



*The* ROYAL COLLEGE *of*  
OPHTHALMOLOGISTS

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# So you want to be an Ophthalmologist?

A short guide to a career in  
ophthalmology in the UK



November 2016



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The Royal College of Ophthalmologists' Annual Congress attracts nearly 2,000 delegates from the UK and overseas, renowned international speakers and provides high quality academic lectures and popular sub-specialty sessions over the three days.

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## About the College

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The Royal College of Ophthalmologists (RCOphth) is the only professional body for eye doctors, who are medically qualified and have undergone or are undergoing specialist training in the prevention, treatment and management of eye disease, including surgery.

RCOphth champions excellence in the practice of ophthalmology on behalf of our members to optimise care for patients. We set the curriculum and examinations for trainee ophthalmologists, provide training in eye surgery, maintain standards in the practice of ophthalmology, and promote research and advance science in the specialty.

As an independent charity, we pride ourselves on providing impartial and clinically based evidence, putting patient care and safety at the heart of everything we do. Ophthalmologists are at the forefront of eye health services because of their extensive training and experience.

RCOphth received its Royal Charter in 1988 and has over 3,500 members in the UK and overseas. We are not a regulatory body, but we work collaboratively with government, health departments, charities and eye health organisations to develop recommendations and support improvements in the co-ordination and management of hospital eye care services both nationally and regionally.

The interests of **trainees are represented by an active and influential Ophthalmologists in Training Group (OTG)**. Members sit on the RCOphth Council and committees, as well as the Academy Trainees' Group of the Academy of Medical Royal Colleges.

## What is Ophthalmology?

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Ophthalmology is a branch of medicine dealing with the diagnosis, treatment, and prevention of diseases of the eye and visual system.

Ophthalmology is unique amongst medical specialties. The eye, its surrounding structures and the visual pathways may be affected by a great variety of clinical conditions. Their successful management depends on the ophthalmology team combining the diagnostic and therapeutic abilities of a physician and technical skills of a microsurgeon with an understanding of the whole patient. Ophthalmology integrates with many other branches of medicine.

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**Ophthalmologists diagnose, investigate, treat and perform surgery to preserve sight and prevent blindness**

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Ophthalmologists are applying new discoveries from the basic sciences to clinical practice. Innovative technologies for imaging the eye have helped to diagnose and treat many conditions, and there have been numerous advances in microsurgical techniques that have improved surgical outcomes. Novel treatments for degenerative diseases of the retina give hope to patients with a previously poor prognosis. These developments make it a very exciting time for the specialty.

One of the fundamental properties of the eye is that many of its components are transparent. This enables the details of its structure and abnormalities to be observed directly, in a manner not possible for most other parts of the human body.

# What is an Ophthalmologist?

An ophthalmologist is a medically trained doctor who commonly acts as both physician and surgeon examining, diagnosing and treating diseases and injuries in and around the eye.

Ophthalmic patients encompass the whole age range, from premature babies to the most senior members of the population. Patients are generally well and their conditions not life-threatening. However, eye symptoms and disorders are very common and can cause considerable anxiety – sympathetic advice and reassurance is often required in addition to diagnosis and treatment.

The majority of ophthalmologists are “surgical ophthalmologists”. Most of the working week is spent seeing patients in outpatient clinics with many requiring follow-up of an ongoing condition. Although patients often have conditions related to ageing, such as cataract, glaucoma and macular degeneration, diseases of the eye and its surrounding structures may be part of an underlying systemic disease, e.g. diabetes.

There is close collaboration with many other specialists, including diabetologists, rheumatologists, neurologists, neurosurgeons, ENT and maxillofacial surgeons, plastic surgeons, paediatricians and geneticists.

## The commonest cause of visual impairment under the age of 65 years is diabetes

When undergoing treatment patients may require procedures using different kinds of laser or surgery, most of which are performed under local anaesthesia as a day case. Most ophthalmologists have two operating sessions per week. The surgical workload of the general ophthalmologist may include cataract extraction, squint and glaucoma surgery, oculoplastic and nasolacrimal surgery. Many consultants now sub-specialise in a particular area although most also continue to also perform cataract surgery.

## In the UK over 400,000 cataract operations are performed annually through small incision (keyhole) surgery known as phacoemulsification

It is the commonest operation under the NHS and of any type of surgery undertaken in the world.

### Specialisation

Ophthalmologists can develop sub-specialty interests in a number of different areas. For

example, ophthalmologists with a paediatric interest deal with eye development and diseases in children.

