

FIRST VISIT COMPETENCIES - MODEL ANSWERS 2009/10

Competency group 1: Communication and Professional conduct

2.5 The ability to demonstrate an understanding of the legal, professional and ethical obligations of a registered optometrist.

What is the AOP?

The Association of Optometrists is a Limited company which provides services to its members (individual optometrists) including promoting their professional and clinical independence; providing indemnity insurance and defence, in disciplinary and professional matters; advising them on commercial, economic, legal and administrative aspects of practice; representing their interests in negotiations for fees, other remuneration, conditions and terms of service (where appropriate) and representing and promoting their interests to Parliament, Government and other institutions in the United Kingdom and the European Community.

What is the College of Optometrists?

The College of Optometrists is the **Professional, Scientific and Examining Body** for Optometry in the UK, working for the public benefit.

Supporting its Members in all aspects of professional development, the College provides Pre-Registration training and assessment, continuous professional development opportunities, and advice and guidance on professional conduct and standards, enabling our Members to serve their patients well and contribute to the wellbeing of local communities.

When did the College of Optometrists last revise their Code of Ethics and Guidelines for Professional Conduct?

The College of Optometrists is continually updating the Code of Ethics and Guidelines for Professional Conduct via its Guidance Review Group. However it produced the latest paper version of its guidance to its Members in April 2008. Areas covered by the guidance include the changes relating to the fitting and supply of contact lenses, including providing clarification on the responsibilities of a registered optometrist “generally directing” the sale or supply of contact lenses and on the duty to provide aftercare.

Your supervisor should have received a paper copy of the latest version. You may download all the Guidelines from: www.college-optometrists.org/

You can also view an archive of all the previously published guidelines.

If you are not a Member/Fellow of the College, are you bound by the College Guide-lines?

Yes, the GOC use them as the standard for fitness to practice and they are regarded as the basis for the professional conduct of optometrists.

What is the General Optical Council?

The General Optical Council (GOC) is the regulator for the optical professions in the UK. The GOC regulates optometrists, dispensing opticians, student optometrists and dispensing opticians and corporate bodies in accordance with the Opticians Act 1989.

What are the functions of the General Optical Council?

The GOC has four core functions:

- Setting standards for optical education and training, performance and conduct.
- Approving qualifications leading to registration.
- Maintaining a register of individuals who are qualified and fit to practise, train or carry on business as optometrists and dispensing opticians.
- Investigating and acting where registrants' fitness to practise, train or carry on business is impaired.

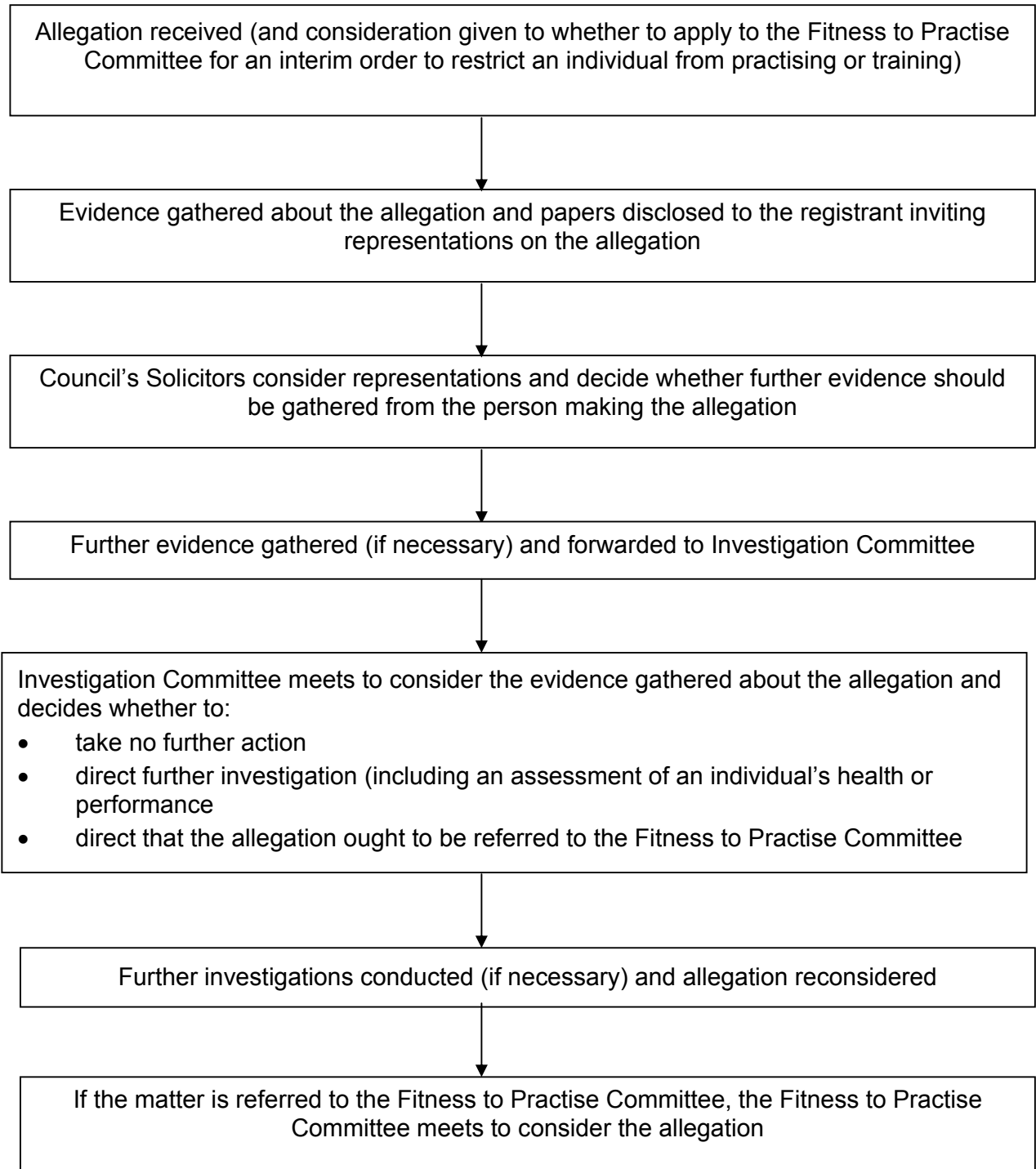
What is the difference between the GOC's Investigating Committee and the Fitness to Practise committee?

The Council's Investigation Committee are responsible for investigating allegations about the fitness of registered optometrists and dispensing opticians to practise, the fitness of student optometrists and dispensing opticians to undertake training and the fitness of corporate bodies to carry on business, in the United Kingdom.

The day to day work of the Investigation Committee is carried out by solicitors employed by the Council.

The Investigation Committee will then decide whether or not a public inquiry should be convened to consider the allegation before the Fitness to Practise Committee.

The Fitness to Practise Committee will consider the allegation (see flow chart below).



What allegations can the Investigation Committee investigate?

The Investigation Committee can investigate allegations about fitness where there is evidence of:

- misconduct
- deficient professional performance
- a caution or conviction in relation to a criminal offence
- adverse physical or mental health
- a finding of impaired fitness by another regulatory body in the United Kingdom
- (Scotland only) an absolute discharge or a specified statutory penalty

What can the Fitness to Practise Committee do if fitness is shown to be impaired?

If fitness is shown to be impaired, the Fitness to Practise Committee may:

- impose a financial penalty order of up to £50,000 (although in some cases this is limited to £1,600)
- impose an order for conditional registration of up to 3 years (this restricts the way in which a person can practise)
- Suspend registration for up to 12 months (or in some cases indefinitely) - The registrant's name is temporarily removed from the relevant register(s). The registrant cannot practise as an optometrist/dispensing optician, or in the case of student registrant, cannot continue with their training for the duration of the suspension.
- Erase registration - the registrant's name is erased from the relevant register(s). The registrant cannot practise as an optometrist/dispensing optician, or in the case of student registrant, cannot continue with their training.

*If the hearings panel decide that a registrant's fitness to practise is **not** impaired, they may issue the registrant with a **warning** about their future conduct or performance.*

What might result in erasure of an optician's name from the register?

- i. Death
- ii. Conviction for a serious criminal offence
- iii. Serious professional misconduct
- iv. Retirement / ceasing to be an optometrist.
- v. Failure to attain appropriate CET
- vi. The registrar may remove a registrant's name from the appropriate register if satisfied that:
 - a. they have not received from the registrant by the relevant date a fully completed application form for retention of registration which
 - b. the registrant is not entitled to be registered
 - c. the registrant is not covered by an appropriate policy of insurance; or
 - d. the application fee has not been paid.

What might the GOC regard as professional misconduct?

- Charging a fee before providing an examination
- Failing to carry out an examination with due care and attention
- Failing to hand over a prescription at the end of the examination
- Failing to issue a written statement as required at the end of an examination
- Failing to comply with GOC regulations

What changes in the last five years to the GOC's legislative role have affected the register?

- The setting up of a provisional register of students with a requirement that they satisfy Council of good character.
- The provision of lists of registered practitioners competent to provide specialist optical services.
- The substitution of the title optometrist for ophthalmic optician, eliminating the register of optometrists who only test sight

According to The Opticians Act 1989 what activities may only a registered medical practitioner (doctor) or registered optician undertake?

The Opticians Act 1989, which consolidates the original Opticians Act 1958 and its later statutory modifications, specifies the activities which only a registered medical practitioner (doctor) or registered optician may undertake. These are as follows:-

- a) Only a registered doctor or optometrist may test sight.
- b) Only a registered doctor, optometrist or dispensing optician may fit a contact lens.
- c) Only a registered doctor, optometrist or dispensing optician may sell, or supervise the sale of, spectacles to a child aged under 16 years or to a person who is registered blind or partially sighted.
- d) Only a registered doctor, optometrist or dispensing optician may sell, or supervise the sale of, a contact lens.
- e) It is an offence for a person to pretend to be a registered optician, particularly by using any of the following terms 'dispensing optician', 'ophthalmic optician', 'optometrist', or 'optician' when not registered.

Who may examine eyes in the UK?

Registered Optometrists
Registered Medical Practitioners
Optometrists and Medical students training under supervision.

