

Assessment Blueprint for Medical Ophthalmology

Curriculum area	Competence	Exam	Mini-CEX	DOPS	MSF	CBD
2.1 Core Ophthalmic Skills						
Assess and interpret visual fields by confrontation						
S	make an assessment of normal and abnormal visual fields using an appropriate confrontational method		x			
	must then be able to interpret any abnormality and the possible causes	x				
	should be aware of the reliability of this method of visual fields assessment and know when to arrange for more detailed visual field analysis		x			x
Assess macular function using the Amsler chart						
S	be able to use the Amsler chart for the assessment of macular function and be able to interpret the results		x			x
	must be aware of the reliability of the test	x				
	must be able to instruct a patient in the use of the chart at home		x			
Perform a complete external eye examination of both eyes						
S	able to perform an examination of the external eye, ocular adnexae, eyelids and orbits using appropriate equipment and illumination		x			
	must be able to modify the examination and utilise other techniques as indicated by the clinical findings		x			
Examine the pupils and perform diagnostic pharmacological tests						
S	be able to assess the pupil for abnormalities of shape, size and reactions and interpret their findings		x			x
	must also be able to perform and interpret appropriate pharmacological tests for specific pupil abnormalities	x	x			
Perform a cover test and assess ocular motility						
S	be able to perform a cover test, assess ocular movements and interpret the findings		x			
	must be able to perform a prism cover test		x			
	must also be able to recognise and describe nystagmus if present		x			
Measure intraocular pressure using applanation tonometry						
S	must be able to measure the intraocular pressure accurately using a variety of applanation techniques and understand the limits of each	x	x			
	must be able to check the calibration of the tonometer		x			

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Perform slit lamp biomicroscopy of the anterior segment using appropriate illumination techniques and stains, and diagnostic contact lenses						
S	must be able to examine the eye and adjacent structures using the slit lamp and interpret their findings		x			
	must be able to employ all of the functions of the slit lamp and use accessory equipment when indicated		x			
	must know how to care for the equipment properly and prevent cross infection	x				
Examine the fundus using appropriate techniques						
S	must be able to examine the fundus of the eye using appropriate techniques and interpret their findings		x			
	must be able to use the direct and indirect ophthalmoscopes		x			
	must be able to use a variety of lenses for binocular fundus examination with the slit lamp		x			
	must be able to use appropriate indentation techniques		x			
2.2: System Specific Competencies						
Clinical science						
Anatomy						
K	anatomy of the eye, adnexae, visual pathways and associated aspects of head, neck and neuro anatomy	x				
Pathology						
K	specialist knowledge of pathology, especially the specialist pathology of the eye, adnexae and visual system. This includes histopathology, microbiology and immunology and other branches of pathology. They must be able to use this knowledge when interpreting clinical symptoms, signs and investigations and in the practice of ophthalmic medicine	x				
Growth, development and senescence						
K	specialist knowledge of growth, development and senescence, and the anatomical, physiological and developmental changes that occur during embryogenesis, childhood and ageing relevant to ophthalmic practice	x				
Optics and Medical Physics						
K	apply knowledge of optics, ultrasound and electromagnetic wavelengths relevant to ophthalmic practice	x				
The safe use of ophthalmic lasers						

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K	apply knowledge of lasers relevant to ophthalmic practice	x	x				
Instrument technology							
K	apply knowledge of instrument technology relevant to ophthalmic practice	x	x				
	must be aware of the limitations of technology and the risks involved in their use	x				x	
	must be able to maintain an understanding of new developments in relevant technologies	x				x	
Inflammatory Disorders Affecting Vision							
Competencies							
S	Outline the indications, contraindications and side effects of the major immunosuppressive drugs used in inflammatory disorders affecting vision	x				x	
	Recognise the need for long term review in many cases of inflammatory disorders affecting vision and their treatments					x	
	Recognise that infection and malignancy can masquerade as inflammation	x				x	
	Recognise systemic involvement	x	x			x	
	Elucidate risk factors for the development of an infectious disease including contacts, travel, animal contact and sexual history		x			x	
	Recognise when specialist Microbiology or Infectious Diseases opinions are indicated		x			x	
	Recognise when a patient is critically ill with sepsis, promptly initiate treatment and liaise with critical care and senior colleagues					x	x
	Outline spectrum of cover of common anti-microbials, recognising complications of inappropriate use	x					
	Use local anti-microbial prescribing guidelines, including therapeutic drug monitoring when indicated	x					x
	Recognise importance of immunisation and Public Health in infection control, including reporting notifiable diseases	x					x
	Accurately describe skin lesions following assessment			x			
	Common or Important Problems						
K	Allergic Eye Disease	X	x			x	
	Anterior Uveitis	X	x			x	
	Atopic Eye Disease	X	x			x	
	Blepharitis	X	x				
	CNS infection: retinitis, meningitis, encephalitis, brain abscess	X	X			x	

