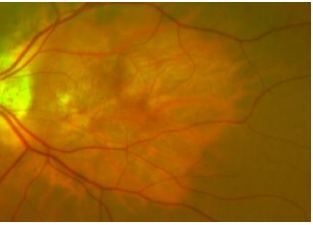
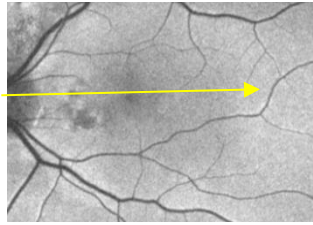
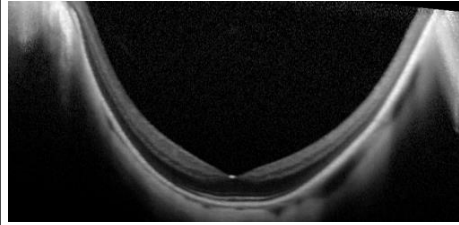
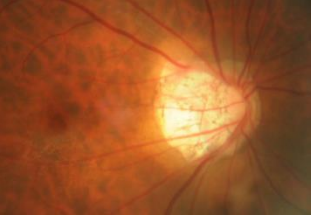
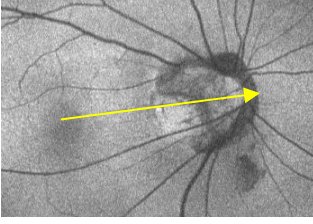
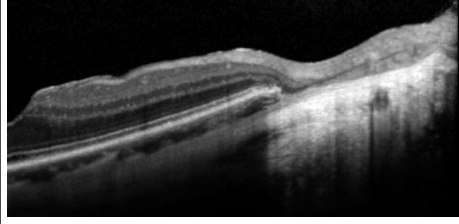
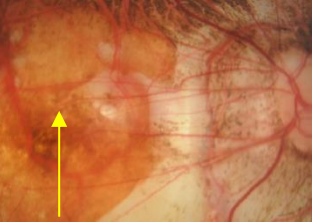
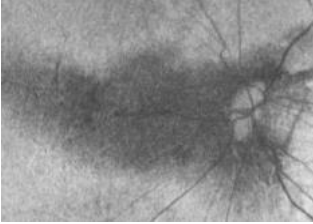
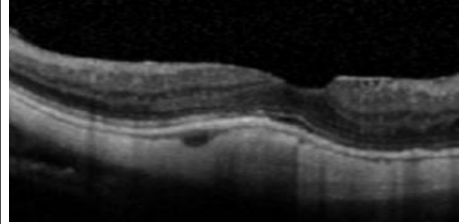


HIGH MYOPIA

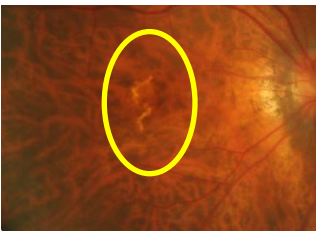
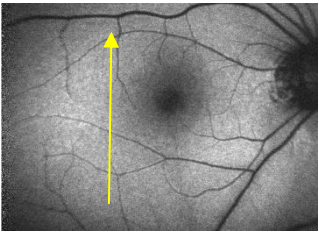
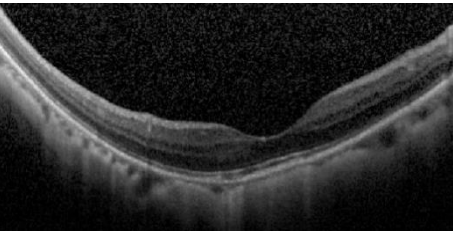

