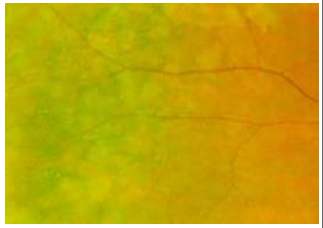
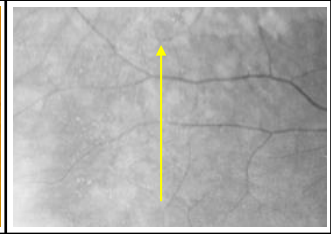
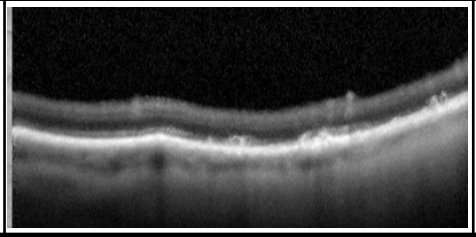
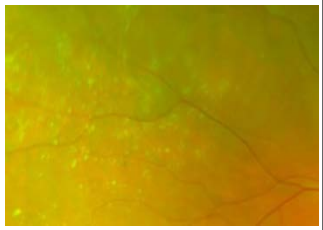
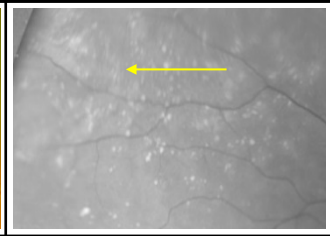
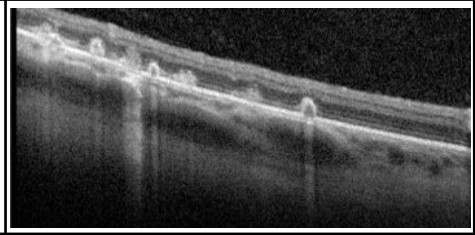
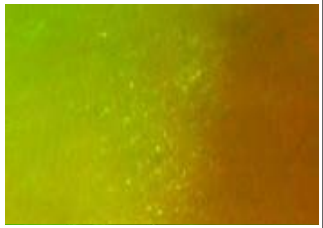
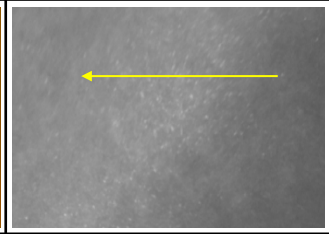
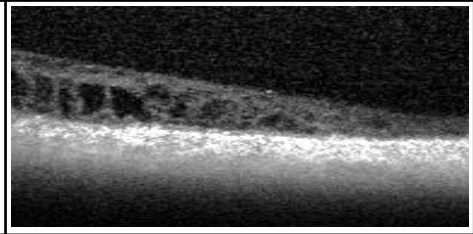
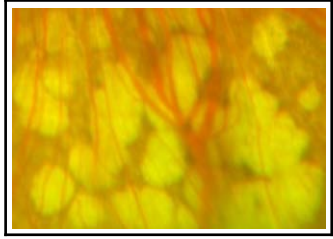
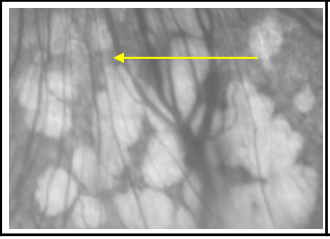
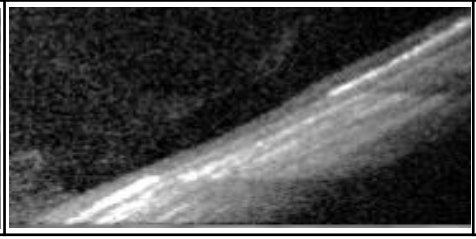
Centre for Eye Health

Chair-side Reference: Peripheral Retinal Lesions

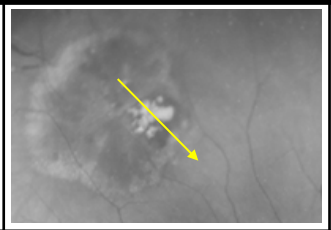
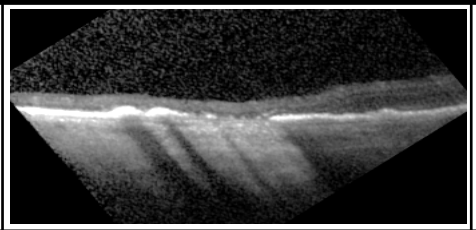
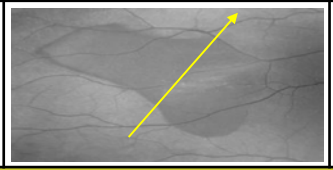
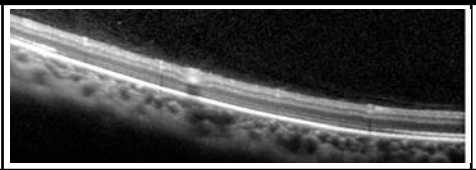
Optometry NEW SOUTH WALES AUSTRALIAN CAPITAL TERRITORY

