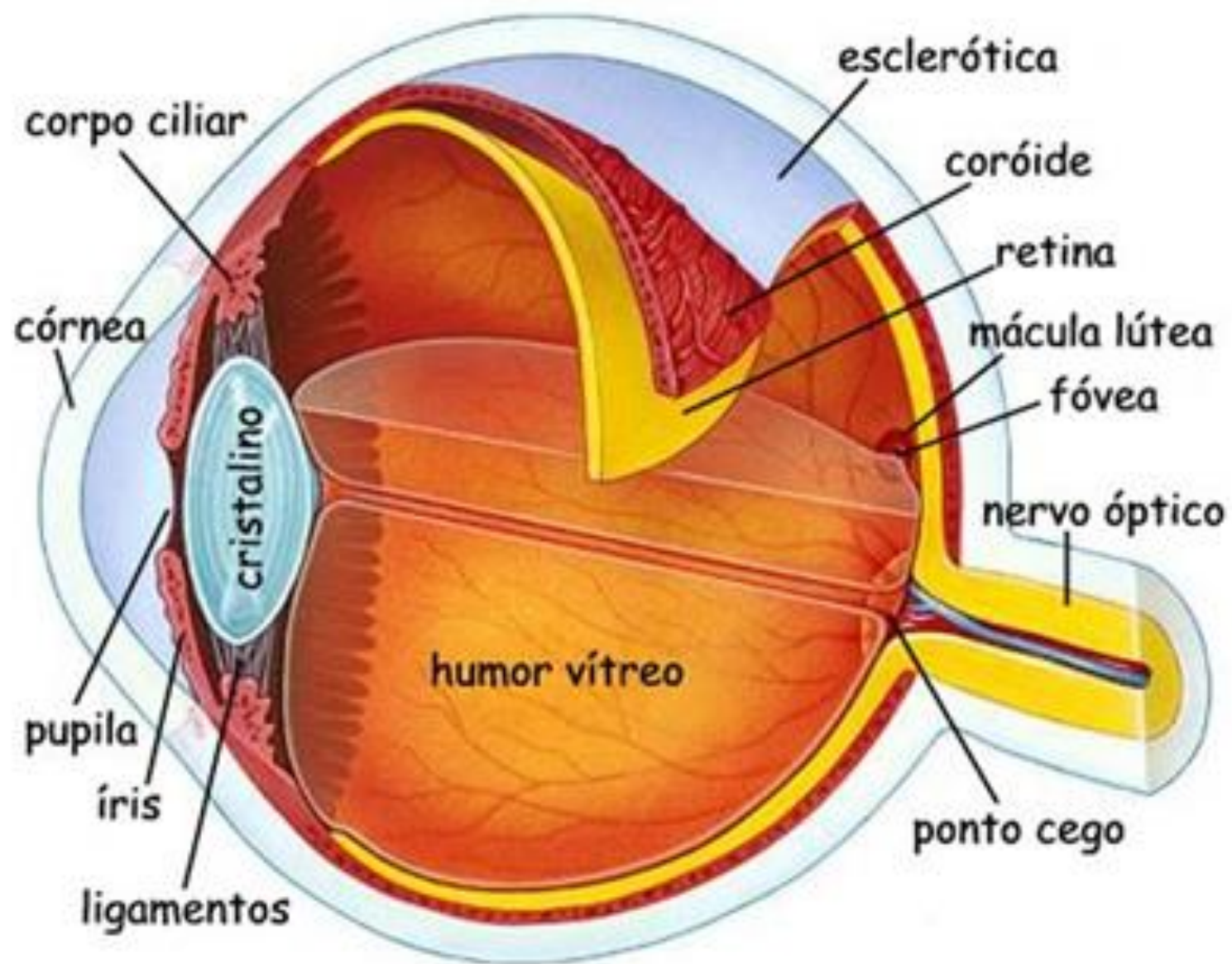


Óptica da Visão

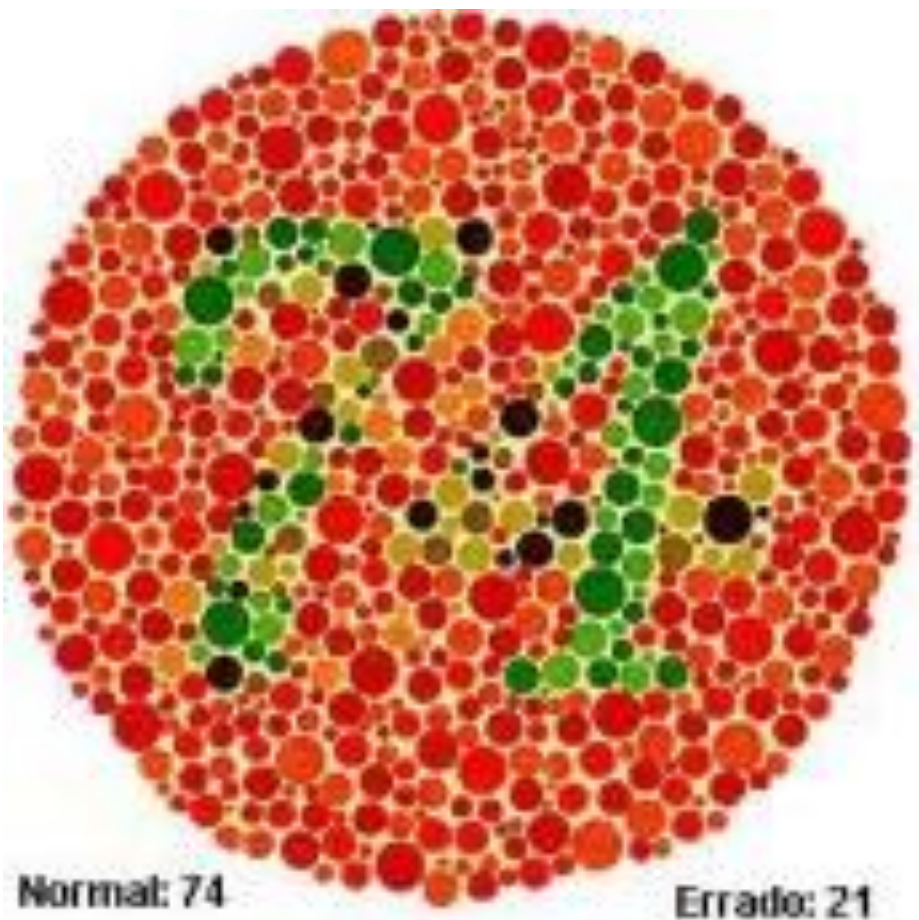
Prof. Jadoski
Física

O Olho Humano



Daltonismo

O Daltonismo é uma perturbação da visão colorida, caracterizada pela falta de reconhecimento de uma ou várias cores.