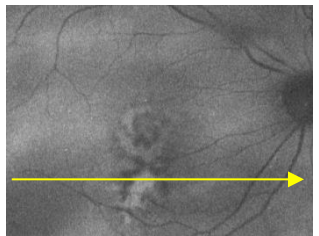
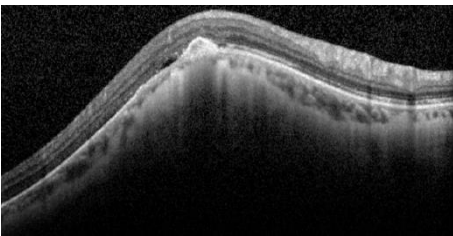
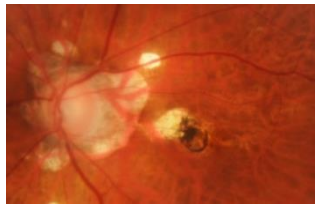
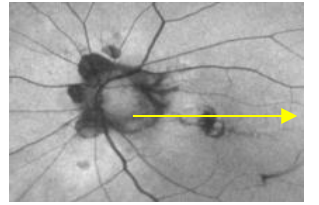
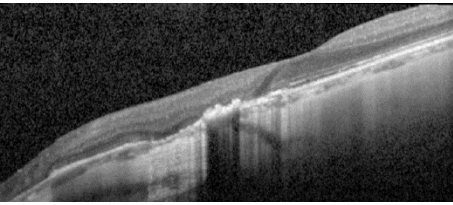
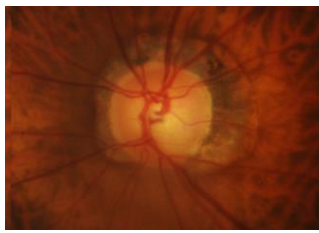
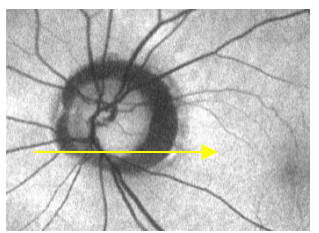

High myopia has traditionally been regarded as a refractive error $>-6.00\text{DS}$ or axial length $>26\text{mm}$. The definition of “pathologic myopia” has varied throughout the literature however the most recent definition proposed by Ohno-Matsui et al. (2017) refers to eyes with visual impairment secondary to changes caused by high myopia and those eyes with myopic complications that risk causing visual impairment in the future. The majority of pathological changes are related to increased axial length and posterior staphyloma. This chairside reference depicts the posterior pole changes associated with pathologic myopia and its ocular complications using multi-modal imaging techniques. For peripheral myopic changes, please refer to the Centre’s Chairside reference on peripheral retinal lesions.

All management recommendations below are based on the assumption that other coexisting pathology requiring more urgent follow-up is not present.