NON VISION-THREATING LESIONS OF THE PERIPHERAL RETINA

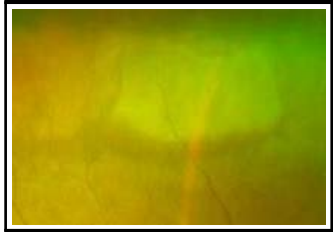
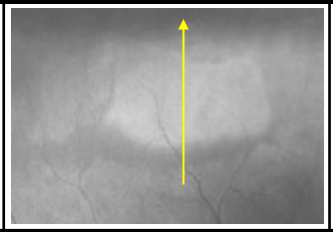
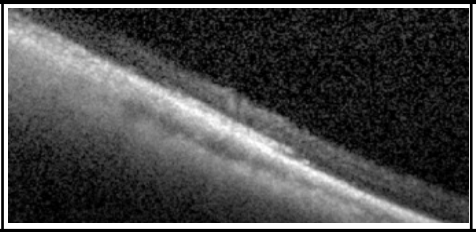
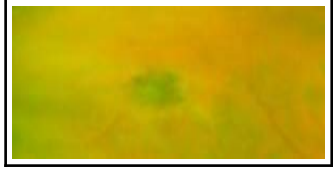
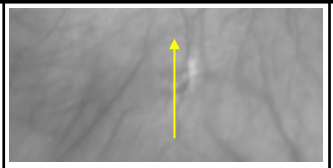
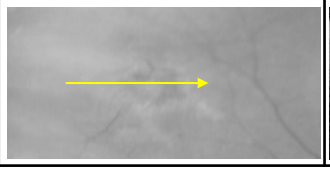
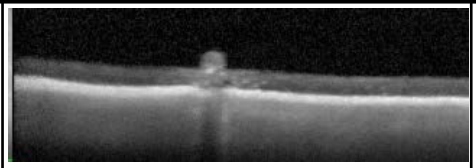
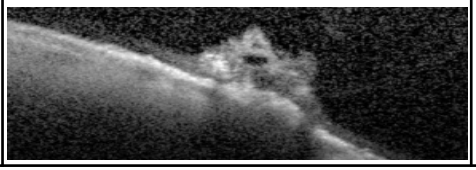
©CFEH

Optomap image	Green separation (red-free)	Optical coherence tomography (OCT)	Description
Peripheral (reticular) pigmentary degeneration (honeycomb chorioretinal degeneration)			
			• Appears as a circumferential band of granular pigment between the ora serrata and equator. The pigment can take on a reticular or bone spicule appearance. • Usually bilateral and often accompanied by peripheral drusen. • Due to pigment scattered throughout the sensory retina from degenerating RPE. • Age related and innocuous. *Routine review required.*
Peripheral drusen			
			• Often found near the equator and may have pigmented borders. • Prevalence increases with age. • Is not associated with a risk for central vision loss in the absence of changes within the macula, however there is evidence that peripheral drusen are part of the spectrum of AMD. *Routine review required.*
Peripheral cystoid degeneration (microcystoid degeneration)			
			• Appears as a hazy grey area of thickened retina extending from the ora serrata. • Small red cysts within areas of cystoid degeneration may mimic the appearance of atrophic retinal holes. • Coalescence of cysts with accompanying splitting of retina is thought to lead to development of retinoschisis. *Routine review required.*
Chorioretinal atrophy (pavingstone/cobblestone degeneration)			
			• Circumscribed areas of retinal thinning from loss of RPE and photoreceptors, which allows increased visualisation of the choroidal vasculature. • Prevalence increases with age. • Often bilateral and more common in the inferotemporal quadrant. • Adjacent lesions may join to form larger areas of atrophy. • Does not predispose to retinal breaks / detachment. *Routine review required.*

