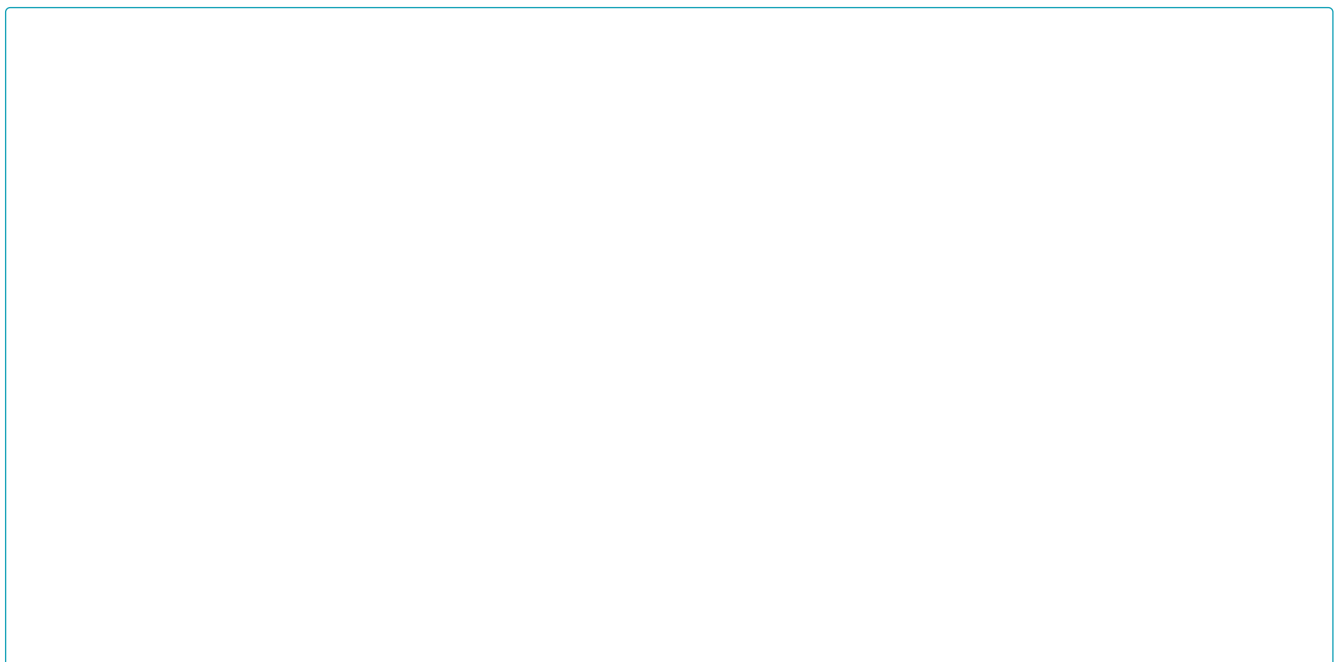


[Age-related macular degeneration \(AMD\)](#) is the leading cause of blindness in elderly patients [1] and is classified as either non-exudative (i.e., dry) or exudative (i.e., wet or neovascular). The clinical manifestations of non-exudative AMD range from incidental findings of drusen to geographic atrophy causing significant vision loss, and approximately 15% of AMD patients ultimately transition to the wet form [2]. This conversion is due to the extension of choroidal vessels into the sub-retinal pigment epithelial (sub-RPE) or sub-retinal space via breaks in Bruch's membrane. AMD has been categorized by The Age-Related Eye Disease Study (AREDS) based on exam findings of hard drusen, soft drusen, RPE abnormalities, atrophy, and choroidal neovascularization [3]; the AREDS categories are as follows:

- **Category 1 (No AMD):** a few (5-15), small (<63 μ m) or no drusen without pigment changes.
- **Category 2 (Early AMD):** Several small drusen, few intermediate-sized (63-124 μ m) drusen, and/or pigmentary changes in one or both eyes
- **Category 3 (Intermediate AMD):** Extensive (i.e., 20 soft or 65 hard without any soft) intermediate-sized drusen, one large (>125 μ m) druse, and/or geographic atrophy not involving the macula in one or both eyes
- **Category 4 (Advanced unilateral AMD):** Advanced dry form (i.e., macula-involving geographic atrophy) or exudative form with [choroidal neovascularization](#) in one eye
- **Category 4a:** Advanced AMD in one eye with category 1, 2, or 3 AMD in the fellow eye
- **Category 4b:** Advanced AMD in one eye and decreased visual acuity (<20/32) secondary to AMD in the fellow eye; however, advanced AMD is not present in both eyes

