

Public awareness series by
Rajasthan Ophthalmological Society
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- Courtesy – Dr Ankur Sinha

What is Amblyopia

- Amblyopia is a condition where one or both the eyes fail to attain normal visual acuity despite spectacles or contact lenses, despite having no structural defect of the eye
- Amblyopia is commonly called as “lazy eye”

How Amblyopia Occurs

- Amblyopia occurs in infancy or early childhood
- When the child is born he or she is not able to see as good as what adults see
- Just like learning to sit or walk, a child also gradually learns to see
- The vision gradually increases, as there is better coordination between the developing brain and the developing eyes

- Any insult in the process of development of normal vision leads to arrest of visual development leading to poor vision or amblyopia
- The insult is either in the form of image blur (unclear image into the eyes) or lack of co-ordination between the two eyes (different images on both eyes)
- The earlier the insult or the greater the insult, leads to poorer vision and denser amblyopia

Blur image causing amblyopia in child with spectacle power



Image seen by child without spectacles

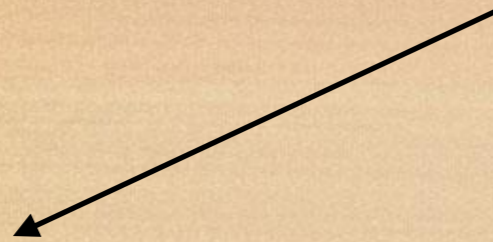
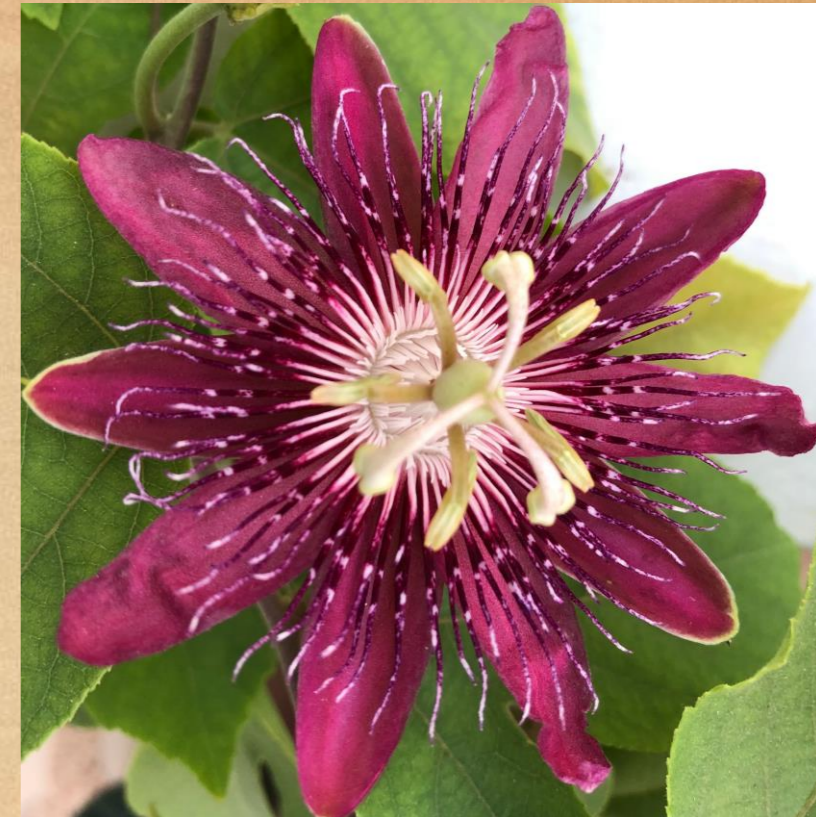


Image seen by child with spectacles



- The Child seeing the blurred image (unclear image) will develop inadequate and blurred vision leading to amblyopia.

- image with spectacles would allow clear image to be formed and normal visual development

