

Blindness Prevention

Awareness Manual



For School Teachers

5 Million people
are waiting for eye
donation

80% of blindness could
be avoided if diagnosed
and treated early

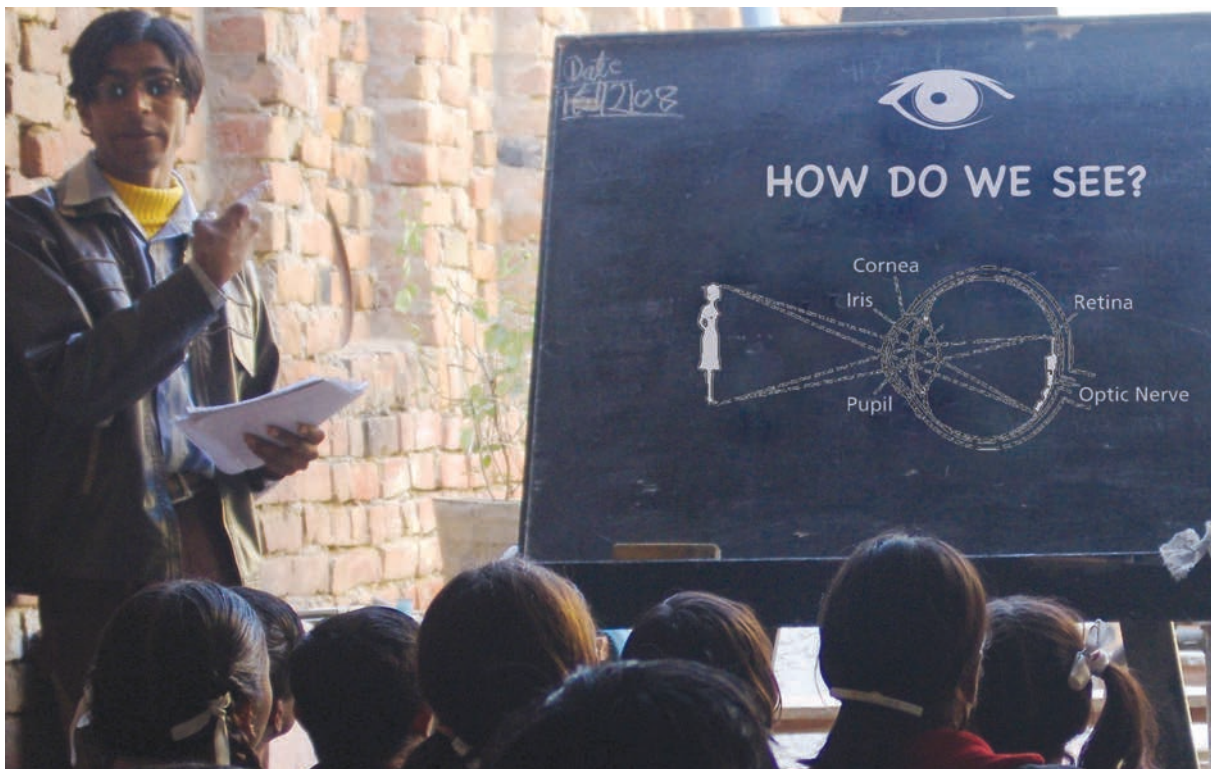
90 % of children who are blind
don't go to school



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**We inform, educate and
advocate issues related to
eye care, eye donation
and empowerment of
visually impaired**



Blindness Prevention Awareness Manual

for School Teachers

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Awareness Manual For School Teachers

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Hindi

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After thorough evaluation of experience gained through interactions with various agencies, and with complete dedication, sensitivity and of our capacity, we found that school teachers can play a very crucial role in making school children aware of prevention of blindness. After conducting many dialogues, meetings, seminars and workshops, it was decided that school children should be en-lighted by the teachers regarding blindness and other eye ailments and through parents-teachers meetings guardians should be included in this process.

In order to implement the above mentioned task Blindness Prevention Awareness Manual is being proposed. The aim of this manual is to provide awareness material and simple methods to prevent blindness which can be easily passed on to the children.

In preparing this manual we have included all the suggestions given by the teachers, doctors, social workers and trainers. We hope that this manual will be useful in making school children aware of the methods of prevention of blindness and other minor eye ailments easily.

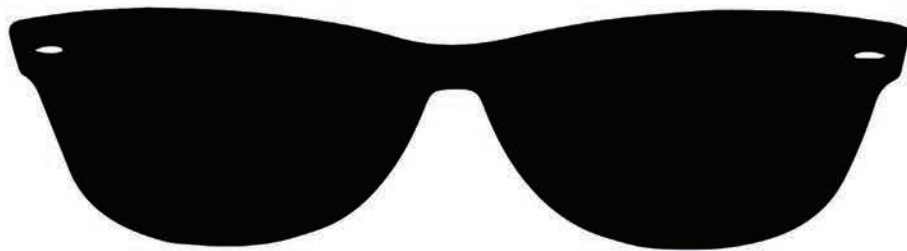
To keep the manual updated new information and technologies will be included in the manual from time to time.

Akhil Kumar Srivastava
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For you, it's easy to
Escape the DARKNESS.
for some people, it's Impossible.



DONATE
YOUR
EYES



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Be informed. Be informed. Be informed about eye.

About Manual (Introduction)



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This manual is prepared in such a way that not only can the children become sensitive towards their eyes, but they can understand the difficulties and problems faced by blind persons. While preparing the manual, special focus is given for activities, so that the child can realize the significance of eyes and take proper care.

Soon after doing the first activity the child will realize the significance of eyes, and if the eyes do get harmed due to any reason, he will face lots of problems in his life; this fact can easily be realized by children by doing the activities given in this manual. Through second activity we have tried to explain the significance of eyes and problems faced by them in case if the eyes are damaged. Our motive is to encourage the children to interact with blind people and help them and treat them equally. After explaining the significance of eyes in their life, we will make them aware about the eye diseases and their symptoms through various activities in this manual.

Sometimes it's not always possible to detect eye problems with symptoms alone. That's why it is very important to know how to examine the eyes in normal way. In Activity 4, it will be explained how to take care and examine the eyes normally without taking help of eye specialist.