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	Common cancers (presentation, diagnosis, staging, treatment principles): lung, bowel, breast, renal, carcinoid	X	X			x
	Common genito-urinary conditions: non-gonococcal urethritis, gonorrhoea, syphilis	X	X			x
	Conjunctivitis	X	X			
	Dermatitis	X	X			x
	Dermatomyositis	X	X			x
	Endocarditis	X	X			x
	Episcleritis	X	X			x
	Herpes zoster and Herpes Simplex infections	X	X			x
	HIV and AIDS including ethical considerations of testing	X	X			x
	Imported fever	X	X			X
	Infections in immuno-compromised host	X	X			X
	Intermediate Uveitis	X	X			X
	Keratitis	X	X			X
	Mixed Connective Tissue Disorders	X	X			X
	Osteoporosis – risk factors, and primary and secondary prevention of complications of osteoporosis	X	X			X
	Panuveitis	X	X			X
	Paraneoplastic syndromes	X	X			X
	Polymyalgia and temporal arteritis	X	X			X
	Posterior Uveitis	X	X			X
	Rheumatoid arthritis	X	X			X
	Sarcoidosis	X	X			X
	Scleritis	X	X			X
	Scleroderma	X	X			X
	Sjogren's syndrome	X	X			X
	Systemic lupus erythematosus	X	X			X
	Systemic Vasculitis	X	X			X
	Tuberculosis	X	X			X
Clinical Science						
K	Mechanisms of inflammation and immunity	X				
	Mechanisms of allergic sensitisation: primary and secondary prophylaxis	X				
	Natural history of allergic diseases	X				
	Principles and limitations of allergen avoidance	X				
	Mechanisms of organism pathogenesis	X				
	Host response to infection	X				

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	Principles of vaccination	X				
	Pharmacology of anti-allergic drugs, immunotherapy and anti-infective agents	X				
Genetic Disorders Affecting Vision						
Competencies						
S	Recognise the organisation and role of Clinical Genetics and when to seek specialist advice					x
	Take and interpret a complete family history		X			X
	Recognise the anxiety caused to an individual and their family when investigating genetic susceptibility to disease				X	X
	Recognise the importance of skilled counselling in the investigation of genetic susceptibility to disease				X	x
	Recognise basic patterns of inheritance	X				x
	Understand the ethical implications of molecular testing and screening: confidentiality, screening children, pre-symptomatic testing					x
	Estimate risk for relatives of patients with mendelian disease	x				x
	Recognise the differing attitudes and beliefs towards inheritance				x	x
Common or Important Problems						
K	Autosomal recessive congenital optic neuropathy	X	X			X
	Familial cancer syndromes	X	X			X
	Homocysteinuria	X	X			X
	Leber's optic neuropathy	X	X			X
	Marfan's syndrome	X	X			X
	Mitochondrial myopathies	X	X			X
	Myotonic dystrophy	X	X			X
	Neurofibromatosis	X	X			X
	Retinal dystrophies	X	X			X
Retinitis pigmentosa	x	X			X	
Clinical Science						
K	Structure and function of human cells, chromosomes, DNA, RNA and cellular proteins	X				
	Principles of inheritance: mendelian, sex-linked, mitochondrial	X				
	Principles of pharmacogenetics	X				
	Principles of mutation, polymorphism, trinucleotide repeat disorders	X				
	Principles of genetic testing including metabolite assays, clinical examination and analysis of nucleic acid (e.g. PCR)	X				x