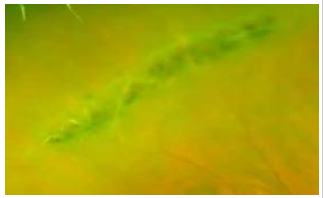
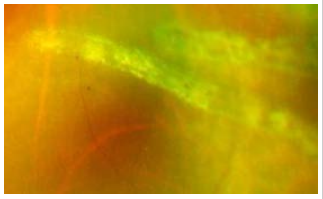
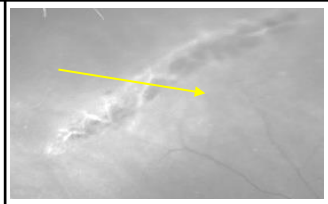
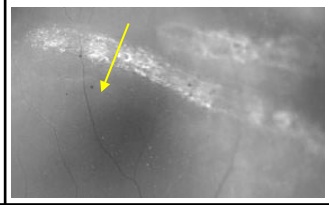
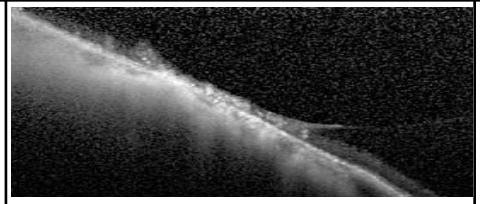
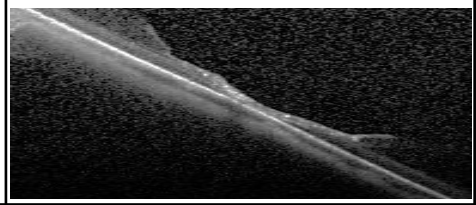
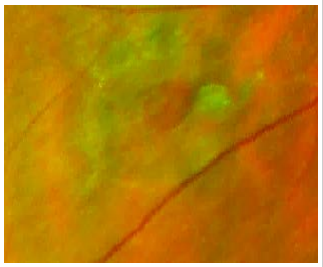
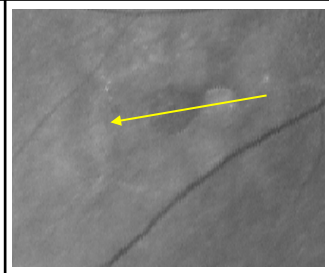
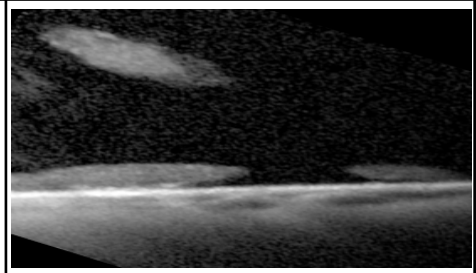
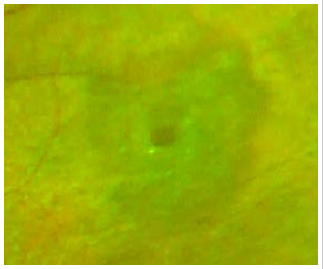
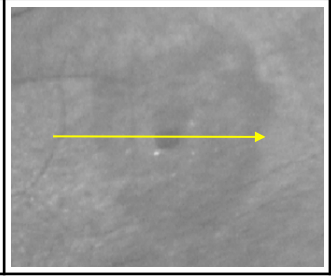
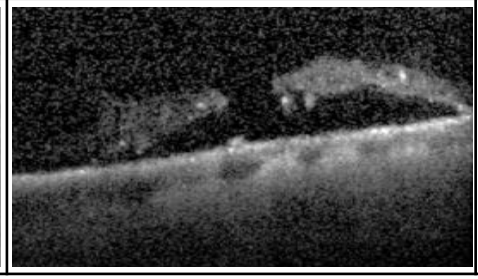
NON VISION-THREATING LESIONS OF THE PERIPHERAL RETINA - Continued

Optomap image	Green separation (red-free)	Optical coherence tomography (OCT)	Description
Congenital hypertrophy of the retinal pigment epithelium (CHRPE)			
			• Flat, well-demarcated grey-black lesion which may have an area of surrounding depigmentation. • May have internal areas of chorioretinal atrophy (lacunae), which become more prominent with age. *Routine review in case of isolated lesions.* *If multiple and/or bilateral lesions, a pisciform shape, or there is a family history of familial adenomatous polyposis, consider referral.*
Dark without pressure			
			• Discrete, flat patches of darker retina, often with well-defined scalloped edges. • More common in darkly pigmented fundi. • Areas can vary in shape and location over time and correlate with changes in outer retinal reflectivity on OCT (ellipsoid zone). *Routine review required.*

