Vertical Section of the Eye

- **Focusing**
  - Near object: more convex; lens becomes thinner and less spherical; suspensory ligaments slacken; ciliary muscles relaxed.
  - Distant object (7 meters or more): less convex; lens becomes thicker and more spherical; suspensory ligaments become taut; ciliary muscles contracted.

- **Pupil Reflex**
  - In bright light:
    - Radial muscles in the iris contract.
    - Circular muscles in the iris relax.
    - Pupil becomes smaller, hence less light enters the eye.
  - In dim light:
    - Radial muscles in the iris relax.
    - Circular muscles in the iris contract.
    - Pupil enlarges, hence more light enters the eye.

- **Distant object (7 metres or more)**
  - Ciliary muscles relax.
  - Suspensory ligaments become taut.
  - Lens becomes thinner and less convex.

- **Near object**
  - Ciliary muscles contract.
  - Suspensory ligaments slacken.
  - Lens becomes thicker and more convex.

- **Light Sensitivity**
  - Light enters the eye:
    - Pigmented black to prevent internal reflection of light; blood vessels bring oxygen and nutrients to the eyeball.
    - Retina: light-sensitive layer containing cones concerned with colour vision in bright light and rods concerned with vision in dim light.

- **Mechanical Protection**
  - Sclera: tough white tissue that surrounds the eyeball.
  - Cornea: transparent front of the eye that allows light to enter.

- **Movement Control**
  - Rectus muscles: controls movement of the eyeball.
  - Orbital muscles: controls eye movement.

- **Blood Supply**
  - Arterial blood vessels:
    - Sphincter muscles: allows blood vessels to relax.
    - Dilator muscles: allows blood vessels to dilate.

- **Nerve Supply**
  - Optic nerve: transmits nerve impulses from eye to brain.

- **Pupil**
  - Region over optic nerve; no photoreceptors so insensitive to light.
  - Region where images are sharply focused; enables detailed, coloured vision.

- **Visual System**
  - Light-sensitive layer containing cones concerned with colour vision in bright light and rods concerned with vision in dim light.

- **Intraocular Pressure**
  - Vitreous humour: keeps eyeball firm.
  - Aqueous humour: controls amount of light entering the eye.

- **Light Reflection**
  - Iris: regulates amount of light entering the eye.
  - Lens: refracts light rays onto retina.
  - Cornea: allows light to enter the eye.

- **Muscles**
  - Ciliary muscles: control curvature of the lens.
  - Suspensory ligaments: maintain the shape of the lens.

- **Optic Nerve**
  - Transmit nerve impulses from eye to brain.