

**National Programme for
Control of Blindness in India**

**For your eyes
ONLY**



**Directorate General of Health Services
Ministry of Health & Family Welfare
Government of India,
Nirman Bhavan, New Delhi - 110 011**



**National Programme for
Control of Blindness in India**

“गाह्यं च रूपस्य मुखस्य शोभा,
प्रत्यक्षाबोधस्थ च हेतु भूतम्।
तमिस्त्र-दिक-कर्मसु मार्गदर्शि,
सर्वो प्रधानं सकलेन्द्रियाणाम्।”

गीता का अध्याय-८: श्लोक १५.१

“The eyes can perceive forms, it adorns the face ;
it is a source of direct knowledge ;
it is a guide to avoid wrong deeds ;
hence the eye is most important of
all sense organs.”



Dr. R.K. SRIVASTAVA
M.S. (Ortho) D.N.B. (PMR)
DIRECTOR GENERAL

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Date.....

FOREWORD

There is a popular saying, "Keep your eyes healthy, they can capture the world". How appealing is the visionary quote! Man is gifted with the precious eyes. It is for a person to take care of his/her eyes as they will take care of him/her for the rest of his/her life.

National Programme for Control of Blindness, Directorate General of Health Services, Ministry of Health & Family Welfare has produced this booklet "For Your Eyes Only" in simple language with lively illustration, and appealing messages.

I hope that the valuable information given in this booklet will guide the general public to take good care of their eyes.

I appreciate the contributions made by Dr. (Mrs.) R. Jose, Deputy Director General (Ophth.), Dr. Brij Bhushan, Assistant Director General (Ophth.) and Dr. V.K. Tewari, Health Education Officer (NPCB) to publish this very informative booklet.


(Dr. R.K. Srivastava)



K. Rammamoorthy
Joint Secretary



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PREFACE

The Blindness Control Division of the Ministry of Health & Family Welfare has brought out a new booklet on eye care entitled "For Your Eyes Only". This booklet provides basic information on eye health care.

I am sure that this would be of immense use to the general public. I place on record my sincere appreciation of the work that my colleagues in the ministry and in the NGO sector have put in to bring out this useful publication.

(K. Rammamoorthy)

Healthy Village, Healthy Nation

एड्स - जानकारी ही बचाव है
Talking about AIDS is taking care of each other



Dr. (Mrs.) R. JOSE
Deputy Director General (Ophth.)



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ACKNOWLEDGEMENT

National Programme for Control of Blindness, Directorate General of Health Services has produced lot of educational materials on Eye Health Care during the last decade. It was felt now to update it and give simple, technical and meaningful messages. This booklet contains preventive aspects to preserve SIGHT since "Prevention Is Better Than Cure". The booklet will be useful for general public up to Grassroots Level.

In this regard, I would like to thank Dr. R.K. Srivastava, Director General of Health Services whose encouragement prompted me to undertake the publication of this booklet.

I also appreciate the efforts put in by Dr. Brij Bhushan, Assistant Director General (Ophth), Dr. V.K. Tewari, Health Education Officer (NPCB), Members of Expert Committee, constituted by the Ministry: Dr. Praveen Vashisht, Associate Professor, Dr. R.P. Center for Ophthalmic Sciences (AIIMS), Dr. Anuj Mehta, Senior Eye Specialist, Safdarjung Hospital and Vardhman Medical College, Shri Rakesh Bhatia, Programme Officer (AV), Ministry of Health and Family Welfare, Shri. H.T. Kansara, Ex. IEC Consultant (DANPCB) and Shri. K.L. Batra, Ex IEC Consultant (WHO).

(Dr. {Mrs.} R. Jose)



For Your Eyes Only

The eyes are the nature's meticulously designed, most valuable gift to us.

Our eyes enable us to see the world around us.

Our daily living, mobility, work ability and our many more life sustaining activities are more or less dependent on the ability of our eyes to see well.

The eyes can perform their functions well only if their growth and development is well-founded

It is also essential that common afflictions to the eyes that cause visual impairment or loss of eye-sight are possibly prevented and / or properly treated

FOR YOUR EYES

This booklet provides basic information on how the eyes grow and work; what anomalies, ailments and diseases affect them, thereby causing visual impairment or loss of eye-sight. Most important role in preserving your eyesight and those of near and dear ones.