Points to be remembered while using this manual

- Discuss keeping in mind the age and awareness of the child.
- Encourage the child to take part in discussion with open mind.
- Carry the activity serially.
- To avoid confusion in children maintain a gap of at least three days between any given two activities. All the activities should not be practiced in one day, in that case child will not be able to understand anything.
- Teachers should practice the activities among themselves before taking the activity sessions with children.
- Upon completion of every activity, it is necessary to discuss with children on how to make the activity better
- Motivate the children to share the experiences gained while doing these activities with other members of the family.
- If possible take the guidelines from any eye specialist about the eye problems and how to take care of them.
- You can also prepare other several activities to explain the importance of eyes, eye diseases and its protection such as word puzzles, fill in the blanks, match words, essay on significance of eyes in life, poster competition etc.

After having the information regarding the significance of eyes, diseases and its symptoms and general observation, it is essential to know how to protect our eyes. While discussing with children we have tried to explain to the children how to take care of their eyes, the do's and don't's in protecting the eyes. At the end of these activities, information is provided for the teachers regarding the ways the eyes work, eye diseases and its symptoms, cure and protection so that teachers can use this information while discussing with children after the end of activity.





■ Activity – 1

| | |
|---------------------------|---|
| Aim: | To realize the significance of eyes |
| Participants: | All the students of class |
| Place: | Class room |
| Material required: | Handkerchief or a clean piece of cloth for each student, which can be tied over the student's eyes like a blind fold. |
| Time: | 25 to 30 min |

Teachers should ask the students to play a game today. This game would be played by blindfolding the eyes. Make a handkerchief or piece of clean cloth available to all students. Ask the students to tie the cloth over their eyes in such a manner that they would not be able to see. After this, ask the students whether they can see anything by cross checking in a honest way. Teacher should help the student in blindfolding in case they are unable to do it properly. After this, tell the students that the game is going to begin and they should get ready. Next step, ask the students to search the Hindi



notebooks from their bags. Be attentive and ensure that students should not try to search notebook by opening or removing the cloth from their eyes. When all the students take out the notebooks, question the students can anyone read anything from it? All the replies will be NO, because it is not possible to read with closed eyes. Now ask the students to remove the cloth from their eyes and teacher should go out of the class room for few seconds, so that students should get time for relaxation.



After sometime, enter the class and ask the students about the game, like whether they enjoyed the game or not. Ask them why they were not able to take out the notebook. During this, motivate the students to take part in this discussion in large number. Also ask them what they experienced when the eyes were closed and tied. Try to know from students how would be the life with closed eyes always. While explaining the significance of eyes, tell them about the problems faced in daily life by blind persons.



Points to be kept in mind:

- Teachers should ensure before doing this activity the children should be free from study pressure and they should really be in a play mood. Try that children should participate in this game without any fear or under pressure and take part freely in the discussion held at the end of the game.
- While tying the cloth, be sure it should not be too tight.
- After the game when you will go out of the class room, it is natural that students will discuss among themselves about the game. Leaving them to discuss after the activity will also help the natural flow of discussion.
- There is complete surety that students will not be able to search out the notebook from their bag. But if any one succeeds, try to find out how he had done, may be by chance he was able to search notebook.
- In order to know about the experiences of students while doing this activity, encourage them to speak out and try to collect the experiences by asking them simple questions during discussion period.
- Avoid any type of anger, frustration, hurry, scolding and negativity during the activity, keep motivating students.
- While answering the questions and explaining the significance of eyes in human life keep in mind their age and level of general understanding.
- In school you can activity more meaningful by practicing this activity with other colleagues and can share your group experiences with students.



■ Activity – 2

| | |
|---------------------------|---|
| Aim: | To explain the significance of eyes with a focus to be sensitive towards the problems faced by blind persons |
| Participants: | All the students of class |
| Place: | Open ground |
| Material required: | Handkerchief or a clean piece of cloth for each student, which can be tied on student's eyes like a blind fold. |
| Time: | 40 to 50 min |



Take all the students to open ground and ask them to make pairs. After making them stand in pairs, blindfold one student in the pair and leave the other one with open eyes.

Next, now the child whose eyes are covered is asked to move with the support of the other student whose eyes are open. After 10 minutes exchange the blind fold where the student who was previously tied can now see and the other student's eyes are closed with cloth. Ask the students are asked to repeat the same procedure asking the blindfolded student to move around with the support of other student. Finally ask them to stop the game and let them untie the cloth. Give them few minutes for relaxation, so that they can prepare themselves to take part in discussions held based on this activity in a fresh way.

After 10 minutes call the students back in the class and ask them:

- How the game was, whether they have enjoyed or not?
- Ask in detail the experiences of students when they had to move around with the support of their friend. Their fears on whether the friend will help them or make them fall.
- Secondly, how they were feeling when the cloth was removed from their eyes and were giving support to the other student of their pair, if they faced any problem while helping their friend to walk.