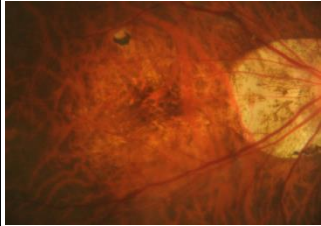
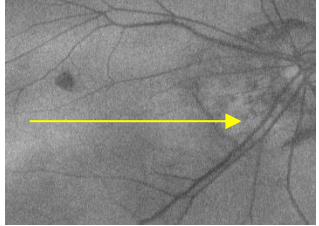
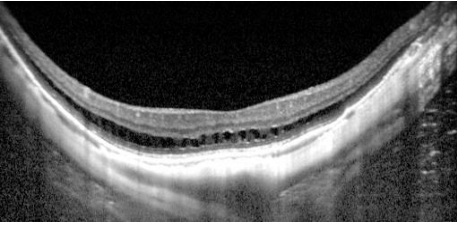
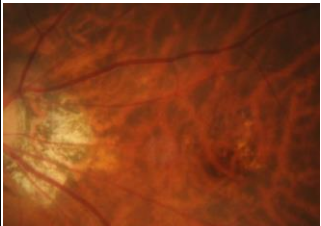
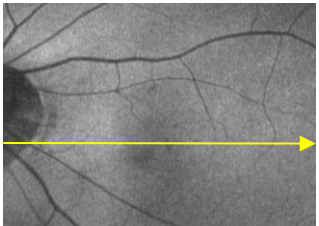
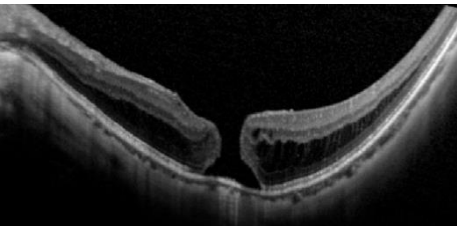
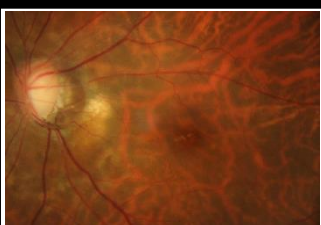
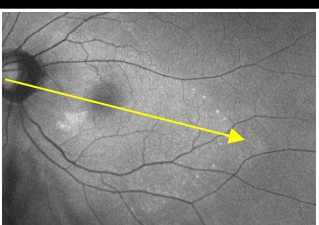
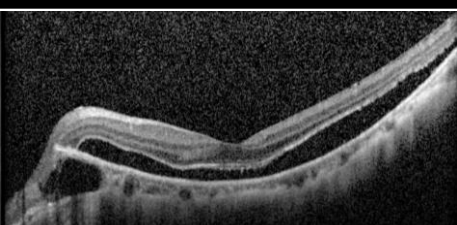
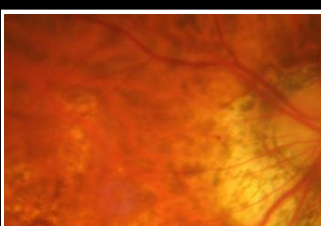
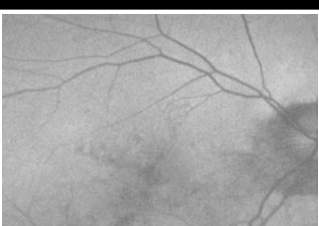
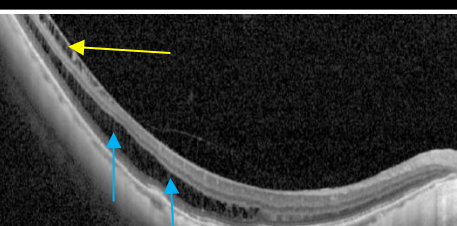
PATHOLOGIC MYOPIA