Formação de Imagens

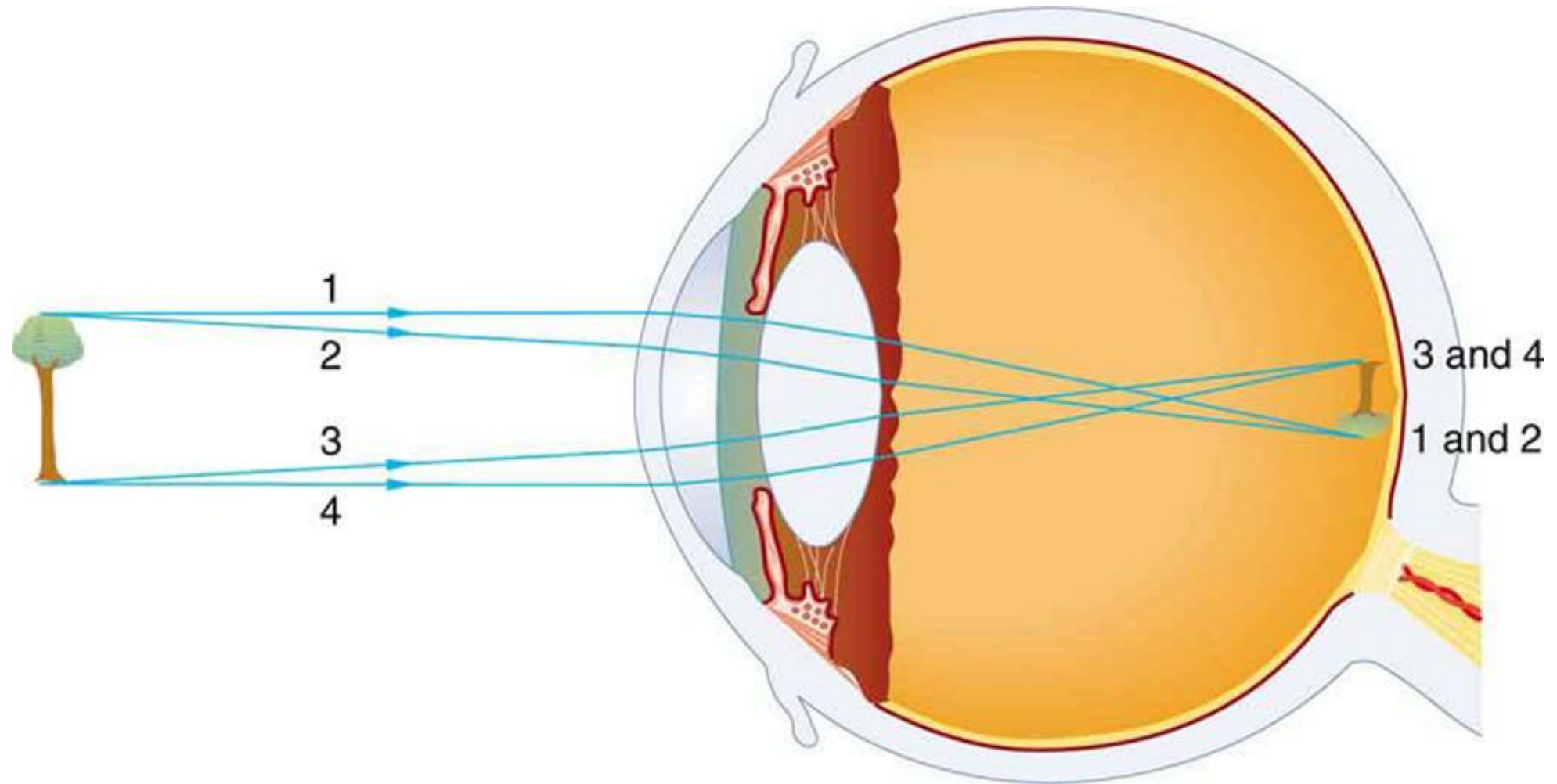


Imagem **real**, **menor** e **invertida**, formada na retina.

Adaptação Visual (Pupila)



Ambiente Pouco
Iluminado

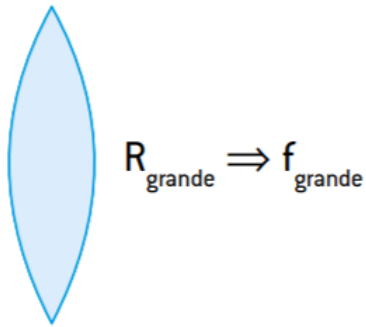


Ambiente Muito
Iluminado

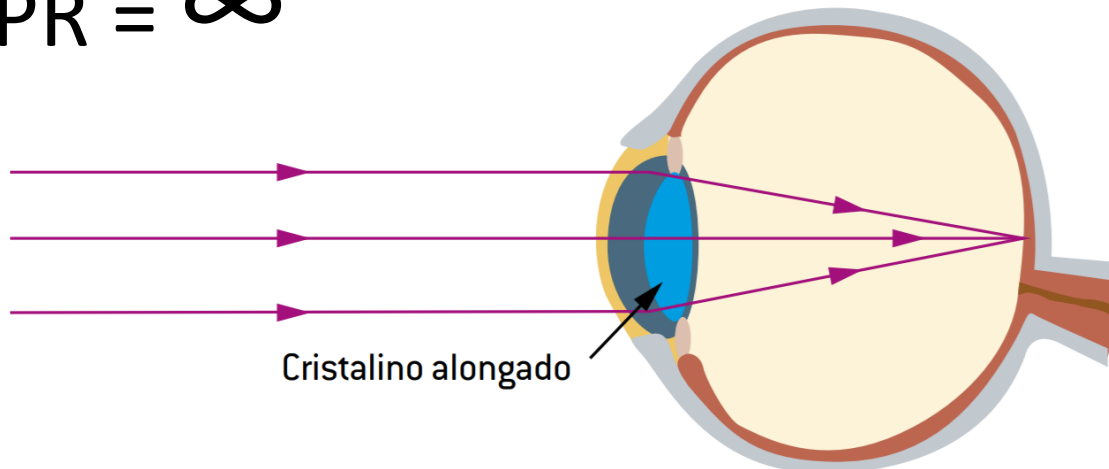
Acomodação Visual (cristalino)

B.1. Objeto afastado

$R_{\text{grande}} \Rightarrow$ cristalino relaxado = olho acomodado para ver de longe.