Medical retinal specialists deal with retinal disease, including its onset in patients with such diverse conditions as diabetes, age-related macular degeneration, eye disease due to systemic conditions and inherited retinal diseases.

A surge in exciting new technology and treatments in recent years have allowed ophthalmologists to manage patients with ocular diseases in a much more effective way, and this trend is likely to continue as services expand.

In the foreseeable future, community or primary care ophthalmologists will increasingly carry out routine procedures and treatments. This will allow patients with more complex problems requiring specialised services and expensive technology, to be treated by hospital-based ophthalmologists.

### Sub-speciality areas include

- cornea and anterior segment
- medical retina
- glaucoma
- oculoplastic surgery (plastic surgery around the eye)
- paediatric ophthalmology
- surgical retina (vitreo-retinal surgeons)
- primary care
- medical and neuro-ophthalmology

Eye emergencies, of which there are a large number, may be seen first by a general casualty officer but in larger departments a separate Eye Casualty department is staffed by ophthalmologists and/or nurse practitioners. Patients may present with a variety of conditions from a simple foreign body on the cornea to sight threatening conditions such as chemical burns, angle-closure glaucoma, blockage to the blood supply to the retina, and retinal detachment. Even patients with brain tumours may first present to an Eye Casualty department. Consultant ophthalmologists take part in an on-call rota but night work is unusual.

## 10% of all outpatients visit the eye clinic

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"I became an ophthalmologist because it allowed me to blend medicine and surgery in a highly technical environment and in a discipline which is evolving. I wanted the challenge of learning new skills and knowledge, and the satisfaction of highly effective treatments. Lower levels of night work, good career prospects and no requirement to initially train in general surgery were also factors in choosing this specialty."  
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### A typical day...

It is Monday afternoon and you are about to perform cataract surgery on Mrs B's right eye. She has very dense cataracts reducing her vision to only counting fingers (in each eye). She had been struggling to look after her grandchildren during the day when her children were at work, and could hardly see to watch television. Although she managed to get around at home, she was scared to go out on her own. Surgery is straightforward and Mrs B goes home a short while later. The following morning your secretary gets a phone call from Mrs B's daughter who wants to speak to you urgently. She tells you that her mother is overjoyed, and is in floods of tears because she is so happy as she can now see her grandchildren clearly for the first time in a number of years. All the family wish to thank you for restoring her sight. For you, there is a real sense of purpose and achievement.



# Ophthalmologists work as part of a multidisciplinary team

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Apart from ophthalmologists other health professionals play an important role in the care of ophthalmic patients, and teamwork is essential to ophthalmic practice.

## **Hospital Doctors and General Practitioners**

Patients may be referred from or to other medical teams for assessment. Ophthalmologists liaise particularly with neurologists, rheumatologists, diabetologists and endocrinologists. GPs will often be the first port of call for patients with eye disease and may refer to, or seek advice from, the ophthalmology unit.

**Ophthalmic Nurses** have training and experience in ophthalmology, and provide specialist support for eye clinics, wards and operating theatres. Some also undergo further training to become nurse practitioners, working in casualty and assessing patients with routine ophthalmic conditions.

**Orthoptists** undergo professional training to become experts in the field of ocular movement, binocular vision and children's sight. Dealing with children with squint (where the eyes are not parallel, e.g. may turn in or out) forms a large part of their work. They may work as part of the team within the eye unit itself, or independently as community orthoptists.

**Optometrists** (aka Opticians) also undergo professional training. Many practice in the High Street, refracting patients and prescribing and dispensing spectacles. They perform screening examinations to detect conditions, such as diabetes and glaucoma. Some work part-time or full-time within the Hospital Eye Service, where they provide

specialist services such as the fitting of complex contact lenses and low vision aids. Increasingly they are assessing patients with particular eye problems such as glaucoma. They have limited but increasing rights to prescribe pharmacological treatments.

**Electrophysiologists** mainly work in larger hospital eye departments and provide electrodiagnostic and monitoring services for patients with suspected or established inherited retinal diseases or visual pathway disorders.

**Visual Function Technicians** carry out a large number of investigations including visual field testing. They also provide imaging of the eye (together with photographers- see below) using various techniques, such as digital fundus imaging, B-scan ultrasound, optical coherence tomography and tomographic imaging of the optic nerve.