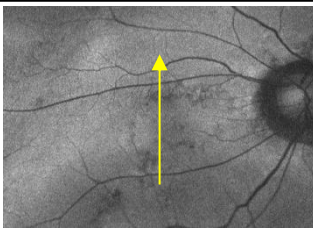
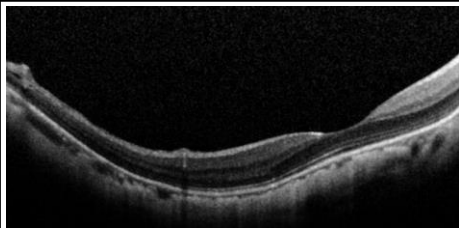
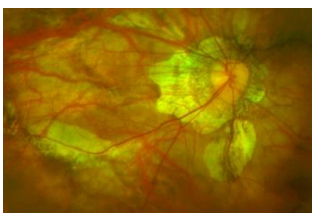
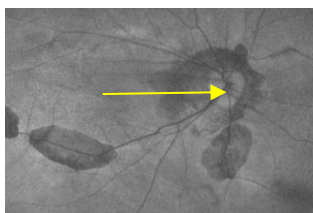
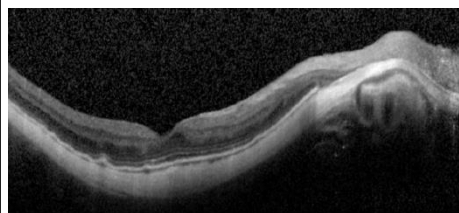
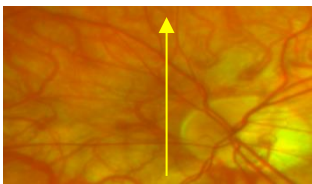
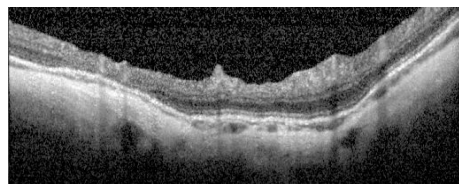
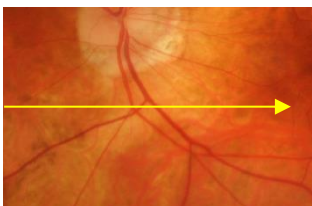
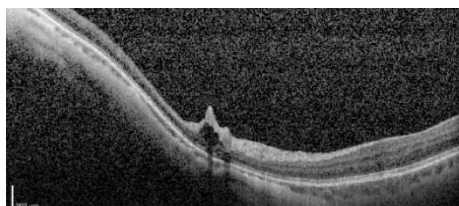
Optomap image	Fundus Autofluorescence	Optical coherence tomography (OCT)	Description
Staphyloma			
			<ul style="list-style-type: none"> A posterior protrusion of the globe in highly myopic eyes that is accompanied by a stretching of the posterior fundus. Present in up to 90% those with high myopia and prevalence increases with age. Clinical appearance: tessellated fundus and/or pallor in a horizontal elliptical shape, typically extending from the nasal side of the disc towards the macula. Seen on OCT as a posterior bowing of the sclera, choroid and retinal layers. <p><i>Annual dilated examination</i></p>
Myopic Crescent (Myopic Conus)			
			<ul style="list-style-type: none"> Sharply defined concentric area adjacent to the optic disc where the sclera is visible. Premature termination of the RPE-choriocapillaris complex. <p><i>Annual dilated examination</i></p>
Dome Shaped Macula			
			<ul style="list-style-type: none"> Convex elevation of the macula within an area of posterior staphyloma Most easily seen on vertical OCT line scans. Associated with reduction in vision and metamorphopsia Absence of CNV but can be associated with subretinal fluid <p><i>Annual dilated examination</i></p>

PATHOLOGIC MYOPIA

Optomap image	Fundus Autofluorescence	Optical coherence tomography (OCT)	Description
Lacquer Cracks			
			<ul style="list-style-type: none"> • Ruptures in Bruch's membrane in which small haemorrhages may occur. • Caused by stretching of ocular tissue due to axial elongation, but not correlated to axial length. • Appear as a yellow-white line in eyes with pathological myopia. • Strong association with myopic CNV (29.4%) which forms along the cracks. <p><i>Annual dilated examination Amsler grid monitoring</i></p>
Myopic Choroidal Neovascularisation (CNV)			
			<ul style="list-style-type: none"> • Funduscopically appears as an area of grey discoloration, sometimes with a pigmented border. • Associated with decreased vision, metamorphopsia and central scotoma if located within the macula. • Type 2 CNV appears on OCT as a hyper-reflective lesion above the level of the RPE with intra-retinal or sub-retinal fluid (appears as hypo-reflective spaces). • Referral for fluorescein angiography may aid diagnosis. <p><i>Prompt referral to ophthalmology.</i></p>
Foster-Fuch's Spot			
			<ul style="list-style-type: none"> • A raised round or oval-shaped pigmented lesion. • Arise secondary to regressed myopic choroidal neovascularisation which causes a proliferation of the RPE. <p><i>Referral to ophthalmology for further investigation.</i></p>
Peripapillary Intrachoroidal Cavitation			
			<ul style="list-style-type: none"> • Well-defined circular orange-yellow peripapillary lesion usually seen at the inferior border of the disc in an eye with pathological myopia but which can surround the entire optic disc. • OCT shows an outwardly bowed sclera with an associated hypo-reflective intrachoroidal space. • Can be associated with a glaucoma-like visual field defect <p><i>Annual dilated examination</i></p>