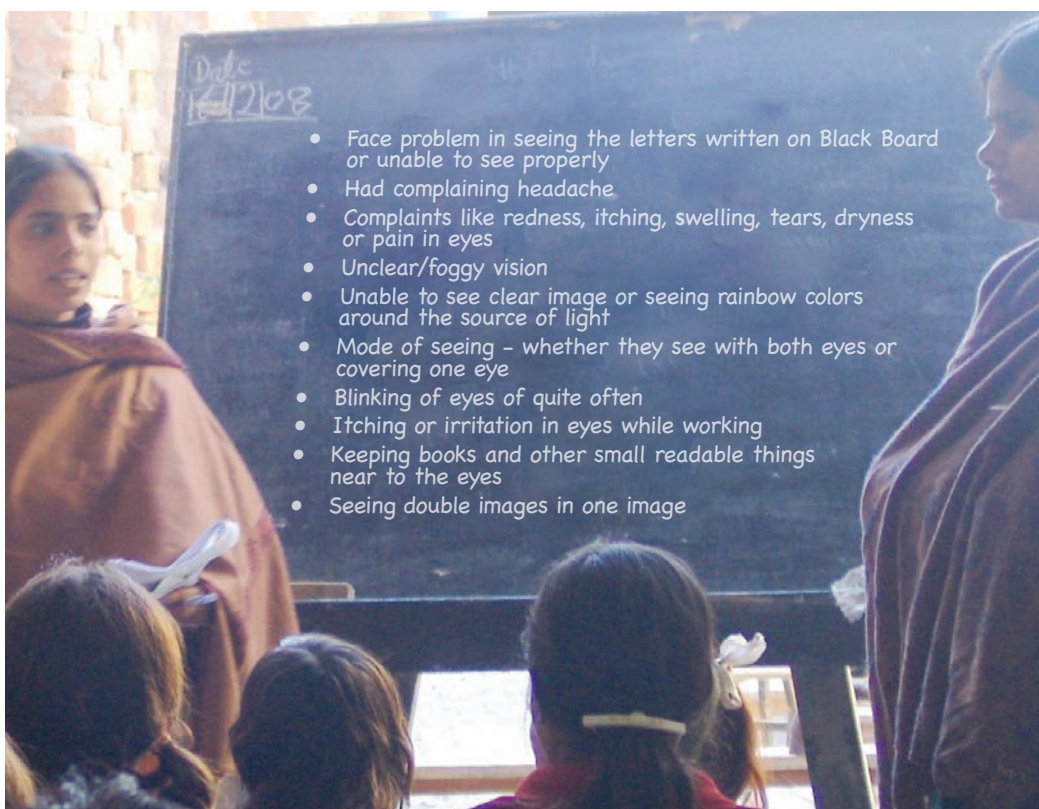
Points to be kept in mind:

- Teachers should ensure that students should be in a friendly, tension free and normal atmosphere from beginning to end while playing this game.
- Cloth should be tied over the eyes in such a way that it should not be too tight and students should not feel pain but tight enough that the student should not be able to see.
- Give total freedom to the students to select their friend in making respective pairs.
- Make sure that enough benches and chairs are there in the ground as a natural obstacles, so that when the students will move in pairs, it will not be a simple walk, the student with open eyes would have to move by protecting his friend with covered eyes negotiate these obstacles, then only these students would be able to realize the difficulties of the blind in real sense.
- Place the benches in such way that they can be easily crossed, they should not be in a way that causes any danger to walking student or guiding student. They should not get injured while navigating their way.
- At the end of the game, while asking the experiences of these students, give them more chances to speak up in their own words and also motivate them to share their experiences. Asking simple and small questions will help you to move ahead this sharing process, so that students would realize in depth about the problems faced by blind people in their routine life. Your aim would be to develop sensitiveness towards blind people in these students
- Provide detailed information regarding the importance of eyes in life and problems faced by blind people.



■ Activity – 3

| | |
|----------------------|--|
| Aim: | To create awareness among students about the symptoms of eye diseases. |
| Participants: | All the students of class |
| Place: | Class Room |
| Time: | 30 to 40 min |



- Face problem in seeing the letters written on Black Board or unable to see properly
- Had complaining headache
- Complaints like redness, itching, swelling, tears, dryness or pain in eyes
- Unclear/foggy vision
- Unable to see clear image or seeing rainbow colors around the source of light
- Mode of seeing – whether they see with both eyes or covering one eye
- Blinking of eyes of quite often
- Itching or irritation in eyes while working
- Keeping books and other small readable things near to the eyes
- Seeing double images in one image

Begin this activity by taking examples from the previously practiced activities, based upon the significance of eyes. For example- In the last few days we had played few games by tying cloth over eyes and tried to learn the significance of eyes through it, till now we all have come to know importance of eyes in our life, without eyes we have to face lots of problems. But due to lack of right information, carelessness and unable to contact eye specialist and many other reasons, many people lose their eyesight in our society.

This is a true fact – eyes diseases are dangerous, but if we consult the eye specialist in time and take precautionary steps, we can protect our eyes from hazard of these eye diseases.

The biggest challenge is failure to identify potential blinding eye condition before it is too late. If we are aware about the primary symptoms of eye diseases, we can save ourselves to some extent.

Creating a healthy atmosphere in the class to provide the information regarding the symptoms of eye diseases to students, ask them how much they understood about the condition of eyes in question and answer format. After that write the following questions on blackboard

and instruct the students to copy down on paper.

Verify whether any child:

- Faces problem in seeing the letters written on Black Board or unable to see properly
- Is complaining headache
- Has complaints like redness, itching, swelling, tears, dryness or pain in eyes
- Has unclear/foggy vision
- Is unable to see clear image or is seeing rainbow colours around the source of light
- Check mode of seeing - whether they see with both eyes or covering one eye
- Is blinking his eyes often
- Has itching or irritation in eyes while working
- Is keeping books and other small readable things near to the eyes
- Is seeing double images in one image

When the students have finished writing the above findings in pages then ask them to write their names at the bottom of the page. Now, explain each question written on the blackboard one by one to the students in detail, and ask them to write Yes – against the question which is applicable to them and mark NO against the point which is not applicable. For example- for the question having headache?, those students having headache will write YES and those who are not having headache will mark – NO against this question.

Motivate the students to keep these symptoms in mind, and as soon as they detect any one of these symptoms in their eyes, they should immediately inform the teachers or parents about the problem.



Points to be kept in mind:

- Before beginning Activity 3, ask the students to close their eyes for 2-3 minutes and try to recall the experiences felt during the Activity 1 & 2. This will help the students to relate themselves once again with the significance of eyes and condition of blind people and suitable atmosphere could be developed for the practice of Activity No 4.
- When the students complete the question answers writing Yes or No against it, collect those papers from the students after the activity, but be sure that every student has written his names on the papers. This information will be useful for further practices.
- While conducting the activity based on symptoms, special attention should be paid towards the feelings of students, the experience should not make them feel discouraged, hopeless, develop fear or frustrated. If such feelings occur, very calmly explain to the student that all these symptoms are treatable.