Know Your Eyes

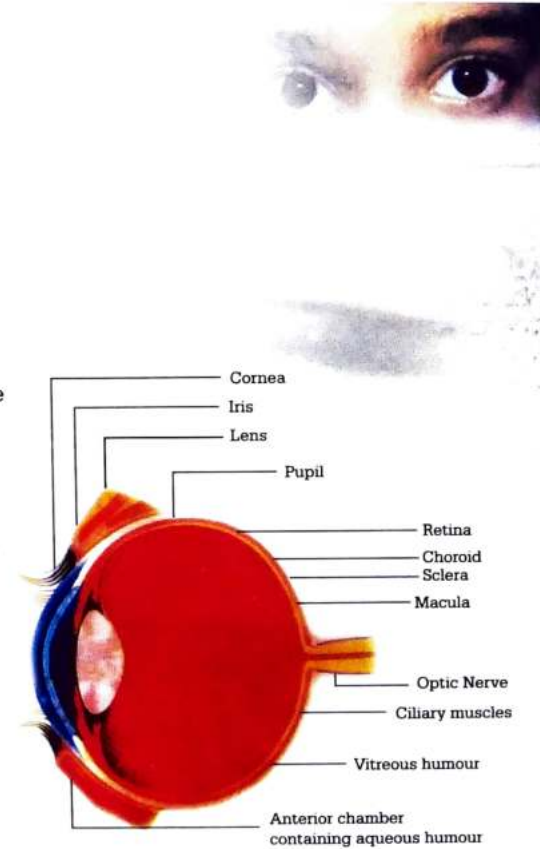
Structure

The structure of the Eye is complex. Just to have some idea, let us look at this diagram. The outer transparent dome-like layer is cornea. The inner white portion is sclera. The black circular chamber is iris. The hole in the centre is pupil. And on its back is the transparent lens. The innermost circle is retina.

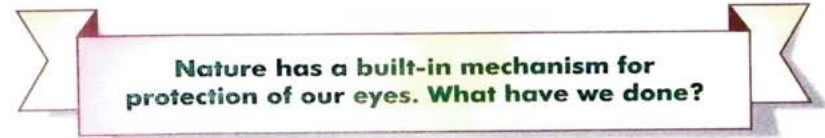
HOW DO WE SEE?

Vision involves, brain and the light. The light rays coming from the object are focused through the cornea; enter the eye via pupil, get fine-tuned by the lenses and reach the retina. The retina signals them to the brain through optic nerve, which turn them into images that we see.

Nature has gifted us with a pair of eyes so that we can have coordinated depth perception of the object that we see.



Schematic representation of the horizontal section of the eye



Cataract

Cataract is a major cause of blindness in India. The condition is caused mainly due to ageing. Cataract is the opacity of the transparent lens of the eye. If clouded, prevents the light to pass through lens and reach retina for image formation. The factors responsible for cataract, are old age, eye injuries, inflammation, diabetes, and prolonged use of steroids. Children may also have cataract since birth, due to the infection passed on to them by their mother during pregnancy.

SIGNS AND SYMPTOMS

- Gradual loss of vision.
- Both eyes are involved at varying stages.
- The pupil of the eye turns grey.
- The patient has hazy or double or multiple vision.
- There is no pain.
- The patient has to change his spectacles frequently.

PREVENTION

Cataract formation cannot be prevented. However, blindness due to cataract can and must be avoided through timely surgical intervention.

TREATMENT

- Medication of any kind cannot cure or delay cataract formation.
- Surgical removal of the clouded lens and replacement by Intra Ocular lens(IOL) can restore normal vision.
- Cataract surgery is simple. It is normally done under local anesthesia.
- Cataract surgical services are available free of cost in government hospitals and many Non-Governmental Institutions.

POST- OPERATIVE CARE

- Protect the operated eye from bright sunlight, dust, smoke and jerks
- Wear dark glasses.
- Put eye-drops / ointments as advised by operating surgeon.
- Get eyes checked by Eye-Surgeon after one week of the surgery and again after 6-8 weeks for refraction.
- There are no diet restrictions.