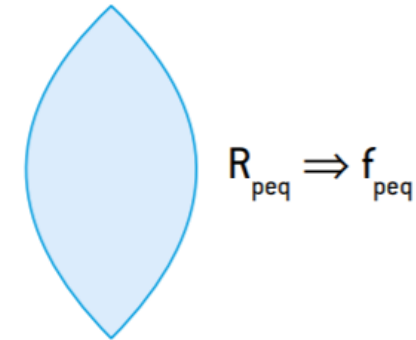


PR = ∞

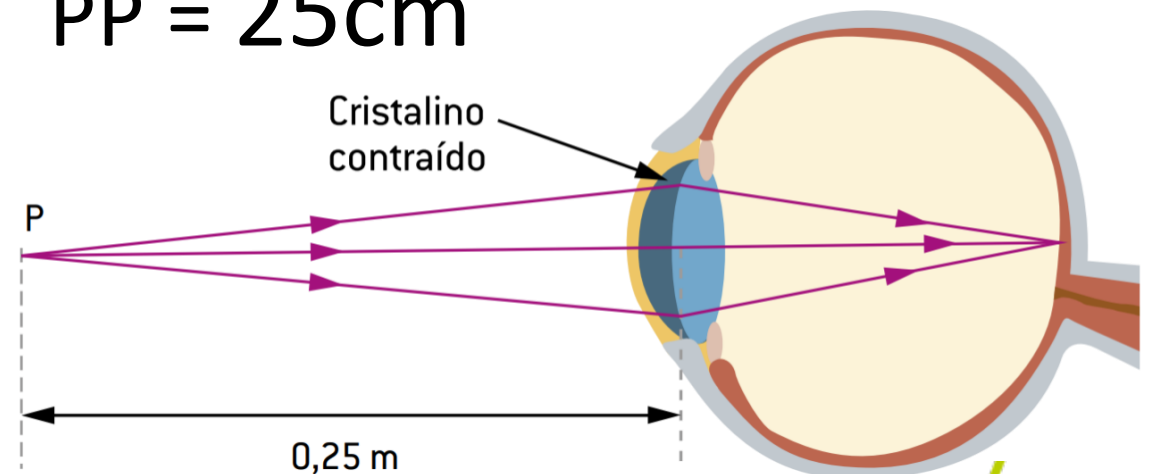


B.2. Objeto próximo

$R_{\text{pequeno}} \Rightarrow$ cristalino comprimido = olho acomodado para ver de perto.



