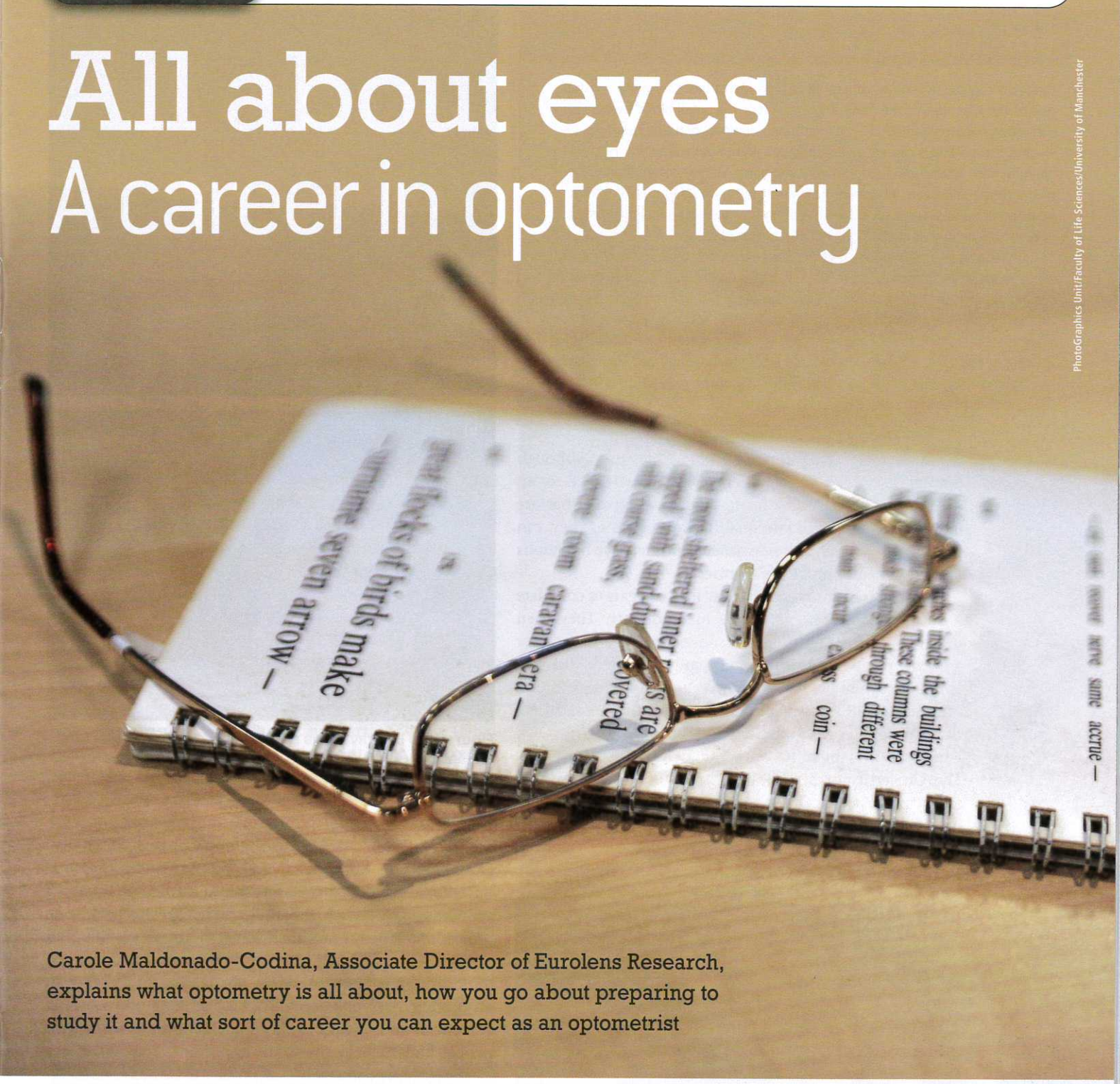
All about eyes
A career in optometry



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Carole Maldonado-Codina, Associate Director of Eurolens Research, explains what optometry is all about, how you go about preparing to study it and what sort of career you can expect as an optometrist