■ Activity – 4

| | |
|----------------------|---|
| Aim: | To develop the ability for general observation of eyes without the help of eye specialist |
| Participants: | All the students of class |
| Place: | Classroom or open veranda of the school with proper light |
| Time: | 30 to 40 min |
| Material: | Vision Test Chart |

These activities which relate to eye examinations/tests, make students aware that lack of proper information sometimes leads to not having enough knowledge which again leads to disease

Now ask the students whether they want to know how to examine eyes, and if they say yes then only begin this activity. Always be sure that students should not be forced for any activity or game.



Instructions:

- Place the chart given in manual in a big room/hall or veranda wall. Chart should be placed at the level of student's sight.
- Measure 3 Meter or 10 feet distance from the wall.
- If you use eyeglasses for distance vision, the glasses should be worn during the test.
- Cover your left eye and see the chart by right eye.
- Have another person point to each line as you read the letters out loud, remember or write to track of which letters you are not able to see.
- Continue to the last row or until you are not able to see.
- Write down the number of the smallest line where you identified the majority of letters correctly (Ex./If you were able to read 5 out of 8 letters on line 8, you would write 20/20.)
- Repeat the steps 4 to 7 with your left eye, this time close your right eye.
- The results depends on the age of the student being tested. A 3 to 4-year-old student should be able to read the 20/40 line, and a 5-year-old the 20/30 line. Older students and adults should be able to read the majority of letters on the 20/20 line.
- If you notice any results that fall outside these standards, immediately contact to your eye specialist.
- Same procedure should be repeated with all the students one by one. You should aim that students should learn to do the eye test on their own with the help of other students.





Points to be kept in mind:

- On the basis of the information obtained through Activity 3, emphasis on the eye test of those students having the eye symptoms.
- Be careful that during the eye test, the other eye of the student is completely closed with palm.
- Let the student identify the figure on his own, don't try to help him.
- Chart should be placed on the wall in such a manner that it should not move here and there, it should be fixed on the wall at one place.
- At the time of eye test, Identify those students who are not able to see the bottom two lines of the chart and contact their parents suggesting them to consult eye specialists, and also encourage the students to take their eye test as priority. Guide the students for the proper eye care and to follow the ways of eye protection.
- Periodically try to collect the information regarding the status of eyes of affected students from their parents.
- Take the help of the students to complete the entire procedure, so that after sometime, students would be able to carry the eye test by themselves.



■ Discussion

| | |
|----------------------|---|
| Aim: | Providing the information regarding precautions for blindness or other eye problems |
| Participants: | All the students of class |
| Place: | Classroom |
| Time: | 1 Hour |
| Material: | Blackboard & Chalk/Flip chart & Marker pen |

Before beginning the discussion, by giving a brief of all the activities done so far, it will act as refresher to students regarding eye problems and protection and also regarding how to take precautionary measures.

Ask the students whether they want to protect their eyes from eye diseases or not. If yes, then tell them the following ways to protect our eyes.

Points to be remember

- Take nutritious food/balanced diet.
- Take fruits, sweet carrot, especially yellow colour fruits like papaya and mango, as these are best source of vitamin A.
- Avoid intake of spicy, stale food, nutrition less and junk food.
- Maintain cleanliness and clean atmosphere.
- Wash the eyes with cool water 2-3 times a day
- If eyes are sticky, clean it properly in regular intervals.
- Eyes should be properly cleansed soon after getting up from bed in morning.
- Never use dirty cloths while cleaning eyes.
- Self medication regarding eye should always be avoided. Consult the doctor
- Avoid use of Native/local made medicines.
- Take precautions while using kajal, surma and other herbals for eyes.
- Protect the eyes from bright light, smoke and chemical substances.
- Never try to see the solar eclipse, sun or welding light with naked eyes.
- Ensure the proper arrangement of light in room while watching TV, watch the TV from a proper distance and give rest to your eyes time to time while watching continuously
- Always read in proper light. Light rays should directly fall upon the object which you are reading instead on your eyes
- Try to read in straight position instead of while lying down



on bed or any such position which gives much strain to eyes.

- Consult the eye specialist on facing any type of eye problems instead of taking advice from Non-medical and lay people.
- Avoid superstitions regarding eye problems and solutions
- If you encounter any other medical problems which could be a cause for blindness, please consult the doctor for full information and guidance.

We can face problems like dryness in eyes, irritation, pain, headache, back pain or muscular pain because of excessive use of computer. The ways to protects us from harmful effects of the computer:

- Keep proper arrangement of light in computer room.
- The person using computer should keep the monitor (computer screen) at proper distance.
- Monitor should be placed lower than eye level.
- Required material should be kept near monitor while working on computer
- To save eyes from variations of brightness and images, always work in computer in proper light arrangement.
- While working, blink eyes many times so that eyes remain moist and can avoid dryness.

Always save the eyes from injuries

We can save our eyes from almost 80 to 90 percent eyes injuries.

While playing and at home:

- Be careful while using pointed objects used in routine life like pointed or sharp toys, knife, needle and scissors, and children should handle them under proper guidance.
- While using spray and or spraying any chemicals, be sure



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that the nozzle should be away from your eyes.

- Before using the detergent or other harmful chemical substances, carefully read the instructions given over it and wash your hands after the use.
- Objects like bow-arrow or pistol should be carefully handled.

At the time of festivals involving fireworks/crackers:

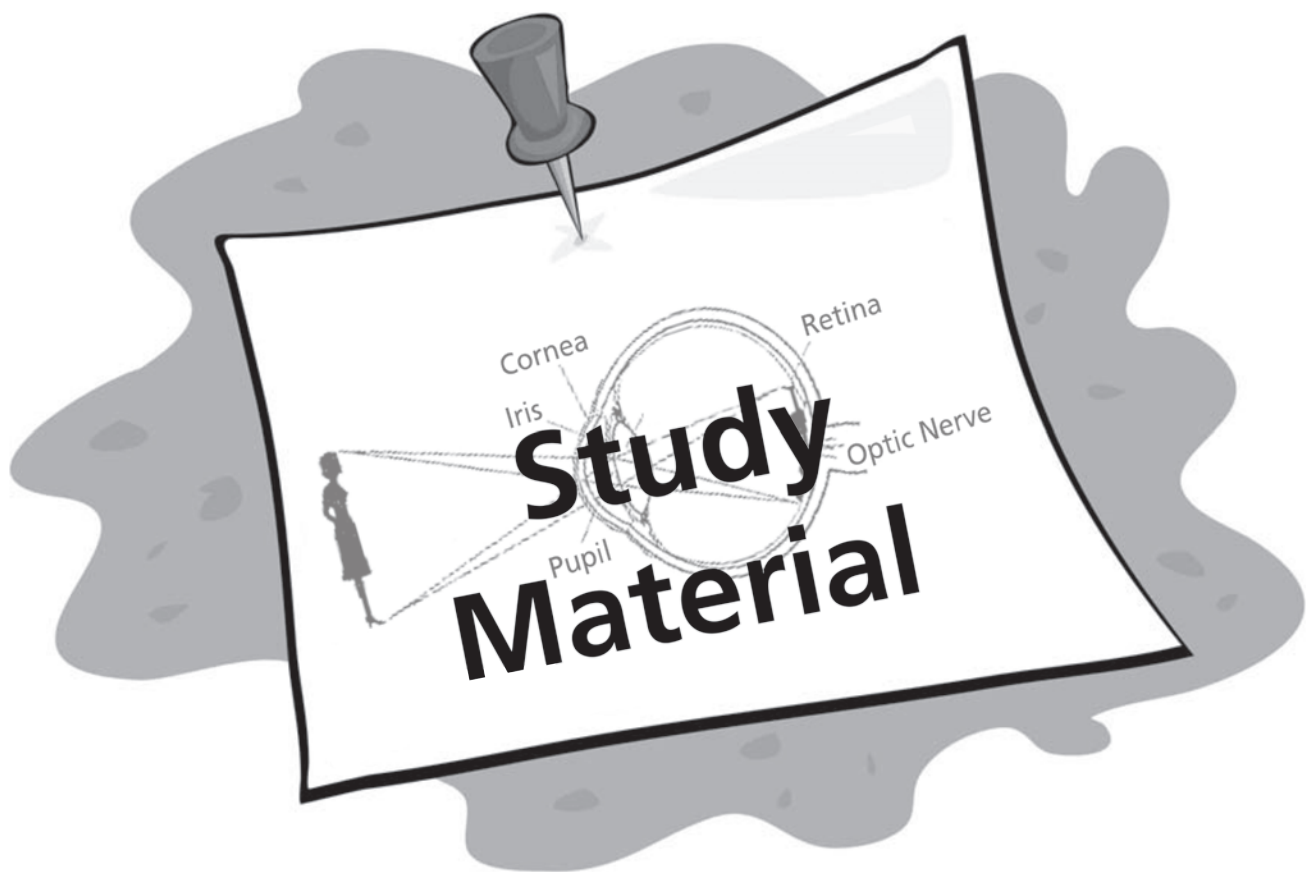
- Always burst crackers under the guidance of elders; don't stand too close to lighted crackers.
- Never light up the crackers inside the house
- Keep sand or bucket full of water nearby while lighting up crackers for safety
- Avoid the use of chemical colors for celebrating holi or other occasions, prefer to use natural colors.
- Don't apply the colors forcefully on others and always be careful that colors should not be applied near eyes.
- In case, if eyes are affected with any harmful chemical substance, wash the eyes immediately and thoroughly with clean water; if the problem persists even after washing eyes, consult eye specialist as soon as possible.

When something falls into eyes:

- Never rub the eyes.
- Wash the eyes properly with water
- Lift the upper eyelid and stretch lower eyelid in a way tears come out and wash any foreign body object
- Take the help of others to pull out the fallen object in eyes through clean wet cloth
- If the foreign body is not coming out easily, immediately contact eye specialist

Immediately contact or consult eye specialist on detecting any type of diseases or symptoms in eyes. Never try to put any type of eye drop in your eyes (self medication).





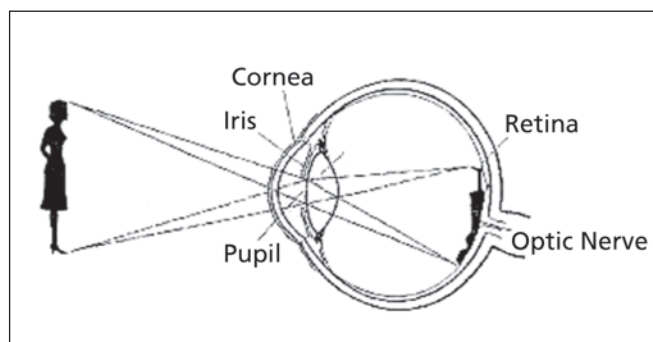
How do we see?

Human eye is one of the most valuable and sensitive sensory organs. It enables us to see the wonderful world and the colors around us. Human eyes are made of many parts working together, which obtain the image of the object through medium of light and send the message to brain. The three things required for vision or to view the image are:

- Eye
- Brain, and
- Light

Before knowing how we see, it is necessary to know how the eyes brain and light works and how they are related to each other.

When there is an object which we look at, the light rays passing from that object, form the image upon our eyes. For example, if we are seeing the dog, the light rays falling upon



the dog, form an image of the dog on the light sensitive layer at the back of the eye called the retina. Light enters the eyes passing through cornea. The cornea is a thin transparent membrane that covers the front of the eye. It has a bulging nearly spherical shape of an average diameter of about 2.1 to 2.3 cm. The cornea and lens refracts (bend) the light rays entering into the eye. Main function of these parts of the eye is to focus the image on the retina which results in clear vision. Light passing through cornea enters the pupil. Iris is a dark colored flexible muscular diaphragm situated behind the cornea; it is involved mainly in controlling the size of the pupil. The inner aperture that we can see in the centre of the iris is called pupil. The iris increases or decreases the size of the pupil to regulate the amount of light that enters through pupil. In darkness, eye requires more light to see any object, in such situation the size of the pupil increases, so that light can enter pupil in maximum

amount and object could be seen clearly. Just opposite to this, when there is bright light or extra amount of light the pupil's size decreases to stop the extra amount of light entering into eye. All this happens on its own; we do not have to tell the eye when to increase or decrease the size of the pupil.

