Glaucoma

WHAT IS IT?
- Glaucoma is the name for a group of eye conditions affecting vision.
- The two main types are open angle (chronic glaucoma) and acute angle closure (acute glaucoma).
- In most cases there is increased pressure in the eye (intraocular pressure) caused by a backup of fluid, which eventually damages the optic nerve. Glaucoma is more common in old age. If untreated it can cause blindness.

SYMPTOMS
- Chronic glaucoma produces few symptoms until it is well advanced. At this point, some peripheral vision will have been lost.
- Symptoms of acute glaucoma are more severe, and include:
  - Sore eyeball;
  - Red eye;
  - Opaque vision and halos when staring at light sources;
  - Enlarged pupil.
- As acute glaucoma progresses, the pain may become severe and can cause nausea and vomiting. Every attack causes further loss of vision and it is important to visit an optician immediately.

CAUSES
- To maintain pressure in the eye, a small amount of aqueous humour is produced constantly and an equal amount drains away. If drainage is blocked, pressure in the eye builds up, damaging the optic nerve.
- Open angle glaucoma is the most common form and develops with age. Loss of sight is gradual and painless. The drainage of the eye becomes less efficient and pressure gradually increases damaging the optic nerve. The nerve fibres at the sides of the eye are affected first, causing loss of peripheral vision.
- Acute angle closure glaucoma is less common. In some people the iris is too close to the drainage system and can be sucked into it, blocking it completely. As the fluid cannot drain away, pressure inside the eye increases rapidly and causes an acute closed-angle attack.
- Secondary glaucoma develops when other conditions, such as injury or inflammation, cause increased pressure in the eye.
- Congenital glaucoma is present from birth and occurs when there is an abnormality in the eye’s draining mechanism.

DIAGNOSIS
- There are four main tests for diagnosing glaucoma.
- A tonometry test uses a range of instruments to measure the intraocular pressure.
- Ophthalmoscopy magnifies the eye using an ophthalmoscope to examine the shape and colour of the optic nerve.
- If the pressure is found to be outside the normal range, or if there are abnormalities in the optic nerve, then a perimetry or a gonioscopy test will be carried out.
- Perimetry is where the individual looks straight ahead and indicates when a moving light passes her or his peripheral vision. This builds a ‘map’ of the person’s vision.
- Gonioscopy uses lenses to check if the angle where the iris meets the cornea is open or closed, showing which type of glaucoma is present.

TREATMENT
Loss of vision caused by glaucoma is irreversible. However, open angle glaucoma can be controlled. The aim is to lower intraocular pressure to prevent damage to the optic nerve.
- Most cases are treated with eye drops. These reduce production of fluid in the eye, or help it drain away more efficiently. There are many different types, including beta blockers and alpha agonists.
- Laser treatment enlarges the tiny holes in the eyes’ drainage system. This helps the aqueous humour flow out of the eye and reduces pressure.
- Surgery (trabeculectomy) is used when other treatments have proved ineffective. A small incision is made in the wall of the eye so that excess fluid can drain into the bloodstream.
- Regular eye checks for those over 40 are important in prevention.

REFERENCES