



Chapter 16

Why Children Lose Their Vision and What We Can Do

When people confront health problems like blindness, they often look for physical and medical causes. These causes are important, and you can learn about them in this chapter. However, to prevent blindness in a community, we also have to look at the social causes of blindness. For example, poor children are more likely to have eye infections and difficulty seeing than other children. Why?

The Story of Penda and Kesi

Penda lives in a small village in Africa. Several years ago, her husband died in a bus accident, leaving her with 3 young children. A few months later, she had another baby, a girl named Kesi. To feed her 4 children, Penda had to work long hours, so she stopped breastfeeding early.

When Kesi was 1 year old, her left eye got swollen. Penda treated her daughter's eye with herb compresses, but Kesi's eye did not get better. A few days later, a thick liquid started coming out of Kesi's eye. Penda was very worried. She had no money for a doctor, so a friend took Penda and Kesi to see a health worker in another village.

The health worker told Penda that her daughter was not getting enough of the right foods, so her eyes were losing their sight. To have healthy eyes, she explained, children need to eat foods like green leafy vegetables, orange vegetables and orange fruits that have vitamin A, which keeps eyes healthy. The health worker treated Kesi with vitamin A capsules. It was too late to save the sight in Kesi's left eye, but the treatment was early enough to save the sight in Kesi's right eye.

Penda was thankful that some of her daughter's sight had been saved. Now, she wants to teach other mothers about how important vitamin A is for children's eyes. She and the health worker are planning a meeting for pregnant women and mothers of young children. Penda is hopeful that other mothers in her village can find low-cost ways to eat better and improve health for themselves and their children.

Why did Kesi lose her sight?

There are several causes:

The rest of the chapter can help you learn about the medical causes and treatments for sight problems. But to prevent blindness, communities must do something about the social causes that medicine cannot fix.

Causes of blindness and eye problems

Child blindness is usually caused by poor nutrition or infection. Many children go blind because:

- they do not have enough food, or their food does not give them the vitamins they need to keep their eyes healthy
- in crowded living conditions, disease and infection spread from person to person
- in communities where garbage and human waste are in the open, flies and other insects spread infection that can also cause blindness
- traditional medicines are misused, making infections worse (see page 165)

These problems cannot be solved by one person working alone. But people can work together to build latrines, get rid of garbage, and find ways to grow the food they need to stay healthy (see page 168). If communities work together, most blindness in children can be prevented.

How can your child eat enough foods with vitamin A if you cannot afford to buy them? Some communities grow small vegetable gardens so they can prevent blindness in their children.



Kesi loses sight in left eye.

NIGHT BLINDNESS, DRY EYES, AND XEROPHTHALMIA (LACK OF VITAMIN A)

To keep the eyes healthy, people need to eat foods that have vitamin A, which is found in certain fruits, vegetables, and some meat. When a child eats enough foods with vitamin A, the surface of the eye stays wet and healthy. Many poor children do not get enough foods that are rich in vitamin A and their eyes begin to dry out. This is called "dry eyes."



Dark yellow and dark green vegetables, and some red or orange fruits and vegetables, are rich in vitamin A. Fish, milk, eggs, and liver also contain vitamin A.

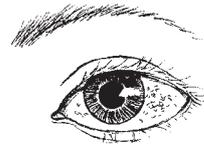
Not getting enough vitamin A is the most common cause of blindness in children, especially in Africa and South Asia. It usually happens to children who are between 6 months and 6 years old. Children under 6 months who only breastfeed usually get enough vitamin A from their mother's milk.

Signs:

1. First, a child has trouble seeing in the dark or does not want to play outside after dark.



2. Then, the eyes may begin to look dry. The white part becomes less shiny, starts to wrinkle, and forms small gray spots that look like soap bubbles (Bitot's spots).



3. Later, the colored part of the eye also gets dry and dull, and may have little pits.



4. Finally, the colored part may get soft, swell, or burst, causing blindness.



Treatment:

- Give 3 doses of vitamin A. The first dose should be given as soon as you find out your child has 'night blindness' or 'dry eyes'. Give the second dose the next day, then a third dose 14 days later.