**Ocular Prosthetists** are responsible for the supply and fitting of ocular and oculofacial prostheses (artificial eyes) when tissue has been lost through trauma or surgery.

**Ophthalmic Photographers** use sophisticated equipment to photograph the face, eyelids, outer eye, and retina. Photographic (including angiographic) and video techniques are essential in the diagnosis and monitoring of many ophthalmic disorders. This is becoming an increasingly important role in an eye unit.

# Training to be an Ophthalmologist

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## **Outline of Specialist Training**

Following the two foundation years, doctors apply for specialist training; in ophthalmology this normally lasts seven years, is competence based and leads to a Certificate of Completion of Training (CCT). The essential, or core, requirements are described by a series of nested learning outcomes. These are derived from a description of what consultant ophthalmologists, as health care professionals in the UK, are able to do and how they approach their practice.

During the first two years the trainee should acquire the general clinical skills of an ophthalmologist, and

have a basic knowledge of the conditions covered by the specialty. As well as general and specialist clinics and ophthalmic casualty work the trainee will attend two theatre sessions per week. During these sessions he/she should master the commonly performed procedures, and assist at more complex operations. Surgical simulation using virtual reality simulators and model eyes is an integral part of the curriculum and this enables trainees to master the basic steps of a surgical procedure before performing live surgery. Trainees may want to become involved in clinical research projects.

As trainees become more senior the depth of their knowledge increases and they learn specialist surgical and clinical skills according to a curriculum set by the College. More time is spent in both general and specialist clinics, with an average of two to three theatre and laser sessions per week. Regular assessment of trainees' progress is undertaken throughout the training. These include Case-based Discussions (CbD), Direct Observation of Procedural Skills (DOPS), Objective Assessment of Surgical and Technical Skills (OSATS). There is also an annual assessment panel to ensure that trainees are progressing as expected.

### **Training to become an Academic Ophthalmologist**

Whilst there are different routes to becoming an academic ophthalmologist, excellent opportunities are

provided by the clinical academic training pathway established through the National Institute for Health Research (NIHR) in the form of Academic Clinical Fellowships (ACF) and Clinical Lectureships (CL).

These posts provide time for trainees to undertake a substantial amount of research or other academic activities during training. ACFs are usually at ST1-3 level and provide a clinical and academic training environment to prepare an application for a Training Fellowship, which will allow them to undertake a PhD (or equivalent). CLs are aimed at trainees who are advanced in their specialty training, have completed a research doctorate or equivalent and who show outstanding potential for continuing a career in academic ophthalmology.

## **The examination structure for a trainee in Ophthalmology**

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In order to obtain a CCT it is necessary to complete the postgraduate FRCOphth examinations before the end of training. FRCOphth consists of three parts:

### **Part 1 FRCOphth**

No previous experience in ophthalmology is necessary to sit the Part 1 FRCOphth. Part 1 FRCOphth can be sat after completion of the F1 year and before entering OST. The examination is based on the learning outcomes from the curriculum for the first two years of training. This includes basic sciences, theoretical optics, pathology and clinical investigation.

The examination consists of two papers:

- A 3 hour 120, single best answer from 4, Multiple Choice Questions (MCQ) paper
- A 2 hour Constructed Response Questions (CRQ) paper

The Part 1 exam must be passed by the end of the second year of training (OST2).

### **The Refraction Certificate**

This is a practical OSCE examination and tests clinical refraction – retinoscopy and the prescription of glasses. The Refraction Certificate must be passed by the end of the third year of training (OST3).

### **Part 2 FRCOphth**

The Part 2 FRCOphth has a written component and a clinical component. The examination is based on the learning outcomes from the whole OST curriculum.

### **Written Component**

A 180, single best answer from 4, MCQ paper. The MCQ paper is sat in two halves of 90 MCQs over two hours each. The written component must be passed in order to proceed to the oral component.

### **Oral Component**

The first part of the oral component is a Structured Viva consisting of five 10 minute stations assessing patient management and investigation, evidence based medicine and research, health promotion, ethics and professional judgement.

The second part is a clinical OSCE examination consisting of six stations assessing clinical and communication skills.

The Part 2 FRCOphth must be passed before the end of the final year of training (OST7). Final accreditation is achieved when all the competencies set down in the OST curriculum are completed and FRCOphth has been awarded.