The importance of daily Amsler grid monitoring should be emphasized to maximize the opportunity to detect early development of wet AMD in either eye. The benefit of micronutrients (e.g., AREDS vitamins) in delaying the progression of AMD has been shown in patients with intermediate and advanced unilateral disease [4]. Patients should be informed of the association between smoking and an increased risk of developing AMD [5].

Early AMD (AREDS Category 2)



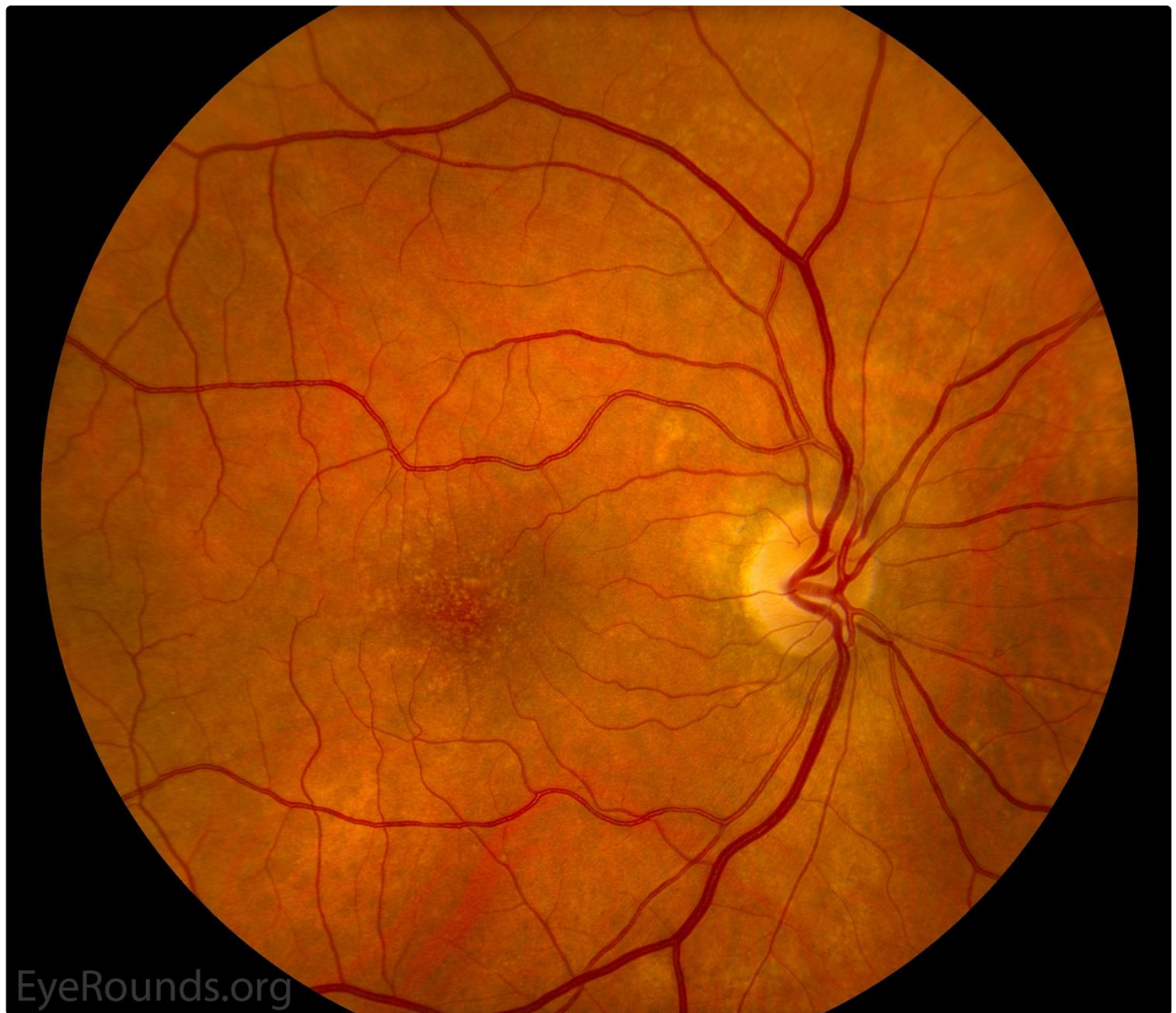


Figure 1a. These fundus photos show early AMD of two different patients. There are a few (<15) intermediate-sized soft drusen predominantly in the inferior macula.

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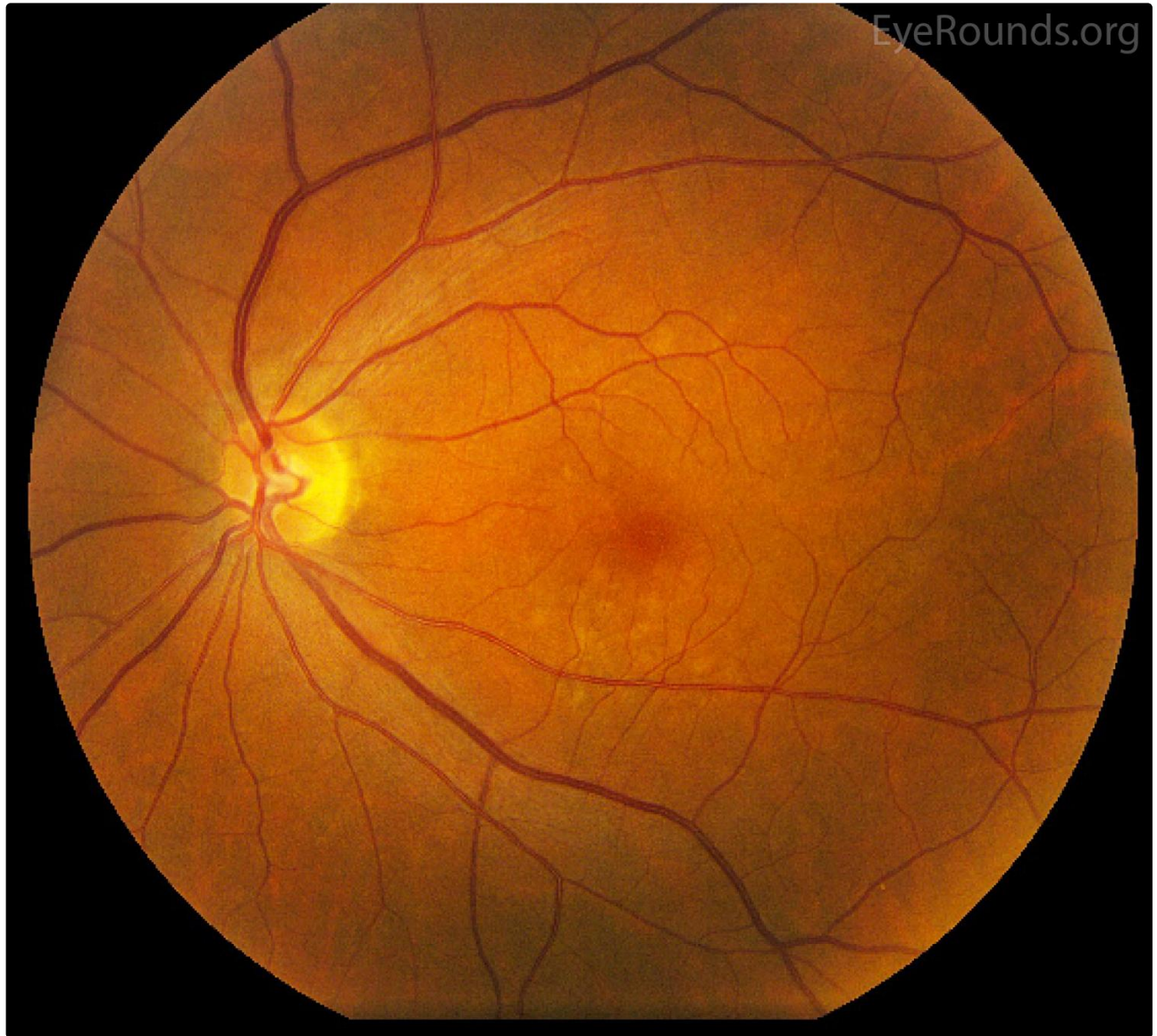


Figure 1b. These fundus photos show early AMD of two different patients. There are several (>15) small hard drusen in the macula.