PP = 25cm



Principais Defeitos de Visão



NORMAL



MIOPIA



HIPERMETROPIA



ASTIGMATISMO

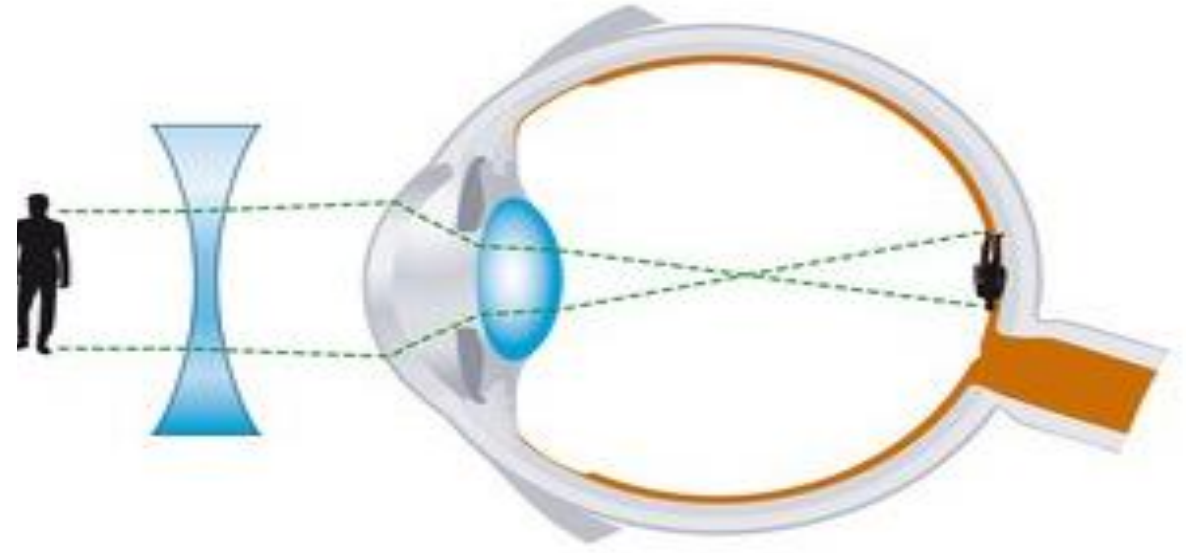
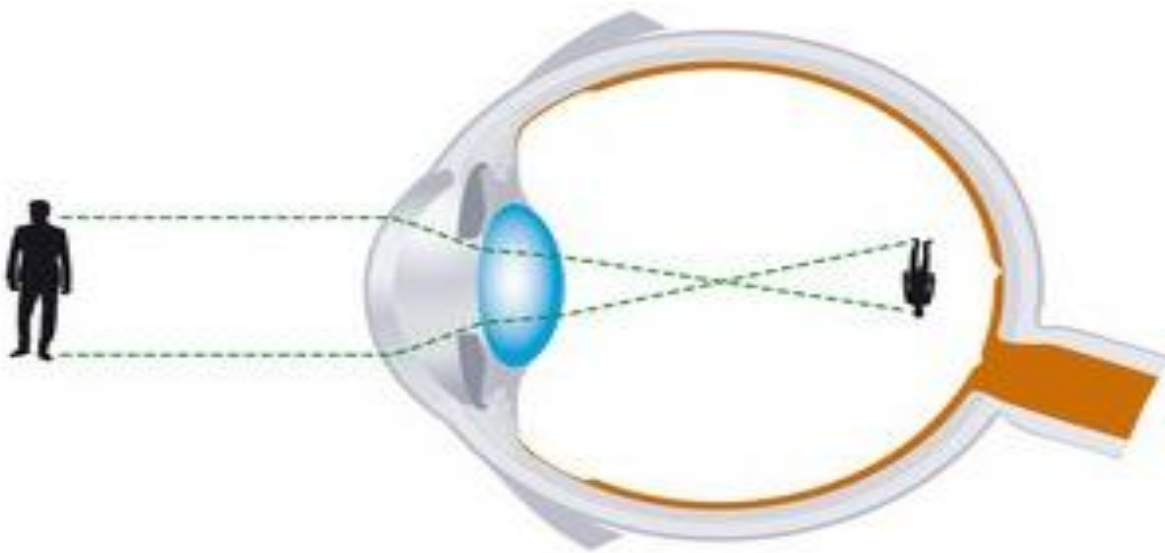
Miopia – dificuldade para longe