*This information relates to the current training and examination structure. Current information can be found on the RCOphth website.*

# Career options after training

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## Consultant Ophthalmologists

The majority of trainees aim to become consultants, for which the FRCOphth (or equivalent) and CCT or CESR are essential. There are approximately 1,200 ophthalmic consultant posts in the UK. Consultants are responsible for all the patients in their care, and for supervising and training junior doctors. Posts may be full-time, part-time or job-share. There are many applicants for each consultant job and the specialty is highly competitive.

## Academic Ophthalmologists

There are several academic departments of ophthalmology in UK universities that are staffed by Professors, Senior Lecturers and Clinical Lecturers; university staff who are clinicians usually hold honorary NHS contracts.

In addition, there are an increasing numbers of academic ophthalmologists embedded primarily in the NHS. Ophthalmologists pursuing an academic career would usually undertake a higher degree

during their training, and through fellowships carry out a substantial amount of research. Advice on academic careers can be obtained from the College's Academic Subcommittee.

## Other Career Options

Some doctors may not wish to become consultants or may be unable to pursue their career to consultant level, but still want to continue a career in ophthalmology. Fortunately, there are other options available.

For Specialty Doctor posts (previously known as Staff Grade or Trust Grade), completion of basic specialist training is required. The type of work performed is dependent upon the individual's interests and experience. Posts may be full-time or part-time and many perform surgery in addition to outpatient work. Some may provide on call cover for their department. Some Staff and Associate Specialist Ophthalmologists (SAS) doctors run departments such as Diabetic Retinal Screening Services.

# Medical Ophthalmology

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A significant proportion of patients seen in eye departments present with ocular manifestations of systemic conditions or may require systemic therapies and long-term management of their eye disease. Management of such patients requires a high level of training and skill in both general medicine and ophthalmology.

**Medical Ophthalmology** is an emerging and exciting specialty, concerned with the medical assessment, investigation, diagnosis and treatment of patients with disorders of vision. Currently training is overseen by the Joint Royal Colleges of Physicians Training Board (JRCPTB).

- Inflammatory eye disease and uveitis (uveitis, cornea and anterior segment inflammation)
- Vascular disorders affecting vision (medical retina, vascular occlusions)
- Endocrine disorders and diabetes (diabetes and diabetic retinopathy, thyroid eye disease, pituitary disorders)
- Neurological disorders and neuro-ophthalmology (MS, ocular motility, optic neuropathies)
- Public health (diabetic retinopathy screening)

Other important aspects include:

- Genetic disorders affecting vision
- Retina specific disorders affecting vision
- Visual rehabilitation

Training is also provided in ophthalmic procedures including retinal laser, intravitreal injections, and periocular injections.

Medical ophthalmology offers a diverse and challenging career choice, bringing together the multidisciplinary care of the ophthalmic patient with systemic disease. An abundance of research opportunities exists, with developments in fields such as ocular imaging, therapeutics, epidemiology and ocular immunology.

For further information regarding the specialty, please refer to the following websites:

[www.jrcptb.org.uk/specialties/medical-ophthalmology](http://www.jrcptb.org.uk/specialties/medical-ophthalmology)  
[careers.bmj.com/careers/advice/view-article.html?id=2902](http://careers.bmj.com/careers/advice/view-article.html?id=2902)  
[www.healthcareers.nhs.uk/explore-roles/ophthalmology](http://www.healthcareers.nhs.uk/explore-roles/ophthalmology)

# The Trainee's Perspective

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In my medical school years, I was fascinated with the physiology of vision and the visual processing which attracted me to the branch of Ophthalmology. I decided to choose Ophthalmology as my specialty of interest during my F1 year medicine block while I was involved in multidisciplinary diabetic clinics with involvement of an ophthalmologist. I was impressed by the amount of information that a precise eye examination could provide, its value in providing clues to diagnosis and management of many systemic conditions and its ability to make a positive difference to the life of the patients and families.

I have found that this specialty gives me immense job satisfaction and offers so much variety that I am always challenged and never bored. You can treat your patients medically as well as surgically depending on various conditions and resources. You can treat patients of all ages from premature babies to centenarians.

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**Ophthalmology is a unique blend of medicine and surgery. It is an ever-evolving field with great potential to impact patients' quality of life**

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Ophthalmology is also at the fore front of research medicine and provides a wide range of research opportunities and academic careers. If you are into gadgets and technology, Ophthalmology is sure to excite you. There is an ever increasing array of investigation modalities and surgical instruments at your disposal.

