



# Childhood Cataract



## What is the lens?

The human lens is a clear structure that is located behind the iris & pupil and has an important function in vision. It works much like a camera lens. In a normal eye, it focuses rays of light into the retina to allow image formation. The retina is the sensitive tissue at the back of the eye. The lens is able to change its shape, and hence it can focus objects at different distances, letting us see things clearly both up close and far away.

## What is a Cataract?

A cataract is clouding of the lens in the eye, which can affect vision. Cataract can occur in either or both eyes.



## What are the types of Cataract in children?

### 1. Childhood Cataract.

Some babies are born with cataracts (called as congenital cataract) or develop them in childhood (developmental cataract), often in both eyes. If these cataracts affect vision, they may need to be removed.

### 2. Secondary Cataract.

Cataracts also can develop in children who have other health problems, such as rubella, diabetes, certain syndromic conditions etc. It could also occur with ocular problems like microphthalmos (small eye), retinal dystrophies, congenital glaucoma etc.

### 3. Traumatic Cataract.

Cataracts can develop after an eye injury, sometimes years later.



## **What is the ideal time for performing cataract surgery?**

Because a clear visual axis is essential for early visual development, early diagnosis and treatment within the first few weeks of life is important. Surgery has to be done as early as possible to improve the chances of maximum visual recovery. However there should be no risks for general anesthesia due to systemic problems.

## **What are the effects of Cataract?**

If the cataract is small, there may be only slight blurring of vision with near normal visual development. Frequently when the impairment is more severe, it can lead to permanent loss of vision i.e amblyopia (lazy eye) if left untreated. Without adequate stimulation central vision can be permanently impaired though some peripheral vision usually remains, the eye does not usually lose the ability to distinguish light and dark. Congenital cataracts can affect one eye only or both eyes. In bilateral cases the cataract can be denser in one eye than other.

## **How do I know that my child has Cataract?**

As cataract is an opacification of the lens, there is a white reflex seen in the centre, that is in the pupillary region. This could be either seen by the pediatrician or child's parents. Infact this reflex may also be picked up in photographs. In infants, the absence of an eye contact is an important sign that should alarm the parents that the child's vision is poor. If the child does not respond to visual stimuli like picking up objects, or recognizing faces or has constantly wandering or moving eyeballs after first 2-3 months, these are all signs that the child's vision is poor and hence, the parents should immediately consult a pediatric ophthalmologist.

## **What is the final prognosis?**

The eventual outcome is very much dependent on the type of cataract, age of the child & the timing of surgery and associated abnormalities of the eye or the brain. Since timely management results in significant visual improvement and hence a near normal vision, it is important that the parents should be highly motivated and act fast. The important point to remember is that early diagnosis & treatment is the key to successful visual rehabilitation in childhood cataracts.



## What is the treatment?

A surgery must be performed to remove the cloudy lens and clear the visual axis (the central part of the eye) so that the light rays can easily enter the eye and produce a sharp image on the retina. Intraocular lenses are implanted whenever possible. Putting an intraocular or artificial lens will depend on the age of the child, size and status of the eye, presence of any ocular problem. However, they cannot be implanted in very young children, as the eyeball is small in size and still growing. Even if the lens is not put at the time of the cataract surgery, it can definitely be considered as an option when the child grows older & the eyes grow bigger.



The surgery is performed under general anesthesia. To serve the purpose of improving vision of the child, optical correction with a contact lens and/or glasses is necessary in addition to removal of cataract.

## How can Cataracts affect my child's vision?

In case of a newborn infant, a cataract causes the immature visual system to be deprived of the stimulation needed for normal development of vision. If left untreated, permanent visual loss (lazy eye) may occur.



Cataract surgery in a child is technically more difficult than in an adult & should be performed only by a surgeon with adequate experience in pediatric cataract surgeries. If cataract is present only in one eye, then amblyopia may be more severe and aggressive amblyopia therapy becomes very important for the final visual outcome.



## What causes Cataracts in children?

Any disruption of the normal structure of the lens can result in clouding. This could be either caused by:

- Accumulation of abnormal breakdown products (metabolites) with retention of water within the lens or
- Interruption of normal development of the lens by a genetic error or following infection with viruses, rarely radiation and drugs.
- Injury- Blunt injury or injury with sharp objects
- In our country, infection of pregnant ladies with Rubella virus & consanguineous marriages (marriages within relatives) are the most common causes. The chances of having congenital cataract are particularly high if there is a family history of cataract.

## Is surgery the end of all the problems?

No. Though surgery does clear the visual axis, the child may develop lazy eye, misalignment of eyes (squint), shaking of eyes (nystagmus), development of refractive errors, increased pressure in the eye (glaucoma). These problems may coexist with the cataract or may develop following surgery. However, with newer surgical techniques, the incidence of these complications has significantly dropped.

Lazy eye (amblyopia) may be seen in one or both eyes and would require treatment with patching, eye drop instillation, glasses and vision stimulation exercises. Misalignment of eyes may require surgical intervention later in life. Late complications of surgery that can occur rarely include membrane formation in pupillary axis, increase in intraocular pressures (glaucoma) with subsequent optic nerve damage and retinal detachment. Hence, following surgery, monitoring of the vision, refractive error, development of complications etc. is mandatory and repeated follow-ups are warranted in an attempt to achieve good visual rehabilitation. In short, surgery is not the end but the beginning of a long association between the pediatric ophthalmologist and the child along with the parents.



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Contact: +91-80-66121496

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**NN - 1:** No. 121/C, Chord Road, Rajaji Nagar, 1st 'R' Block  
Bangalore - 560010, INDIA  
Tel: +91-80-66121643  
Email - [infonn1@narayananethralaya.com](mailto:infonn1@narayananethralaya.com)



**NN - 2:** Narayana Health City, No. 258/A, Bommasandra  
Hosur Road Bangalore - 560099, INDIA  
Tel: +91-80-66660655-0658  
Email - [infonn2@narayananethralaya.com](mailto:infonn2@narayananethralaya.com)



**NN - 3:** No. 1/1, 1st Main Road, Defence colony 100 Feet Road,  
Indiranagar, Bangalore - 560038, INDIA  
Tel: +91-80-66974000/01/02  
Email - [infonn3@narayananethralaya.com](mailto:infonn3@narayananethralaya.com)



**NN - 4:** No. 63, Next to Royal Meenakshi Mall, Bannerghatta Road  
Hulimavu, Bangalore - 560076, INDIA  
Tel: 080-66121618-1619  
+91 9513522400, +91 9538822400  
Email - [infonn4@narayananethralaya.com](mailto:infonn4@narayananethralaya.com)



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[www.narayananethralaya.org](http://www.narayananethralaya.org)