N.B. Students of optometry now have to be registered with the GOC in order to examine eyes under supervision.

Who can deal with complaints about the cost of spectacles or contact lenses?

The General Optical Council (GOC) has no power to deal with consumer complaints such as the cost of a service or of any spectacles or contact lenses provided. Concerns may be pursued via the following organisations:

- **Advertising Standards Authority** (www.asa.org.uk)
regarding concerns about broadcast or non-broadcast advertising
- **Local National Health Service bodies** (www.nhs.uk)
regarding services funded by the National Health Service
- **National Association of Citizens Advice Bureaux** (www.nacab.org.uk)
regarding advice/assistance in relation to legal claims
- **Optical Consumer Complaints Service** (www.opticalcomplaints.co.uk)
regarding advice/assistance in relation to consumer complaints
- **Trading Standards Service** (www.tradingstandards.gov.uk or www.ts.org.uk)
regarding complaints relating to optical goods or services

What is CET?

Continuing Education and Training.

What is DOCET?

The Directorate of Continuing Education and Training

Is it a requirement that an Optometrist undergoes continuing education?

In order to retain his/her name on the GOC register registrants will have to achieve 36 general CET points, in a 3 year cycle, which recommenced in January 2007.

In order to retain his/her name on the GOC register specialist list the registrant will need to acquire, by 31 December 2010, 18 CET points in the area of specialist practice to which the list refers. These specialist CET points will be to the specialist level and will be over and above the 36 general CET points required to remain on the Opticians Register.

What changes to the GOC's legislative role have affected CET?

Empowerment to make statutory rules for post-registration education and training in 2005.

How can you check if someone is registered?

- Look in the most recent GOC register
- Ring the GOC
- Check on the GOC website, the register is now online at www.optical.org

What professional indemnity insurance do Optometrists have to have?

The GOC requires as a condition of continuing registration that you demonstrate proof of appropriate insurance.

The College of Optometrists requires, as a condition of membership, that an appropriate level of indemnity cover is maintained. The current requirement is for cover for £1,000,000 for any one incident. The cover should be for both professional matters, e.g. negligence etc. and also to indemnify against claims for product liability.

N.B. To practice an optometrist need not be a member of the College of Optometrists only registered with the General Optical Council.

The AOP has recently increased its level of indemnity cover to £2,000,000

What is the GOS?

The General Ophthalmic Service

What is the HES?

The Hospital Eye Service

What are PCTs?

They are Primary Care Trusts

How are PCTs connected to the GOS?

The GOS is now administered by local PCTs. Prior to April 1996, this role was undertaken by separate Family Health Service Authorities (FHSAs), which no longer exist. Prior to 2002 this role was undertaken by separate Health Authorities (HAs). PCTs now contract ophthalmic practitioners to provide NHS sight tests and optical vouchers to eligible groups of the population.

What major change to the GOS took place in April 1989 and April 1999?

The restriction of NHS sight tests to certain eligible sectors of the population and the legislation permitting the sale of ready-made reading glasses by unregistered suppliers took effect from April 1989.

The extension of eligibility for NHS sight tests to all those aged 60 or over from April 1999.

What changes have there been to the groups eligible for NHS Sight Tests since April 1989?

In April 1989, NHS sight tests were restricted to the following eligible groups:

- Children aged under 16;
- Students in full time education aged 16 - 18;
- Adults and their partners receiving Income Support;
- Adults and their partners receiving Family Credit;
- Patients and their partners on low income holding health benefits certificate HC2;
- Glaucoma and diabetes sufferers;
- Patients registered blind or partially sighted;
- Patients requiring complex lenses;
- Close relatives aged 40+ of a glaucoma sufferer.

Subsequent additions to the eligible groups were:

- Adults and their partners receiving a Disability Working Allowance (from April 1995)
- Adults and their partners receiving Income-based Job Seekers Allowance (October 1996)
- Patients aged 60 or over (from April 1999)
- Adults and their partners receiving full Working Families Tax Credit or Disabled Persons Tax Credit or credit reduced by £70 or less (from October 1999), replaced by Working Tax credit and Child Tax credit (April 2003)
- Adults considered to be at risk of glaucoma by an ophthalmologist (from February 2001)
- Patients having a sight test at home because they cannot leave home unaccompanied (from February 2001)
- Pension Credit Guarantee Credit replaced Income support for patients aged 60+ (October 2003)

Outline the NHS complaint's procedure that came into force in April 1996, what does it mean for practices?

This is designed to speed up the resolution of complaints; hopefully via Local Resolution but if this fails through an Independent Review. The complaints procedure applies to NHS matters only, i.e. the GOS eye examination and, in certain circumstances, the designation of optical vouchers. The Practice has a statutory duty under its NHS terms of service to display its complaints procedure prominently in the practice. The Practice should have a nominated and named person in charge of the complaints. The

complaints procedure should be entirely the responsibility of the Practice and be understood by all the staff, a complaint must be normally acknowledged and resolved within a fixed period, a written complaint and its resolution must be recorded and should be kept separate from the main records.

How often can a person have their eyes examined through the NHS?

An agreement was reached in 2001 between the profession and the Department of Health on the optimal intervals between GOS eye examinations for different categories of patients on clinical grounds.

Payments agencies will automatically pay all bona fide claims for GOS fees for sight tests carried out at the intervals listed below, subject to normal post-payment verification. Claims for GOS fees for sight tests carried out at an interval which is shorter than those listed below will need to be accompanied by a justification by the optometrist by means of a numerical code. Such a sight test may be initiated by an optometrist or by a patient who presents with a problem requiring immediate attention in the judgement of the optometrist. The GOS regulations require practitioners to satisfy themselves that a sight test is clinically necessary. Therefore, the intervals given below are not to be read as applying automatically to all patients in a category. However, optometrists will not normally test the sight of patients under the GOS more frequently than according to the following schedule of intervals:

- Under 16 years in the absence of any binocular vision anomaly or manifest reactive error - 1 year
- Under 7 years with binocular vision anomaly or corrected refractive error - 6 months
- 7 years and over and under 16 with binocular vision anomaly or rapidly progressing myopia - 6 months
- 16 years and over and under 70 years - 2 years
- 70 years and over - 1 year
- 40 years and over with family history of glaucoma or with ocular hypertension and not in monitoring scheme - 1 year
- Diabetics not part of a diabetic retinopathy monitoring scheme - 1 year

A sight test may be carried out at a shorter interval than those listed above, either at the optometrist's initiative for a clinical reason, or because the patient presents him/herself to the optometrist with symptoms or concerns which might be related to an eye condition.

If a GOS sight test is carried out at an interval shorter than one of those listed above, the optometrist must annotate the GOS 1 form with one of the following codes:

1. Patient is at risk of frequent changes of prescription for reasons not requiring medical referral or for reasons already known to a medical practitioner.
2. Patient with pathology likely to worsen, for example, ARMD, cataract, corneal dystrophy, or congenital abnormalities.
3. Patient has presented with symptoms or concerns requiring ophthalmic investigation.

4. Patient has presented for a sight test at the request of a medical practitioner.
5. Other unusual circumstances requiring clinical investigation.
6. Broken spectacles do not by themselves constitute a reason for a GOS sight test. If, in exceptional cases, the optometrist considers a sight test to be necessary, he or she will be required to justify the sight test on purely clinical grounds.

How long is it necessary to keep a patient's records from the last date of an eye examination, before you dispose of them?

GOS regulations require that patient records in respect of General Ophthalmic Services be kept for seven years. However action can be brought for up to three years *from when a patient has acquired the knowledge that the injury is attributable to the alleged wrongful act or omission of the practitioner*. Thus a patient may proceed with an action many years after the event giving rise to the liability; it may therefore be of value to seek the opinion of your professional indemnity insurer about how long you should keep your patient records! The AOP recommends that records of adult patients should be retained for 12 years and children's records should be retained until they are 25 years old.

What was the common law duty of care that an Optometrist must meet that was given statutory force in the NHS? What change to the regulations in 2001 has further clarified this?

The issuing of a prescription/written statement to the patient, following an eye examination.

The addition of the statement "A prescription showing no change or a statement was issued" on the revised GOS1, has been introduced to underline the requirement for a new prescription to be issued to a patient, even when there has been no change to the previous one. This is also on the GOS 2.

May a prescription over two years old, be dispensed?

Yes, but it is inadvisable.

May a receptionist dispense to a twelve-year-old child?

No, dispensing to children under sixteen must be under the supervision of a registered optician.

May a receptionist dispense a complex prescription?

No, it must be under the supervision of a registered optician.

These are not "excluded sales" i.e. patients over 16 or prescriptions with a spherical power not exceeding 4.00D.

What are PoS checks?

Point of Service checks

What does this mean for practitioners and patients?

Optical practitioners are now required to request patients to show evidence of their eligibility for NHS sight tests and optical vouchers following the introduction of the revised versions of the GOS forms in February 2001. If no evidence is produced, the practitioner should enter a cross in the "Evidence not seen" roundel on the appropriate GOS form. Patients are now required to show evidence of eligibility.

Can Optometrists ignore PoS?

No they are now part of the GOS terms of service

What other changes in the GOS came into force from 19 February 2001?

Measures to strengthen regulation of domiciliary visits and accompanying revised GOS forms were also introduced from 19 February 2001.

What were the changes to the domiciliary visits rules?

Optometrists may only accept requests for domiciliary visits from or on behalf of people who are housebound. They have to apply to "host" PCTs when they propose to visit a residential home to test the sight of 3 or more patients. They are only able to claim the standard sight test fee for visiting day centres and only attend day centres for specific categories of patient. They will be in breach of their terms of service if they offer inducements to managers of residential homes.

What were the changes to the revised GOS forms with respect to glaucoma?

The section for glaucoma and those at risk of developing glaucoma has been separated out. In the case of someone at risk of developing glaucoma, the patient should provide the name and address of the hospital that they attended.

What were the changes to the new GOS forms with respect to student's repair and replacements?

Part 1 included a new field for full-time students aged 16, 17 or 18. Students in this age group are eligible for repair and replacements, but only if they satisfy the health authority that the loss was due to illness.

How is the GOS in Scotland different to that in England?

Through enabling legislation in the Smoking, Health and Social Care (Scotland) Bill, passed on 30 June 2005, a new contract was created for Optometrists in Scotland to provide NHS Eye Examinations. This replaced the old GOS contract.

