Anatomy & Physiology of the Eye

ANATOMY OF THE EYE

The eyes are suspended in bony sockets called orbits. Six extraocular muscles attach to the sclera, rotating and holding the eye in place. These movements are crucial for vision and compensate for the blind spot.

1. **Conjunctiva:** Mucous membranes lining the eyelid and eyeball. Fuses with eyelids to prevent foreign objects from getting behind the eye.
2. **Cornea:** The outer, front transparent layer. It focuses incoming light by a fixed amount.
3. **Sclera:** The opaque, tough outer white layer. Prevents light from entering except through the cornea and pupil.
4. **Iris (Colored Part):** Contains muscles that contract/relax to determine pupil size, controlling the amount of light entering the eye.
5. **Lens:** Transparent layers whose shape changes to focus on objects at varying distances. This adjustment is called **accommodation**.

Types of Eye Movements

- **Saccadic Movements:** Rapid, jerky shifts in gaze from one point to another.
- **Pursuit Movements:** Smooth movements that maintain focus on a moving object.

ORGANIZATION OF THE RETINA

Visual information is processed and propagated through the retina in a specific pathway before being sent to the brain via the optic nerve.

Visual Information Pathway

1. Photoreceptor Cells
2. Bipolar Cells
3. Retinal Ganglion Cells
4. Brain

When light enters the eye, it must pass through several cell layers in the retina before reaching the light-sensitive proteins within the photoreceptors, where it is detected.