Optometrists are the main providers of **primary** eye care in the UK, and optometry is a fast-moving clinical profession. Optometrists are trained to examine the eyes to detect defects in vision, ocular diseases and abnormalities, and problems with general health. There are currently around 13 000 registered optometrists in the UK. They should not be confused with ophthalmologists. Ophthalmologists are medically trained doctors who have specialised in the eye and can provide the full spectrum of eye care, from fitting spectacles to performing complex eye surgery.

What optometrists do

Key words

Optometry
Optometrist
Eye examination
Vision

Optometrists prescribe various types of vision correction including spectacles and contact lenses. They detect and advise on **cataracts**, glaucoma (see Box 1) and a wide range of eye problems. They manage patients with **low vision**, where spectacles can't improve vision, and binocular vision problems, where the two eyes do not work together properly. Optometrists also screen patients for general health problems such as diabetes (see

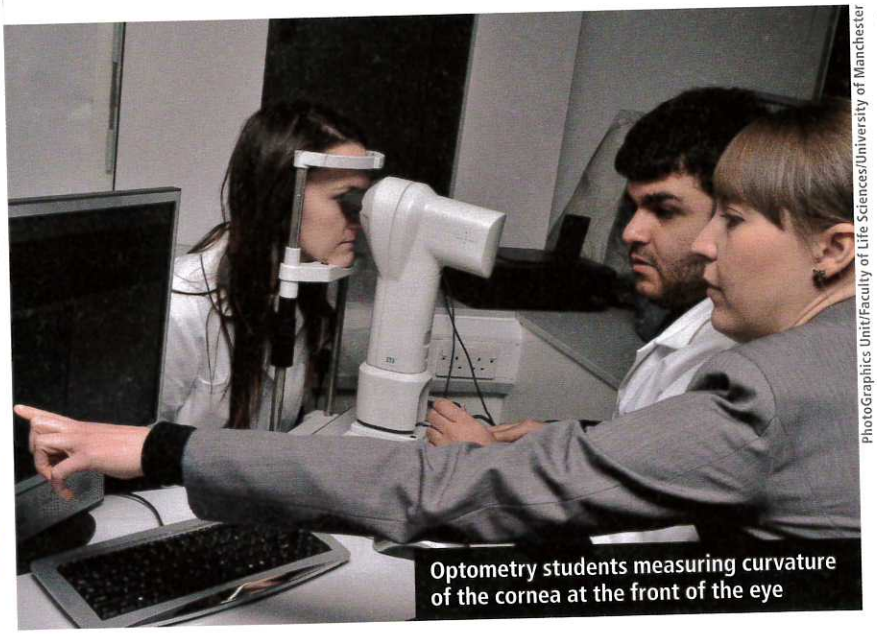
Box 1 Diagnosing disease by examining the eyes

Diabetes can cause serious general health problems and the retina is often one of the first sites in the body to be affected. The small blood vessels in the retina become damaged — a condition known as diabetic retinopathy — and these vessels can easily be observed and photographed during an eye examination. Severe changes to the retinal blood vessels affect the health of the retina and can lead to blindness if left untreated. Figure 1 shows a healthy retina and one with diabetic retinopathy, including leaking vessels, haemorrhages and abnormal growth of new blood vessels.

Glaucoma describes a group of eye diseases in which damage to the optic nerve leads to progressive, irreversible loss of vision, usually in both eyes. In glaucoma, increased pressure in the eye damages the delicate nerve fibres of the optic nerve. This can lead to permanent blind spots developing in the field of vision. Optometrists screen for glaucoma by measuring the pressure inside the eye using an instrument called a tonometer. They can also observe the optic nerve in the retina (see Figure 1) and plot the patient's field of vision using a visual field screener.