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Intermediate AMD (AREDS Category 3)



Figure 2a. Eyes demonstrates intermediate AMD with high risk (i.e., large, confluent, soft drusen) non-neovascular, age-related macular degeneration. Ultimately, the patient progressed to category 4 AMD with development of a choroidal neovascular membrane in the left eye (not shown), which required serial intravitreal injections.

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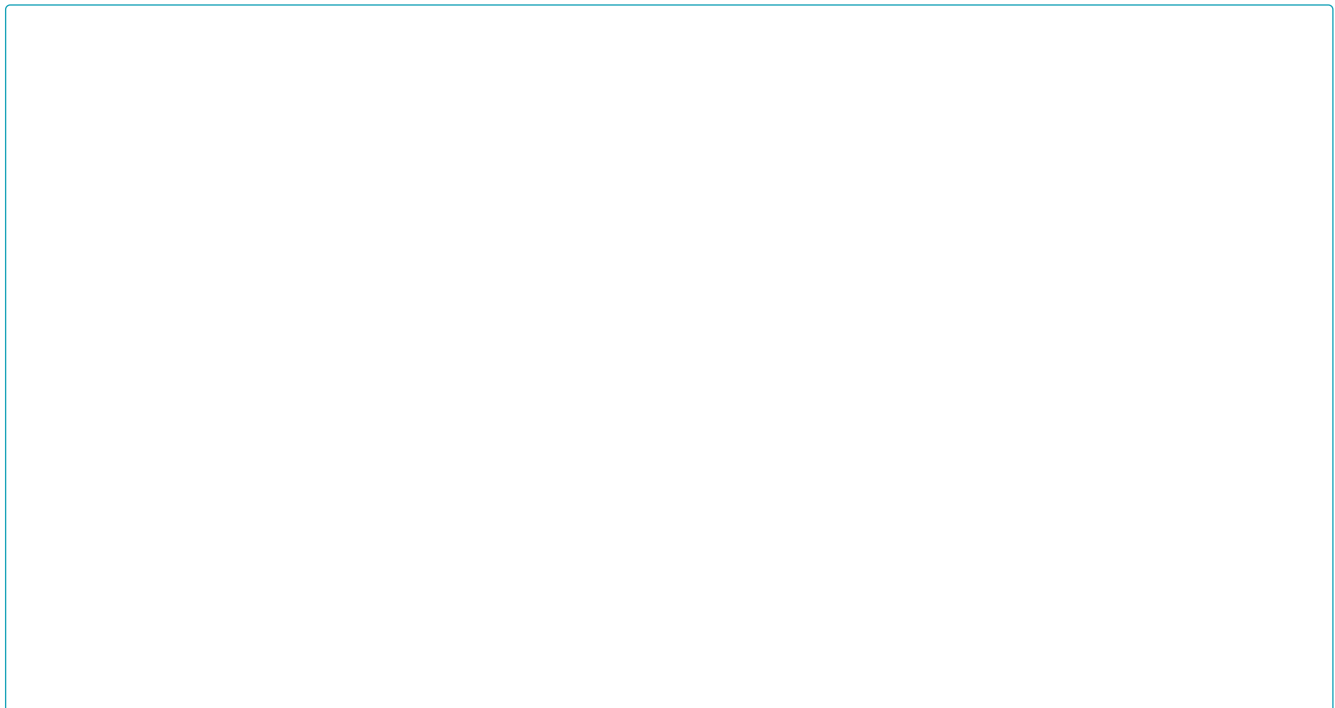
