**THE EYE**

- **Conjunctiva**: 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, and cones sensitive to dim light and black.
- **Cornea**: the transparent part of the eye, the first refracting surface.
- **Iris**: the colored part of the eye, which contracts or relaxes to adjust the size of the pupil, controlling the amount of light entering the eye.
- **Suspensory ligament**: the suspensory ligament keeps the lens in place, allowing it to be adjusted by the ciliary muscles.
- **Ciliary muscles**: the ciliary muscles contract or relax to adjust the thickness and curvature of the lens.
- **Retina**: the lining of the eye that contains photoreceptor cells.

**MEDICAL APPLICATIONS OF PHYSICS**

- **Camera vs. Eye**: Camera = lens, focus light to project camera, retina. Sensor = film or CCD.
- **Dioptric**: refraction of light by a lens or other optical system, causing light from a point object to be focused at another point.
- **Converging lens**: lens that causes light to converge, forming an image.
- **Diverging lens**: lens that causes light to diverge, forming a virtual image.

**ULTRASOUND**

- **Range of ultrasound in medicine**
  - Prenatal scanning: 2 MHz - 5 MHz
  - Detecting tumors: 3 MHz - 10 MHz
  - Medical imaging: 2 MHz - 20 MHz
  - Dental: 20 - 50 MHz

- **Uses of ultrasound**
  - High frequency focused ultrasound can cause tissue destruction and hyperthermia.
  - Ultrasound waves are not visible as they are above the audible range of sound.
  - Echography: uses ultrasound to create images of internal organs.

- **Ultrasound waves**
  - Frequency: above 20 kHz
  - Diagnostic imaging: 1 MHz - 15 MHz
  - Medical imaging: 2 MHz - 10 MHz
  - Dental imaging: 20 MHz - 50 MHz

- **Equation for ultrasound**
  - $S = \frac{dA}{dt}$