Cataract formation cannot be prevented by any means. Blindness due to cataract can and must be avoided through timely surgical intervention.

Glaucoma (Kala Motia)

Glaucoma, known as a sneak thief of eyesight, is one of the most sight threatening condition of the eye. It usually occurs among the people above 40 years of age especially who have a family history of glaucoma. It is caused due to excess build-up of fluid inside the eye, which, in normal case, is drained in blood stream. The fluid exerts pressure on vital parts of the eye like optic nerve and causes irreversible damage. Initially field vision is affected.

SIGNS AND SYMPTOMS

- Seeing of colored halos around the source of light.
- Headache and pain in the eye
- Gradual loss of side vision and restriction of field of vision
- Frequent change of spectacles

PREVENTION

Glaucoma cannot be prevented, but blindness due to glaucoma can be avoided, if detected early and treated properly and regularly.

TREATMENT

Regular check-up and medication as advised by the Eye-Doctor is a must for lifetime. In certain cases, Eye-Doctor may advise surgery also. But even after surgery medication as advised by the doctor from time to time must be strictly followed to avoid blindness.

Guard against glaucoma. Early detection and regular treatment can prevent blindness due to glaucoma



Normal Vision



Glaucoma Vision





Refractive Errors

Refractive error, when left uncorrected, is the most common cause of visual impairment. It is caused due to abnormal size and curvature of the eyeball.

TYPES OF REFRACTIVE ERRORS

(1) Myopia or near sightedness.

Persons with myopia have blurred distant vision. Children with myopia are not able to perceive their problem. It increases until the age of 20 or so. The condition can be corrected by concave / minus spectacles.

(2) Hyper metropia (Far sightedness)

Persons with hyper metropia have difficulty in seeing both distant & near objects. The condition can be corrected by using convex / plus spectacles. When left uncorrected, such persons feel eyestrain and headache while doing close work.

(3) Astigmatism

In this condition, a blurred distorted image falls on the retina. It causes strain. This astigmatism condition is treated by wearing cylindrical glasses

(4) Presbyopia

After the age of 40, a person may find difficulty to see near objects clearly. This is because the plasticity of the lens decreases. The defect can be corrected easily by wearing spectacles.

PREVENTION

Refractive errors cannot be prevented. However, they can be corrected with early detection and by wearing appropriate glasses regularly. There are mass screening programmes for detection of refractive errors among school children.

PARENTS/TEACHERS CAN IDENTIFY THE REFRACTIVE ERRORS IN CHILDREN By OBSERVING

- Hazy Vision.
- Complaints of headache while doing near work.
- Squeezing of the eyes while watching the distant objects.
- The child not taking interest in studies. It may be a sign of Refractive errors.
- Copying from other children's books instead of blackboard.

**Refractive Errors have no cure.
But correction is sure by appropriate glasses**

Diabetic Retinopathy

One of the major medical problems in our country is diabetes. While diabetes itself is a problem, it causes damage to many parts of our body including the eyes. Diabetic Retinopathy usually affects the retina.

SIGNS AND SYMPTOMS

- There is no visible sign or pain etc, initially.
- At later stage, blurred vision
- Seeing floaters (Dark spots) or black lines.

PREVENTION

- Regular check-up and medication to keep blood sugar under control is the best prevention for diabetic retinopathy.
- All those who have diabetes must get their eyes-checked from time to time to rule out retinopathy, even if their blood sugar is under control.

TREATMENT

- The damage already caused is irreversible.
- Medical treatment for diabetes can help to stop or delay progression of the diabetic retinopathy.



If you have diabetes, get your eyes checked for retinopathy or any other eye problem.



Corneal Blindness

The cornea is the transparent tissue covering the front of the eye. Vision will be dramatically reduced or lost if the cornea becomes cloudy.