Ophthalmology offers a good work life balance. It is interesting, challenging, and rewarding. In my opinion, if you have a passion for medicine and surgery, technology, like 'attention to detail', have good manual dexterity, and want to make a difference to a patient's life, ophthalmology is the specialty to be in.

*Archana Pradeep – ST7 East Midlands Deanery and member of the Ophthalmologists in Training Group*



# Opportunities for working abroad

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Blindness is an international public health issue and the UK has many longstanding and productive professional and clinical networks with ophthalmic communities around the world which continue to develop. All eye care professionals work towards reducing and preventing the impact of vision loss for patients and their communities, and this is especially true for under-developed countries.

The chance to observe practice in different units around the world is rewarding and is recognised in many NHS trusts as part of a professional's duty both during and after training. Long-term relationships are often formed with the opportunity for the exchange of clinical experience, discussion of complex cases and research.

In education, challenges here and abroad are often similar and sharing good practice with international

clinical and educational supervisors is mutually beneficial. Many UK ophthalmologists help shape training programs, develop continuing professional education programmes and are examiners in developing countries.

In academia a number of sub-Saharan colleagues who wish to do higher degrees have supervisors in the UK and a number of UK ophthalmology trainees, through the London School of Hygiene and Tropical Medicine, spend their higher degrees abroad.

International work abroad for UK ophthalmologists provide unique opportunities to have a very direct and immediate impact on the major public health issue of world-wide vision loss and eye disease.

# Prizes available to medical students

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**The Patrick Trevor-Roper Undergraduate Travel Award** is open to all undergraduate medical students from the UK and Eire only. There are three awards to be made annually, each for the sum of £550. This money can be used to fund electives in ophthalmology and may be spent on travelling or subsistence.

**The Duke Elder Undergraduate Prize Examination** takes place once a year in Medical Schools throughout the country. This is a competitive national examination run by The Royal College of Ophthalmologists.

Your medical school may also award an ophthalmology prize; find out from the eye department or medical school office if this is the case. The following medical schools have awards but this is not an exhaustive list: Barts, Belfast, Birmingham, Bristol, Edinburgh, Liverpool, Newcastle, Nottingham, Royal Free / UCL.

Keep up to date by following the College on @RCOphth or visit the RCOphth website for further information.

## Finding out more

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Ophthalmology is a highly competitive specialty. If you are already a medical student, you could talk to members of the local eye department to find out what opportunities there are locally to gain practical experience in ophthalmology as a medical student. Seek out the perspective of both junior and senior members of the ophthalmology team.

If you are seriously considering a career in ophthalmology, it is worthwhile thinking how you might enhance your portfolio. You may like to include ophthalmology in one of your student selected components/special study modules and your elective period. It is also possible to do an ophthalmic elective in the UK or abroad. Volunteering with a local or national eye charity will help you understand more about vision impairment from a patients' perspective.

Information on curriculum, exams, training and other topics are freely available on the RCOphth website.

Join the **British Undergraduate Ophthalmology Society** (BUOS) [www.buos.co.uk](http://www.buos.co.uk)

Publish in the **British Undergraduate Journal of Ophthalmology** (BUJO) [bjo.bmj.com](http://bjo.bmj.com)

**The British Medical Association** [www.bma.org.uk](http://www.bma.org.uk)

**The General Medical Council** [www.gmc-uk.org](http://www.gmc-uk.org)

**NHS Medical Careers** [www.medicalcareers.nhs.uk](http://www.medicalcareers.nhs.uk)

**The Foundation Programme**  
[www.foundationprogramme.nhs.uk](http://www.foundationprogramme.nhs.uk)

## Membership of the The Royal College of Ophthalmologists

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Members have a collective voice through membership of RCOphth, influencing and shaping ophthalmology services and the professional standards of consultants, especially in training the next generation of eye doctors.

Members are encouraged to support and maintain the high quality of services of this unique profession, through the work of standing committees and representation at external meetings and groups. Nearly 50% of members are involved in one way or another at any one time in the work of RCOphth.

The benefits of membership, which is tax deductible includes a free copy of the Eye Journal, College News magazine, registration for e-Portfolio and access to the American Academy of Ophthalmology and the ONE network with an array of full text access to ophthalmic journals, self-assessment tools and online learning.

For more information about becoming a member please contact the **Membership Team** on:

**T. 020 3770 5353**

**E. [membership@rcophth.ac.uk](mailto:membership@rcophth.ac.uk)**

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London, NW1 2HD  
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