CHANGES THAT POSE A POSSIBLE THREAT TO VISION

White without pressure			
			• Appears as area of translucent white to grey retina, often with a red-brown border. • Higher incidence with age and in myopia. • More pronounced in darkly pigmented fundi. • Can vary in shape and location over time and correlate with changes in outer retinal reflectivity on OCT (ellipsoid zone). The exact cause is uncertain. • The potential association with the development of retinal breaks is unclear. *Review 6 monthly - 2 yearly, depending on the presence of other risk factors for retinal tears (more often in case of scalloped borders and extensive vitreous degeneration).*
Vitreoretinal tuft: Non-cystic (top) and Cystic (bottom)			
 	 	 	**Non-cystic**: Short (<0.1mm), thin projections of altered retinal and glial tissue. • Tips of noncystic tufts may break off and be observed as small floaters overlying the vitreous base. • Not associated with retinal breaks. *Routine eye exam* **Cystic**: Round/oval-shaped, grey-white nodules of varying size. • Congenital and associated with vitreoretinal traction. • Consist of glial tissue with internal microcysts and often with RPE hyperplasia near/within the tuft. • May predispose to a retinal tear/operculated hole or detachment with PVD. *Annual review if asymptomatic. If symptomatic, prompt evaluation with scleral indentation for any retinal break is warranted.*

CHANGES THAT POSE A POSSIBLE THREAT TO VISION - continued

Optomap image	Green separation (red-free)	Optical coherence tomography (OCT)	Description
Lattice (top) and snailtrack (bottom) degenerations			
 	 	 	**Lattice**: Band of retinal thinning with abnormal vitreoretinal attachments at the margins. • Associated with RPE hyperplasia, yellow glistening flecks, sclerosed vessel formation and atrophic holes. • Most common in the superior and inferior retina and usually in a circumferential orientation around the eye. **Snailtrack**: A variant of lattice degeneration. • Shiny bands of retina due to numerous glistening yellow-white dots on the inner retinal surface. • Associated with atrophic holes are often found within lesions. • Most common in inferotemporal quadrant. *Annual review is required.* *If symptomatic (flashes and floaters), scleral indentation is mandatory with more regular subsequent reviews. Also consider other risk factors for development of retinal detachment.*
Operculated retinal hole			
			• Round red hole with an overlying floating fragment of tissue which often appears smaller than the hole due to tissue atrophy. • Results from focal vitreoretinal traction which pulls a "plug" of retinal tissue (operculum) away from the surrounding tissue. • May have associated localised subclinical retinal detachment (fluid cuff) and/or surrounding RPE hyperplasia *Asymptomatic cases with <1DD radius fluid cuff: 6-12 month review or refer for retinal specialist opinion, particularly If located superiorly.* *In cases of fluid cuff >1DD radius, symptomatic lesions or in the case of additional risk factors for retinal detachment, referral is indicated.*
Atrophic retinal hole			
			• Red, round lesion, pinpoint to 2DD . • Often with surrounding whitish subclinical retinal detachment (fluid cuff) and/or RPE hyperplasia. • Results from retinal thinning and can occur within lattice or snailtrack degeneration or otherwise apparently normal retina. • Represent full thickness retinal break, unrelated to vitreoretinal traction. *Isolated, asymptomatic cases and those with RPE hyperplasia: annual review. In case of fluid cuff that is <1DD in radius, review in 6 months or refer for retinal specialist opinion, particularly if located superiorly.* *In case of fluid cuff >1DD radius or symptomatic cases, referral is indicated.*

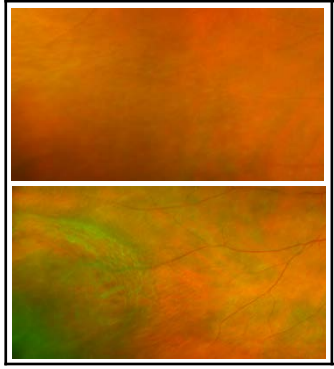
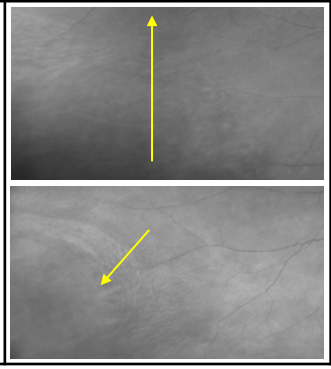
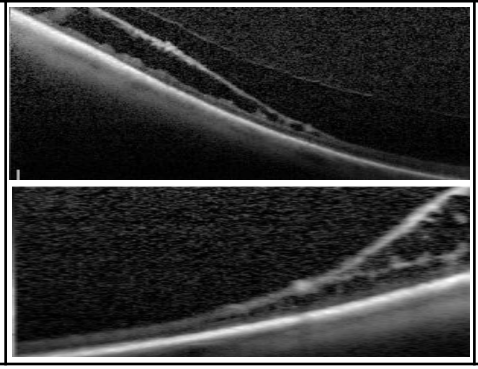
Centre for Eye Health

