



## THE COLLEGE OF OPTOMETRISTS

### Learning outcomes for the Professional Certificate in Medical Retina, incorporating diabetic retinopathy screening and age related macular degeneration

The professional certificate is a prerequisite to further levels of College accredited medical retina qualifications.

#### 1. Aim

This certificate:

- provides community and hospital based optometrists with knowledge of common medical retina conditions and includes topics covering screening, referral and treatment pathways, with an emphasis on optical coherence tomography (OCT) interpretation and diabetic retinopathy grading
- enables community and hospital based optometrists to make accurate and appropriate referral decisions for patients with medical retina conditions
- prepares optometrists to commence working under supervision<sup>1</sup> in:
  - medical retina new patient triage clinics
  - AMD treatment-retreatment clinics
- prepares optometrists to work in photography based diabetic retinopathy screening services
- covers all of the requirements for the Public Health England qualification Level 3 Diploma for Health Screeners (Diabetic Eye),<sup>2</sup> *with the exception of:*
  - Undertake diabetic retinopathy imaging unit
  - the assessment element of 3.1 of the Detect retinal disease and classify diabetic retinopathy unit.

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<sup>1</sup> College guidance on Supervision <https://www.college-optometrists.org/guidance/supplementary-guidance.html>

<sup>2</sup> Public Health England <https://cpdscreeing.phe.org.uk/healthscreeerqualification>

## Learning outcomes

Following completion of the programme an optometrist will be able to demonstrate:

- a) a detailed knowledge of the anatomy, physiology and pathophysiology of the retina, with emphasis on the macula
- b) an understanding of the risk factors and differential diagnosis of disorders of retinal and macular pathology
- c) an understanding of treatments of medical retina disorders including the patient's response to treatment
- d) an ability to communicate effectively with patients
- e) an ability to interpret OCT images and fundus photographs for AMD and diabetic retinopathy, with appropriate patient management
- f) an awareness of the use of fluorescein, ICG angiography and autofluorescence in medical retina service delivery
- g) an understanding of the principles, processes, protocols, potential benefits and limitations of national diabetic retinopathy screening programmes
- h) an understanding of diabetes and its relevance to retinopathy screening
- i) an ability to detect and classify diabetic retinal disease
- j) an ability to recognise acute retinal pathology, conduct appropriate tests and make appropriate referrals, clearly stating the level of urgency
- k) an awareness of current national referral guidelines and detailed knowledge of local referral pathways for patients with medical retina disorders
- l) an awareness of the rapidly evolving nature of medical retina treatments including pertinent treatment trials
- m) an understanding of current guidelines for management of medical retina disorders
- n) safeguarding adults and children - equivalent to DOCET Safeguarding Adults and Safeguarding Children level 2.

## 2. Indicative content

- a) Anatomy, physiology and pathophysiology of the retina:
- relationship between the retina, Bruch's membrane and choroid.
- b) Risk factors, differential diagnosis and pathogenesis of retinal and macular pathology including:
- dry AMD
  - wet AMD
  - other causes of choroidal neovascularisation
  - epiretinal membrane
  - pseudo-macular holes and macular holes
  - vitreomacular adhesion
  - diabetic maculopathy
  - diabetic macular oedema
  - macrovascular and microvascular complications of diabetes
  - central serous retinopathy
  - central retinal vein occlusion (ischaemic and non-ischaemic)
  - branch retinal vein occlusion
  - vitelliform macular changes
  - retinal dystrophies
  - uveitis
  - macroaneurysms
  - retinal emboli
  - macular telangiectasia
  - cystoid macular oedema
  - benign or non-referable disorders, for example, CHRPE.
- c) Current treatments of medical retina disorders including the patient's response to treatment and pertinent treatment trials.
- d) Communication with patients to include, but not limited to:
- appropriate adaptation for individual patients
  - provision of written information
  - understand informed choice and its relevance to screening
  - how to obtain patient consent
  - eligibility for CVI registration
  - referral to rehabilitation services, for example, low vision clinic, ECLO, social services or voluntary organisations
  - referral to GP, diabetic clinic or hospital eye service
  - evidence based dietary and lifestyle advice.

e) OCT imaging and fundus photography to include, but not limited to:

- normal OCT and fundus image including common artefacts
- types of OCT, for example, time domain vs. spectral domain
- monitoring the response to treatment over time
- drusen
- atrophic change
- fibrosis
- pigment epithelial detachment
- subretinal fluid
- intraretinal fluid
- cystoid macular oedema
- interpretation of OCT thickness measures
- epiretinal membrane
- RPE tear
- vitelliform macular changes
- vitreo-macular interface disorders, for example macular holes, lamellar macular holes, pseudoholes and epiretinal membranes
- diabetic retinopathy
- criteria for gradability of images
- image handling software including diabetic grading software.

f) Fluorescein angiography, ICG angiography and autofluorescence.

g) National diabetic retinopathy screening programmes:

- purpose of screening and impact on the patient
- factors affecting patient decision to take up screening, including but not limited to:
  - culture
  - religion
  - ethnicity
- procedures and quality assurance systems in national screening programmes, including but not limited to:
  - failsafe systems
- features of effective screening programmes, for example, register of patients, non-compliance with screening, referral pathways to ophthalmology
- potential benefits and limitations of screening programmes, including but not limited to:
  - issues of reliability, accessibility and acceptability of the screening test

- availability of effective diagnostics and treatment
- overall cost effectiveness of the programme.

h) Diabetes and relevance to retinopathy screening:

- type 1, type 2 and other types of diabetes including gestational and malnutritional
- risk factors for diabetic retinopathy
- symptoms, appropriate responses to and treatments of hypoglycaemia and hyperglycaemia
- diabetes and cataract
- pregnancy and diabetic retinopathy progression
- long-term complications of diabetes.

i) Detecting and classifying diabetic retinal disease:

- presence or absence of diabetic retinopathy, maculopathy and other common retinal pathology
- clinical features of diabetic retinopathy and maculopathy
- diabetic retinopathy and maculopathy requiring routine or urgent referral.

j) Acute macular and retinal pathology detection and management:

- history for example significance of recent distortion or sudden deterioration of vision
- clinical examination, including dilated fundus assessment with slit lamp and Volk lens
- use and limitations of Amsler chart testing
- suspected subretinal neovascular membrane; signs to include but not limited to: macular haemorrhage, grey or raised lesion, exudates and evidence of fluid on OCT
- other conditions to include:
  - retinal detachments and tears
  - BRVO
  - CRVO
  - BRAO
  - CRAO
  - AION
- management of retinal and macular pathology including non referral, routine and urgent referral.

- k) Current national referral guidelines and local referral pathways.
- l) Current treatments of medical retina disorders and pertinent treatment trials.
- m) Current guidelines, including but not restricted to:
  - Royal College of Ophthalmologists clinical guidelines for AMD, diabetic retinopathy and retinal vein occlusion
  - NICE guidelines for AMD, diabetic retinopathy and retinal vein occlusion.
- n) Safeguarding adults and children - equivalent to DOCET Safeguarding Adults and Safeguarding Children level 2.

### **3. Teaching, learning and assessment strategies**

#### a) Teaching and learning requirements

The programme should be of sufficient length to achieve the stated learning outcomes. Programme delivery may be achieved through a variety of learning strategies, for example, face-to-face instruction, practical skills, distance learning or directed private study, as appropriate for the material or skills being taught.

To guide teaching strategy we distinguish between different levels of candidate competence in our learning outcomes:

- awareness – the candidate will be familiar with the item(s) in the learning outcome but is not required to demonstrate detailed understanding, knowledge or practical experience
- understanding – the candidate will be able to explain the key item(s) in the learning outcome but is not required to have practical experience
- detailed knowledge – the candidate will be able to demonstrate higher order thinking in most item(s) in the learning outcome
- ability – the candidate will have competence in a practical task acquired through skills based training or experience. Ability should incorporate higher order thinking.

This qualification has been designed to cover the theoretical knowledge of medical retina disorders, together with specific practical elements as indicated in the learning outcomes. We envisage that the practical skills will be taught and assessed as part of the programme, without the need for a clinical placement.

b) Assessment requirements

Assessments should be designed to provide valid and reliable judgements about a candidate's performance. Assessment criteria must be made explicit and be appropriate for the competency they are designed to test. For example, competences relating to a clinical skill should be assessed using an appropriate skills-based assessment. For each assessment, a marking scheme with the appropriate pass/fail criteria should be established. Candidates should demonstrate skills such as critical thinking, problem solving and reflection.