

DFT Biofizika

8. Optikai gyakorlatok

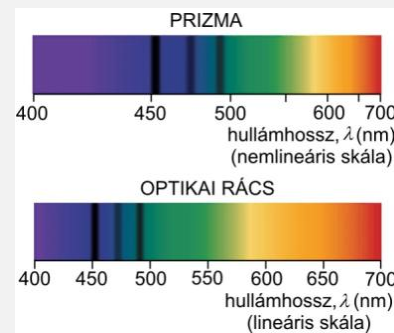
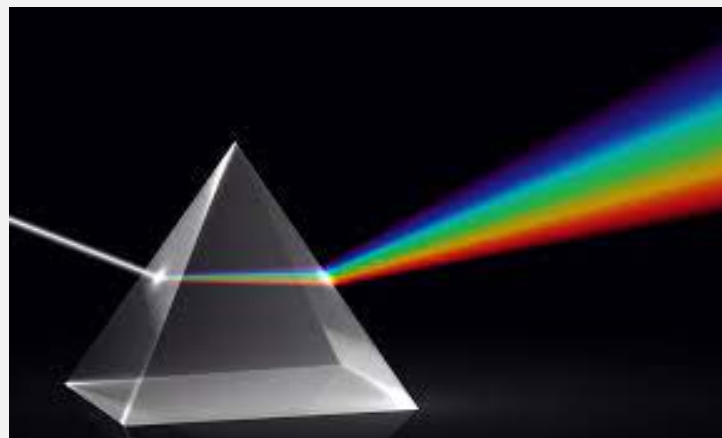
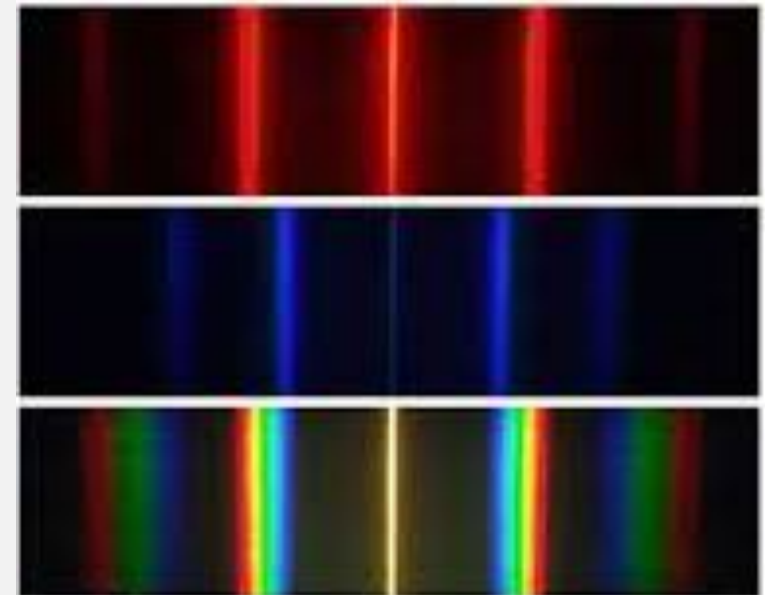
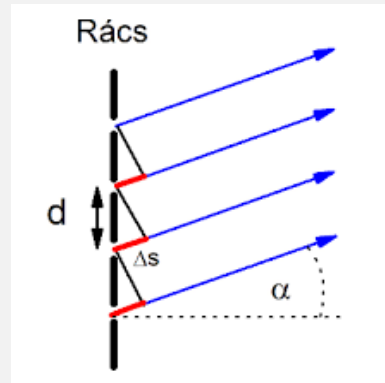
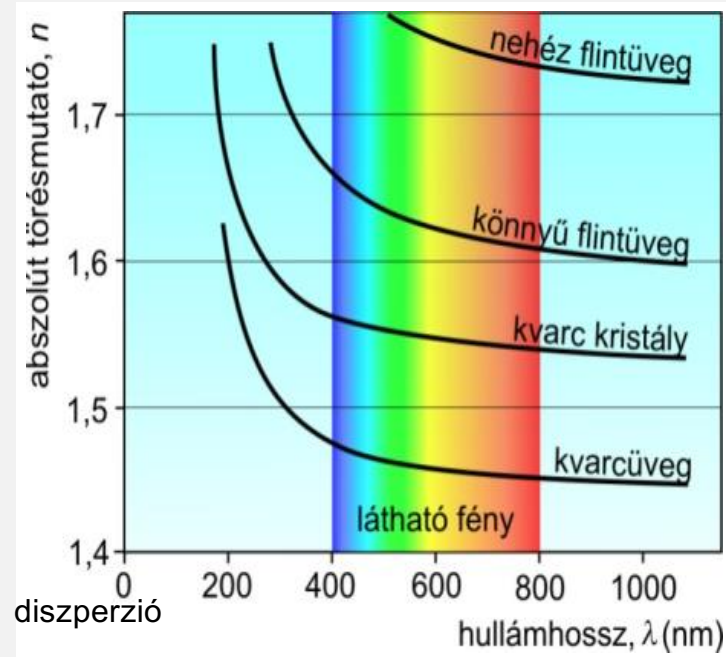
Fehér fény színeire bontása, lencsék képalkotása. Mikroszkóp: nagyítás és felbontóképesség. A szem optikája.