Box 1 and Figure 1) and high blood pressure. Although optometrists refer most patients with eye disease to an ophthalmologist for treatment, an increasing number are undertaking postgraduate qualifications so that they can practise as 'independent prescribers' and treat eye infections and other ocular problems themselves.

Optometrists study at university for 3–4 years to complete a Bachelor's or Master's degree in optometry. They then undergo a year of training and supervision in a hospital or a private practice before becoming fully qualified. This year is known as the pre-registration year. Once pre-registration training and all assessments and examinations are satisfied, they can register with the **General Optical Council** (GOC), which allows them to work independently in the UK. The University of Manchester and Aston University offer a 4 year Master of Optometry degree, which includes the pre-registration year as part of the course. Whichever route you take, you can expect to be fully qualified 4 years from starting your university degree.



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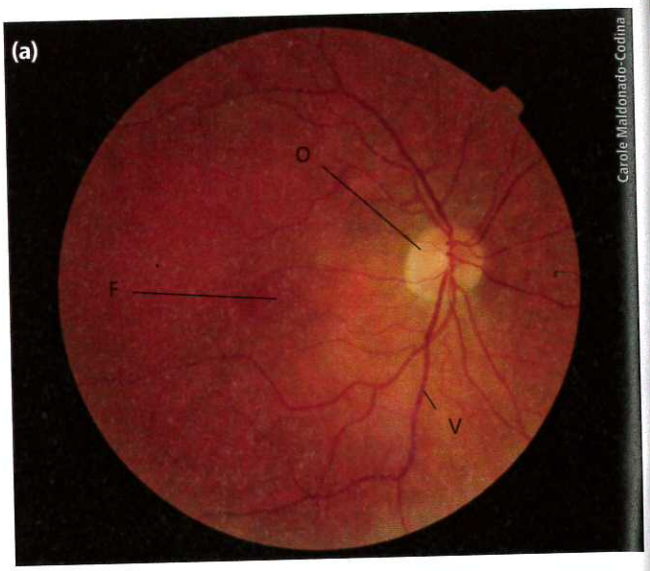
Optometry students measuring curvature of the cornea at the front of the eye



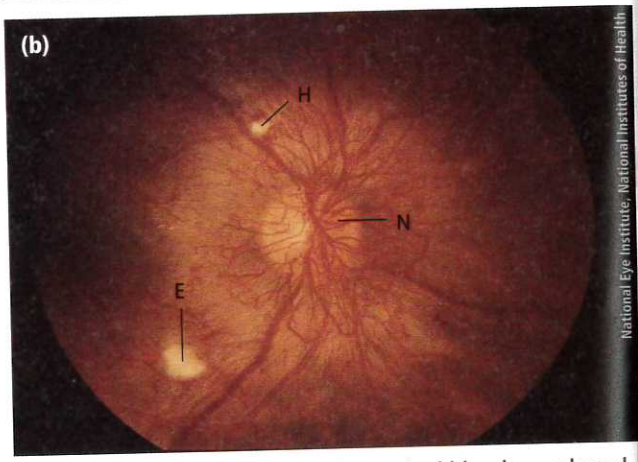


Figure 1 (a) Healthy retina showing retinal blood vessels and the optic nerve. F = fovea, O = optic disc, V = main blood vessel **(b)** A retina showing diabetic retinopathy. E = exudates, H = 'dot' heamorrage, N = new blood vessels at the optic disc

Is optometry right for you?

Now that you know what an optometrist is, the next question to ask is 'Is it right for me?' At the end of 4 years of training you will be a highly skilled and respected healthcare professional. Box 2 outlines some of the key skills and attributes that will help you decide whether you are suited to this profession. Observing, shadowing or helping in an optometrist's practice will also help, and add valuable content to your UCAS application. Wanting to work with people and to help them are important. You will see a variety of patients, which means that no two days will ever be the same and, most importantly, you will feel a sense of achievement and job satisfaction.

