

When viewing a near object

The (circular) **ciliary muscles contract**, reducing their circumference

They **reduce pull** on the (elastic) **suspensory ligaments**

With less force on the lens, its elasticity allows it to become wider – **decreasing** its **focal length**

Rays from the near object produce a focused image on the retina

When viewing a distant object

The (circular) **ciliary muscles relax**, increasing their circumference

The **suspensory ligaments** are **pulled tight**

The lens is stretched to become longer and thinner, **increasing** its focal length

Rays from the distant object are brought to focus image on the retina

In dim light

Light sensitive in the retina detect the light intensity

Impulse are sent along the optic (a **sensory**) nerve to the brain

The brain returns impulses along a **motor** nerve to the **radial** muscles of the iris

The radial iris muscles **contract** while the circular iris muscles **relax**

The diameter of the pupil **increases**, allowing more light to enter

In bright light

Light sensitive in the retina detect the light intensity

Impulse are sent along the optic (a **sensory**) nerve to the brain

The brain returns impulses along a **motor** nerve to the **circular** muscles of the iris

The circular iris muscles **contract** while the radial iris muscles **relax**

The diameter of the pupil (the hole in the centre) **decreases**, allowing less light to enter, decreasing the risk of damage to the retina