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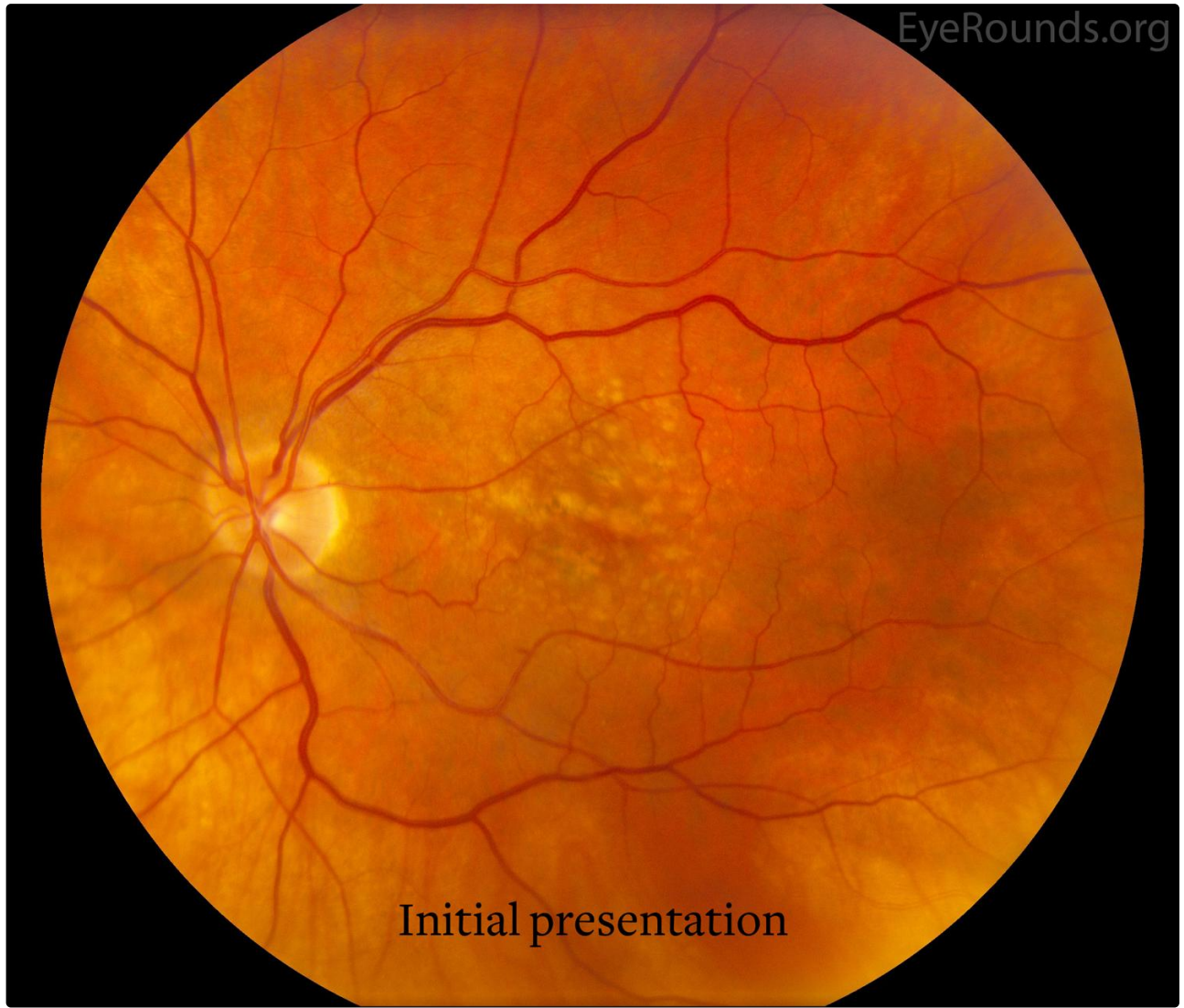


Figure 2b. Eye demonstrates intermediate AMD with high risk (i.e., large, confluent, soft drusen) non-neovascular, age-related macular degeneration.

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Transition to Advanced Unilateral AMD (AREDS Category 4)





Initial presentation

Figure 3a. Dry, high risk (large, soft drusen) Category 3 AMD on initial presentation.

