Physiology of Vision in Human beings

The vertebrate eyes have **Photosensitive cells** called **Rods and Cones**. Rods are elongated cells mainly confined in the **periphery** of the retina. These are meant for **Dim vision** in low light and for peripheral visions. Rods are extremely light sensitive and their sensitivity is about **500 times** greater than the sensitivity of cones. Only **one photon** is required to stimulate a rod to send a signal to the brain.

The molecules of **Rhodopsin** in the rods undergo a change in shape as light is absorbed by them. Rhodopsin is the chemical that allows night-vision, and is extremely sensitive to light. When exposed to light, it immediately **bleaches** into **Retenene** and **Opsin**. It takes about 30 minutes to regenerate fully using new molecules of Retenene (Retenene is derived from **Retinol**, a form of **Vitamin A**). Most of the adaptation occurs within the first five or ten minutes in the dark. Rhodopsin is less sensitive to the **longer red wavelengths** of light. So many people use red light to preserve night vision.

Cones on the other had are pointed cells confined in the **central part** of the retina. These are meant for **Central vision**, **Bright vision** and **Colour vision**. Rods have photosensitive pigment called **Rhodopsin** and cones have **Iodopsin.**