

Due to no-correlation b/w the axial length and refractor power, the rays entering in the eye  
↑ are not focussed on fovea centralis of retina  
**Refractive Error** is called refractor error. ①

**Emmetropia:**

Classification

"Parallel Rays of light coming  
From infinity focus at a point  
on Retina."

**Ametropia:**

Parallel rays of light coming  
From infinity not focussed at  
a point on retina.

**Types:**

- ① Hypermetropia
- ② Myopia
- ③ Astigmatism

**Complication:** (Myopia) ↓ ✖

- ① Post-staphyloma
- ② Macular hemorrhage
- ③ Retinal Detachment
- ④ Glaucoma
- ⑤ Chorioidal Neovascularization.

Define ✓  
Sub-concept ✓  
causes  
sign  
Diagnosis  
Rx

Non-surgical  
surgical.

## Hypermetropia

Far sightedness

Long sightedness

## Myopia

Near sightedness

Short sightedness

### Causes :-

Axial hypermetropia

curvature hypermetropia

Index hypermetropia

Aphakia

Axial myopia

curvature myopia

Index myopia

Positional myopia.

### Clinical Features :-

Convergent squint

Defective vision

Defective vision  $\bar{e}$  asthenopia

Tiredness of eye

Headache

Photophobia

Watering of eye

Blur vision

Half shutting of eye

Divergent squint

### Signs :-

VEC ① Visual acuity  $\downarrow$

② Eyeball Normal or  $\downarrow$

③ Corneal Diameter  $\downarrow$

Visual acuity  $\downarrow$

Eye-ball prominent

Ant-chamber deep.

### Define :-

Parallel rays of light are focussed behind Retina.

Parallel rays of light are focussed in front of Retina.

⑥ -  
-: **Diagnosis** :-



- Retinoscopy
  - A-scan → ↓ Axial length
  - Fundus examination  
↓  
Pseudo-papilloedema
- ① Retinoscopy
  - ② Ascan → ↑ Axial length
  - ③ ~~Central Topography~~
  - ④ ✓ Fundoscopy → Normal

⑦ -  
-: **Treatment Rx** :-



- Non-surgical :->
  - +ve convex lenses
  - +ve contact lenses
- Non-surgical :->
  - +ve concave lenses
  - +ve contact lenses
- Surgical :->
  - ✓ Photorefractive keratectomy
  - ✓ LASIK
  - Conductive Keratoplasty
- Surgical :-> ★
  - Photorefractive Keratectomy
  - Radial Keratectomy
  - ✓ LASIK
  - LASEK
  - Clear lens extraction

**Pathogenesis**

Read

- Peripapillary atrophy
- Lacquer cracks
- choroidal Neovascularize
- Foster Fuchs spot
- Retinal Detachment

# Astigmatism

## Definition:

Parallel rays of light enter in eye can't focus at a point of Retina but form focal lines.

## Types :-

### Regular Astigmatism

### Irregular Astigmatism

① Simple myopic :->

Multiple foci

One focus on Retina

Other in front of Retina.

② Simple hypermetropic :->

One focus on Retina

Other behind the Retina.

③ Compound Myopic :->

Both rays in front of retina.

④ Compound hypermetropic :->

Both rays behind retina.


⑤ Mixed :->


One in front of Retina

Other behind the Retina.

Rx:

Non-surgical :->

Cylindrical lense 

Spherocylindrical 

Hard contact lense.

Surgical :->

LASEIK

LASIK

Keratotomy

Photorefractive Keratotomy

# Accommodation

## Definition:-

Eye changes the refractive power to focus the near object clearly.


## ① - Presbyopia:-

Physiological insufficiency of accommodation leading to impairment of vision for near-work due to advance age.

### Cause:-

- ① - Advance Age
- ② - Loss of elasticity

### Rx:-

Convex lense. 

## ② - Iso-metropia:-

State of eye when both eyes have equal refraction.

## ③ - Anisometropia:-

Two eyes have unequal <sup>Power.</sup> refractive

## ④ - Aniseikonia:-

Image of two with unequal size and shape of image.

### Rx:-

contact lense  
Aniseikonic glasses.

41-years old lady present in Eye OPD  
with difficulty of reading small  
print. No-D.M, No Ang, No previous  
History?

Diagnosis → Presbyopia ✓

Rx → Convex lense Usage: ✓

Pathogenesis:

↑ Age

Loss of elasticity

Hardening of lense

Weak ciliary muscle

↑ Work-Load.

Presbyopia:

Physiological insufficiency of  
accommodation leading to impairment of  
vision for near work due to  
advance age.