In our eye, just behind the iris, a clear convex lens is situated. When the right amount of light falls on this lens, it forms an inverted but real image of the objects and focuses it on the retina. Retina on which image is formed, acts like a screen. Retina consists of more than 130 million small, light sensitive cells, which carry the messages to other cells. When light falls on these cells, they become activated and convert light into electrical signals to produce a sense of vision. These cells finally connect to nerve fibres which join to form the optic nerve, which is a part of brain.. This optic nerve connects the eye to the brain and carries impulses to and from the brain. Image formed at retina is sent as electrical impulses to brain through optic nerve. The brain analyses the object we are seeing. When we see any object, both our eyes view a slightly different scene, but the brain connects both the scenes and makes a single object visible. Both the eyes play a significant role in seeing any object; if any one of the eye is affected, it affects the vision.

We can understand this phenomenon by doing an activity with two pencils. Ask the students to hold two pencils just in front of the eyes; now close one eye and bring both the pencils closer, while keeping one eye closed. Students mostly will have difficulty in doing so. But if we ask them to repeat the same activity with both the eyes open, they can join the pencils easily.

Try to know from the students why it happened so, why they are not able to join both the pencils with one eye closed, and very easily they were able to join pencils when both the eyes were open. Also try to know from the students what kind of problems they have to face when one eye is not working properly.



Main causes of blindness

Among the main causes of blindness, cataract is 55 percent, myopia or hypermetropia 19 percent, glaucoma 4 percent, corneal blindness 7 percent and rest are 15 percent. Now we will learn one by one, causes, symptoms and its treatment.

CATARACT

Cataract is a very common disease all over the world and causes blurred or dimmed vision, and it is the main reason of blindness in our country. It usually occurs in older age. The lens becomes cloudy or opaque and light is unable to enter eyes either partially or completely and patients face blurred or dimmed vision. In some cases there could be double vision or no vision at all. Old age, eye injury, inflammation, diabetes and use of steroid for long period are the main causes of cataract. If a woman is affected during pregnancy, the child may have cataract right from the birth.

Signs and Symptoms

Bilateral cataracts in an infant due to congenital rubella syndrome

Signs and symptoms vary depending on the type of cataract, though there is considerable overlap. People with nuclear sclerotic or brunescient cataracts often notice a reduction of vision. Those with posterior subcapsular cataracts usually complain of glare as their major symptom.

The severity of cataract formation, assuming that no other eye disease is present, is judged primarily by visual acuity test. The appropriateness of surgery depends on a patient's particular functional and visual needs and other risk factors, all of which may vary widely.

People with cataracts may have the following symptoms:

- Blurry, cloudy, or misty vision.
- Some describe it as similar to looking through frosted glass.



-
- Vision may be affected by small spots or dots.
 - The patient sees small patches which blur parts of his/her field of vision.
 - Vision gets worse when lights are dim.
 - Vision is sometimes worse when light is very bright (glare).
 - Some people with cataracts also comment that colors appear less clear and faded.
 - Reading becomes very difficult, and eventually impossible.
 - Glasses need to be changed more frequently.
 - Eventually wearing glasses becomes less effective.
 - In some rare cases patients can see a halo around bright objects, such as car headlights or street lights.
 - Double vision in one eye (rare).

Precaution

The procedure of formation of cataract cannot be stopped, but can be cured by operation in time. The treatment of cataract is possible only by operation.

Treatment

No medicine can cure cataract, nor can reduce the formation of cataract in eye. In cataract the normal vision can be brought back by removing the dimmed lens through surgery and placing intra ocular lens. Cataract surgery is very simple.

Cataract surgery

Cataract removal can be performed at any stage and no longer requires ripening of the lens. Surgery is usually 'outpatient' and performed using local anesthesia. Approximately 90% of patients can achieve a corrected vision of 20/40 or better after surgery.

Phacoemulsification is the most widely used cataract surgical procedure today. This procedure uses ultrasonic energy (U/S) to emulsify the cataractous lens

Extracapsular cataract extraction (ECCE), consists of removing the



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lens manually, but leaving the majority of the capsule intact. The lens is expressed through a 10–12 mm incision which is closed with sutures at the end of surgery.

Intracapsular cataract extraction (ICCE) is rarely performed nowadays. The lens and surrounding capsule are removed in one piece through a large incision while pressure is applied to the sclera. The surgery has a higher rate of complications.

Post-operative care

The post-operative recovery period (the period after cataract extraction is done) is usually short. The patient is usually ambulatory on the day of surgery but is advised to move cautiously and avoid straining or heavy lifting for about a month. The eye is usually patched on the day of surgery and at night using an eye shield is often suggested for several days after surgery.

In all types of surgery, the cataractous lens is removed and replaced with an artificial lens, known as intraocular lens, which stays in the eye permanently. Intraocular lenses are usually monofocal, correcting for either distance or near vision, however, multifocal lenses may be implanted to improve near and distance vision simultaneously, but these lenses may increase the chance of unsatisfactory vision.

GLAUCOMA

Glaucoma can make the eyes permanently blind. Unfortunately, Glaucoma is often detected at final stage by which nothing remains in our hand. The only way to protect us from this is to detect this disease as soon as possible; mostly it occurs in people above 40 age.

Aqueous humour, a fluid substance providing nourishment and proper shape to eyes is being secreted continuously by the tissues situated around the lens called the ciliary body. This fluid drains out of the eye through a tissue called trabecular meshwork situated between cornea and sclera (white of the eye). In this way the formation and flow of aqueous humour in eyes is a continuous process. Continuous formation and flowing of this fluid is necessary for healthy eyes and its balance is called intraocular pressure.



Sometimes the trabecular meshwork get blocked and drainage of this liquid is stopped, but the formation of this fluid continues. This increases the pressure upon the optic nerve. This may result in complete and irreversible blindness.

