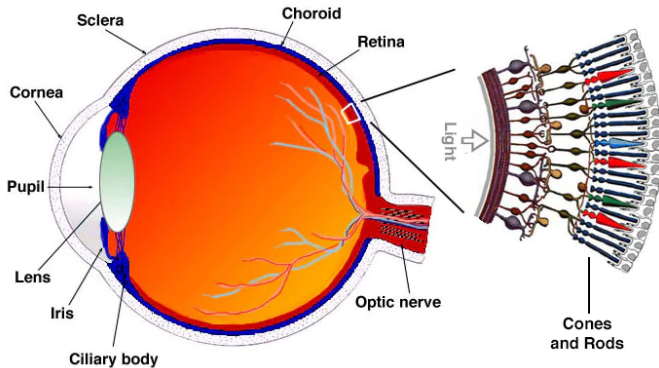


Explain the image formation in the eye. What are the differences in focusing between the ordinary cameras and the human eyes?

Michel Jean Joseph Donnet

Human Visual System



(image take on: futura-sciences.com)

Rods and Cones

- ▶ 100 millions of rods
- ▶ 6.5 millions of cones

Camera VS human eye

A huge difference is the lens:

- ▶ lens varies for human eye \Rightarrow change the focal of the lens
- ▶ lens doesn't vary for camera \Rightarrow change the position of the plane

Another difference is the brightness adaptation:

- ▶ Human eyes have a huge dynamic range $O(10^{10})$
- ▶ contrast sensitivity is different. . .

\Rightarrow the perceived brightness is very complex for the human eye !

Example of brightness complexity

Brightness vs luminance

