

Errors of refraction (refractive defects)

Pavína Gawlasová

Petra Šanovcová

Vision

- One of 5 senses
- Information about environment
- Most often defects are errors of refraction

Vision

- Normal vision – Emmetropia

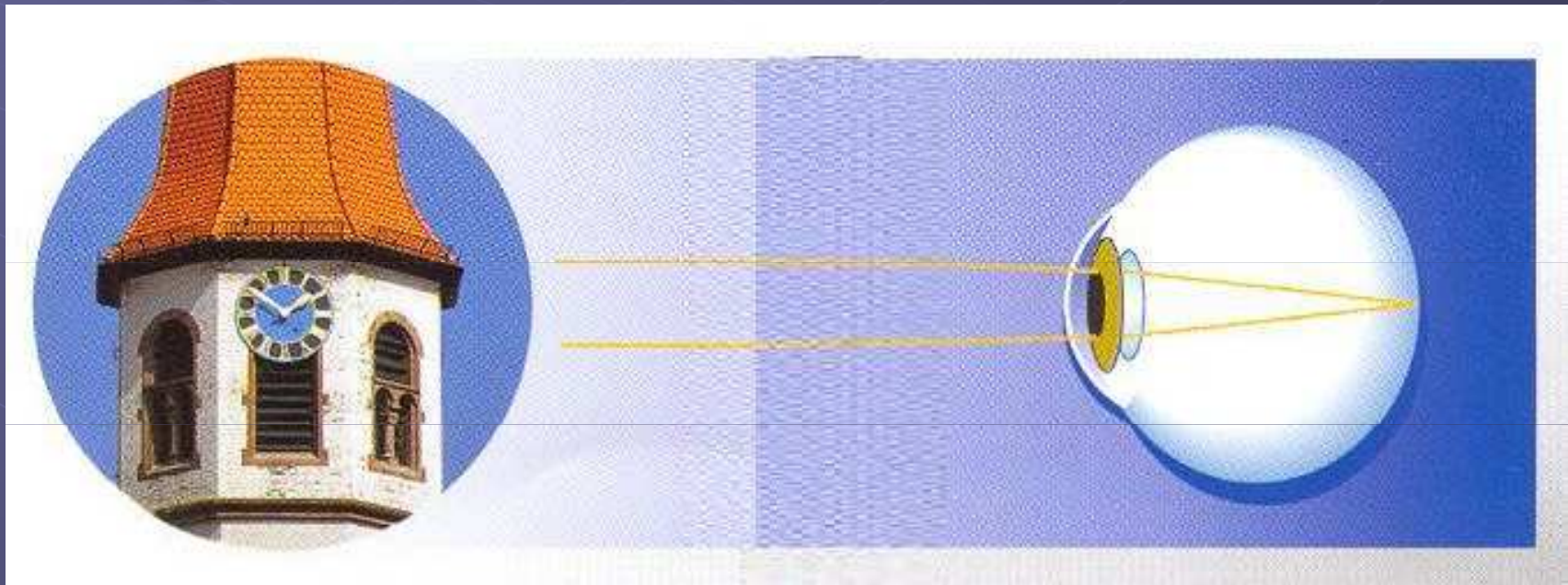
- normal eye

- no refractive error

- the rays form focus on the retina

Refraction

- The proportion of length and vergency of an eye



Errors of refraction

- Characterized by : - blurred vision
 - astenopical troubles

- Astenopical troubles :
- pain of the eyes
 - burning eye
 - lacrimation
 - red-eye