The New Eye examination does not require mandatory refraction, but provides a health assessment of the eyes that may lead to refraction, other procedures, repeat procedures, care pathways for sight threatening conditions, or other referral as appropriate for every patient, for every visit.

Under the new contract:

There is a free eye examination for every person in Scotland

There is a fee structure for a supplementary examination allowing repeat tests and procedures.

There is a primary eye examination fee of £44 for those aged 60 and over; £36 for primary eye examinations for those aged under 60 and a supplementary eye examination fee of £21. These will rise from April 2010 to £45, £37 and £21.50 respectively.

The Scottish Executive Health Department provided an initial equipment grant of £8,000 per practice paid to assist optometrists to provide the new GOS service. Training is provided for optometrists in Scotland who now need a competency certificate to continue providing GOS service

Practitioners have to demonstrate their abilities in four areas: slit lamp biomicroscopy, Volk lens BIO, applanation tonometry and threshold visual fields/record-keeping before being accepted for a GOS contract.

There is now an annual review to take account of changes in technological advances and service delivery.

As part of the 3 year fee agreement it has been agreed that the taking of digital photos will become a standard part of the primary NHS eye examination for those aged 60 and over from 1 April 2009 and will be phased in.

A 40 year old patient with a family history of glaucoma asks for an NHS examination having had one only nine months previously, the Optometrist tells him that he is not allowed and he must have a private eye examination or else wait a further three months. Is the Optometrist correct?

The GOS regulations require practitioners to satisfy themselves that a sight test is clinically necessary. Optometrists will not normally test the sight of patients under the GOS more frequently than the agreed intervals which at present would be one year for a patient 40 years and over with family history of glaucoma. A sight test could be carried out at a shorter interval, either at the optometrist's initiative for a clinical reason, or because the patient presents him/herself to the optometrist with symptoms or concerns which might be related to an eye condition. If an optometrist carries out a GOS sight test at an interval shorter than one of those listed above, the optometrist must annotate the GOS 1 form Part 3 "in the case of a re-test at less than the standard interval, please specify appropriate reason" field with one of the following codes:

1. Patient is at risk of frequent changes of prescription for reasons not requiring medical referral or for reasons already known to a medical practitioner.
2. Patient with pathology likely to worsen, for example, age-related macular degeneration, cataract, corneal dystrophy, or congenital abnormalities.
3. Patient has presented with symptoms or concerns requiring ophthalmic investigation.
4. Patient has presented for a sight test at the request of a medical practitioner.

5. Other unusual circumstances requiring clinical investigation.
6. If none of the above apply then the Optometrist is correct to refuse.

What action would you take in the case of an asymptomatic patient who requires a myopic correction to attain adequate visual acuity for driving but who refuses to accept your advice?

The patient should have the findings and the implications explained to them. Inform the patient that it is illegal and that they should cease driving immediately and inform the DVLA. It should be emphasised that their motor insurance will be null and void if the patient does not meet the visual requirements for driving and that the police following any accident could prosecute them. The optometrist should do their best to persuade the patient that spectacles are in both the patients and the community's interest. The patient's refusal should be noted on the record and the patient should be invited to sign an acknowledgement of your advice. If the GP's name is known, it would be sensible to send a letter advising (informing) them of the situation. The GPs name can be obtained from the PCT if necessary. Informing the DVLC would be an extreme step only appropriate if the patient could be regarded as a significant danger to other members of the community (but it would be wise to discuss this with the AOP first as you are breaching your duty of confidentiality to the patient).

An NHS eye examination is carried out under cycloplegia. An extra fee is charged, as there is no provision for a cycloplegic fee under the NHS, is the Optometrist entitled to do this?

A very grey area in England and Wales, the AOP has suggested that additional fees for tests supplementary to the "basic" NHS sight test could be charged but this has not yet been tested in a court of law. At present, under your NHS duty of service you must provide an appropriate examination for every patient, regardless of the level of the NHS fee. The difficulty lies in the determination of what lies within your GOS terms of service and what could be regarded as a supplementary procedure.

Is it possible to charge a separate fee for a visual field analysis?

Possibly if it is a private examination. Although it could be argued that the patient would be unable to make an informed decision about the value of a field test and the Optometrist has a duty of care to carry out all tests regarded as necessary. See previous comment on AOP's suggestion on additional fees.

Can an Optometrist registered with the GOC refuse to join the NHS?

Yes, by not registering with the local PCT

Can an Optometrist registered with the NHS refuse to see certain categories of NHS patients?

No

Can an Optometrist registered with the NHS limit the appointments available to see NHS patients?

Yes

What new category of patients became eligible for a “free” NHS eye examination in April 1999?

Old aged pensioners (60 years upwards)

What is "professional negligence"? Distinguish between professional negligence and serious professional misconduct.

Negligence is commonly defined as carelessness. In more detail, negligence is where damage, for example physical loss or personal injury, has occurred due to a breach of duty or care.

Professional negligence is "a breach of a duty of care" where the professional has a higher duty of care due to their specialist training.

Serious professional misconduct is where the practitioner "brings the profession into disrepute".

What must be shown for proof of "professional negligence"?

In all cases these three elements must be shown:-

- i. That a duty of care exists,
- ii. That there has been a breach of that duty of care,
- iii. That damage or loss has resulted from the breach.

Damage must have resulted from the breach, and the injury or loss must have been foreseeable.

What is the difference between "misadventure" and "negligence" in common law?

Misadventure is where you could not foresee any adverse consequences.

Negligence is carelessness.

If for example something occurred, perhaps an adverse reaction, which had never previously been documented, then this could not have been foreseen and is not attributable to negligence.

Misadventure is where the damage or loss would have occurred in any event whether or not the duty of care had been breached or where, as above, the damage could not have been foreseen.

Can a person who has agreed to have contact lenses fitted sue their practitioner if a corneal ulcer develops?

Yes, if they can prove negligence.

What is the CHRE?

The Council for Healthcare Regulatory Excellence (CHRE) is a statutory overarching body, covering all of the United Kingdom and separate from Government, established from April 2003. CHRE promotes best practice and consistency in the regulation of healthcare professionals.

When established in 2003, it was originally called the Council for the Regulation of Healthcare Professionals (CRHP) and is still called CRHP for legal purposes.

The CHRE oversees the regulatory work of the following nine organisations:

- [General Chiropractic Council \(GCC\)](#) -regulates chiropractors.
- [General Dental Council \(GDC\)](#) -regulates dentists, dental nurses, dental technicians, dental hygienists, dental therapists, clinical dental technicians and orthodontic therapists
- [General Medical Council \(GMC\)](#) -regulates doctors
- [General Optical Council \(GOC\)](#) -regulates optometrists, dispensing opticians, student opticians and optical businesses.
- [General Osteopathic Council \(GOsC\)](#) -regulates osteopaths
- [Health Professions Council \(HPC\)](#) -regulates the members of 13 health professions: arts therapists, biomedical scientists, chiropodists/podiatrists, clinical scientists, dieticians, occupational therapists, operating department practitioners, orthoptists, paramedics, physiotherapists, prosthetists/orthotists, radiographers, speech and language therapists
- [Nursing and Midwifery Council \(NMC\)](#) -regulates nurses and midwives
- [Pharmaceutical Society of Northern Ireland \(PSNI\)](#) -regulates pharmacists in Northern Ireland
- [Royal Pharmaceutical Society of Great Britain \(RPSGB\)](#) -regulates pharmacists in England, Wales and Scotland.

CHRE has a Council of 19 members, including nominees from each of the regulatory bodies regulating healthcare professionals and ten lay members.

CHRE is a UK-wide body and is independent of Government. It reports annually to Parliament.

More information about CHRE is available at: www.chre.org.uk

What is the remit of the CHRE?

CRHP (now the CHRE) was established in April 2003 with the following remit

- to promote the interests of the public and patients in relation to regulation of the healthcare professions
- to promote best practice in the regulation of the healthcare professions
- to develop principles for good professionally-led regulation
- to promote co-operation between regulatory bodies and other organisations.

Why is CHRE relevant to Optometrists?

Because it can challenge the findings of the GOC by referring them to the High Court.

- A decision of a regulatory body finding a practitioner not guilty of serious professional misconduct is a “relevant decision” which can be referred to court by CHRE. This effectively means that CHRE can challenge “not guilty” findings as well as unduly lenient sanctions.
- The existence of other complaints to a regulatory body or proceedings by a regulatory body will not prevent CHRE from referring a “relevant decision” in respect of the same practitioner.

What affect do the laws on health and safety in the workplace have on you in practice?

The Health and Safety at Work etc. Act 1974 and The Management of Health and Safety at Work Regulations 1999

Employers are required to prepare a Statement of General Policy on Health and Safety. Where there are five or more employees it must be a written statement. It should cover hours of work, especially for younger workers, half-day holidays, bank holidays etc. Employers are required to carry out risk assessments and identify measures to ensure the health and safety of employees and others coming onto the premises i.e. providing information for employees, and training employees in safe working practice.

The Health and Safety (Consultation with Employees) Regulations 1996

Governs workplaces where employees are not represented by trade union safety representatives.

The Health and Safety (Young Persons) Regulations 1997

Specifies the employer’s duties to employees under 18 years old.

Provision and Use of Work Equipment Regulations 1992

Concerned with the provision of safe equipment and its safe use - probably more relevant in a workshop environment.

Personal Protective Equipment at Work Regulations 1992

Relates to such items as protective clothing, safety footwear, eye protection, hand protection, respirators etc. In an optometric practice, particular thought might be given to hand protection, when handling chemical substances, and eye protection, when working with any machine with moving parts or likely to eject particles.

Workplace (Health Safety and Welfare) Regulations 1992

Covers maintenance of equipment, ventilation, temperature, lighting, cleanliness and waste materials, room dimensions and space, workstations and seating, condition of floors and traffic routes, sanitary conveniences, washing facilities and clean drinking water etc.

The Control of Substances Hazardous to Health Regulations 1999 (COSHH) and the Chemicals (Hazards Information and Packaging) Regulations 1999

Under COSHH an employer must regularly review risk assessment, provide employees exposed to substances hazardous to their health with information, instructions and training.