CAUSES

- Malnutrition
- Injuries
- Infections
- Acid/ Alkali, Burns
- Post operative Complications or Infections
- Congenital Disorders

SIGNS & SYMPTOMS

- Watery eyes mucous/purulent discharge from eye
- Blurred vision
- Redness in the eyes
- Dryness
- Pain in the eyes

PREVENTION

- Prevent eye injuries. Keep sharp objects away from the reach of children
- Provide supplementary dose of Vitamin "A" solution to all children below 6 years of age. Educate mothers on nutrition of children
- Avoid self-medication. Consult eye specialist in case of any signs and symptoms as above.

TREATMENT

Prompt medical attention can prevent corneal blindness in most cases. People with corneal blindness can regain their vision by corneal grafting.

Donate your eyes and help two corneal blind to see again.

Prevent "Eye" Injuries

Most of the eye injuries are usually preventable. They occur frequently and can happen anywhere. It is estimated that 80-90 % of all eye injuries are preventable. 40-45 % out of them occur in and around the home. In children, eye injuries can occur at home, school or play ground and also during the festivals of Deepawali, Dussehra and Holi. Retinal burns can occur while viewing the solar eclipse with naked eye. They should always be aware of the best ways to protect their eye sight. Hence, prevention is the first and most important step for avoiding eye injuries. The following preventive measures can be taken at home, at play and during the festivals to save eye sight.

AT HOME

- Items of daily use like sharp edged toys, knife, needle, scissors etc., should be kept away from children. These objects can sometimes cause serious injuries when they come in contact with eyes.
- Make sure that all spray nozzles are directed away from you before you press down on the handle.
- Read instructions carefully before using detergents, ammonia or harsh chemicals. Wash your hands thoroughly after use.

AT PLAY

- Many toys with pointed or sharp ends and games like guli-danda, boxing can prove dangerous. Remember to pay attention to the age of a child while selecting a toy or a game.
- Avoid projectile toys such as dart, pellet guns etc. These can hit the eye from a distance.
- Supervise children when they are playing with toys or games that can be dangerous.
- Teach children the correct way to handle potentially dangerous items such as scissors, pencils, bows and arrows.

DURING FESTIVAL

- Don't give crackers to small children ✓
- Don't stand too close to fireworks.
- Don't ignite fireworks indoor ✓
- Adult supervision is essential ✓
- Wear eyeglasses or goggles for protection ✓
- Place a bucket of water nearby to put out fire ✓
- Use herbal colours. Avoid use of chemicals in fire ✓
- If chemicals falls in the eyes wash with plenty of water ✓

Blunt and perforating eye injuries need urgent attention. Do not ignore eye injuries. Avoid self treatment at all costs.



Vitamin 'A' Deficiency

Deficiency of Vitamin A in the body results / causes, various diseases. If left un-treated, the condition results in total blindness among children.

CAUSES

- Poor intake of vitamin A rich food like green leafy and yellow vegetables, fruits etc., by expectant and nursing mothers and infants.
- Frequent diarrhoeas.
- Measles and other respiratory infections.

EARLY SIGNS

- The Infant's skin and eyes appear dry and wrinkled.
- White portion of the eye appears lusterless and dull.
- Grey elevated patches called bitot spots appear on the white portion of the eye.
- Poor vision in dim light and at night.
- The condition is curable at this stage if the patient is referred to the Doctor and treated promptly.

PREVENTION

Expectant and nursing mother should eat adequate Vitamin A rich food (green leafy vegetables etc.)

TREATMENT

- Vitamin A Prophylaxis doses are given to the expectant and nursing mothers and infants. The schedule is as under for the children.

Dose	Age
FIRST DOSE	9 months with Measles Vaccine
SECOND DOSE	1 ½ Years with DPT Booster Vaccine
THIRD DOSE	2 years
FOURTH DOSE	2 ½ years
FIFTH DOSE	3 years

- Primary Health Centers also treat such patients.
- All infants should be breastfed from the very first day of their birth

Vitamin A deficiency disorders are preventable. Vitamin A prophylaxis is given free of cost in all primary health centers. Avail this facility and avoid childhood blindness

Conjunctivitis



Conjunctivitis, known as eye-flu, usually affects a large number of people at a time, particularly during monsoon. It affects both eyes. It causes itching sensation. After a couple of days of itching sensation, eyes become red, sticky and swollen. White yellowish discharge collects in the eyes. Often, the patient recovers within a few days without any medicine.

