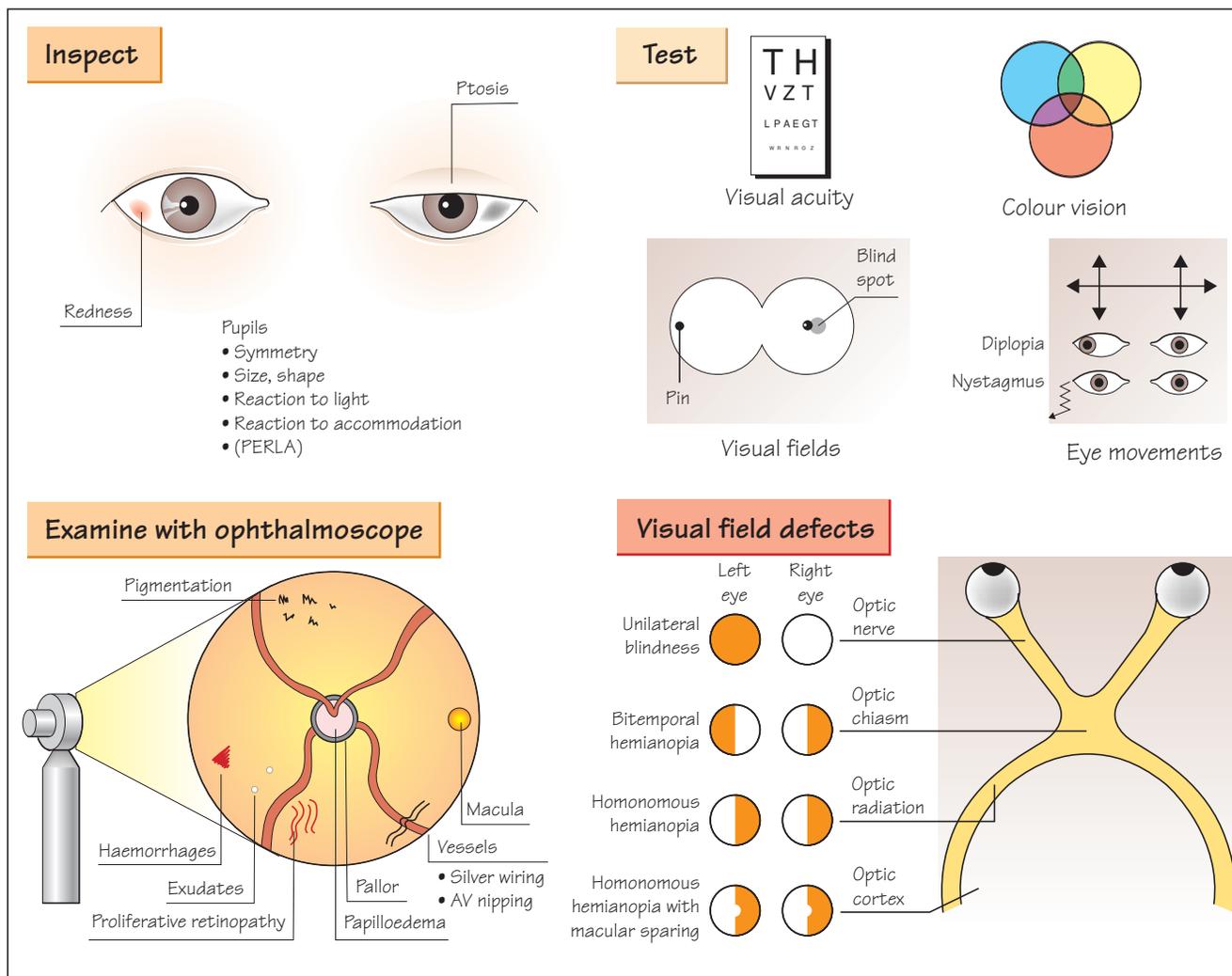


18 The visual system



History

Diseases of the eyes may present with:

- visual impairment or disturbance
- red eye
- painful eye
- double vision.

