Age related macular degeneration (AMD) is the most common pathology affecting the macula; however, there are many other ocular conditions involving macula lesions that can mimic the appearance of AMD. The tables below give an overview of a number of conditions which are commonly confused with AMD.

Aetiology of lesions at the macula can be broadly divided into two categories; changes related to dystrophies and those arising from other causes. A macula dystrophy typically has a painless bilateral onset with a progressive course. Dystrophies may be inherited or occur through spontaneous genetic mutations. In the case of dominant inheritance, there will likely be a clear family history however in the case of recessive or X-linked inheritance, there may be few or no family members affected. Conversely, macula problems which are not dystrophic in origin may result from a combination of factors including genetic predisposition, inflammation, infection, medical history and degenerative changes. These cases may be unilateral or bilateral but are likely to show less bilateral symmetry compared to a dystrophy.

<table>
<thead>
<tr>
<th>Macula Dystrophy</th>
<th>Optical coherence tomography (OCT)</th>
<th>Fundus autofluorescence (FAF)</th>
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</table>
| **Stargardt Disease**                      | • Foveal atrophy surrounded by discrete yellowish round or pisciform flecks scattered through the fundus  | • Hyper-reflective thickening of the RPE layer and thinning of the I5E line  
• May be foveal sparing with regular I5E profile in some cases  
• Intense hyper-fluorescence of flecks surrounded by hypofluorescence                                                                 |
| **Pattern Dystrophy**                      | • Bilateral and symmetrical deposition of yellow, orange or grey materials in different patterns  
• Presentations include butterfly, reticular dystrophy, adult onset foveomacular vitelliform dystrophy  
• Age of onset varies from 30-50 years of age  
• Mild loss of vision and/or metamorphopsia however some may remain asymptomatic  
• Autosomal dominant inheritance  
• Hyper-reflective lesions between the RPE and more inner retinal layers.  
• Often disruptions of the I5E line  
• Hyper-fluorescence of vitelliform lesions                                                                 |
| **Best Vitelliform Macular Dystrophy**     | • Initially presents with yellow, yolk like macular lesion  
• Progresses to geographic atrophy in later stages  
• Variable age of onset ranging from 1st to 6th decade  
• Usually asymptomatic before the age of 40  
• Autosomal dominant inheritance  
• Risk of choroidal neovascularisation in later stages  
• Early lesions found between the RPE and sensory retina  
• Later stage may involve sub-retinal fluid, subretinal scars and oedema  
• Variable hyper-fluorescence corresponding to vitelliform material.  
• Hypo-fluorescence in atrophic areas                                                                 |
| **Central Areolar Choroidal Dystrophy**    | • Initially parfoveal pigmentary RPE changes progressing to enlarged RPE atrophy and eventually confluent geographic atrophy  
• VA deteriorates at age 30-50 but some cases are asymptomatic until later  
• Occasionally photophobia associated  
• Autosomal dominant inheritance  
• Reduced retinal thickness with disruption of the I5E zone and outer retina  
• Remaining retinal layers are intact  
• Speckled pattern of hyper- and hypo-fluorescence confined to the macula region in a round / oval shape                                                                 |

* The specific diagnosis of dystrophies may be uncertain in the absence of electrophysiology results and genetic testing.
### Non-Dystrophic Macular Changes

#### Chronic / Recurrent Central Serous Chorioretinopathy
- Raised appearance of areas with residual sub-retinal fluid
- Frequently pigmentary changes (hyper/hypo)
- Possible blur/metamorphopsia unilaterally
- Most common in males age 20-50 years
- Mild unilateral hyperopic shift in acute phase
- Risk of CNV with increased chronicity / recurrence

#### Resolved Central Serous Chorioretinopathy
- Pigmentary changes frequent (hyper/hypo) following resolution of condition
- Possible blur/metamorphopsia unilaterally
- May be recurrent
- Increased risk of CNV with increased retinal disturbance

#### Plaquenil Retinopathy
- Bilateral granular depigmentation of RPE in the macular region progressing to atrophic bull’s eye maculopathy
- Often asymptomatic
- Possible colour vision deficit, blur and/or metamorphopsia
- Medical history of Plaquenil/hydroxychloroquine
- Increased risk with cumulative dose (dosage and duration)

#### Epiretinal Membranes/Macular Pucker
- Irregular light reflex or sheen which becomes more obvious with thickened membrane
- May cause distortion of blood vessels, retinal wrinkling and white striae
- Ranges from asymptomatic to blur / metamorphopsia
- More common over age 50
- Normally follows a PVD or peripheral retinal change

#### Acute Posterior / Multifocal Placoid Pigment Epitheliopathy (APMPPE)
- Multifocal yellow-white lesions predominantly in the posterior pole which regress over 1-2 weeks
- Pigmentary changes may persist following resolution of white dots
- Acute onset between 20 to 50 years of age
- Metamorphopsia and paracentral scotoma
- Unilateral progressing to bilateral (days/weeks)
- Idiopathic
- Good visual prognosis unless foveal involvement, recurrence or older age of presentation

#### Area of sub-retinal fluid
- Irregular/ thinned RPE
- Granulation and focal thinning of the posterior surface of the detached retina

#### Possible hyper-fluorescence associated with fluid or area of previous fluid
- Gravitational tracts if long-standing

#### Irregular RPE/ISe zone upon resolution of fluid
- Atrophy of outer retina in a bull’s eye pattern sparing a foveal island
- Underlying increased choroidal reflectivity

#### Fig 1: Early ring of hyper-fluorescence
- Fig 2: Late ring of hypo-fluorescence

#### Normally typical background autofluorescence as the RPE is unaffected
- Distortion of blood vessels may be accentuated

#### Disruption of the ISe line and outer retina
- RPE atrophy

#### Hypo-fluorescent lesions at presentation followed by hyper-fluorescence as lesions regress