Most newly qualified optometrists gain experience by working in a private practice or a hospital optometry department. Some optometric practices are clinically orientated, offering a range of clinics in specialities such as contact lenses, low vision or **dry eye** treatments. Other practices are more commercially orientated, providing a vibrant retail workplace. These various types of optometric practice, and other career options, mean that optometrists have a wide range of choices for their future work.

Box 2 Key skills and attributes for an optometrist

A number of key skills are important for a career as an optometrist:

- good interpersonal and communication skills
- friendly, caring personality
- enjoy working with and helping people of all ages
- good organisational and administrative skills
- accuracy and attention to detail
- manual dexterity
- ability to maintain concentration for repetitive tasks

Applying to study optometry at university

Currently, nine universities in the UK offer an optometry degree programme and all of these courses are accredited (approved) by the GOC. You will usually need a minimum of five GCSEs grades A*–C (or an acceptable equivalent), usually including English and mathematics. Some universities specify a minimum grade in certain subjects, so you need to check the individual entry requirements carefully on the UCAS website. In addition, you will require three A-levels or equivalent, generally in science-based subjects such as biology, chemistry, physics or mathematics. Typical offers are ABB to AAA, or five subjects for Scottish Highers and six subjects for Irish Highers, all at A or B. Again, it is important to check entry requirements for each university and to tailor your subject choices for your chosen institutions.

DBS and GOC

Universities carry out a Disclosure and Barring Service (DBS) check on prospective students prior to starting the course. This is because, during training, students work with members of the public, including children and vulnerable adults. However, having a previous criminal conviction or caution will not necessarily prohibit you from studying optometry.

You are required to register as a student with the GOC, and comply with their standards throughout your time at university and beyond. Some universities interview all suitable applicants and some choose to interview only a proportion. Whichever is the case, you will want to make a good impression on your UCAS form. When deciding on whether to make an offer or invite to interview, universities will only have your UCAS form to guide them.

Further information

Further information if you are considering a career in optometry can be found at:
http://tinyurl.com/lea6mhu
www.optical.org/en/Education
www.studentaop.org.uk/careers
http://tinyurl.com/lfv4z6p
http://tinyurl.com/ky2hok4
The entry requirements for each university offering optometry can be found at:
www.ucas.com

