

Exercise walk-through

Sense organs ■ 14.2

eXercise

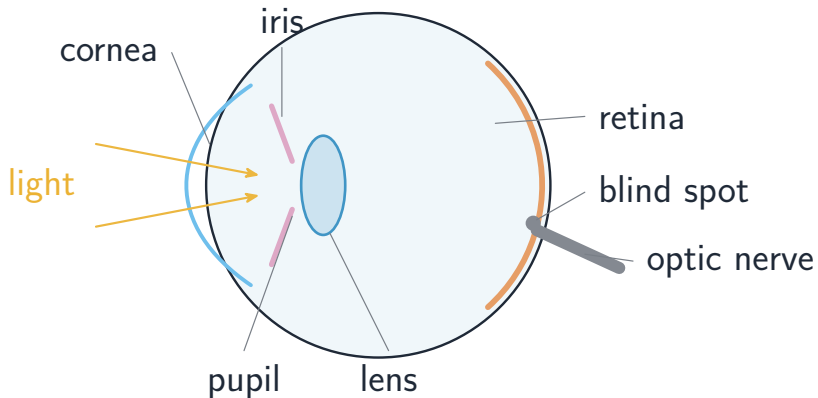
You must be able to

- name the parts of the eye and their functions
- explain the pupil reflex (antagonistic muscles)
- describe accommodation and the roles of rods and cones

Method — The eye

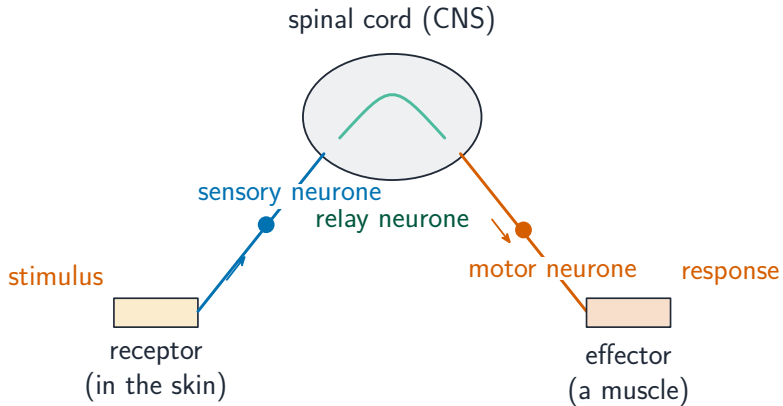
- **pupil reflex:** bright light → circular muscles contract → pupil narrows.
- **accommodation:** near object → ciliary muscles contract → lens fatter.
- **rods:** dim light (no colour); **cones:** colour, bright light.

Method — The eye



The eye in section: cornea, iris/pupil, lens, retina, optic nerve

Method — The eye



Sense organs feed the reflex arc

Practice 2.1 ■ 1 mark

State the function of the retina.

Solution 2.1

Worked steps

it contains light receptors that detect light **B1**.

Practice 2.2 ■ 1 mark

State what happens to the pupil in bright light.

Solution 2.2

Method: The eye

Worked steps

it gets smaller (narrows) **B1**.

Exam-style 3.1 ■ 1 mark

The part of the eye that focuses light onto the retina is the:

- A** iris
- B** cornea only
- C** lens
- D** optic nerve

Solution 3.1

Method: The eye

- A iris
- B cornea only
- C lens
- D optic nerve



Worked steps

C. The lens focuses light onto the retina.

Exam-style 3.2 ■ 2 marks

The pupil changes size in different light.

- (a) Explain how the pupil narrows in bright light.
- (b) State the difference between rods and cones.

Solution 3.2

Method: The eye

Worked steps

- (a) the circular muscles of the iris contract **M1**; the radial muscles relax, so the pupil narrows **A1**.
- (b) rods are sensitive in dim light but detect no colour **M1**; cones give colour vision and work best in bright light **A1**.