The Electricity at Work Regulations 1989

Requires electricity systems to be safe, having been designed, installed maintained and repaired by competent persons.

Fire Precautions (Workplace) Regulations 1997

Sets out those workplaces that require a fire certificate. General safety legislation imposes a duty on an employer to provide as much information, instruction, training and supervision as is necessary to ensure the safety of employees.

The Health and Safety (First Aid) regulations 1991

Requires employers to provide adequate and appropriate equipment, facilities and possibly personnel to provide first aid to employees.

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

RIDDOR requires the reporting of work-related accidents, diseases and dangerous occurrences.

Employer's Liability (Compulsory Insurance) Act 1969 and the Employer's Liability (Compulsory Insurance) General (Amendment) Regulations 1994

Employers must have insurance against liability for injury or disease to an employee arising out of and in the course of work. The Employer must display a certificate of Insurance in the place/places of business.

Disability Discrimination Act 1995

An employer's duties under health and safety legislation should be undertaken so as not to discriminate against those with disabilities.

Other regulations that might be relevant include:

- Health and Safety (Display Screen Equipment) Regulations 1992
- Health and Safety Information for Employees Regulations 1989
- Health and Safety (Safety Signs and Signals) Regulations 1995
- Manual Handling Operations Regulations 1992
- Noise at Work Regulations 1989

What other regulations might affect an optometric employer?

Employment Protection (Consolidation) Act 1978

Covers duties to your employees and theirs to you. Amongst other things, it requires you to give an employee a written statement of their contract of employment within 13 weeks of starting the job. Details to include date of commencement, job title, pay, hours, holiday entitlement, grievance procedure etc.

Offices, Shops and Railways Premises Acts

This covers the provision of rest rooms, toilets, drinking water and such things as minimum temperatures. Also the obligation to provide a safe well ventilated, well lit working environment.

Shops Act 1950.

The Sunday trading Act 1994

Sex Discrimination Act 1975

The Equal Pay Act 1970

Business Names Act 1985

What three categories of medicines exist? Write brief notes on them.

i) General Sales List (GSL) Medicines

These are products, which can be used relatively safely by members of the public without the need for supervisory conditions attached to their sale. Thus any retailer can sell such products as long as the premises used for storage are secure. There are no eye drops or ointments on the GSL. Optrex solution, however, is available from other retail sources than a Pharmacy.

ii) Pharmacy (P) medicines

The sale of these products must be supervised by a registered pharmacist from premises carrying out business as a retail pharmacy. An optometrist is allowed to supply any eye drop or ointment, which is a pharmacy medicine, if required in the course of optometric practice and where an emergency exists in the supply N.B. The

legislation has recently been amended to remove the 'emergency only' caveat for supply. An optometrist may purchase P medicines for use in the practice with no formalities, P medicines of interest to the optometrist include fluorescein papers and drops, phenylephrine, Brolene, naphazoline, antazoline etc. N.B. chloramphenicol eye drops have been reclassified from prescription-only medicine (POM) to pharmacy-only (P) for the treatment of bacterial conjunctivitis.

iii) Prescription only medicines (POM)

These are products, which are available to the public only with a medical, dental or veterinary prescription. It is recognised that drugs such as those for mydriasis, for example, should be available to the optometrist and to this end exemption from the restriction of supply has been granted. Through these exemptions, optometrists may supply a patient with certain drugs by retail sale or indirectly via a signed order to a pharmacist.

A small subsection of the POM list allows only optometric use rather than supply. To prevent such products as topical anaesthetics from being supplied to the patient for analgesia.

What legislation governs the sale and supply of drugs?

The Medicines Act 1968 and The Misuse of Drugs Act 1971 as well as a number of statutory instruments.

What legislative changes came into effect in April and July 2005 affecting optometric use of medicines?

The Medicines (Pharmacy and General Sale - Exemption) Amendment Order SI 2005 No 766

The Medicines for Human Use (Prescribing) (Miscellaneous Amendments) Order SI 2005 No 1507

The Medicines (Sale or Supply) (Miscellaneous Amendments) Regulations SI 2005 No 1520.

What changes in the rules for optometric referral have occurred recently?

The Opticians Act empowers the General Optical Council to make rules related to injury or disease of the eye. When the Act originally came into force the rules stated that optometrists were obliged to refer all injuries or diseases of the eye to a registered medical practitioner.

The rules were amended in 1999 (SI 1999/3267) to give the optometrist the discretion not to refer, if in their professional judgement there is 'no justification' or that it would be 'impractical or inexpedient' to do so.

This gave the optometrist the authority to monitor the progress of an ophthalmic condition and to tender appropriate 'advice'.

The 2005 amendment (SI 2005/1476) states that when deciding not to refer, details of 'advice or medical or clinical treatment' should be recorded in the patient record.

The other significant amendment in the 2005 rules is the authority to refer to 'a person other than a registered medical practitioner who provides and who has the appropriate qualifications or expertise to provide medical or clinical treatment for the injury or disease of the eye from which the person consulting him appears to be suffering'.

The new rules therefore allow for referral to optometrists with special interests, such as glaucoma and ARMD as well as other healthcare professionals, for example, orthoptists.

What must a signed order include?

The signed order should be written in indelible ink and should include the following information:

The optometrist's name, address and qualifications

Date of order

Name and address of patient if applicable (age if under 12)

The purpose for which the POM is to be supplied and its name, quantity, pharmaceutical form and strength

Labelling instructions, where applicable

An original signature of the optometrist

What is the difference between a contact lens specification and a prescription?

When the fitting of contact lenses is complete, the optometrist is required by law to give the patient a specification of the lenses, such that the lenses can be replicated.

(Replication of the lenses is the crucial distinguishing feature between a prescription and a specification.)

What must a contact lens specification include?

The specification must include details of the author of the specification, of the patient, of the lenses so that they can be replicated, and the dates of the completion of the fitting and of the expiry of the specification. The expiry date must be clinically justified and is to be interpreted not only the date beyond which a supply cannot be made, but also the date beyond which the existing supply cannot 'stretch'.

In deciding how long the patient can wear and be supplied with the contact lenses, the optometrist's overriding concern should be the patient's safety.

Who can supply contact Lenses?

It is a criminal offence to supply contact lenses other than by, or under the supervision of, or under the general direction of a registered medical practitioner, registered optometrist or registered optician (the latter qualified to fit and dispense contact lenses).

Legal opinion from the AOP indicates that general direction is regarded as 'less rigorous' than supervision. The AOP understands the crucial difference in the optometrist's accountability regarding supply to be between knowledge of the process of supply (general direction) and actual presence on the premises at the time of supply (supervision).

If an optometrist receives a specification and a request from a patient for the supply of contact lenses, the optometrist must only supply if the specification is still valid and unexpired. *Although it remains to be confirmed whether it is legally permissible for the optometrist to supply the patient without a specification (provided that, in the optometrist's judgement, it is clinically safe to supply),*

What recent changes to the GOC regulations affect the “fitting” of contact lenses?

Under the new GOC rules, contact lenses can only be prescribed and fitted on the basis of a sight test or eye examination which is less than two years old. It is now a criminal offence to prescribe and fit, if the period is longer than two years.

It remains a legal requirement to give the patient a copy of his/her spectacle prescription, following a sight test or an eye examination.

If, having received the prescription, the patient decides in favour of contact lenses, the optometrist can offer to fit them.

Fitting contact lenses means, in brief, determining that there are no contra-indications to contact lenses; and determining the right contact lenses for a patient. The optometrist, having assumed the responsibility of fitting the contact lenses, must take all the necessary care and attention to ensure that the lenses are suitable for the patient.

It is a criminal offence to fit contact lenses (including plano contact lenses) in the absence of a valid prescription.

Once the optometrist and patient are satisfied with the fitting of the lenses, the fitting is complete. (The College of Optometrists believes the period is usually not more than three months. The optometrist should be able to justify a period that is, exceptionally, longer for the fitting to be completed.) During the fitting period, the optometrist remains responsible for the patient. If more than one person participates in the fitting, the last person to participate in the fitting is the person responsible for the provision of the specification and for giving the patient the correct instructions on how to use the contact lenses.

When the fitting is complete, the fitter (in this case, the optometrist) must give the patient 'a signed, written specification of each lens fitted, sufficient to enable the lens to be replicated.'

In addition to having a responsibility to ensure that a patient is suitable to wear contact lenses (including planos), the fitter must also give the patient instructions on the use and care of the lenses.

The AOP advises optometrists to ask the patient to sign a consent form to indicate that the patient understands the advice and instructions about the wearing and care of the lenses. The fact of having given the patient such advice and instructions should be recorded on the patient's record.

The optometrist must judge how often he/she needs to see the patient for a contact lens check-up or eye examination thereafter. In making such a judgment, the optometrist must exercise his/her clinical discretion.

Who is responsible for a patient's contact lens aftercare?

The law requires the supplier of contact lenses to make arrangements for the person to whom the [contact] lenses are supplied 'to receive aftercare, in so far as, and for so long as, may be reasonable in his particular case.' (If the fitter is the supplier, the fitter is responsible for the aftercare.)

Although there is no legal definition of aftercare, the supplier – whether an optometrist or a remote supplier under the general direction of an optometrist – is responsible for the patient's aftercare. The term 'aftercare' as the profession has previously understood it is not now applicable in this context.

The AOP distinguishes between supply with or without an examination. The AOP takes the view that aftercare within the meaning of the statute is basic advice to the patient advising on contact lens care, the need for routine professional contact lens care and contact details for emergency care. The AOP would recommend this advice is given to the patient in writing to protect the supplying practitioner. The AOP view is consistent with the College's guidance (paragraphs 30.11 and 30.12).

An optometrist, who examines an existing contact lens wearer for the renewal of a specification and supply, will be expected to provide a higher level of professional contact lens care. Chapter 29 of the College's guidance describes this higher level of care.

N.B. To achieve this competency you have to demonstrate that you have a sound knowledge of the regulations and professional guidelines relevant to optometric practice

You do not need to provide any specific patient records to demonstrate this competency, however your Assessor may use any case records provided for other competencies to identify evidence.

Competency group 2: Assessment of Visual function/Binocular Vision anomalies

3.7 The ability to assess a patient's colour vision and to determine whether it achieves the standards required by various vocational groups.