HOW IT SPREADS

It spreads from person to person. The fingers, flies and fomites (handkerchief, bath towel, bed linen etc.) spread infection.

PREVENTION

Hygiene is very important in arresting the spread of infection.

- Wash your hands and face with clean water frequently.
- Keep separate towel, handkerchief, bed linen etc. for each member
- Wash them with clean water daily.
- Avoid touching of the eyes frequently.
- Use sun-glasses.

TREATMENT

- Avoid self-medication of any sort without medical advice.
- Do not put ghee / honey etc., in the eyes.
- Wash your eyes frequently with clean cold water.
- If condition does not improve within 3-4 days, consult your doctor.



Conjunctivitis normally subsides within 3-4 days. If the condition of your eyes does not improve within 3-4 days, consult your doctor for advice.

Trachoma

Trachoma is an infectious disease. It affects eyelids. Later, when Eyelashes turn inside, causing damage to the cornea. It is found in certain pockets of the States of North India like Haryana Punjab, Rajasthan, Uttar Pradesh, Uttaranchal, Gujarat etc.



SIGNS AND SYMPTOMS

- Sandy sensation in the eyes
- Raised granules on the conjunctiva
- Usually both eyes are involved
- In-turned eye-lashes
- Discharge from eyes

PREVENTION

- Personal hygiene is the best prevention against trachoma
- Keep environment clean
- Remove all fly-breeding situations in and around the home.
- Maintain personal hygiene and facial hygiene.
- Keep separate towel, linens etc. for each member of your family and keep them clean.
- Wash your face with clean water several times in a day.
- Avoid physical contact with the person who has trachoma.

TREATMENT

- Trachoma is curable. Apply Antibiotic eye ointment on the advice of Eye Doctor.
- Wash your face frequently.
- Surgical removal of in-turned eye lashes

ADOPT 'SAFE' STRATEGY

- S - Surgery of in turned Eye lashes.
- A - Antibiotic (Medicine & eye Ointment)
- F - Frequent face wash
- E - Environmental sanitation

Personal Hygiene & Environmental sanitation is the best method of TRACHOMA prevention.

Squint or Crossed Eye



Crossed eye usually develops during early childhood. Both the eyes of the child are abnormally aligned when looking at an object. A person with crossed eyes uses one eye at a time and is deprived of the depth perception. It effects binocular vision and co-ordination between the two eyes. The condition can be corrected, if detected early.



SIGNS AND SYMPTOMS

The condition is prominent and in most cases, it can be noticed.

PREVENTION & TREATMENT

- Squint is best corrected, if noticed during early childhood. In some cases, proper spectacles can achieve desired correction. Consult the Eye Doctor immediately.
- Long duration squints, corrected surgically, do not usually bring about vision improvement. They are just for cosmetic correction.



Do not ignore childhood squint. Get it corrected before it becomes permanent.

When Something Falls in the Eye (Foreign Body in the Eye)

When small particles of charcoal, wood, sand, etc. falls in the eye they settle down in the conjunctiva, cornea and under the upper eye lid. They cause irritation and can damage the eyesight. In such a situation, please observe the following:

- Do not rub the eye. Wash with plenty of water
- Lift the upper eyelid and pull it down over the lower eyelid and move the eyeball.
- This will help in removing the foreign body from the eye.
- Let the tears wash it away. Most of the time, tears will do the cleaning.
- Ask some other person to take out the offending particle with the help of a clean wet cloth.
- If the particle does not come out easily, consult an Eye Doctor immediately.



**Avoid eye injuries following safety rules.
Do not rub the affected eye. Seek medical
attention immediately.**

Computer Vision Syndrome



Extensive testing in government laboratories has established that the computer monitor emits no harmful ionizing radiation (such as X-ray) or non-ionizing radiation (such as ultraviolet) under normal operating conditions. However, Computer monitors can cause dry eyes, eyestrain, eye irritation, Headache, backache etc. or muscles spasm. Changing the arrangement of the workstation or providing rest to the eyes in between the work can often relieve these complaints.