Types of refractive defects

- Hypermetropia

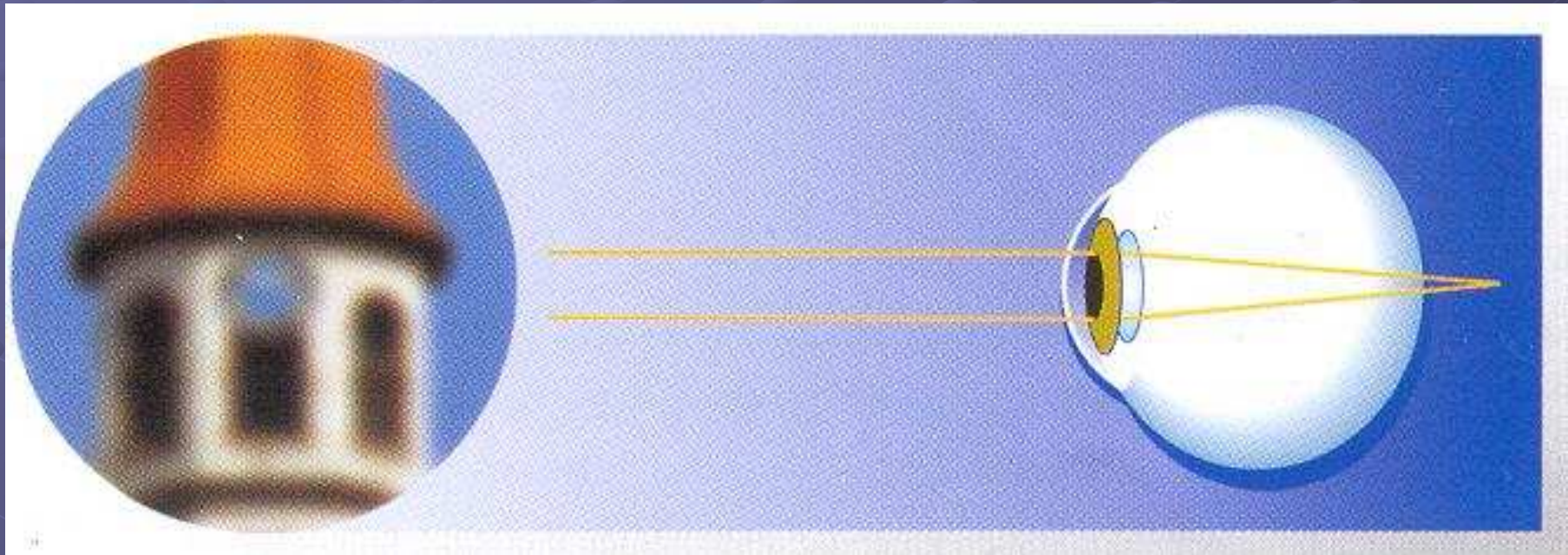
- Myopia

- Astigmatism

Hypermetropia

- Typical for a short eye
- Focus out of retina – behind retina
- Wrong vision : - long distance
- short distance

Hypermetropia



Hypermetropia

● First dividing: 1) Latent

2) Manifest:

a) Facultative

b) Absolute

Hypermetropia

- Second dividing: 1) Light (0 – 3 Dpt)
2) Middle (3 – 6 Dpt)
3) Hart (> 6 Dpt)