Dr. Liliom Károly

karoly.liliom.mta@gmail.com

2025. 11. 04.

Színkép prizmával és optikai ráccsal

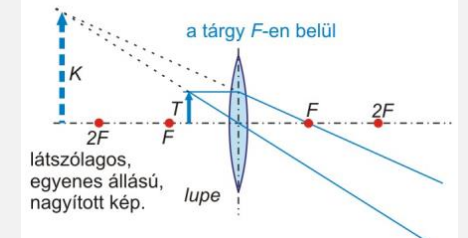
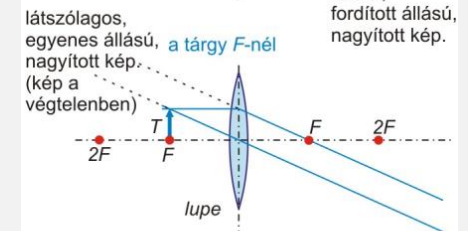
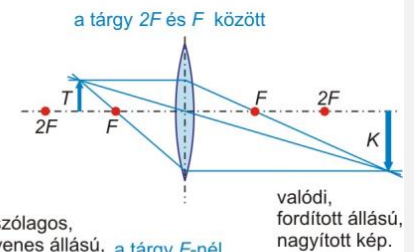
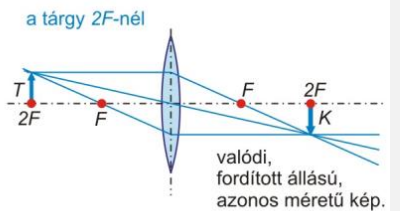
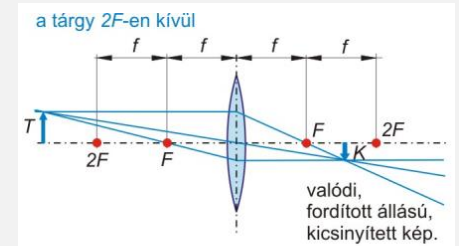
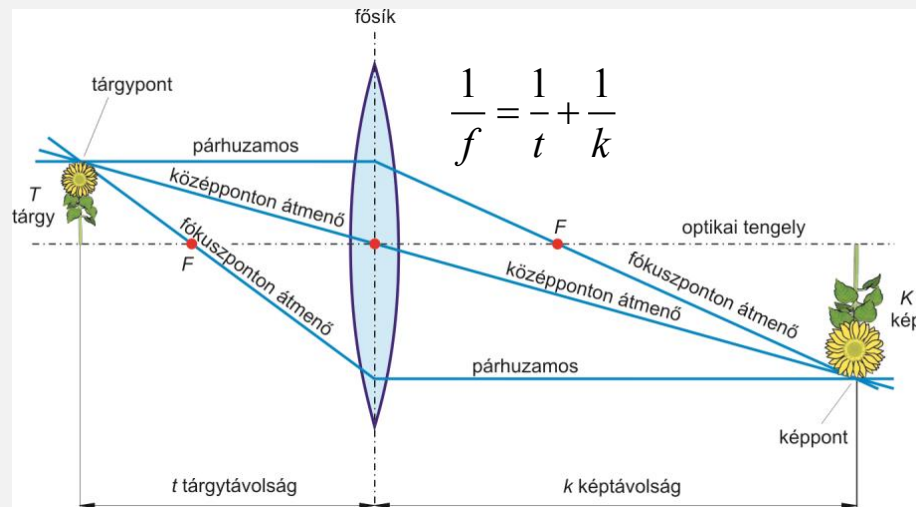
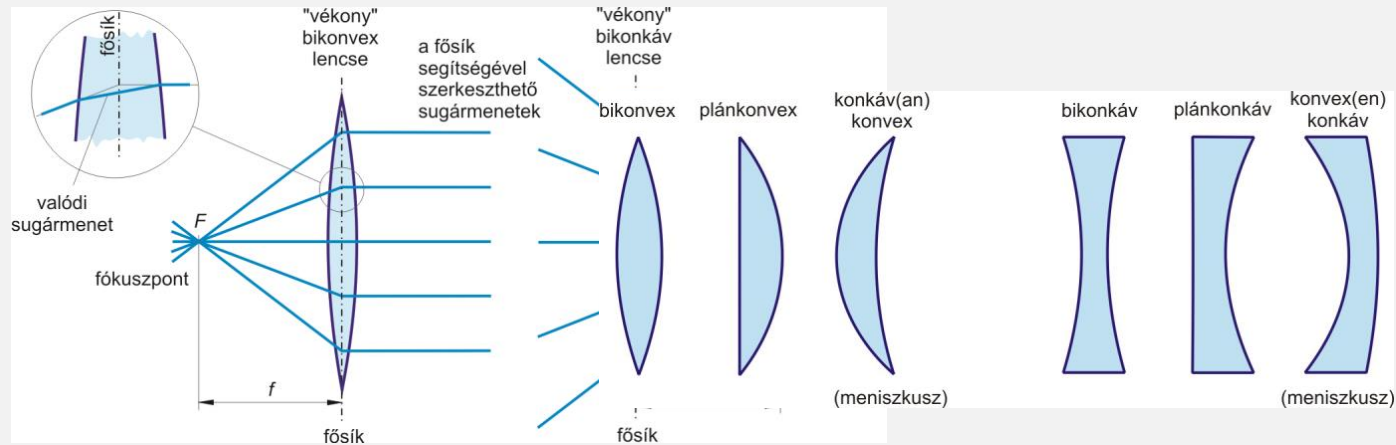
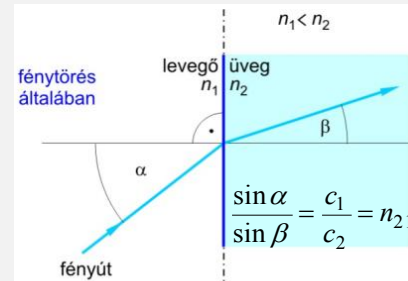
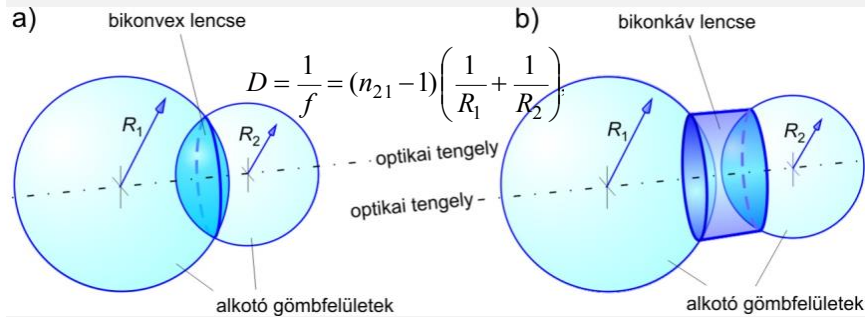