What are the different plates in the Ishihara test called and what are they for?

Plate 1	The Introductory (demonstration) plate which is correctly seen by all patients, and is useful for identifying malingerers.
Plates 2 - 9	The Transformation or confusion plates, where one number is seen by colour normals and a different number by colour defective patients.
Plates 10 – 17	The Vanishing digit, where a number is seen by colour normals, but cannot be seen by colour detectives.
Plates 18 - 21	The Hidden digits, where a number cannot be seen by colour normals, but can be read by most colour defective patients.
Plates 22 - 25	The Diagnostic design, where two numbers one seen by protan observers, one by deutan observers. Sometimes neither are seen.
The rear plates	These duplicate the conventional Ishihara plates but using tracing rather than numbers, suitable for patients who are innumerate.

What are some of the problems with using the Ishihara test?

- Using an unsuitable light source (should be a standard illuminant source C, Macbeth Easel lamp).
- Using the Ishihara when screening for a certain occupation or vocation which requires a specified test.
- Assuming that the Ishihara test alone is a sufficient assessment of a congenital colour defect.
- Attempting to assess an acquired colour deficiency using the Ishihara.

What are the Colour vision tests acceptable for testing entry to the Police?

All the usual colour vision tests (Ishihara, City etc) are acceptable. It is possible that borderline cases will need to be assessed with the Farnsworth D15 test at a later date.

What are the Colour vision requirements for entry to the Police?

Monochromats are not acceptable. Anomalous Trichromats and Dichromats are acceptable but will need to “be aware of the deficiency and make appropriate adjustments”. These groups may be restricted to certain jobs. The use of colour correcting lenses is not acceptable.

What are the Colour vision requirements for entry to the RAF?

There are three categories of colour vision:

CP2: No errors are made using the Ishihara plates under the prescribed conditions

CP3: Errors are made on the Ishihara plates but the subject is able to correctly name the lights presented by the Holmes Wright Lantern.

CP4: Unable to pass the Holmes Wright Lantern test. NB artificial aids to colour perception e.g. Chromagen lenses are not acceptable.

Regular aircrew and Aircraft engineers require CP2, whilst a Ground engineer for the VC10 and Hercules aircraft only requires CP3.

Would this patient be able to become a Royal Naval officer?

Ishihara test

Number of plate	Score RE	Score LE	Normal	Person with Red-Green Deficiencies		Person with Total colour blindness and weakness	
1	12	12	12	12		12	
2	8	8	8	3		X	
3	6	6	6	5		X	
4	29	29	29	70		X	
5	55	57	57	35		X	
6	5	5	5	2		X	
7	3	3	3	5		X	
8	17	17	15	17		X	
9	71	71	74	21		X	
10	2	2	2	X		X	
11	6	6	6	X		X	
12	97	97	97	X		X	
13	45	45	45	X		X	
14	5	5	5	X		X	
15	7	7	7	X		X	
16	16	16	16	X		X	
17	73	73	73	X		X	
18	X	X	X	5		X	
19	X	X	X	2		X	
20	X	X	X	45		X	
21	X	X	X	73		X	
				Protan		Deutan	
				Strong	Mild	Strong	Mild
22	26	26	26	6	(2)6	2	2(6)
23	42	42	42	2	(4)2	4	4(2)
24	35	35	35	5	(3)5	3	3(5)
25	96	96	96	6	(9)6	9	9(6)

Assuming all other requirements are fulfilled, the minimum requirement for most applicants for the Royal Navy depends on the specific role. Candidates achieving correct recognition of 13 out of the first 15 plates of the Ishihara test (24-plate abridged

edition 1969) are graded CP2 and require no further testing unless they wish to be aircrew, pilots or bridge watchkeepers (these require CP1).

Officers whose critical visual task requires CP1 will also have to achieve the correct recognition of coloured lights shown through the paired apertures on the Holmes-Wright lantern at low brightness at 6 metres in complete darkness.

You may still be able to become a Royal Naval officer but with reduced specialisation opportunities with CP3 or CP4.

CP3 is the correct recognition of coloured lights shown through the paired apertures on the Holmes-Wright lantern at high brightness at 6 metres in complete darkness.

CP4 is the correct recognition of colours used in relevant trade situations, and assessed by simple test with coloured wires, resistors, stationary tabs etc.

Candidates failing to reach the minimum standards of colour perception are graded CP5.

This candidate has made partial errors on plates 5, 8 and 9 in the right eye and plates 8 and 9 in the left eye. They may have a very slight colour deficiency but it would be sensible to repeat the test to make sure they are repeatable errors. If they are repeated and there is a consistent defect it may be appropriate to warn the candidate that they may not achieve CP2 and this may limit their naval career.

N.B. To achieve this competency you have to demonstrate that you can assess a patient's colour vision using suitable colour vision tests under appropriate conditions and that you can recognise a colour vision abnormality if it is present. You will need to be able to (understand and) explain the implications of any colour vision defects with respect to vocational and lifestyle requirements to a patient.

As evidence your Assessor will expect you to provide two patient record cards for two patients where you have carried out a colour vision assessment (the results can be either normal or abnormal, if they are abnormal you need to have recorded your advice and action for that patient).

Competency group 3: Methods of Ocular examination

5.4 The ability to assess pupil reactions

5.15 An understanding of the assessment of visual function, including the use of specialist charts for distance and near vision, and the effects of lighting, contrast and glare.

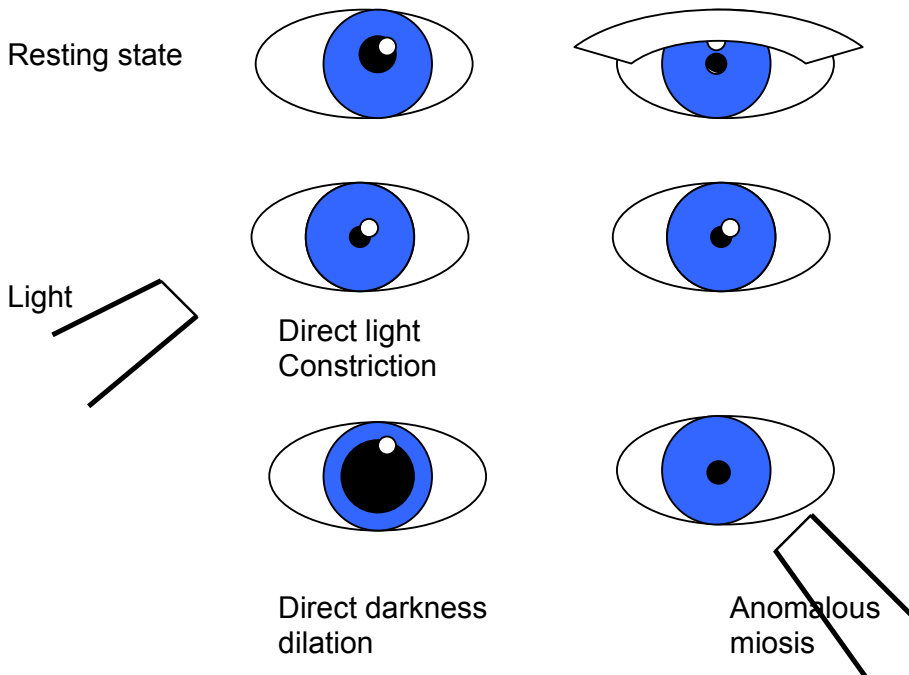
Why is it important to assess the pupil?

Evaluation of the size and mobility of the pupil provides information about the integrity and function of the iris, optic nerve, posterior visual pathways and the third and sympathetic nerves to the eye.

What should you assess, in your evaluation of the pupil?

- Static pupil size
- Direct pupillary response
- Indirect (consensual) pupillary response
- Near (accommodative) response
- Marcus-Gunn test

What is the problem with these pupil reactions?



The diagram shows a left Horner's syndrome. i.e. Pupillary miosis with ptosis affecting both upper and lower lids. There are normal light and near reflexes, and decreased sweat production (anhidrosis), on the same side of the face. There will be a dilation lag of about 5 seconds when the room light is extinguished.

Why do the clinical signs in this condition occur?

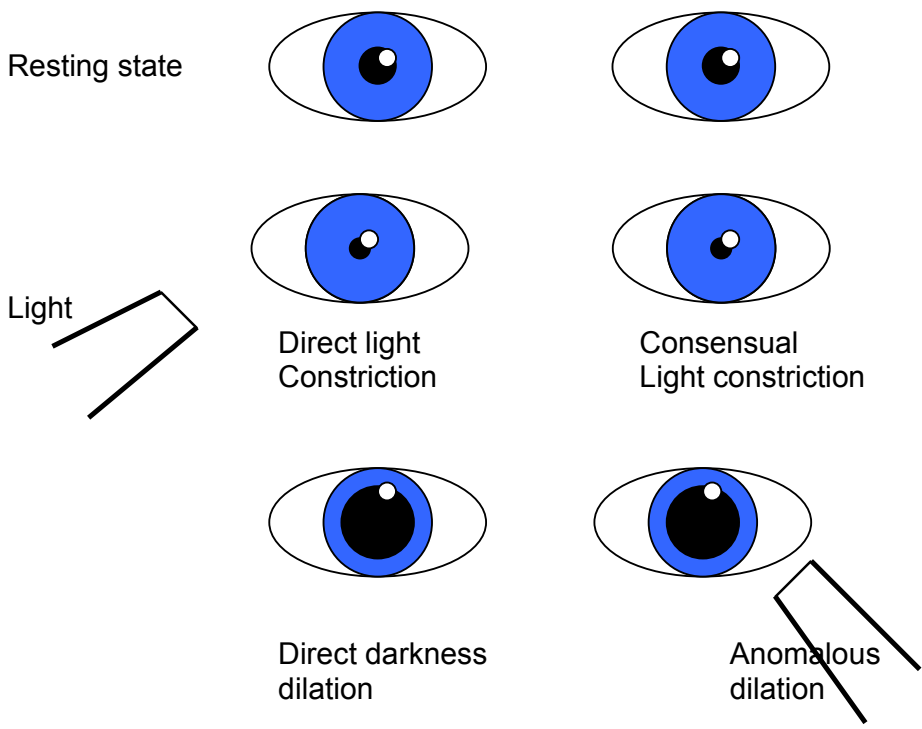
Mild ptosis is due to a weakness of Muller muscle
 Elevation of the lower eyelid is due to a weakness of the inferior tarsal muscle
 Miosis is due to the unopposed action of the sphincter pupillae

What is a relative afferent pupillary defect and how can this be detected clinically?