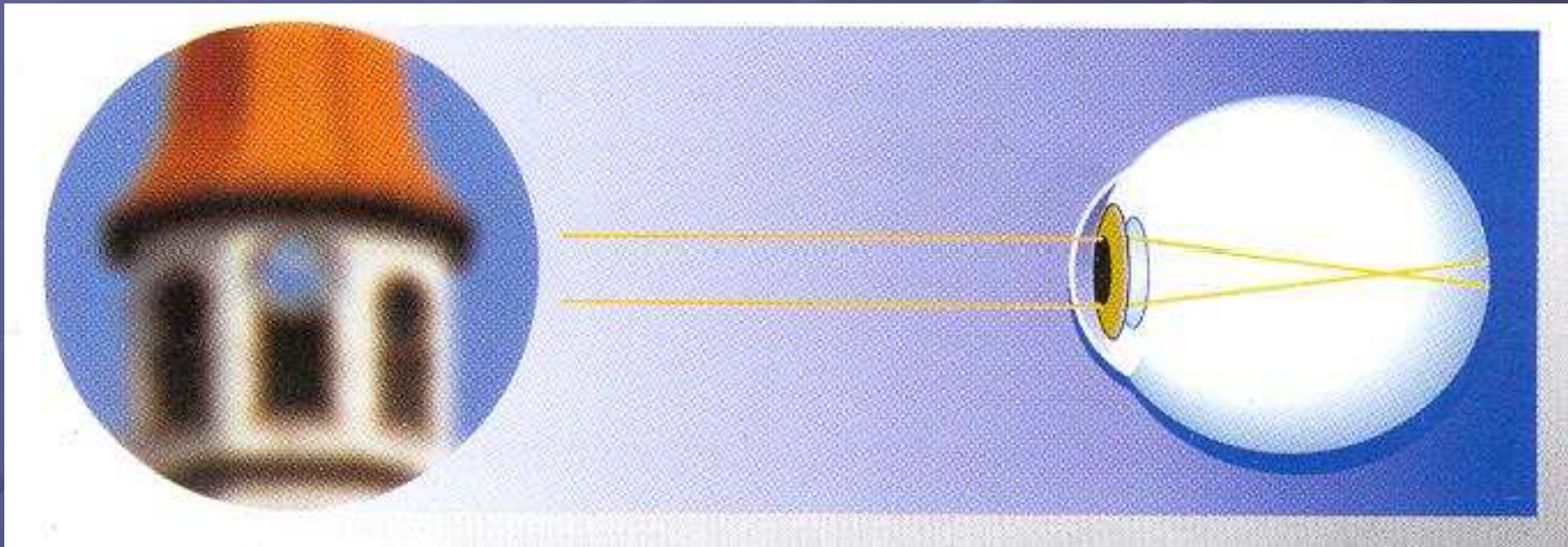
Hypermetropia

- Correction: - convergent lens in the glasses
- contact lens
- laser operation

Myopia

- Typical for a long eye
- Focus out of retina – in front of retina
- Wrong vision : - long distance

Myopia



Myopia

- First dividing: 1) Light (0 – 3 Dpt)
2) Middle (3 – 6 Dpt)
3) Hart (> 6 Dpt)

Myopia

● Second dividing: 1) School myopia

2) Late myopia

3) Congenital myopia

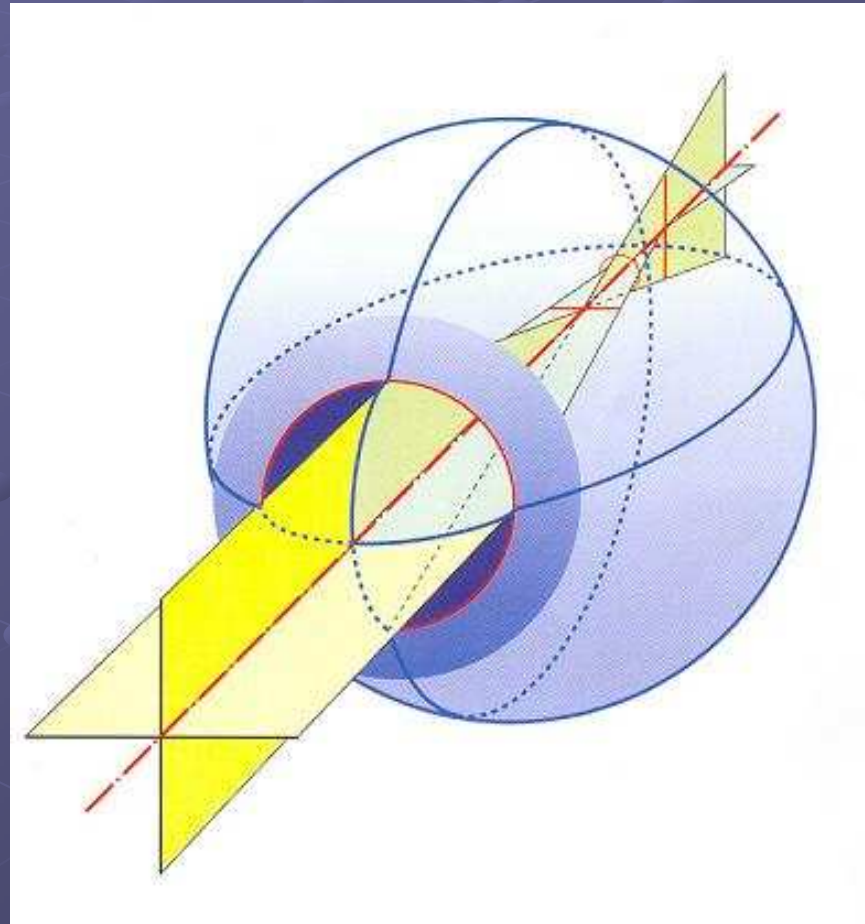
Myopia

- Correction: - divergent lens in the glasses
 - contact lens
 - laser operation

Astigmatism

- Different distortion of cornea
- Two focuses
- Wrong vision : - short distance
- long distance

Astigmatism



Astigmatism

● Dividing: 1) regular

2) irregular

Astigmatism

- Correction: - cylindrical lens in the glasses
- cylindrical contact lens

Thank you for your attention!