Diffrakció

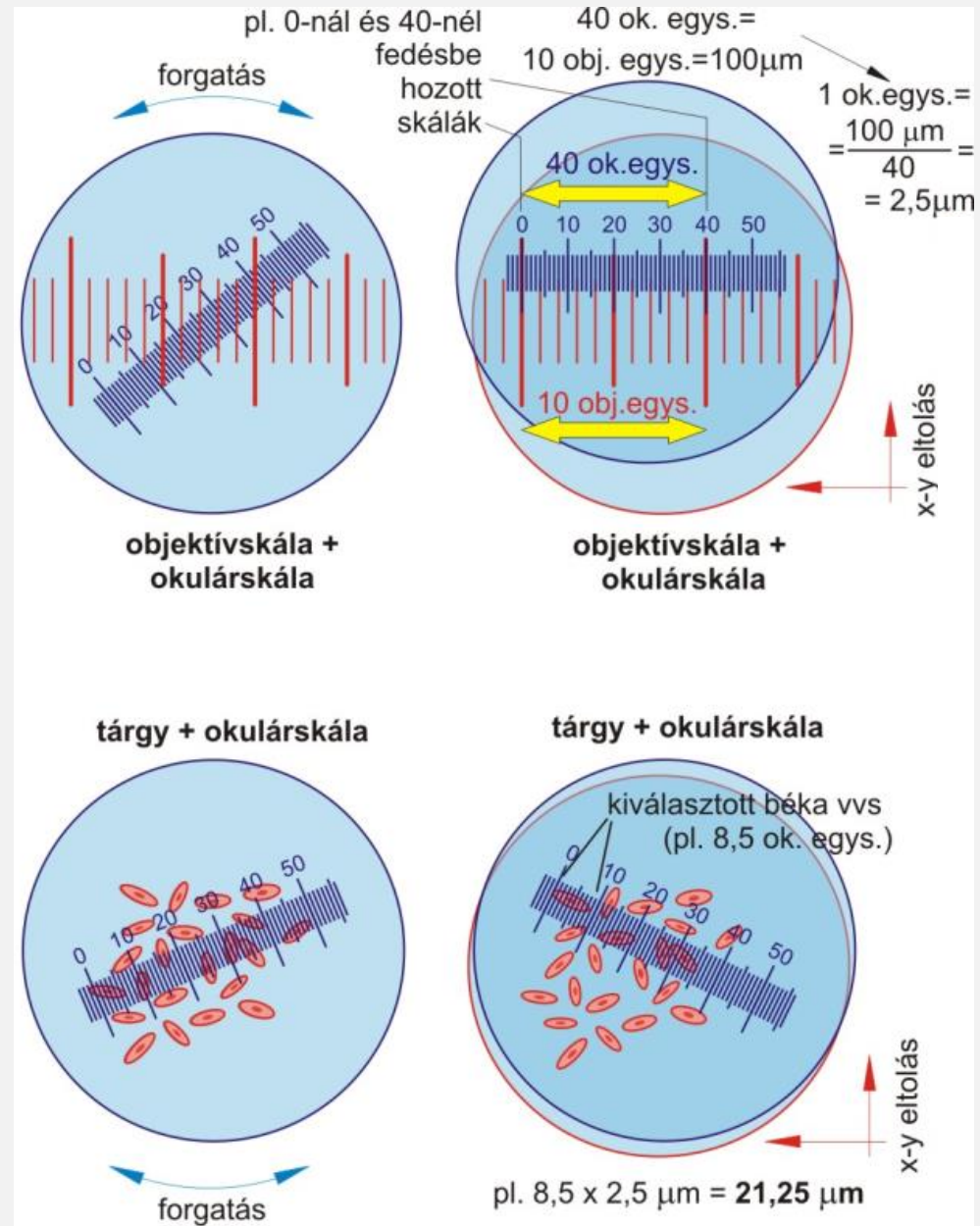