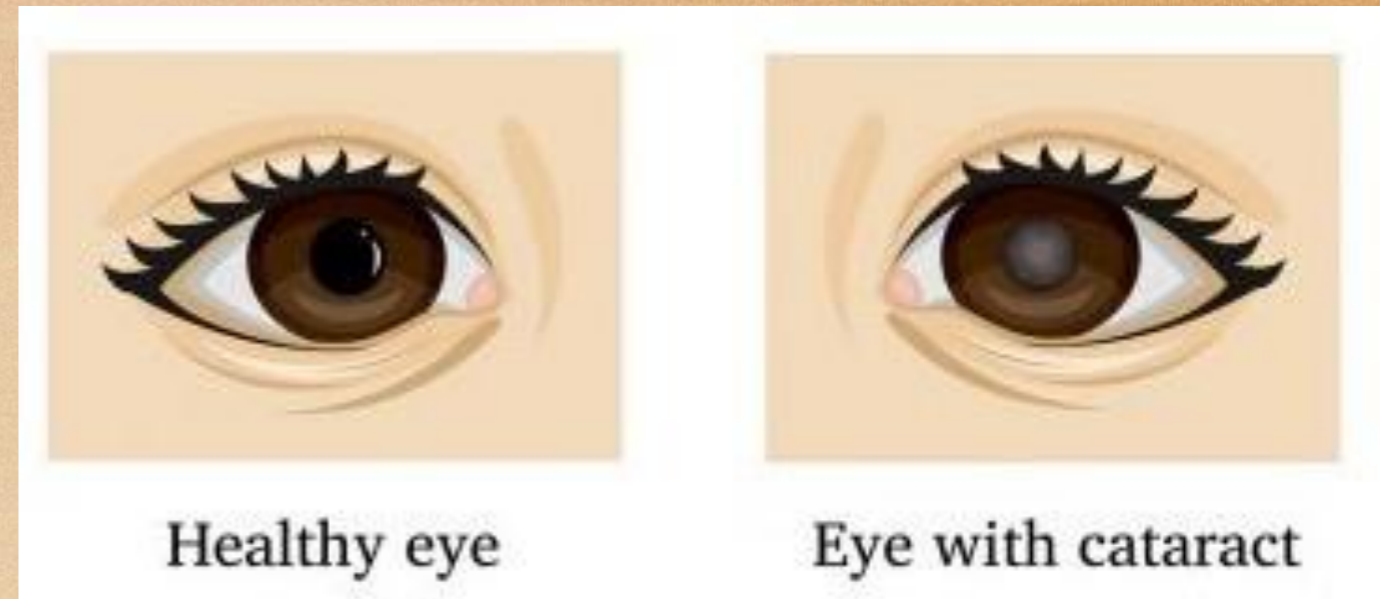
Squint or Cross eyes



- The child will see only from the straight eye and brain will gradually ignore the image from the squinting eye. this will lead to amblyopia in the squinting eye.

Child with congenital cataract

- The light entering the left eye is very poor, hence the image formed is very poor. this will severely affect the vision development and lead to severe amblyopia.



- After cataract surgery, amblyopia therapy is a must in order to maximise the gain of vision in the affected eye

Note the white reflex in left eye



Importance of amblyopia

- Seeing is an important part of learning has maximum information for learning is provided by the eyes
- Poor vision due to amblyopia is seen in 1-4% of general population, i.e. there may be a child with amblyopia in 1-3 classrooms
- Amblyopia occurs in infancy and young children, where they continue to suffer from low or poor vision throughout their lives
- it is most common cause of preventable vision loss in one eye
- if detected early in childhood, it can be treated and good vision can be achieved in most cases.

Early identification and screening of Amblyopia

- When to go to an eye specialist
 - Parents and caregivers can check the child for equality of vision in both the eyes, a child resenting closure of one eye strongly
 - any child with one eye red glow or abnormal head posture or squint in photograph
 - Child going close to TV or Book
 - Slight suspicion of poor vision

- At times abnormal red reflex is noted in pictures with flash, this may indicate need for glasses or squint or any other problem in the eye.
- Eye specialist to be consulted with the photograph



Note the abnormal red reflex in left eye



Screening for amblyopia

- high risk children like premature children, down's syndrome etc, should be screened by ophthalmologists with in 1 month of birth
- there should be a vision screening of the child at least once before the age of 3 years
- Full or detailed eye examination to be done at least once by an eye specialist between 3-5 year of age and the same to be repeated once between 5-8 years of age

Types of amblyopia

- Deprivation - due to deprivation of light entering the eye, seen in corneal opacity, congenital cataract etc
- strabismic - due to misalignment of eyes or squint
- anisometropic (due to difference in the glasses power of both the eyes) / ametropic (due to high power in both the eyes)
- mixed - mixture of above

Treatment of amblyopia

- Deprivation amblyopia - removal of the cause for deprivation amblyopia (e.g cataract, corneal opacity etc) spectacle correction and amblyopia therapy
- Strabismic - spectacle correction, if any followed by amblyopia therapy and then treatment of squint in the form of surgery if needed
- Anisometropic - spectacle correction, followed by amblyopia therapy. Ametropic - spectacle correction
- Mixed - case to case basis

Squint or Cross eyes

- Child with specific type of squint needing spectacles



- Proper spectacles corrects the squint and helps in treatment of amblyopia



- Note; not all squints can be fully treated with glasses

Amblyopia therapy

- Amblyopia therapy works best in young childhood, hence to be started as the disease is diagnosed
- First step is proper spectacle correction (to be worn all time)
- Patch therapy (Full time vs Part Time)- as advised by the treating ophthalmologist

- Amblyopia therapy with glasses and Hand/home made Patch from paper and dressing tape



- Amblyopia therapy of a patient needing patch only (with commercially available readymade patch)



Myths about vision in children

- Myth: The power of glasses of children cannot be ascertained till they start reading
- Fact: if the child needs glasses, the power can be ascertained even for a new born child
- Myth: poor vision due to amblyopia, gets better as the child grows
- Fact: The child needs to be treated as early as possible as the chances to gain the vision drops with growing age

- Myth: cross eyes, shaky eyes or other abnormalities get better with age
- Fact: any visible issue is there with eyes of a child can be an early sign of poor vision, an eye specialists consultation to be sought immediately
- Myth: Glasses are a burden and a big defect of the eye
- Fact: Glasses, if need are a help and they do not reflect significant defect, in fact they help in good vision and proper development of the child

- From birth to initial 5 to 7 years there is a rapid development of vision
- In the first 3 to 4 months children start following a moving object
- Three-dimensional vision or depth perception and colour vision starts to develop by the age of five months
- By the age of two years the children family starts developing good vision including depth perception, colour perception etc.

Who is affected by Amblyopia

- children with “cross eyes” or squint, shaky eyes, complaining of poor vision in any eye, or with any eye problem
- In some cases the disease can run into the family, hence screening of a of a patient of amblyopia is a must

THANKS

**An education initiative by
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