$$PR' \ll \infty$$

$$\frac{1}{f} = \frac{1}{p} + \frac{1}{p'}$$

$$\frac{1}{f} = \frac{1}{C} - \frac{1}{E}$$

$$\frac{1}{f} = \frac{1}{\infty} - \frac{1}{PR'}$$



$$f = -PR'$$

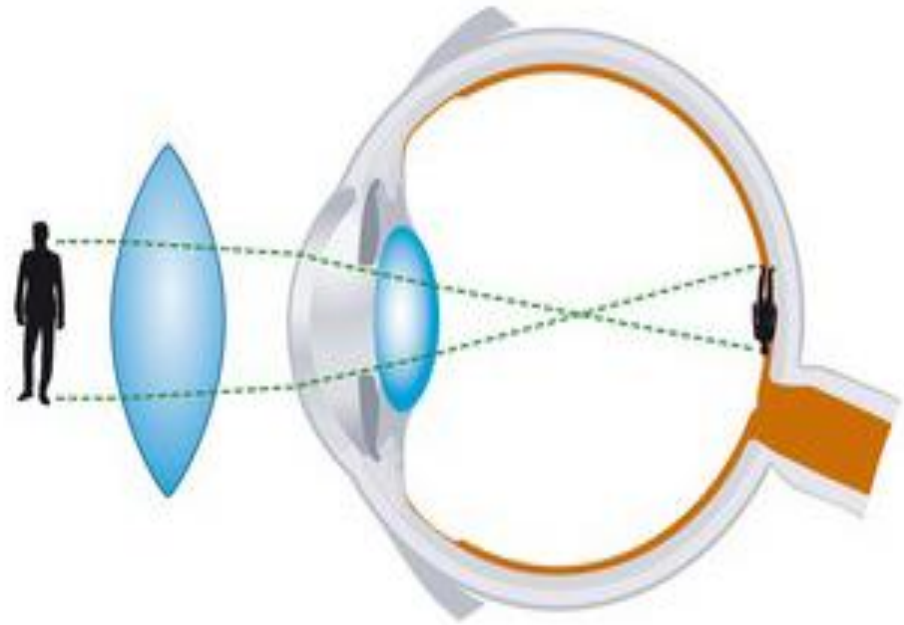
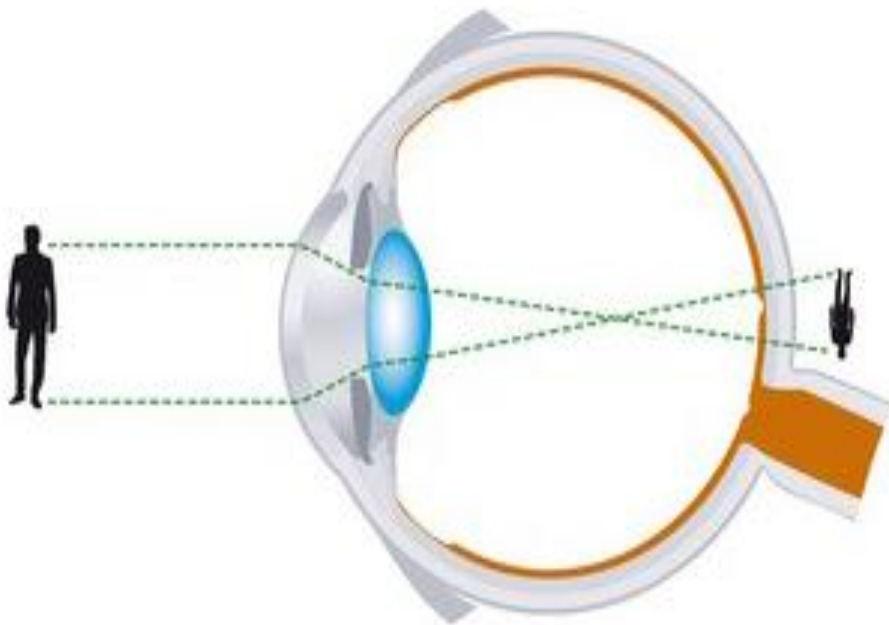
Hipermetropia – problema para perto