A relative afferent pupillary defect (RAPD) is a relative inter-eye difference in the direct pupillary constriction caused by a retinal or optic nerve lesion affecting the afferent (visual fibres) of one eye.

Clinically a RAPD can be detected by using the swinging flashlight (Marcus-Gunn) test. If there is a lesion affecting the left afferent fibres, direct illumination of the right eye will cause the right pupil to constrict (direct reaction) and the left to constrict (consensual reaction as the afferent fibres of the right eye to the midbrain are unaffected). However swinging the illumination to the left eye will induce a re-dilation of the left pupil since afferent fibres relaying the direct response are affected. If no lesion were present the left pupil would remain constricted.

The magnitude of the RAPD can be quantified using neutral density filters, although most clinicians will simply record the presence of a R or L RAPD if detected.



What are the advantages and disadvantages of the Snellen and LogMAR charts as a measure of visual acuity?

	Snellen	LogMAR
Advantages	<ul style="list-style-type: none"> • Comparatively cheap • Commonly available • Snellen fraction universally understood 	<ul style="list-style-type: none"> • The letters are of almost equal legibility. • There are the same number of letters on each row (5 on the Bailey-Lovie and EDTRS chart). • The spacing between each letter on each row is equal to one letter width. • The spacing between the rows is equal to the height of the letters in the smaller row. • The progression of letter sizes on the chart follows a geometric progression. • A score can be assigned to any level of VA which can take into account any single letters missed or read incorrectly
Disadvantages	<ul style="list-style-type: none"> • The number of letters per line varies, • (From just one letter on the 6/60 line, up to 8 - 10 letters on the lines for better acuity). • The change in letter size across lines is not systematic. • The spacings between adjacent letters and adjacent rows do not have any systematic or logical relationship to letter size. <p><i>Thus the task is not the same for each level of acuity</i></p>	<ul style="list-style-type: none"> • Decimal visual acuity and LogMAR not universally understood • Not available as an internally illuminated 6m chart <p><i>Although the EDTRS is available with an internally illuminated chart to be used at 4m – 1m.</i></p>

Why might the LogMAR chart be helpful in a low vision assessment?

Such a chart might be useful in low vision examination because: -

- a) There are several letters on all the lines. (i.e. there's a choice, not just one letter on Snellen 6/60 line)
- b) The systematic chart design means that testing at alternative distances is made easier. (i.e. with equal intervals between each line).
- c) It measures lower levels of vision than 6/60 at normal testing distances.

What does LogMAR mean?

Logarithm of the **Minimal Angle of Resolution**

How do you score a LogMAR Chart?

Each letter is worth 0.02 log units, so if a patient reads down to the 0.60 line but has missed any three letters on any of the previous lines they would receive a LogMAR score of 0.66 i.e. $0.60 + (3 \times 0.02)$. *N.B. the higher the LogMAR number score the worse the vision e.g. 0.00 is equivalent to 6/6, 1.00 is equivalent to 6/60*

What is an ETDRS chart?

This is a form of LogMAR chart developed from the “Early Treatment of Diabetic Retinopathy Study”; it is widely accepted as the gold standard Research tool for measuring vision and visual acuity.

- It has five letters per row
- Equal spacing of the rows on a log scale (the rows are separated by 0.1. log unit)
- Equal spacing of the letters on a log scale
- Individual rows balanced for letter difficulty

Different versions of the ETDRS test chart are available. The three standard versions of the ETDRS chart are R, 1 and 2.

Are Bailey-Lovie and ETDRS charts different?

Bailey-Lovie Charts and ETDRS are both LogMAR charts but they are different. Bailey-Lovie charts are designed to be used at 6, 3 and 1.5 meters and EDTRS at 4, 2 and 1 meters. EDTRS charts are available printed on a plastic sheet designed to be used in a back illuminated chart, Bailey-Lovie charts are printed on a cardboard sheet and are designed to be front illuminated. Bailey-Lovie letter sizes are rectangular e.g. for the Bailey-Lovie Chart Design, a 6/6 letter is 4 minutes of arc in height by 5 minutes of arc in width. ETDRS letters are all square, i.e. 5 by 5 minutes of arc.

If a patient had a Snellen distance acuity of 6/24 what would you expect their near (N acuity) to be?

Rule of thumb calculations (Snellen distance VA/3) would expect a near acuity of about N8 (24/3).

If a patient had a LogMAR distance acuity of 0.60 what would you expect their near LogMAR acuity to be?

LogMAR near acuities would normally be expected to be the same as the distance LogMAR acuities, so you would expect a near LogMAR acuity of 0.60. *N.B. distance LogMAR 0.6 is equivalent to 6/24 and near LogMAR 0.6 is equivalent to N8.*

What are some of the important influences on visibility?

The size of the task detail and its distance from the eye

These affect the angle subtended at the eye and hence the visual acuity required to resolve the detail. It is impossible to see an object or its detail if it subtends too small a visual angle.

Contrast

The ability to recognise detail in a task depends not merely upon its subtense but also upon the contrast, either of luminance (brightness) or colour, between the essential parts of the task and its immediate background.

Clarity of image

Some tasks may be made more difficult by blur (loss of high spatial frequency information) e.g. carbon copies of written material.

The time available for viewing the object or detail

The less time available the greater the difficulty in recognising or detecting the detail.

Why might an older patient who sees N5 in your consulting room, not see as well at home?

Visual performance is related to age and illumination.

Class of task	Age 40	Age 60
Safe movement	100 lux	200 lux
General work	200 lux	400 lux
Reading/Writing	400 lux	800 lux
Sewing/Drawing	600 lux	1200 lux
Sewing (Dark material)	900 lux	1800 lux

What advice could you offer to improve their visual performance?

You could use a Visibility indicator; this is a small card, which has 21 squares of varying degrees of contrast. The performance in the consulting room is noted and then this level is attempted at home. If the illumination is inadequate then an increase in illumination can be considered. This may be achieved by the use of local lighting, control of glare and or / redecoration in lighter colours. However larger improvements can be achieved by changing the task i.e. increasing the size and contrast, than by increasing the illuminance.

This is particularly important for the elderly, in that although high levels of illuminance are usually essential, a large detail size (produced by magnification where necessary) or by using large print books, has a greater effect on visibility.

Why might a Contrast sensitivity test be useful in your examination?

Contrast sensitivity (CS) provides information about a patient's vision additional to that provided by visual acuity. Some patients can have normal visual acuity and reduced CS at low spatial frequencies, e.g. patients with lens opacities, optic neuritis and multiple sclerosis, Parkinson's disease, papilloedema, POAG, diabetic retinopathy and compressive lesions of the visual pathways. CS can therefore be used to help screen for visual pathway disorders and to explain symptoms of poor vision in a patient with good visual acuity. When used in combination with VA, CS can be used to help explain symptoms of poor or deteriorating vision and help to justify referral of a cataract patient with reasonable VA. Reduced CS can also explain a poor response to an optical aid by a low vision patient.

How would you set up a Pelli-Robson letter CS test?

Illuminate the chart with uniform luminance between 60 and 120cdm⁻², avoiding specular reflections from the chart surface.

Test at 1 m

Test monocularly with optimal refraction.

What results would you expect for?

i) Patients less than 20 years old?

For patients less than 20 years old monocular CS should be 1.65 log units and above.

ii) Patients between 20 and 50 years old?

For patients between 20 and 50 years old, monocular CS should be 1.80 log units and above.

iii) Patients older than 50?

For patients older than 50 years, monocular CS should be 1.65 log units and above.

If the monocular scores are equal the binocular score should be 0.15 log units higher (binocular summation).

What other Contrast sensitivity tests are available?

- Regan - LogMAR letter chart
- Arden grating - sine wave gratings
- Vistech (Vision Contrast Test System) - sine wave gratings

What is glare?

Glare is defined as "discomfort or impairment of vision when parts of the visual field are excessively bright in relation to the surroundings" or "the effect of a light source within the field of view that is significantly brighter than the average luminance to which the eye is adapted". Glare is usually divided into two categories. The most common is discomfort glare where vision is not noticeably affected, but where coping with the

brightness differences becomes tiring. The second form is referred to as disability glare, because it disables vision. Whereas discomfort glare may go unnoticed for a time there is no danger that disability glare will be ignored. For this reason it is seldom a problem with electric light and most often results from uncontrolled sunlight. This can be further divided into direct, reflected, adaptive or successive. The CIBS quantify glare using the limiting glare index and a mathematical value referred to as the glare constant.

In general glare is dependent upon several factors: The Luminance and the intensity of the glare source. The angle of glare source relative to the line of sight. The area of the glare source. Reduction / control can be practically achieved by careful installation of lighting (either diffuse / indirect illumination, recessed or directional luminaires) and careful screening of other glare sources (i.e. windows) and decoration. In extreme cases, the text on the VDU screen is obliterated by the reflection from a window.

Write brief notes on tungsten and fluorescent lamps, how do they work and what properties do they have?

Tungsten: These operate by heating a coiled tungsten filament to incandescence in an inert gas (nitrogen or argon). This produces a continuous spectral output.

Fluorescent lamps: These operate by passing an electric current through vapour. A low-pressure mercury discharge light converts half the electrical energy into ultraviolet light. This is then used to excite a layer of crystals on the inner surface of the tube. The output is seen as a series of spectral peaks instead of a continuous spectrum. This can be varied by the composition of the phosphors and vapours that fill the tube.

This table represents the two principle types of lamp used: -

Property	Tungsten	Fluorescent
Output	Incandescent	Discharge
Efficacy	8-18	35-80
Correlated colour temperature	2800-3100	3000-6500

As a rule of thumb the higher the correlated colour temperature then the better the colour rendering. In addition the lamp will appear colder.

Efficacy: Tungsten has a very poor efficiency - most of the light is lost in the form of heat. Fluorescent is more efficient - but this is variable dependent upon the type of lamp.