PREVENTION

- Computer users should keep their screen at a distance.
- Place the monitor slightly below eye level.
- The reference material should be kept close to the screen to minimize head and eye movements and focusing changes.
- Illumination should be proper to minimize reflection and glare use.
- The monitor screen should be kept clean
- Frequent blinking will lubricate the eyes and prevent them from drying out.



**Visual comfort is the key to the safe
use of computers.**

Low Vision

Low Vision is partial sight. It cannot be fully corrected by surgery, medication or glasses. It reduces the ability of the affected person to do many daily activities due to impaired vision.

CAUSES

- Congenital & birth problems/ disorders like Rubella or Albinism, Nystagmus.
- Injury to the eye or brain (Stroke), which can lead to Hemianopia.
- Systemic diseases like Diabetic Retinopathy.
- Retinal Disorders like Retinitis Pigmentosa.
- Age related disorders like Macular Degeneration.
- Juvenile Macular Degeneration, Optic Atrophy.

MANAGEMENT

The management of low vision mainly involves three steps, namely, proper evaluation, prescription of low vision devices and rehabilitation.

ADVICE

- Use low vision devices.
- The low vision patient should be well adapted to home, school & work place environment.

LOW VISION DEVICES AVAILABLE

- Magnifying spectacles hand and stand magnifiers for reading and writing.
- Distance telescopic lens for distant vision.
- Computer aided devices like closed circuit televisions.
- Non optical devices like special lamps and large print materials.



Low Vision is no more a handicap.
vision can be enhanced to near normal
with the help of low vision aids and human touch.

Retinopathy of Prematurity



The inside of the eye (retina) is not fully developed in a premature baby due to premature birth. During development, blood vessels grow from the central part of eye out towards the edges. This process is completed just before the normal time of delivery. In premature babies, the process is not complete. If the blood vessel growth proceeds normally, the baby does not develop Retinopathy of prematurity. (ROP). If the vessels grow and branch abnormally the baby develops ROP. It is more common in babies more than 12 weeks premature. This causes bleeding inside the eye and even progress to retinal detachment. This results in irreversible low vision or blindness.

DIAGNOSIS

A trained Ophthalmologist/Retina specialist can detect ROP by dilating the pupils of the eye and using an indirect Ophthalmoscope to scan the entire retina to detect ROP and assess the state of retinal maturity.

Any other preterm baby who had problems after birth like lack of oxygen/infection/blood transfusion/breathing trouble etc. is also vulnerable.

RETINAL EXAMINATION

It should be completed by day 30 of the life of a premature baby. It should preferably be done earlier (at 2-3 weeks of birth) in very low weight babies (<1200 gm birth weight).

TREATMENT

ROP is treated with laser rays or cryopexy to prevent abnormal growth of the blood vessels. It helps to prevent retina from getting detached thus preventing vision loss.





Stage 1 + stage 2 does not need any treatment. These stages may resolve as their own without further progression. ROP needs to be treated as soon as it reaches a critical stage called threshold ROP. If the retina detaches then it becomes stage 4 or stage 5. Surgery for these stages has very poor visual outcome. There is 50% or greater risk of vision loss if left untreated after this.

If treated on time, child is expected to have reasonably good vision. All premature babies need regular eye examination till they start going to school. Premature infants more frequently need glasses in early childhood than children who were not borne premature. They also are prone for developing amblyopia or strabismus.

Sometimes they may need treatment for cataract, glaucoma, retinal detachment.

Babies with birth weight of less than 2 Kg. or those born at less than 35 weeks of pregnancy are most likely to have retinopathy of prematurity.

Events

- August 25th to September 8th observed as 'National Eye Donation fortnight' all over India every year.
- Second Thursday of October celebrated as 'World Sight Day' all over India every year.

For further information, contact

**Nearest Primary Health Centers,
Government Hospitals, Medical
Colleges, NGO, Hospital etc.**



One of the basic human rights is the Right to See. We have to ensure that no citizen goes blind needlessly, or being blind does not remain so, if by reasonable deployment of skills and resources, his sight can be prevented from deteriorating, or if already lost, can be restored.

Central Council of Health & Family Welfare
at its meeting held in April 1975



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