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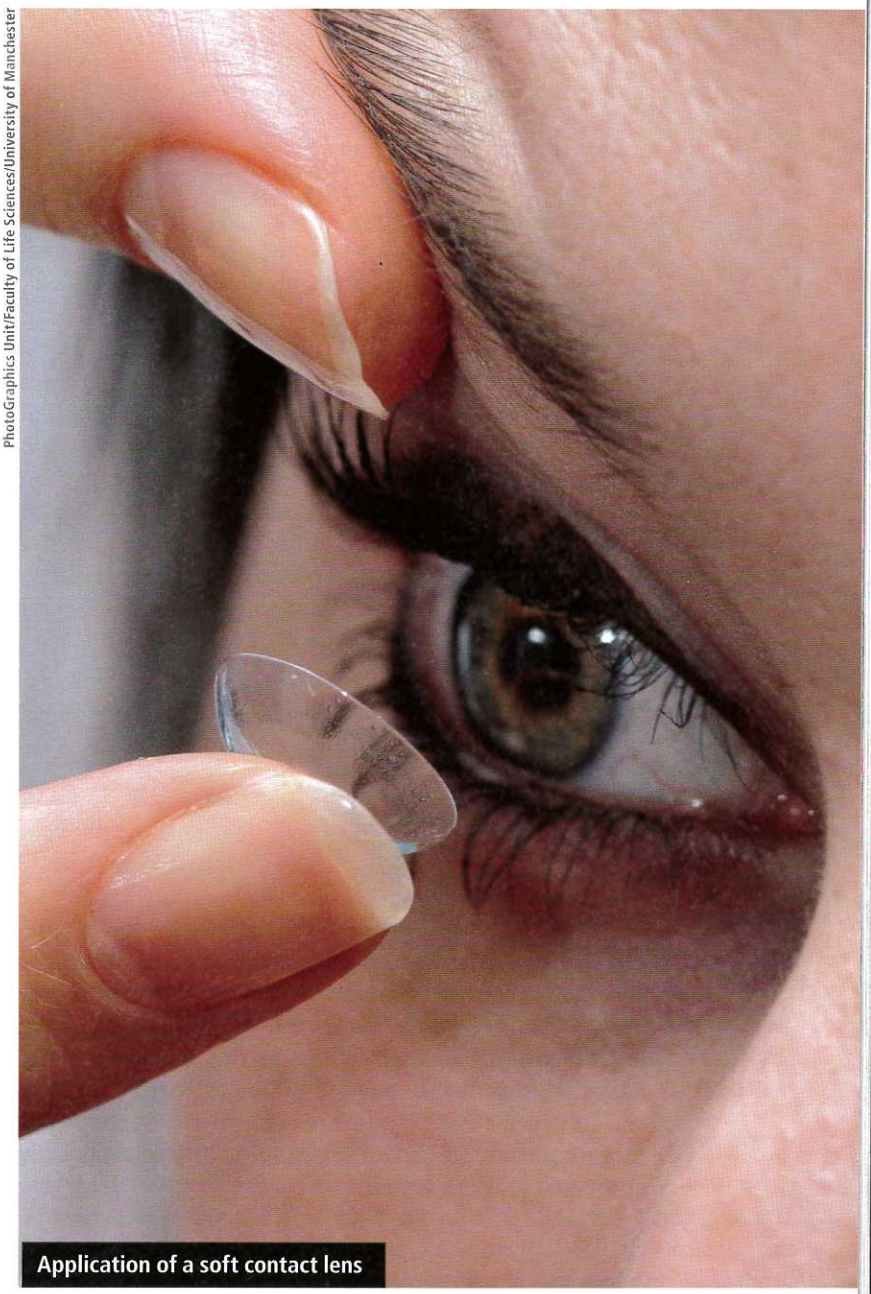


Application of a soft contact lens

Terms explained

Cataract Clouding of the crystalline lens inside the eye, leading to a decrease in vision.

Dry eye A disease of the tear film, which results in discomfort and visual disturbance with potential damage to the surface of the eye.

General Optical Council The regulator for the optical professions in the UK. Its purpose is to protect the public by promoting high standards of education, performance and conduct among optometrists and opticians.

Laser refractive surgery A general term for eye surgery that uses a laser on the front of the eye to eliminate the need for spectacles or contact lenses.

Low vision A loss of eyesight making everyday tasks difficult or impossible. Low vision cannot be improved with spectacles or contact lenses.

Primary care Services that are easily accessible to members of the public.

Sports vision A specialised branch of optometry dedicated to optimising visual performance in order to improve athletic performance.