Definitions on Colour Rendering / CCT / Colour Appearance (from the CIBS Code)

Colour Rendering: A general expression for the appearance of surface colours when illuminated by light from a given source compared, consciously or unconsciously, with their appearance under light from some reference source. "Good colour rendering" implies similarity of appearance to that under an acceptable light source such as daylight.

Correlated Colour Temperature: The temperature of a full radiator which emits radiation having a chromaticity nearest to the light source being considered, e.g., the colour of a full radiator at 3500K is the nearest match to that of a White tubular fluorescent lamp.

Colour Appearance & Apparent Colour of a light source, subjectively the hue of the source or of a white surface illuminated by the source, the degree of warmth associated with the source. Lamps of low correlated colour temperature are usually described as having a warm apparent colour and lamps of a high correlated colour temperature are usually described as having a cold apparent colour.

N.B. To achieve these competencies you have to demonstrate to your Assessor that you can assess the direct, consensual and near pupil reflexes of a patient; choose the appropriate instruments for examining the pupil and demonstrate the correct way of using them; that you can provide a clear explanation to the patient of the purpose and nature of the pupil investigations that you are carrying out; that you can maintain the patient's safety and comfort and that you can provide a written record of the pupil responses you have examined in a clear and logical manner.

You need to be able to demonstrate that you understand the effects of lighting, contrast and glare on a patient's visual function and that you understand the advantages and disadvantages of a range of specialist charts (LogMAR and Contrast sensitivity) for the assessment of visual function.

No patient records are required to demonstrate these competencies.

Competency group 4: Dispensing and Optical appliances

4.2 The ability to measure and verify optical appliances, taking into account relevant standards

Which British standard relates to the Specification for tolerances on optical properties of mounted spectacle lenses?

BS 2738-1:1998

Where can you find this information?

It should be available as a hardcopy in your practice if not it can be accessed through the College of Optometrists Library or directly from the British Standards website (for a fee).

Are these bifocal spectacles within British standards tolerances?

Rx:	R +2.25/-2.25 x 85	Add +2.00	optical centres	distance 66 mm
	L +3.00/ -2.50 x 90	Add +2.00		near 62 mm

> 20.00	±0.37	±0.25	±0.25	±0.37	±0.37
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Tolerances on the direction of the cylinder axis are:

Cylindrical Power Dioptres	Tolerances on the cylinder axis Degrees
≤ 0.50	±7
> 0.50 and ≤ 0.75	±5
> 0.75 and ≤ 1.50	±3
> 1.50	±2

Tolerances on the addition power for multifocal and progressive lenses are:

Value of the addition power	Tolerance
≤ 4.00	±0.12
> 4.00	±0.18

Centration tolerances are:

Meridional lens powers D	Horizontal tolerance	Vertical tolerance
Both lenses: power < [2.00]	0.25 Δ and 2.0 mm displacement	0.25 Δ and 1.0 mm total displacement
Both lenses: power ≥ [2.00]	2.0 mm total displacement	1.0 mm total displacement
One lens < [2.00] and One lens ≥ [2.00]	0.12 Δ and 2.0 mm displacement	0.12 D and 1.0 mm total displacement

N.B. to achieve this competency you have to demonstrate to your Assessor that you can correctly verify a spectacle prescription against relevant tolerances.

Competency group 5: Contact lenses

5.8 The ability to use instruments to measure corneal curvature.

7.1 (part) The ability to insert and remove soft contact lenses and instruct patients in these procedures.

7.4 The ability to advise on contact lens materials and care regimes.

What instructions would you give a patient on how to insert and remove their soft contact lenses?

These are sample sets of instructions used in practice, you may have your own procedures but they should essentially cover the points discussed below.

Before handling your lenses **ALWAYS ENSURE THAT YOU HAVE THOROUGHLY WASHED YOUR HANDS** and that they are free of creams, perfumes, nicotine, etc.

It is advisable to handle the lenses over a flat clean surface to avoid losing or damaging them. It is sensible to avoid handling the edges of your lenses as these can be particularly fragile. Try to ensure that your fingernails do not come into contact with the lenses as they can damage the lens surface and try not to unnecessarily bend or squeeze the lenses between your fingers. If you drop a lens on the floor stay still and find it before you move as lenses do not usually survive being stepped on! Always rinse your lenses with saline if you have dropped them to clean of any dust or debris the lens may have collected.

INSERTING YOUR LENSES

Remove one lens from its side of the case. The lens should be placed on the tip of the forefinger of one hand (usually the left hand for the left eye and the right hand for the right eye). Before insertion, it is important to check that the lens is not 'inside out'. With the lens on your fingertip, concave surface uppermost, observe the lens profile. If the surface forms a smooth and continuous curve the lens is the correct way around. If the surface bends out slightly at the edges then it is 'inside out' and should be gently turned inside out again so that it is the right way around. After confirming the lens is the right way around, keeping the head still, gently look down and pull back the edge of the upper lid firmly using a finger from your other hand. The lid should be gripped at the eyelashes to prevent a natural instinct to blink during insertion. Looking straight ahead into the mirror (with time and practice you may well be able to manage without a mirror) and pull down the edge of the lower lid with the second finger of the hand holding the lens. Slowly, and gently and carefully, place the lens onto the cornea (the clear window at the front of your eye). Take the forefinger away from the eye and release the lower lid and then the upper lid. Alternatively you may prefer to tip your chin inwards and place the lens on the white of the eye immediately beneath the coloured part of the eye. Having done so, gently release the lid and after a blink the lens should centre correctly onto the cornea. If not, close your eyes and gently massage the lens through the eyelid onto the cornea. Repeat this procedure for the other eye.

REMOVING YOUR LENSES

There are two methods for removing your lenses, you may prefer one but it is useful to practice both.

METHOD 1

First ensure the lens is centred over the cornea then tipping your chin inwards, pull down the edge of the lower lid with the fingers of one hand. Gently slide the lens onto the white part of the eye with the forefinger of the other hand and then gently, but carefully, grasp the lens between the forefinger and thumb, and remove the lens from the eye. The lens needs to be grasped firmly between the flat of the forefinger and thumb not between the fingernails.

METHOD 2

As before, ensure the lens is centred over the cornea. Holding the upper and lower lids apart as described under lens insertion. For the right eye, turn your head to the right and look over your nose into the mirror. Slide the lens off the cornea, with the forefinger of the right hand, towards the ear and onto the white part of the eye, Grasp the lens between forefinger and thumb, and remove the lens as before. Repeat for the left eye but this time turn your head to the left.

What are the advantages of hydrogen peroxide based systems?

- No preservatives therefore patient sensitivity reactions are unlikely
- Efficient method of disinfecting will kill Acanthamoeba cysts in an overnight soak
- Enhances cleaning, bleaching effect

- A new contact lens case is provided for the patient with most packs
- May dissolve protein tablets in solution
- Less risk of red eye reaction with extended wear

What are the disadvantages of hydrogen peroxide based systems?

- The peroxide must be neutralised
- Effective neutralizing is sometimes lengthy
- Complicated and therefore not user friendly
- Possibility of patient error, resulting in mild chemical burn to eye
- High water content materials may deteriorate with prolonged storage in hydrogen peroxide
- Bulky for travel
- Expensive

What is Dymed?

Dymed is the proprietary name for polyhexanide (polyaminopropyl biguanide or polyhexamethylene biguanide) a high molecular weight preservative.

What is Polyquad?

Polyquad (polyquaternium 1) is a polyquat used as a high molecular weight preservative.

How do Dymed and Polyquad work?

Both work in a similar but not identical way. They both bind to exposed negatively charged phospholipid groups in the outer bacterial plasma membrane. This results in cellular lysis as the biological properties of the cell membrane are destroyed. They are both giant molecules and bind to several phospholipid groups simultaneously. This is the key to effective disinfections at low concentrations. In the case of polyquad there are 40 cationic groups positioned at regular intervals along the molecules chain like structure. The chain can orientate so that these groups target several negative phospholipid groups at the same time. Dymed has less active groups than polyquad having only 10 or 12 active biguanide groups per molecule. However because the spacing between these active groups is more similar to the spacing between phospholipid groups on the cell membrane a similar number of phospholipid groups are targeted and it is just as effective. This simultaneous binding of the active groups with multiple phospholipid groups on the cell membranes allows low concentrations of the preservative to be very effective. Dymed is used in concentrations of 0.00005-0.0001%; Polyquad is used in concentrations of 0.001%.

What are the advantages of multipurpose solutions for soft lenses?

- User friendly and therefore enhancing compliance

- Solution cleans rinses and disinfects. No separate saline or cleaner required (except Optifree, which has a separate cleaner)
- Continuously disinfect lenses for at least 30 days
- Low toxicity to the cornea
- Preservatives used exhibit low binding affinity for hydrogels therefore patient sensitivity reactions are unlikely
- A new contact lens case is provided for the patient with most packs
- May dissolve protein tablets in solution
- The preservatives used have a large molecular size and therefore prevented from entering the contact lens matrix. This reduces the possibility of sensitivity reactions or lens discoloration

Which multipurpose soft contact lens solutions have been withdrawn in the last five years and why?

Bausch & Lomb's ReNu MoistureLoc® has a worldwide product recall in May 2006. An increase in ocular Fusarium infections had occurred in Hong Kong, Singapore and the US. A root cause for these infections has not been found, but a disproportionate number of those infected used ReNu MoistureLoc®. Testing has demonstrated that ReNu MoistureLoc does not contain Fusarium, but is less effective at combating it than expected under certain situations where the instructions for use were not followed, such as leaving the top off the bottle, topping up solution in contact lens case, etc.

COMPLETE® MoisturePLUS™ from Advanced Medical Optics (AMO) also had a worldwide product recall in June 2007 as it is suspected that this product is associated with an increased incidence of *Acanthamoeba* keratitis.

What are the similarities and differences between ReNu, OPTI-FREE Express and COMPLETE MPS Easy Rub?

OPTI-FREE Express replaced the OPTI-FREE solution that had differed from other MPS as it was sold as a lens care system with a separate daily cleaner, OPTI-CLEAN. The preservative used in both OPTI-FREE AND OPTI-CLEAN was 0.0011 % Polyquad (Polyquaternium 1). Opti-Free did not contain a surfactant and therefore needed to be used with OPTI-CLEAN. This contained high molecular weight polymeric beads, which removed deposits more effectively from the CL without damaging the surface.