Chair-side Reference: Peripheral Retinal Lesions

Optometry NEW SOUTH WALES AUSTRALIAN CAPITAL TERRITORY

CHANGES THAT POSE A POSSIBLE THREAT TO VISION - continued

Flat / typical (top) and Degenerative / bullous / reticular (bottom) retinoschisis

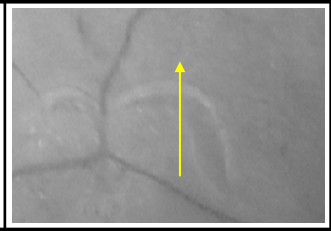
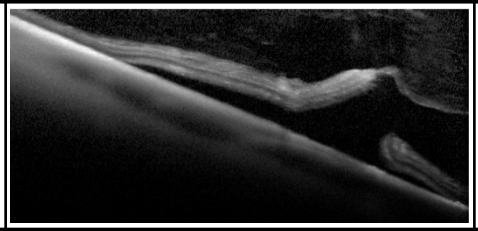
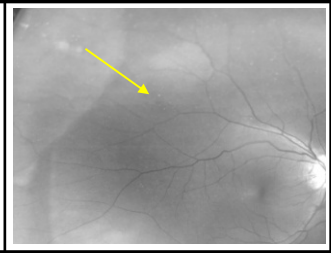
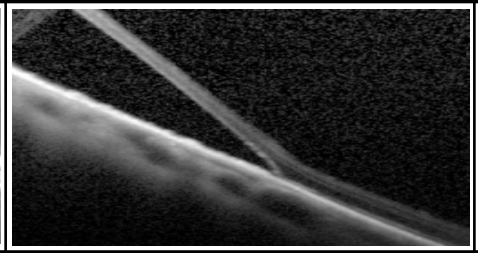




Flat: Smoothly elevated, transparent, often with small white dots on the surface.
- Usually bilateral and most common in the inferotemporal quadrant.
- Retinal splitting occurs at the level of the outer plexiform layer as a result of the coalescence of cysts in peripheral cystoid degeneration.
- Rarely associated with expansion, retinal holes or retinal detachment.

Degenerative : Well-circumscribed, immobile, transparent dome-shaped elevation of the retina with a reticular pattern of sheathed retinal vessels.
- Retinal splitting at the nerve fibre layer with an increased incidence of inner and outer layer holes and associated formation of retinal detachments.
- Often bilateral and most common in the inferotemporal quadrant.
- The presence of a pigmented demarcation line suggests a secondary detachment which has been stationary for >3 months.

Annual review for progression or breaks; consider peripheral visual field exam.

PERIPHERAL RETINAL CHANGES THAT POSE A DIRECT THREAT TO VISION

Optomap image	Green separation (red-free)	Optical coherence tomography (OCT)	Description
Retinal tear (linear, horseshoe or flat)			
			• Retinal break associated with vitreoretinal traction (vitreous remains adherent to the flap of torn retina). • Appears red with a surround of grey retinal tissue. If horseshoe-shaped, the apex usually points towards the posterior pole. • May occur along edges of lattice degeneration or associated with vitreoretinal tufts. • Often associated with acute PVD. • Can lead to retinal detachment, typically within a few weeks (see below). *Prompt referral is indicated*
Rhegmatogenous retinal detachment			
			• Fluid separation of neuro-sensory retina from the RPE through a break in the retina. • Appears as a semi-transparent, undulating elevation, becoming opaque over time. • Obscuration of underlying choroidal detail may be the only visible sign in early or shallow cases. • A pigmented demarcation line, whitish folds and accumulation of intraretinal exudates indicate increased chronicity. Note that retinal detachments can also occur as a result of other causes including traumatic, exudative and tractional. *Prompt referral is indicated.*

Risk factors associated with the development of retinal detachments	Vitreous degeneration (liquefaction or shrinkage), Myopia, Fellow eye with retinal detachment, Strong family history of retinal detachment, Symptomatic retinal break, Cataract surgery, Progression of retinal thinning in young patients, Presence of significant vitreoretinal traction in elderly patients, Blunt/penetrating ocular injury, Peripheral vitreous haemorrhage.

This chairside reference is intended to cover the more common peripheral retinal lesions but is not all-encompassing. In particular changes adjacent to the ora serrata such as meridional folds, zonular traction tufts, pars plana cysts and oral pearls are not included in this reference