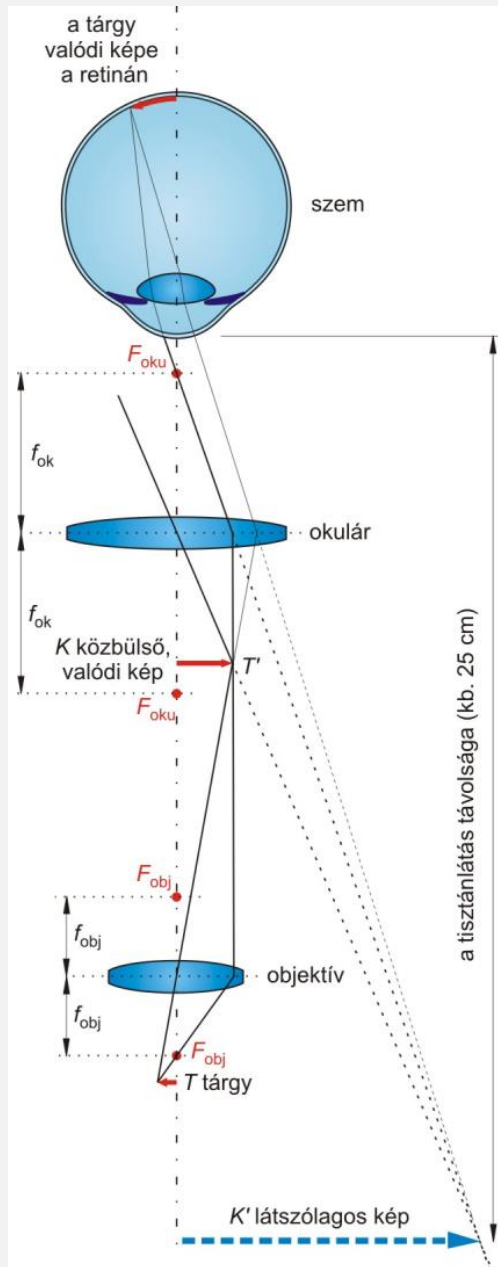
Fény diffrakciója optikai résen

