**THE EYE**

- **Pupil**: The hole in the middle of the iris, allows light to pass through and enter the eye.
- **Lens**: Transparent, flexible disc behind the iris held in place by the suspensory ligament and ciliary muscles. Refracts light to focus onto the retina.
- **Iris**: Coloured part, muscles contract/relax to adjust size of pupil & control amount of light entering the eye.
- **Cornea**: Refracts light by a fixed amount as it enters the eye. Covers front part of the eye.
- **Retina**: The lining at the back of the eye. It contains two types of light receptor cells: rods which are sensitive to dim light and black/white cones sensitive to color. These light receptors trigger electrical impulses sent to the brain via the optic nerve.

**SUSPENSORY LIGAMENT**

- **Conjunctiva**
- **Iris**
- **Pupil**
- **Cornea**
- **Ciliary muscles**
- **Suspensory ligament**
- **Lens**
- **Optic nerve**

**MEDICAL APPLICATIONS OF PHYSICS**

- **Suspensory ligaments**: Connect ciliary muscles to the lens, hold the lens in place. Suck/expand as the ciliary muscles contract or relax to adjust the thickness and curvature of the lens.
- **Medical imaging**:
  - **CT scans**: Computed tomography uses x-rays to create detailed 3D images from different angles.
  - **Ultrasound**: Useful in medical imaging, e.g., to study organs, detect cancer.

**X-RAYS**

- **Use**: Used in medical imaging, e.g., to study organs, detect cancer.
- **Properties**: Absorbed by metal and bone, transmitted by other tissues.
- **Wavelength**: Same order of magnitude as the diameter of the atom.

**ULTRASOUND**

- **Uses**: Ultrasound waves have frequencies above 20kHz and are produced by electronic systems. They are partially reflected at boundaries between two substances with different densities.

**Camera vs Eye**

- **Focal length**
- **Power of a lens**: Power in diopters = focal length in meters.
- **Correction of vision defects**:
  - **Myopia**: Short sight, caused by a too long eyeball or a too thick/mixed lens.
  - **Hyperopia**: Long sight, caused by a too short eyeball or the eye lens being unable to focus on objects.

**POTENTIAL ENERGY**

- **Power of a lens**: Power in diopters = focal length in meters.