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	Pathophysiology of genetic disorders affecting vision	x				x
Neurological Disorders Affecting Vision						
Competencies						
K	Define the likely site of a lesion within the nervous system following full assessment		x			x
	Recognise when specialist opinion is indicated		x			x
	Recognise when a patient's presentation heralds a neurosurgical emergency and refer appropriately		x		x	x
	Be aware of the management and subsequent investigation of patients presenting with neurological medical emergencies such as cerebrovascular accident, accelerated hypertension, aneurysm formation, fistula or dissection		x		x	x
Common or Important Problems						
K	Acute new headache	X	X			X
	Central Nervous System infection: encephalitis, meningitis, brain abscess	X	X			X
	Concomitant squint	X	X			X
	Cranial nerve palsies	X	X			x
	Functional disorders	X	X			X
	Headache including migraine, migrainous neuralgia and hemicrania	X	X			X
	Horner's syndrome	X	X			X
	Infection	X	X			X
	Inflammation	X	X			X
	Multiple sclerosis	X	X			X
	Myasthenia gravis	X	X			X
	Non-specific orbital inflammation	X	X			X
	Paraneoplastic disorders	X	X			X
	Raised intracranial pressure	X	X			X
	Stroke and transient ischaemic attack	X	X			X
	Sub-arachnoid haemorrhage	X	X			X
	Thyroid eye disease	X	X			X
	Tumour	X	X			X

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Clinical Science						
K	Anatomy or cerebral blood supply	X				
	Cerebral automaticity	X				
	Pathophysiology of pain	X				
	Pharmacology of major drug classes: anxiolytics, hypnotics inc. benzodiazepines, antiepileptics	X				
	Physiology of nerve conduction	X				
	Principles of neurotransmitters	X				
	Structure and function of the central, peripheral and sympathetic nervous systems	X				
	Structure and physiology of visual, auditory, and balance systems	X				
Public Visual Health						
Competencies						
S	To be aware of the importance and implications of identifying asymptomatic sight-threatening eye disease in people who perceive themselves to be in good visual health					X
	To be aware of the importance of internal and external quality assurance					X
	The ability to lead a multi-professional team of health care workers across the primary care/ secondary care interface				x	
Common or Important Problems						
K	Organisation and delivery of effective visual health care in the community	x			X	X
	Organisation and delivery of systematic screening for diabetic retinopathy in people diagnosed with diabetes	x			x	x
Clinical Science						
K	Patient management and recall	X				X
	Theory and practice of systematic screening	X				x

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Retina Specific Disorders Affecting Vision						
Competencies						
S	Recognise when specialist opinion is required.				X	x
	Be aware of the management and subsequent investigation of patients presenting with retina specific emergencies particularly choroidal neovascular membrane formation				x	x
Common or Important Problems						
K	Disorders of the choroid, particularly neovascular membrane formation	x	x			x
	Disorders of the retinal pigment epithelium	x	x			X
	Disorders of the photoreceptors/ bipolar cells/ ganglion cells	x	x			X
	Local disorders of retinal blood vessels	x	X			X
	Disorders of the vitreo-retinal interface	X	X			x
Clinical Science						
K	Pathophysiology of acquired "retina specific disorders"	X				
	Therapeutic options for acquired "retina specific disorders"	X				x
Vascular Disorders Affecting Vision						
Competencies						
S	Recognise when specialist opinion is required		x		x	x
	Be aware of the management and subsequent investigation of patients presenting with vascular medical emergencies such as cerebrovascular accident, accelerated hypertension, aneurysm formation, fisutula or dissection		x		x	x
	Outline risk factors for vascular disease	x	x			x
	Counsel patients on risk factors for vascular disease		x			
	Outline methods of smoking cessation of proven efficacy		x			x
Common or Important Problems						
K	Arteriosclerosis/ Atherosclerosis	x	x			x
	Carotid artery dissection	X	X			x
	Cerebrovascular disease	X	X			X
	Diabetes	X	X			X
	Diabetic retinopathy	X	X			X
	Dyslipidaemia	X	X			X
	Endocarditis	X	X			X
	Hypertension, including management of accelerated hypertension	X	X			X