Fény diffrakciója optikai rácson

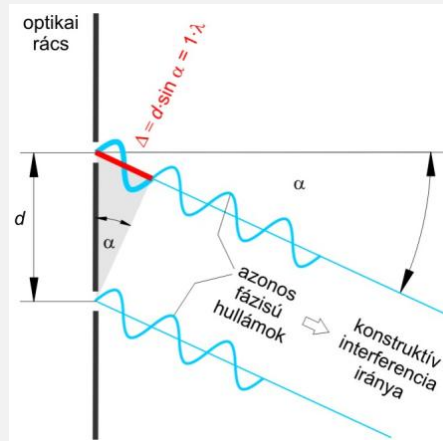
Lencsék képképzése



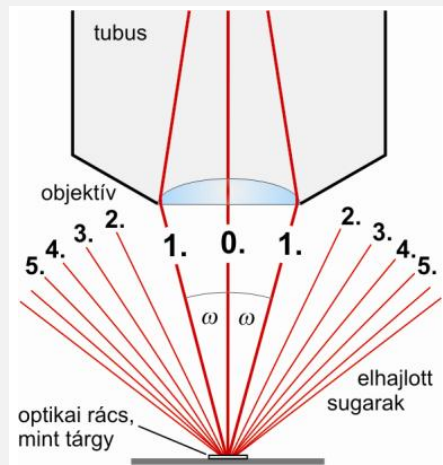
Mikroszkóp



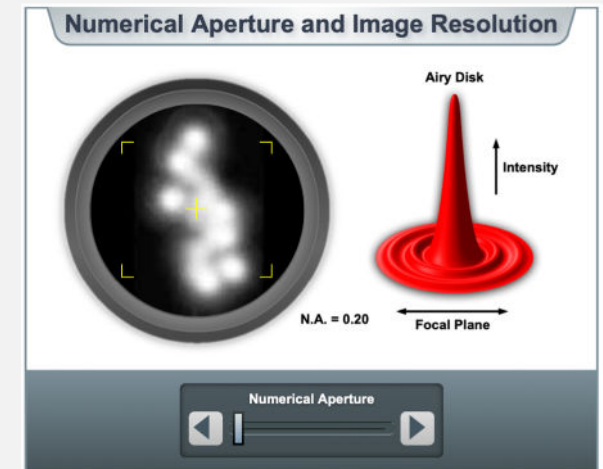
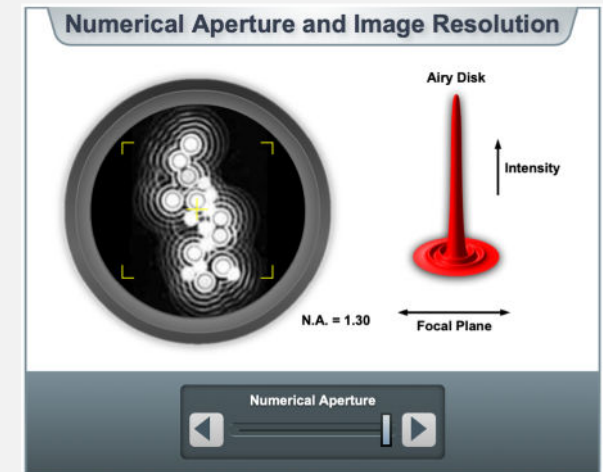
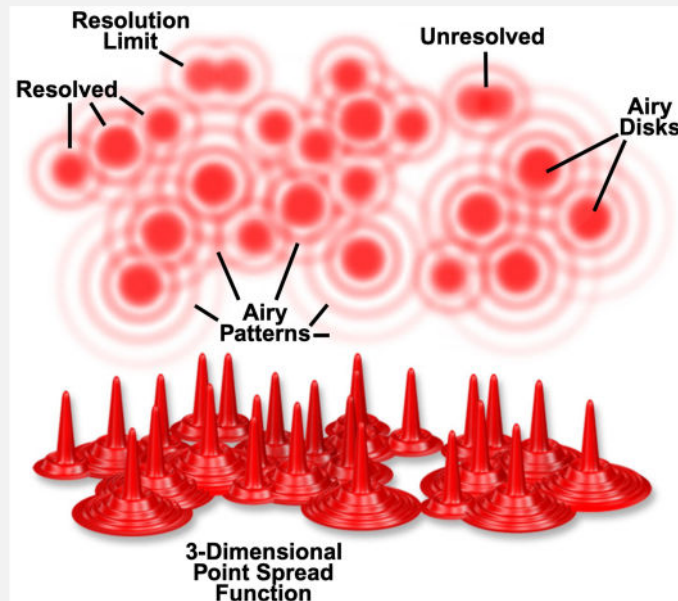
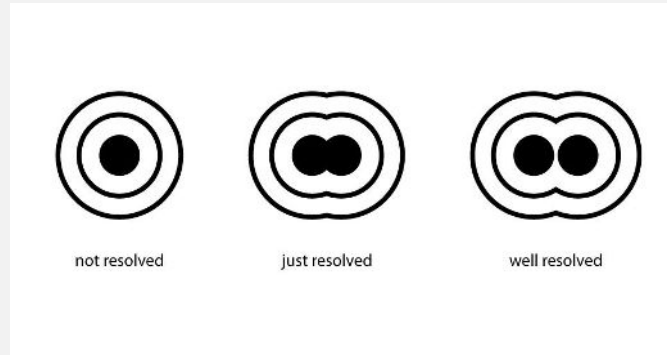
Mikroszkóp felbontóképessége