In most cases of glaucoma, there may be no symptoms at all till the late stage. The common symptoms of this disease are changing the power of spectacles frequently, the eye sight decreases day by day especially peripheral vision and it becomes difficult to see in room light. Headache may occur occasionally and rainbow colours are visible around light bulbs

Prevention from Glaucoma

In most of the cases, there is no prevention for this disease, but if it happens due to some reasons, it is better to detect as early as possible. If the treatment is given in time, it can be controlled to some extent and sufferer can be saved from becoming blind. That's why it is always suggested to avoid smoking and go for eye check-up on regular routine basis, especially those persons which can come easily under the grip of Glaucoma.

Who can be affected from Glaucoma

- If a member of the family is or was suffering from glaucoma, like brother, sister, parent etc
- Undergone eye surgery
- Diabetes patients
- Using high minus or plus number spectacles
- Hypertension
- Gone for eye surgery
- Suffering from thyroid
- Suffering from cataract from long period
- Got eye injury in past
- Habit of using eye drops especially steroids or unknown herbal drops from long time

Effective Suggestions

Important points to be kept in mind for patients

- Take medicines n time as directed; never take medicines



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- without doctor's prescription
- Go for eye and optic nerve and intra-ocular pressure check up at least once in a year to an eye doctor not optician.
 - Take doctor's advice regarding the eye pressure and for regular checkup
 - If any one member of the family is suffering from Glaucoma, in that situation all the other members of that family above 40 years age should go for regular eye checkup

CORNEAL BLINDNESS (blindness due to the damage of cornea) & Vitamin A

A glass like transparent layer called cornea covers the front of the eye ball which gets damaged due to injury, eye infection and lack of nutrition in childhood. Blindness occurred due to corneal damage; the eye sight can be restored through corneal transplant. A new cornea is procured through eye donation only. In our country, there are large number of people who became blind due to corneal damage. We can avoid this situation by taking proper care of cornea.

Causes for corneal blindness

Deficiency of Vitamin A is the main cause of corneal blindness. Vitamin A helps in strengthening the surface tissue of our body including eyes also. Deficiency of Vitamin A weakens the cornea and sores occur which results in blindness. The continuous deficiency of Vitamin A occurs due to dysentery, Khasra and malnutrition. Deficiency of Vitamin A causes corneal blindness and many other diseases, and if is not treated properly the child can become blind. Pregnant and breast feeding women and children should take leafy and yellow colour vegetables and fruits which are rich in vitamin A as part of their diet.

Indications or symptoms

Wrinkles and dryness can be seen on the child's skin and in the eyes, the white portion of the eye ball (sclera) loses its shininess and appears dull, dry, rough and full of wrinkles. Brownish coloured rough and raised



patches called Bitot's spots can be seen over the sclera or white portion of the eyes, occasionally looking foamy or resembling fish scales. Child is not able to see clearly in dim light or during night time. This situation is called as night blindness

Precaution

Vitamin A is found in large quantity in green leafy vegetables like chaulai, gram, methi, bathua, spinach, palak, gazar, pumpkin and fruits like mango and papaya. Egg, meat, fish milk, curd and paneer is also rich in Vitamin A but saturated fat, cholesterol is also found in these food products.

Precaution for the other reasons of corneal blindness

It is very necessary to provide balanced and nutritious diet to children to prevent corneal blindness occurring due to malnutrition. Prevent eyes from any type of injury. Avoid infectious diseases by keeping the surrounding neat and clean. At the time of infection, use separate and clean towels, bed sheets for each member of the family. Wash the face several times a day with clean water and destroy all the causes for the spreading of flies around your residence.

Warning

Vitamin A should be given in proper quantity in our body, and it should be kept in mind that there should be gap of six months between the two doses of Vitamin A, excess amount of vitamin A results in vomiting and sometimes brain is also affected.

Diabetes & EYE

More than 10 crores diabetes patients by 2030

India has perhaps the world's second largest population with diabetes and the number of new diabetics is growing by leaps and bounds. As per medical research surveys, more than seven crores diabetes patients are in india, among which approximately half are women. There is a possibility that these numbers may increase to



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ten crores by year 2030. If the duration of Diabetes is more than 10 years it surely affects other body parts and one of those could be eyes. As you all know, diabetes affects the walls of blood vessels and weakens the vessels carrying oxygen to the Retina (where image is formed). If a diabetic patient is not having blood sugar well controlled then he/she can get affected with Diabetic Retinopathy and the worst part is that it is usually diagnosed only after much damage, sometimes irreversible has occurred to the retina.

Diabetic Retinopathy

Tiny vessels carrying blood to the retina in diabetics start leaking, allowing cholesterol and blood and fluid to collect in the retinal layers. Some new vessels also can which leak and even rupture easily which harms the retina of eye due to the fact that the supply of oxygen and nutrition to the retina reduces.

Some preliminary changes of Diabetes eye affection

- White cataract or black cataract
- Getting frequent mild eye infections like styes and conjunctivitis
- Poor eye sight in the morning hours
- Bleeding in retina
- Headache or sudden diminishing in eye sight
- As compared to a normal person a diabetic patient is more vulnerable for developing cataract at an earlier age

Precautions for safety

- Get regular eye checkup, even necessary for children
- Keep cholesterol and sugar under controlled limits in blood
- If one feels pain, darkness, anxiety in eyes contact doctor immediately
- Diabetic patients should get eye checkup atleast once in a year



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- Diabetic patients suffering from over 10 years should get eyes tested once quarterly
 - Pregnant women if diabetic contact the doctor for further precautions

The greater the duration of diabetes, the greater the chances of developing Diabetic Retinopathy. However with the help of retinal lasers, the incidence of blindness can be reduced by 60 %, but by being aware and taking precautions one can avoid such problems.

The other eye defects

Myopia or near-sightedness

A person with myopia can see nearby objects but cannot see distant objects clearly. For example a child suffering from this disease tries to sit very close to the blackboard in class. In this condition, the cornea and lens of the eye bend the incoming light rays from distant objects too much so that they focus in front of the light sensitive layer of the eye – the retina.

Myopia can increase with age and in some cases, the retina too may develop holes or tears, hence myopic patients should immediately see an eye doctor when detected and then annually at least. The defect is corrected by using concave lenses in spectacles.