$PP' > 25\text{cm}$

$$\frac{1}{f} = \frac{1}{p} + \frac{1}{p'}$$

$$\frac{1}{f} = \frac{1}{C} - \frac{1}{E}$$

$$\frac{1}{f} = \frac{1}{25} - \frac{1}{PP'}$$



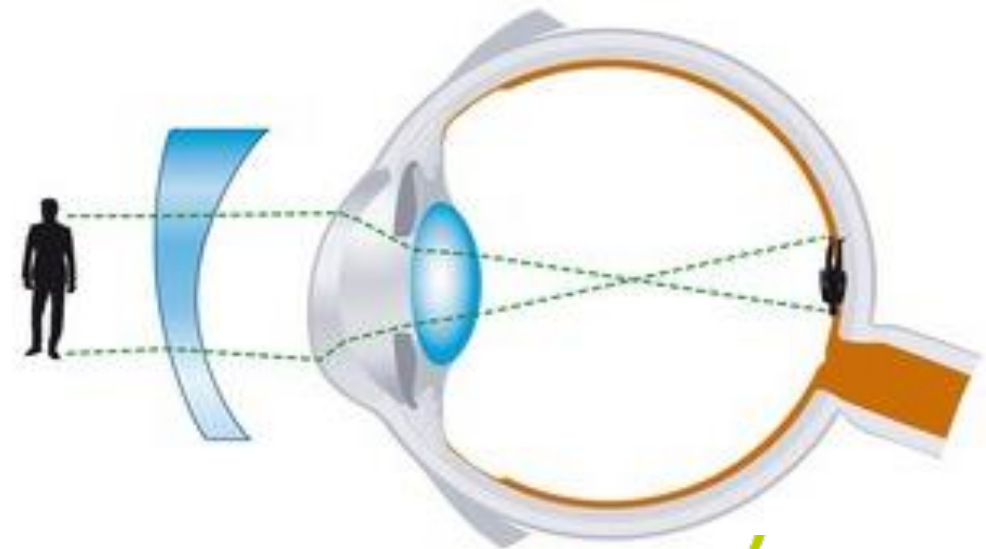
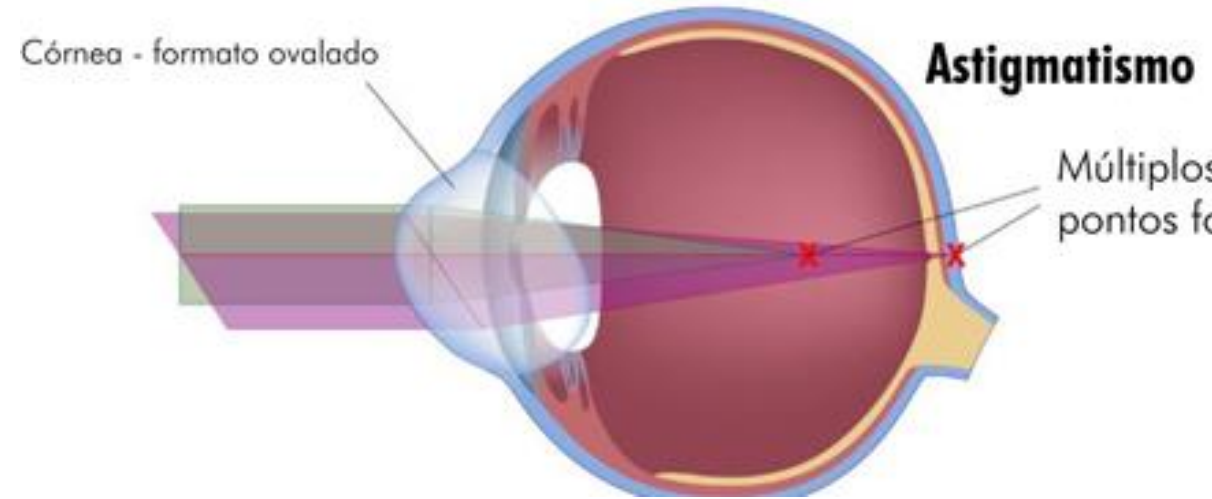
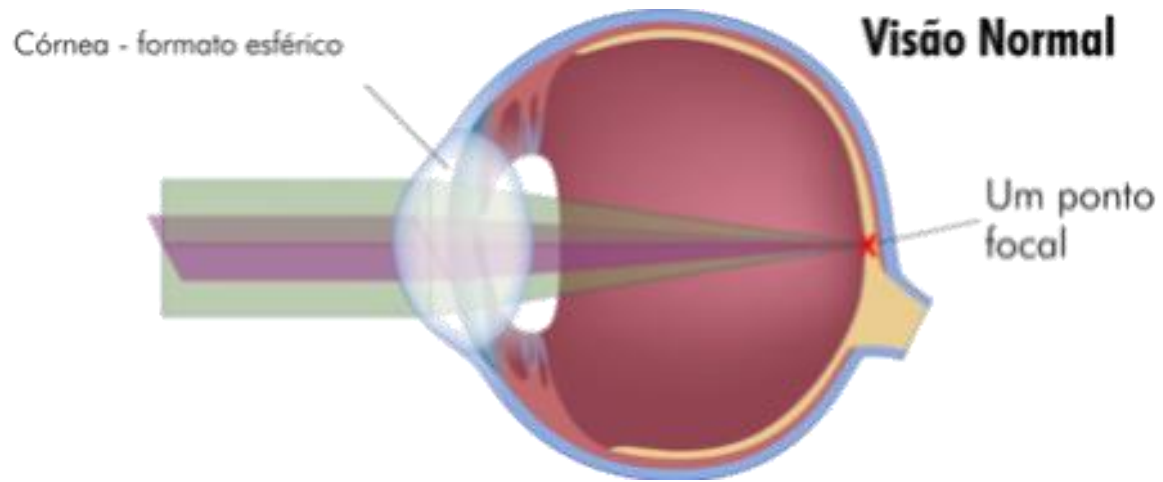
$$\frac{1}{f} = \frac{1}{25} - \frac{1}{PP'}$$

Presbiopia (Vista Cansada)

≈ Hipermetropia (problema para perto)



Astigmatismo – Lentes Cilíndricas



Estrabismo – lentes prismáticas