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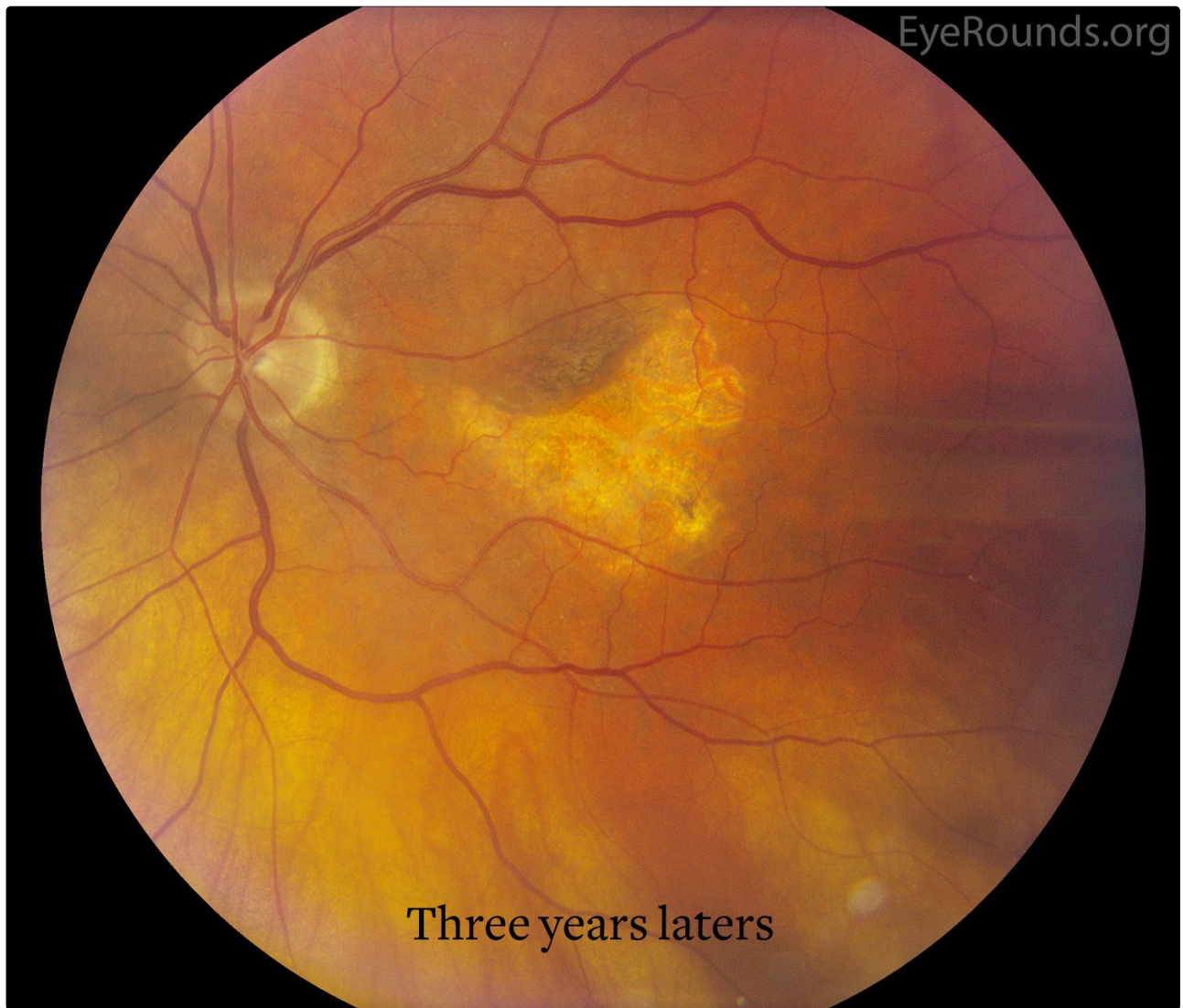


Figure 3b. Three years later, there was evidence of geographic atrophy only in the left eye, and the patient had significant vision loss in the left eye.

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Advanced Bilateral AMD



Figure 4a. Non-exudative macular degeneration with extensive geographic atrophy in both eyes. Since this patient had advanced AMD in both eyes, he was not an AREDS vitamins candidate.

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Figure 4b. Non-exudative macular degeneration with extensive geographic atrophy in both eyes. Since this patient had advanced AMD in both eyes, he was not an AREDS vitamins candidate.

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References:

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