Hypermetropia or Long-sightedness

Person suffering from this disease is not able to see clearly near or distant objects; generally it is common in very young age. This defect can be corrected by using a convex lens of appropriate power. If this defect is not cured in time, the person suffering from hypermetropia can suffer from headache, heaviness in eyes and difficulty in reading.

Presbyopia

The power of accommodation of the eye usually decreases with ageing, lens is not able to change its size due to ciliary muscles



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weakness and the light rays falls behind the retina while reading or seeing nearby objects. This defect is common in people at 40 years or above age. Person suffering from presbyopia sees dimmed images while reading, writing or working at near by objects.

Astigmatism

In this defect, some of the light rays focus on a particular point before or behind the retina, due to which the person is not able to see objects at distance or near clearly and feels irritation and headache, sometimes eyes become red in colour.

Short-sightedness (myopia), long-sightedness (hypermetropia), presbyopia and astigmatism like diseases could be cured and controlled by the use of proper lenses in spectacles to some extent. A person suffering from these defects can damage his eyesight to a great extent if not using or taking spectacles/lens/proper care

Squint

Usually squint develops during early childhood. Both the eyes of the child are abnormally aligned when looking at an object. A person with squint uses one eye at a time and is deprived of depth perception. Squint can be corrected at any age perfectly by surgery. However, Squint is best corrected and binocular vision restored, if noticed during early childhood. In some cases, proper spectacles can achieve desired correction. As soon as you come to know that your child has Squint, consult the Eye Doctor Immediately.

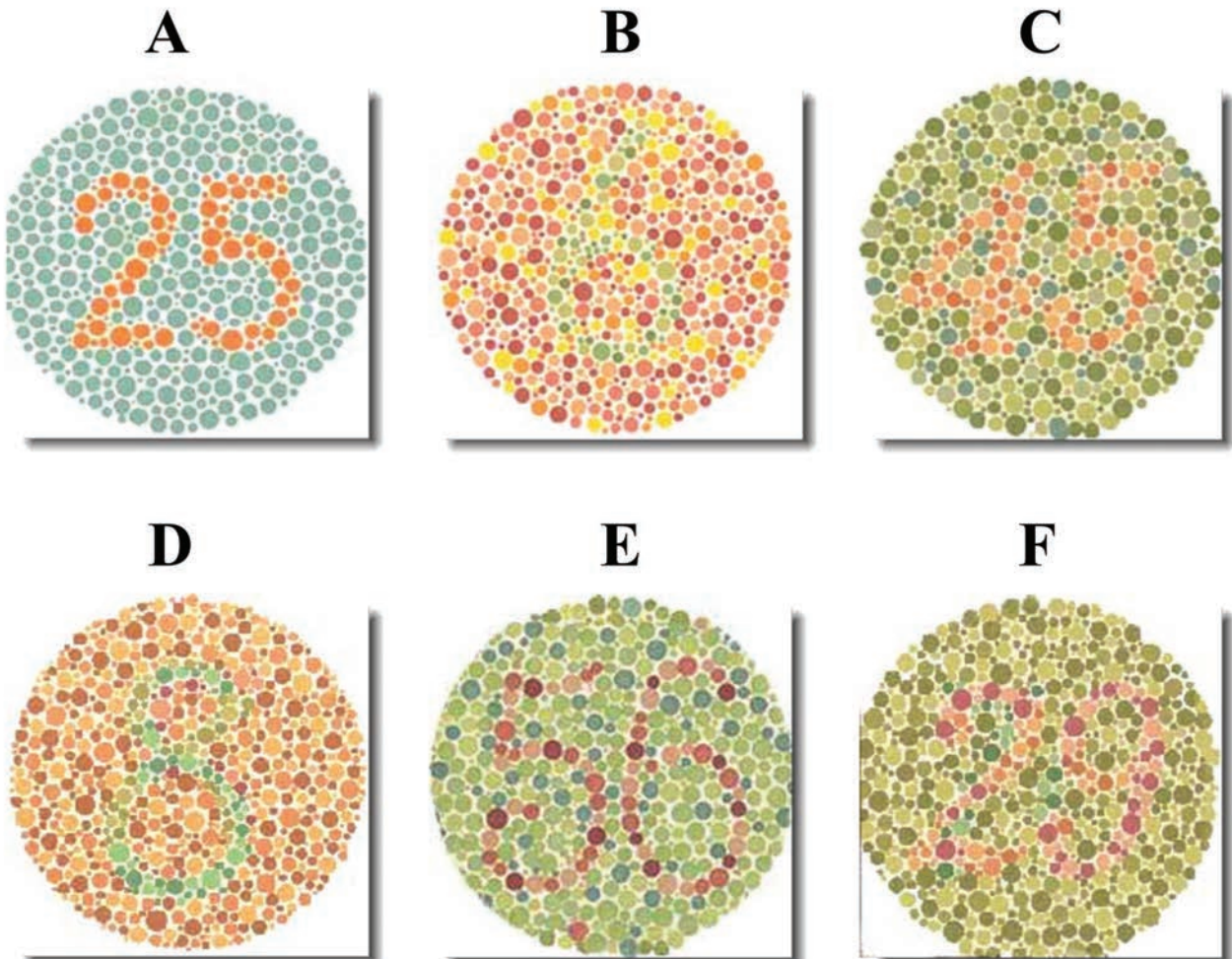
Long standing squints, corrected surgically, do not usually bring about vision improvement. They are just for cosmetic correction.



Colour Blindness

Colour blindness is such an eye effect in which the person suffering from colour blindness is not able to identify the colors properly, he sees red as green, green as red or blue as yellow colour. There is no cure for colour blindness. But if this defect could be detected right from childhood, a child can shape his future in right direction. For example a child with color blindness wishes to enter medical field, keeping the practicalities in mind he can chose the particular branch where he/she is not required to identify colors etc....

The children affected from colour blindness could be easily detected by the activity given below. Ask the children to look at the circles given below one by one, and note down the numbers they see; later on match it with your own answers given below. If you find colour blindness in any of the child suggest him to go for colour blindness check up to eye specialist as soon as possible.



Children those who are not affected from colour blindness will see 25 in A, 6 in B, 45 in C, 8 in D, 56 in E and 29 in F circle.

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