UCAS statement

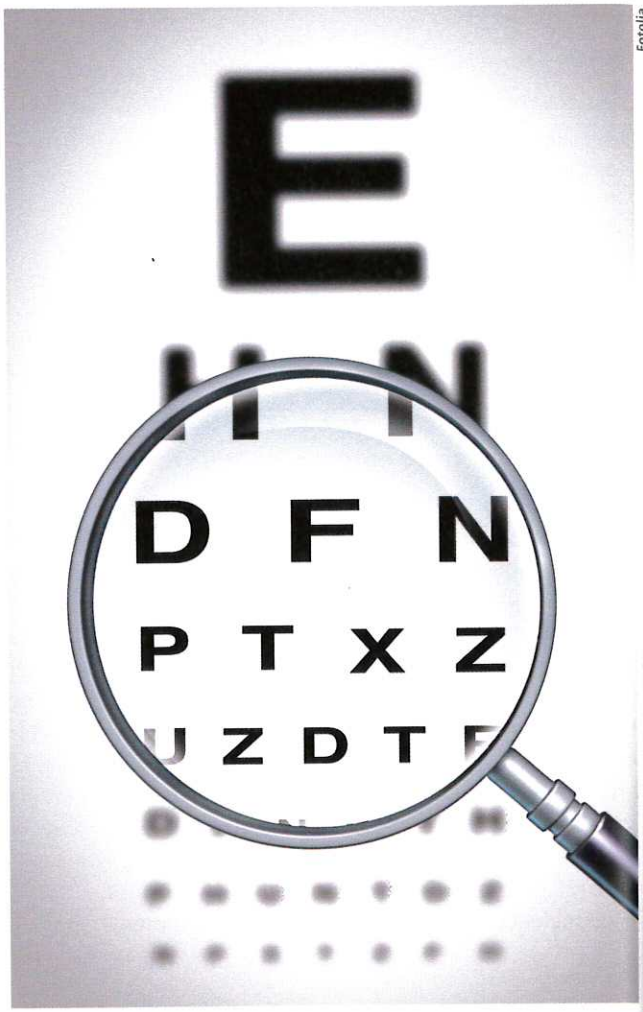
Your UCAS personal statement is an important part of your application and gives you the opportunity to tell the admissions team about your various work and life experiences. Gaining work experience in an optometry practice or a hospital optometry department is important, as is demonstration of teamwork and leadership skills. Universities are looking for well-rounded individuals who are highly motivated and good with people.

Which university?

Apart from entry criteria, you should consider other factors when choosing a university. These include the teaching and clinical facilities available, whether or not you can switch to a Master's degree partway through your course, how soon you get to examine real patients, and what student support is available (e.g. academic advisors, disability support). Try to visit as many optometry schools as possible on open days before you apply. Many universities will invite you for an interview before making you an offer and this is a good opportunity to ask further questions and look around before you make your final choice.

The optometry degree course

The degree courses at UK universities differ slightly but they all contain the same basic elements to prepare you for your pre-registration year: basic sciences, optometric studies and clinical practice. In your first year you will begin to discover the scientific principles that underpin optometry, including the anatomy of the eye (see Figure 2), properties of light and the processing of images in the brain. You will also become familiar with lenses used to correct vision and the instruments that are used by optometrists in their everyday job. The clinical elements of the course will introduce you to general eye examination techniques. Some degree programmes incorporate examining 'real' patients as early as the first year of the course.



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In your second year you will cover topics such as pharmacology, human disease, binocular vision and contact lens practice. The clinical elements of the course will continue and in many courses you will be ready to examine members of the public under supervision by the end of your