PATHOLOGIC MYOPIA

Retinal Photo/Optomap	Fundus Autofluorescence	Optical coherence tomography (OCT)	Description
Myopic Macular Schisis			
			<ul style="list-style-type: none"> • Separation of intraretinal layers, typically outer layers. • Typically no visual symptoms at onset. • Slowly progressive with a strong association with macular hole formation and retinal detachment within 2 years if left untreated. • Associations with axial length >31mm, chorioretinal atrophy and vitreoretinal interface disorders. <p><i>Referral to ophthalmology for consideration of treatment.</i></p>
Myopic Macular Hole			
			<ul style="list-style-type: none"> • Due to tractional forces secondary to vitreomacular adhesion. • Risk of hole formation is higher if an ERM is seen on OCT exerting horizontal or oblique tractional force. • Absence of PVD and foveal sparing by schisis are associated with increased stability. • Treatment involves vitrectomy, internal limiting membrane (ILM) peeling and silicone oil tamponade. • Prognosis is poor with axial length >30mm and/or hypo-AF at the fovea. <p><i>Referral to ophthalmology for treatment.</i></p>
Macular Detachment			
			<ul style="list-style-type: none"> • Separation of the sensory retina from the RPE • Associations with axial length >31mm, chorioretinal atrophy and vitreoretinal interface disorders. • If confined to the fovea, referred to as foveoschisis <p><i>Referral to ophthalmology for consideration of treatment.</i></p>
Tractional ILM detachment and Retinoschisis			
			<ul style="list-style-type: none"> • ILM Detachment (yellow arrow) has a similar appearance to an epiretinal membrane, except that there are "pillars" or columns that bridge the gap between the membrane and the retinal surface. • Strong association with myopic foveoschisis. • Retinoschisis (blue arrows) most commonly occurs in the outer and inner plexiform layers. <p><i>Referral to ophthalmology if evidence of progression.</i></p>

PATHOLOGIC MYOPIA			
Optomap image	Fundus Autofluorescence	Optical coherence tomography (OCT)	Description
Diffuse Chorioretinal Atrophy			
			<ul style="list-style-type: none"> Yellowish-white appearance to the posterior pole, starting at the optic disc and macula and spreading to involve the entire staphyloma. 3.7% of eyes with diffuse chorioretinal atrophy have been shown to develop myopic CNV (Ohno-Matsui, 2003). <p><i>Annual dilated examination</i></p>
Multifocal (Patchy) Chorioretinal Atrophy			
			<ul style="list-style-type: none"> Well defined greyish-white lesions in the macular area and around the disc. OCT shows complete loss of the choriocapillaris and over time can develop to loss of the outer retina and RPE. Lesions area hypo-autofluorescent on FAF. Choroidal vessels are visible in areas of atrophy and in advanced cases the sclera is visible. Associated with a 20% risk of myopic CNV (Ohno-Matsui, 2003). Can develop from advanced diffuse chorioretinal atrophy, lacquer cracks or along the border of a posterior staphyloma. <p><i>Referral for OCT or ophthalmology to rule out CNV</i></p>
TRACTIONAL VASCULAR CHANGES IN HIGH MYOPIA			
Optomap image	Fundus Autofluorescence	Optical coherence tomography (OCT)	Description
Vascular Microfolds			
	FAF not available		<ul style="list-style-type: none"> Using OCT, these can be detected in up to 44% of those with pathological myopia. In eye with both paravascular cysts and vascular microfolds, the incidence of retinoschisis at the vessels is much higher than if cysts alone are present. <p><i>Annual dilated examination</i></p>
Paravascular Cysts			
	FAF not available		<ul style="list-style-type: none"> Detected in 50% of high myopes when examined with OCT. Small hollow spaces seen on OCT, usually adjacent to large retinal vessels. Increased occurrence with age, axial length, degree of myopia and presence of posterior staphyloma. Rupture of the cysts cause paravascular lamellar holes. <p><i>Annual dilated examination</i></p>