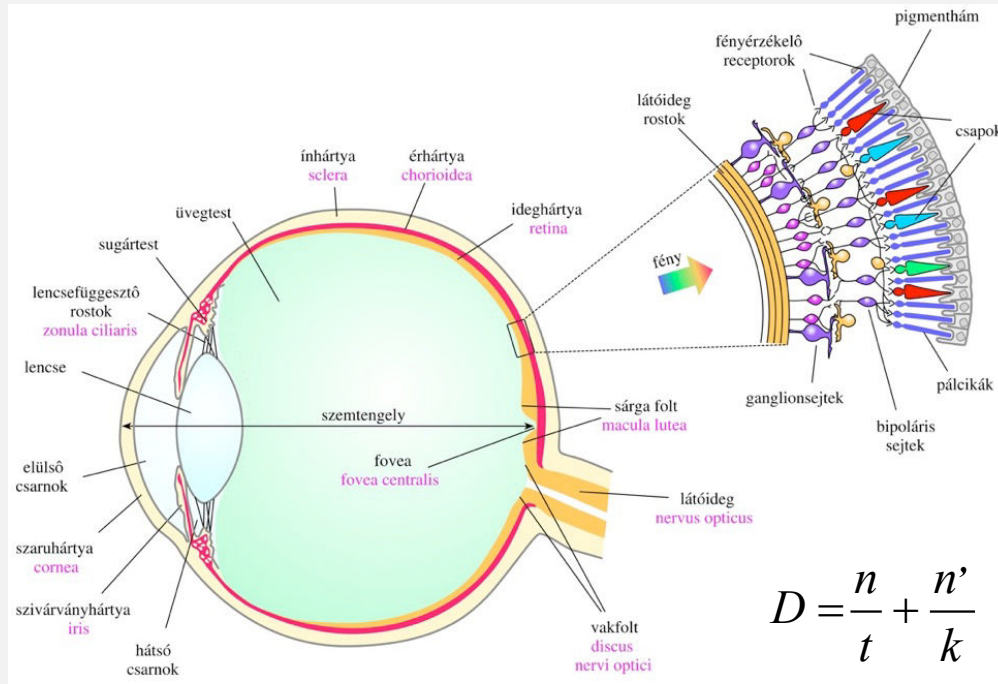
Ernst Abbe, 1873



$$\delta = 0,61 \frac{\lambda}{n \sin \omega}$$

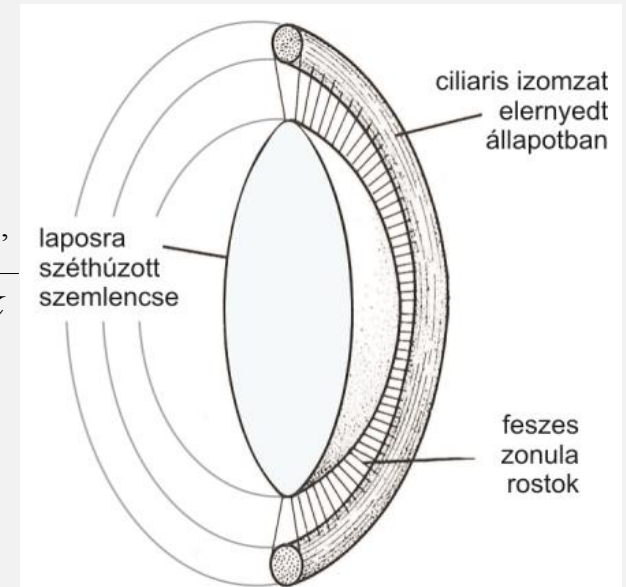


A szem optikája – fokális akkomodáció

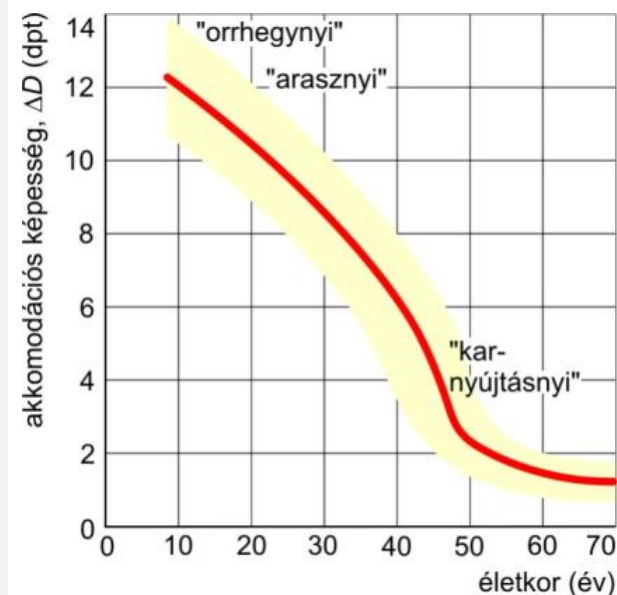


$$D = \frac{n}{t} + \frac{n'}{k}$$

$$D_r = \frac{n}{t_r} + \frac{n'}{k}$$

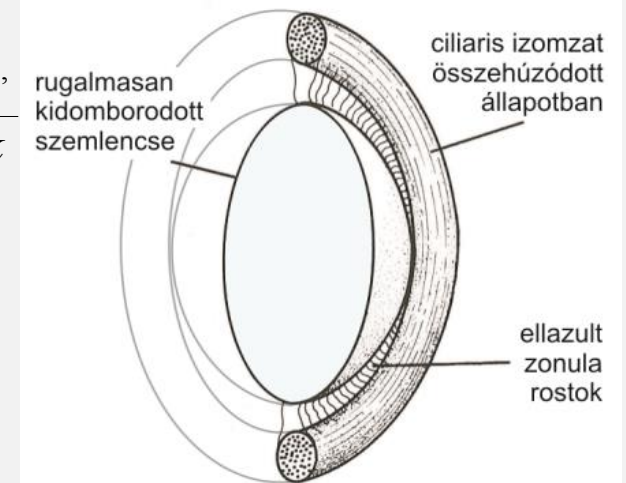


A ciliaris izomzat elernyed állapotban.