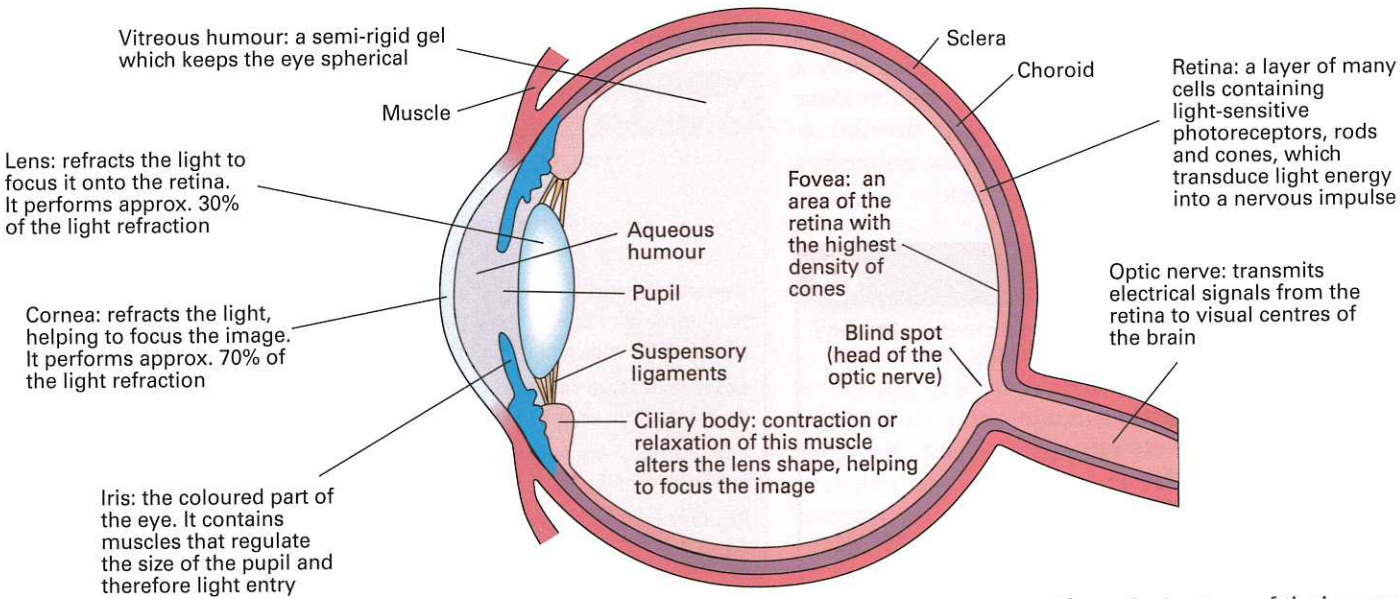

Figure 2 Anatomy of the human eye

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Optometry student examining the anterior of the eye using a slit lamp biomicroscope

second year. Many degree courses include a short 1 or 2 week secondment to an eye hospital for you to gain experience in ocular disease and what happens to patients when they are referred to an eye hospital.

In year 3 the majority of your time is spent examining patients in clinics devoted to various specialities such as contact lenses, optometric examination, spectacle dispensing, low vision, binocular vision and children's vision. These clinics may take place at a local eye hospital or in private practices. The clinical sessions are accompanied by lectures and other subject areas such as business management and legal/professional aspects of optometry.

Overall, the course is stimulating and very busy. You will find lectures and practical classes will fill most of the week and, as well as attending classes, you will need to find time for course work and assignments. So be prepared for some hard work.

Career options in optometry

Once you are fully qualified you can develop your interests in specialist areas such as contact lenses, **laser refractive surgery**, low vision, children's vision, **sports vision** or managing specific types of eye disease. It is also possible to increase your prescribing and management capabilities after a period of extra study and clinical practice. This means that you can prescribe a wider range of medications and take on more responsibility for the clinical management of a patient than a normal optometrist. Throughout your career as an optometrist, the GOC requires you to maintain up-to-date skills and knowledge needed to practise safely and effectively, so you will undertake mandatory 'continuing education and training'.

The majority of optometrists spend their careers looking after patients, but there is a wide variety of alternative career pathways. As with other academic disciplines it is possible to study for a Master's degree or PhD. Gaining these extra qualifications could allow you to forge a career as an academic. This is exactly what I did following a period of time working as an optometrist in private practice.

As an academic my job is varied. On any given day I could be giving a lecture, supervising a clinical practical session, discussing research findings with my PhD students, writing a research paper, or speaking at an international conference. Other career paths include working in industry (e.g. in a spectacle lens or a contact lens manufacturing company), for professional bodies such as the College of Optometrists or the GOC, and for charities. Whichever path you choose, the career of an optometrist is incredibly fulfilling and, if you want to, you can have a number of different careers in optometry during your working life.

Dr Carole Maldonado-Codina is a senior lecturer in optometry at the University of Manchester. She is also Associate Director of Eurolens Research, a contact lens research group based at the university. Her main research interests focus on the characterisation of contact lens materials and the response of the eye to contact lens wear.