OPTI-FREE Express, COMPLETE MPS Easy Rub and ReNu - All these solutions now comprise a single solution with a surfactant incorporated into the solution. They can therefore be considered as true multifunction solutions.

OPTI-FREE Express is manufactured by Alcon and contains 0.001% Polyquad (Polidronium chloride) and Myristamidopropyl dimethylamine 0.0005% and the surfactant Poloxamine. OPTI-FREE also contains EDTA and a citric acid buffer, which maintain the pH around 7.0. OPTI-FREE Express is marketed as a **No rub** care regime.

ReNu is manufactured by Bausch and Lomb and contains 0.00005% Dymed (polyhexanide or polyheamethylene biguanide) and the surfactant Poloxamine. These are compounded with EDTA (0.1 %) and the buffer sodium borate, which maintain pH around 7.3. ReNu recommends rubbing and rinsing as part of the care regime.

COMPLETE® MPS Easy Rub™ is manufactured by Advanced Medical Optics and contains 0.0001% Trischem (polyhexamethylene biguanide) and the surfactant Poloxamer 0.05%. These are compounded with the chelating agent EDTA (0.02%) and a buffer, Trometalol, which maintains the pH around 7.6. COMPLETE MPS Easy Rub as its name suggests recommend a rubbing and rinsing action as part of the care regime.

What are some of the advantages and disadvantages of one–position and two-position keratometers?

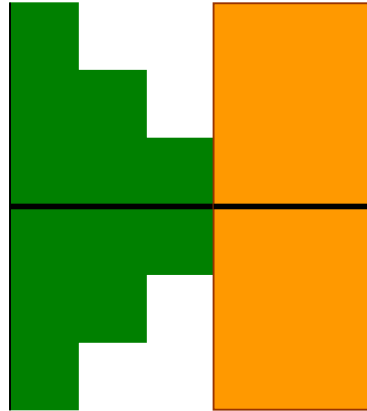
	One-position	Two-position
Advantages	Quicker to use	More accurate due to longer working distance
Disadvantages	<p>Assumes the principal meridians lie exactly at 90° to each other</p> <p>Shorter working distance can lead to larger measurement errors</p> <p>Vertical mire may not be in the same focal plane as the horizontal mire in very toric corneas</p>	<p>Measurement inaccuracy can occur with very high or low Radii</p> <p>Require second adjustment to measure the second principal meridian</p>

Give examples of both?

One position: Bausch and Lomb

Two position: Javal Schiotz

What do the Javal Schiotz mires look like when they are aligned?



The green mire should be just touching the orange mire as above.

What is this keratometer?



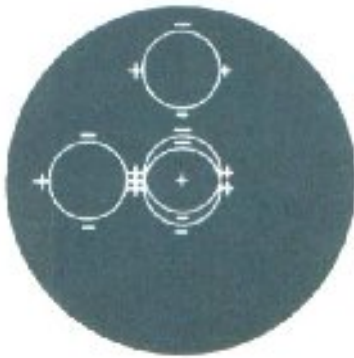
This is a Javal Schiotz keratometer. Note the rotation knob on the top, the mires along the radius scale and the mire adjustment on the silver knob at the bottom.

What is the radius and axis measured here?

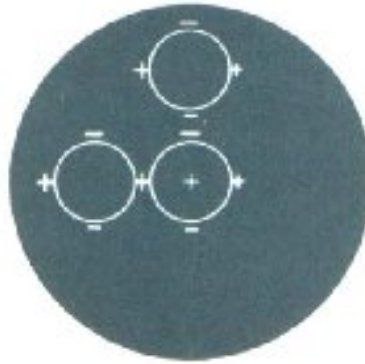


The radius is 7.1 mm axis 180 degrees (*the axis is measured from the double axis marker*).

What do these Bausch and Lomb mires show?



1.



2.



3.

1. The instrument is slightly out of focus
2. The instrument is in focus and the horizontal meridian is coincided by rotating the horizontal knob and the vertical meridian is to be coincided by rotating the vertical knob
3. To coincide the mires, the instrument needs to be tilted correctly at the cylinder axis

N.B. To achieve these competencies you need to demonstrate to your Assessor that you can measure and record a patient's corneal curvature using a keratometer; that you can demonstrate safe insertion and removal of soft contact lenses and that you can demonstrate suitable hygiene procedures during these processes.

You will need to demonstrate keratometry and insertion and removal of a soft contact lens on a real "patient".

You will need to provide patient records showing a range of insertion and removal training that you have done including training at least one rigid gas permeable contact lens patient and at least one soft contact lens patient in insertion and removal technique.

Competency group 6: Ocular Disease

6.4 An understanding of risk factors for common ocular conditions.

6.16 An understanding of the role of optometrists in shared care schemes.

What does COAG stand for?

Chronic open angle glaucoma

What are the risk factors associated with developing COAG?

Several factors have been associated with increased risk of developing COAG in the general population. These include:

1. INTRA OCULAR PRESSURE

- IOP > 21 mmHg suspicious
- IOP >25 mmHg pathological (after Goldmann)
- A difference between eyes of > 3 -4 mmHg is suspicious
- A diurnal variation of > 5 mmHg is suspicious. (Normally higher AM, lower PM)
- Tonometry at different times (phasing) is useful in borderline cases

2. OPTIC DISC CHANGES

- C/D ratio > 0.3 suspicious
- C/D ratio > 0.5? Pathological
- Vertically oval cup
- C/D ratio >0.2 difference between eyes
- Disc pallor (peripapillary halo in 20%)
- Nasal displacement of vessels
- Notching of cup
- Haemorrhages (splinter)
- Lamina cribrosa changes

3. FIELD DEFECTS

Treat all with suspicion.

4. FAMILY HISTORY

10% incidence with 1st degree relatives.

5. AGE

Rare under 35-40 years, increasing risk with increasing age

6. ETHNICITY

Increased risk in people of black Caribbean descent.

7. AMETROPIA

Increased incidence in myopes.

8. DISEASE

- Exfoliation in patients over the age of 65 years
- Increased incidence in diabetes mellitus
- Systemic hypotension.
- Rhegmatogenous retinal detachment
- Fuch's endothelial dystrophy (15%)
- Retinitis pigmentosa (3%)
- Central Artery Occlusion.
- Arterial Hypo / Hypertension.

Smoking

What does OHT stand for?

Ocular Hypertension

What are the significant risk factors for the development of COAG from OHT?

- Age (per decade)
- Mean IOP (per mmHg)
- Central corneal thickness (per 40µm thinner)
- Pattern standard deviation (per 0.2dB greater)
- Vertical cup-to-disc ratio (per 0.1 larger).

What are the risk factors for diabetic eye disease?

Risk factors include ethnic origin, smoking, hypertension, pregnancy and poor diabetic control.

What are the risk factors for Age-related macular degeneration?

Risk factors include age, heredity, environment (exposure to sunshine, diet) and smoking.

What are the risk factors for cataract?

- Age
- Heredity
- Sex- *more prevalent in women*
- Environment- *exposure to sunshine*
- Smoking
- Trauma- *including eye surgery*
- Ionising radiation
- Drug-induced
- Secondary cataract: diabetes, uveitis, angle closure glaucoma, pathological myopia,

What shared care schemes exist nationally?

Shared care schemes in existence include schemes covering:

- Cataract
- Contact Lenses
- Diabetes
- Glaucoma – *these may well be altered in line with the 2009 NICE guidance*
- Low Vision
- Paediatrics
- Referral Refinement/Direct Referral
- Therapeutics
- Welsh Eye Care Initiative (WECI)

Where could you find more information about these?

The AOP website at <http://www.assoc-optometrists.org/>
Your Local Optometric Committee or PCT

What are the National Eyecare pathways?

Model care pathways are being developed for cataract, glaucoma, low vision and ARMD, with pilot projects having been funded by the DOH.

The pathways are designed to improve the interface between primary and secondary care, with recommendations for a greater role for optometrists in the community with appropriate training, audit and clinical governance to reduce pressure on secondary care and improve the service available to patients. The design principles for the care pathways were to:

- make best use of available resources;
 - have fewer steps for the user;
 - make more effective use of professional resource; and
 - show a high standard of clinical care with good outcomes.
- more information is available on <http://www.eyecare.nhs.uk/>

What factors might a framework for LVA services need to take into account?

- a person with low vision should be able to use low vision services at any stage after low vision has been identified
- access should not be exclusively determined by clinical parameters such as visual acuity
- that the person's GP should be kept informed
- that a full eye examination by an ophthalmologist or optometrist has been carried out.
- There should be re-examination annually by an optometrist or OMP
- services should be provided as close to the person's own home as practicable
- mechanisms should ensure inter-agency referral and information exchange
- those supplying low vision aids should ensure that the user is trained in the optimal use of their vision and the LVAs
- all elements of the service should be subject to regular, professionally conducted clinical or service audit.

What problems may present to an optometrist taking part in post operative cataract assessment?

One day post operatively patients may present with:

- Diplopia
- Corneal oedema
- Raised IOP
- Aniseikonia (if lens wrong power or deliberately corrected high myopia)
- Wound leak
- Iris prolapse
- Vitreous prolapse
- Uveitis
- Vitreous haemorrhage
- Hypopyon/endophthalmitis

One week post operatively patients may present with:

- Uveitis
- Endophthalmitis
- Glaucoma
- Corneal oedema

One to eight weeks post operatively patients may present with:

- Persistent uveitis
- Cystoid macular oedema
- Lens deposits
- Raised IOP
- Persistent corneal oedema
- Refractive surprise
- Astigmatism
- Capsular phimosis – *this is fibrosis of the capsular bag which may decentre the IOL or narrow the anterior capsular aperture, compromising the vision*
- Retinal detachment or macular disciform
- Posterior capsular fibrosis

N.B. To achieve this competency you need to demonstrate to your Assessor that you understand and can take into account the risk factors for a range of common ocular diseases. You need to be able to demonstrate an awareness of current shared care schemes and co-management initiatives and the extended role of the optometrist.

No patient records are required to demonstrate this competency.