A lencse lapos, akkomodálatlan.



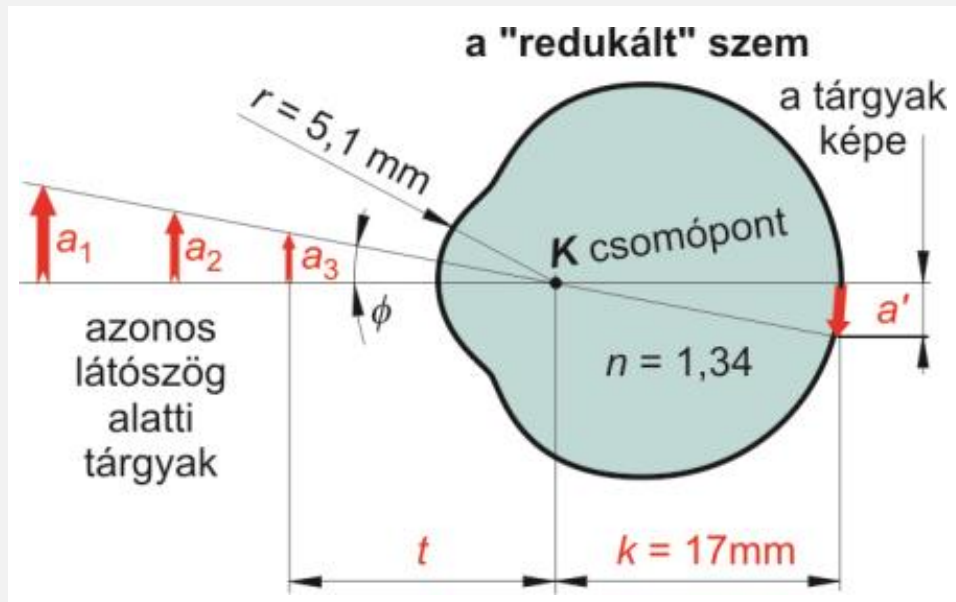
$$\Delta D = D_p - D_r = \frac{1}{t_p} - \frac{1}{t_r}$$

$$D_p = \frac{n}{t_p} + \frac{n'}{k}$$



A ciliaris izomzat összehúzódot állapotban.
A lencse domború, közelre akkomodált

A szem optikája – redukált szem, visus



$$\text{látásélesség (visus, VA)} = \frac{l'}{\alpha(')} \cdot 100\%$$