The eyes are also important windows for detecting systemic disease causing, for example, papilloedema, hypertensive or diabetic retinopathy.

Obtain a very detailed history of the nature of any visual symptom. Most important is whether one or both eyes are affected. Was the onset sudden or gradual? Are there any accompanying symptoms (ocular pain, headache, discharge, etc.)?

Past medical history

- Previous visual problems?
- Diabetes mellitus?

- Hypertension?
- Neurological disease?
- Any specific eye treatments (e.g. laser)?

Drugs

Are there any drugs the patient has taken that might cause visual symptoms or to treat ocular disease (e.g. drops for glaucoma)?

Family and social history

- Any family history of inherited visual problems (e.g. glaucoma)?
- Any family history of eye symptoms (e.g. transmission of infective conjunctivitis)?
- What is the extent of the patient's visual disability?
- Is the patient registered blind?
- Any adaptations to the home?
- Does the patient own a guide dog?

Examination

Inspect the eyes

- Any obvious abnormalities (e.g. proptosis [abnormal protrusion of the globe], redness, asymmetry, obvious nystagmus, ptosis)?
- Look at the conjunctivae, the cornea, the iris, the pupils and the eyelids. Are the pupils symmetrical?
- What size are they? Do they respond normally and equally to light and accommodation?
- Is there ptosis? Check for eyelid closure.

Test the eyes, individually

- Test visual acuity in each eye with, for example, a Snellen chart for far vision and a Jaeger chart for near vision.
- Test colour vision; for example, using Ishihara charts.
- Test visual fields with confrontation and examine for blind spot.
- Test eye movements: ask about diplopia and look for nystagmus.

Examine the eyes with an ophthalmoscope

The ophthalmoscopic examination of the eye is a vital part of the complete physical examination. It can reveal the effects of systemic conditions such as hypertension and diabetes mellitus, causes of visual dysfunction such as optic atrophy, and reveal conditions such as raised intracranial pressure by demonstrating papilloedema. The ocular complications of conditions such as diabetes mellitus may be asymptomatic until sight-threatening complications have developed; hence the importance of screening examinations.

Optimize the conditions for fundoscopy. Both patients and examiner need to be comfortable. Examine the patient in a darkened room with a good ophthalmoscope producing a bright light and, if necessary use pupillary dilatation (contraindicated only in recent head injury when serial pupillary examinations are essential or where there is a risk of acute angle closure glaucoma). If you need to dilate, warn the patient of possible photophobia and visual blurring which will prevent driving.

Ask the patient to fix their gaze on a distant object. Examine their right eye with your right eye and their left eye with your left eye.

Examine from a distance looking initially for the presence of the red reflex and, if absent, consider lens opacities such as cataracts. Then examine the optic disc (shape, colour, edge, physiological cup), the peripheries of the retina following the main vessels outwards from the disc (vessels, venous pulsation, haemorrhages, exudates, pigmentation) and, finally, the macula.

The presence of papilloedema, haemorrhages or exudates, or presentation with loss of vision, requires explanation.

A full examination with particular emphasis on the cardiovascular and neurological systems may be required.

Common, important abnormalities

1 Diabetic retinopathy:

- microaneurysms
- 'dot and blot' haemorrhages
- soft exudates
- proliferative changes
- laser treatment scars.

2 Hypertensive retinopathy:

- silver wiring
- arteriovenous nicking
- haemorrhages and exudates
- papilloedema.

3 Papilloedema:

- blurred elevated disc margin
- there may be accompanying haemorrhages
- loss of venous pulsation, sometimes tortuous vessels
- the disc may be pink (hyperaemic)
- there may be enlargement of blind spot.

4 Optic atrophy:

- pale optic discs.

5 Retinitis pigmentosa:

- retinal pigmentation.