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	Ocular ischaemia	X	X			X
	Retinal artery macroaneurysm	X	X			X
	Retinal artery occlusion	X	X			X
	Retinal vein occlusion	x	X			X
	Thrombophilia	X	X			X
	Transient ischaemia	X	X			X
	Valvular Heart Disease	X	x			X
Clinical Science						
S	Anatomy and function of cardiovascular system	X				
	Homeostasis of the circulation	X				
	Atherosclerosis	X				
	Pharmacology of major drug classes: beta blockers, alpha blockers, ACE inhibitors, ARBs, anti-platelet agents, thrombolysis, inotropes, calcium channel antagonists, potassium channel activators, diuretics, anti-arrhythmics, anti-coagulants, lipid modifying drugs, nitrates, centrally acting anti-hypertensives	X				
	Structure and function pancreas	X				
	Outline the structure and function of insulin	X				
	Pharmacology of major drug classes: insulin, oral antidiabetics	x				
Visual Rehabilitation						
Competencies						
S	Organisation and delivery of visual rehabilitation					x
	Elucidate in older patients co-morbidities, activities of daily living, social support, drug history and living environment		x			x
	Recognise when specialist Medicine in the Elderly opinion is indicated				x	
	Recognise importance of multi-disciplinary assessment				x	x
	Set realistic visual rehabilitation targets					x
	Recognise that older patients often present with multiple problems (e.g. loss of vision, falls and confusion, immobility and incontinence)				x	x
Common or Important Problems						
K	Acute confusion	X	X			X
	Age related pharmacology	X	X			X
	Central visual loss	X	X			X

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	Cortical visual impairment	X	X			X
	Dementia	X	X			X
	Depression in the elderly	X	X			X
	Deterioration in mobility	X	X			X
	Falls	X	X			X
	Homonymous visual defects	X	X			X
	Peripheral retinal visual loss	x	x			x
Clinical Science						
K	The normal physiology of ageing	x				
2.3: Investigation Competencies						
Outline the Principles of the Following Investigations:						
Biochemistry						
By the end of specialist training in Medical Ophthalmology (Ophthalmic Medicine) the trainee should be able to outline the indications for and interpret the following additional investigations						
K	Orthoptic assessment	X	x	X		X
	Assessment of corneal shape, structure and thickness	X	x	X		X
	Retinal and optic nerve imaging techniques	X	X	X		X
	Ocular angiography	X	X	X		X
	Ocular and neuro-electrophysiology	X	X	x		X
	Visual Fields (automated, manual)	X	X	x		X
	Tensilon Test	X	X	x		x
	Ultrasonography of the eye, anterior orbit	X	X	x		X
	Neuroimaging of the brain and orbit including magnetic resonance imaging, computed tomography and cerebral angiography	X	X			X
	Aqueous sampling		X	X		X
Vitreous biopsy		x	X		x	

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2.4: Procedural Competencies						
By the end of specialist training in Medical Ophthalmology (Ophthalmic Medicine) the trainee should be competent at the instruction, appraisal and assessment of junior doctors in the performance of the following additional procedures						
S	Recognise and assist with the special needs of people with visual impairment in the clinical environment		x		x	X
	Administer periocular and intraocular drugs			X		
	Achieve appropriate local anaesthesia, and recognise the possible complications			x		X
	Assess lacrimal function			X		
	Perform anterior chamber paracentesis			X		
	Perform a corneal scrape			X		
	Remove ocular surface foreign bodies			X		
	Achieve punctal occlusion			X		
	Fit a bandage contact lens			X		
	Administer periocular botulinum toxin injections			X		
	Perform ocular ultrasound			X		
	Demonstrate lid hygiene to a patient			X		
	Perform anterior chamber and vitreous sampling			X		
	Carry out irrigation and debridement of ocular contaminants			X		
	Apply appropriate laser for the management of the lens capsule			x		
	Apply appropriate laser for the management of raised intraocular pressure				X	
Apply appropriate laser for the management of retinal problems				x		