In the chart below, one capsule contains 50,000 IU (international units) of vitamin A.

Age	Number of capsules in one dose
under 6 months	1 capsule
6 months to 1 year.....	2 capsules
more than 1 year	4 capsules

Note: Once a child loses some of her sight, treatment will not get back that part of her sight. But starting treatment right away can keep her from losing any more of her sight.

Prevention:

- Breastfeed your children as long as possible — at least for 1 year, but even longer if you can.
- Try to make sure your child eats food rich in vitamin A every day.
- If a child is sick with measles, try to give her extra foods with vitamin A.

MEASLES (RUBEOLA)

Measles is a sickness that passes from person to person. If a child is already weak from not eating enough good foods or from diarrhea, being sick with measles can make her lose some or all of her sight.

Signs of measles:

- fever, runny nose, and cough
- red eyes
- red rash all over the body

**Treatment:**

- Your child should rest, drink a lot, and eat healthy foods. If a baby cannot breastfeed, give her breast milk with a cup.
- Give one dose of vitamin A (see the chart at the top of this page) as soon as you find out your child has measles. This will prevent 'dry eyes.'
- Give rehydration drink for diarrhea (see next page). This will help replace the liquids and nutrients lost when a child has diarrhea.

2 ways to make rehydration drink

If you can, add half a cup of fruit juice, coconut water, or mashed ripe banana to either drink. These contain potassium, a mineral which helps a sick child accept more food and drink.

1. **With sugar and salt.** (You can use raw sugar or molasses instead of sugar.)

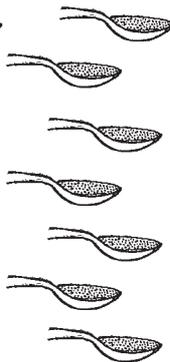
In 1 liter
of clean
WATER



put
half of
a level
teaspoon
of **SALT**



and 8 level
teaspoons of
SUGAR.



CAUTION: Before adding the sugar, taste the drink and be sure it is less salty than tears.

2. **With powdered cereal and salt.**

(Powdered rice is best. But you can use finely ground maize, wheat flour, sorghum, or cooked and mashed potatoes.)

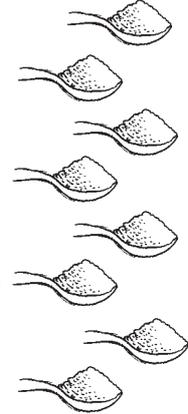
In 1 liter
of clean
WATER



put half
of a level
teaspoon
of **SALT**



and 8 heaping
teaspoons of
powdered **CEREAL.**



Boil for 5 to
7 minutes
to form a
liquid gruel
or watery
porridge.
Cool the drink
quickly and
begin to give
it to the sick
child.

CAUTION: Taste the drink each time before you give it to make sure that it has not spoiled. Cereal drinks can spoil within a few hours in hot weather.

Prevention:

- have your child immunized against measles. Your child can get the measles immunization as early as 6 to 9 months of age. See a health care worker to find out if this vaccine is available in your community.
- keep children away from anyone with measles.
- if someone has measles, wash their bedding, clothes, and eating tools separately from the rest of their family.

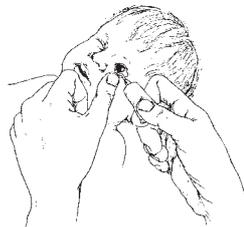


Usually, measles is not a serious sickness. But when children are weakened because they do not get enough to eat, or because of diarrhea from drinking unsafe water, sicknesses like measles can be very dangerous. It is really poverty that makes these children blind.

INFECTED EYES IN NEWBORN BABIES (NEONATAL CONJUNCTIVITIS)

All newborn babies should be protected from eye infections by applying 1% tetracycline, erythromycin, or chloramphenicol eye ointment as soon as possible after birth. If these medicines are not available, you can also use a 2.5% solution of povidone-iodine.

Clean the baby's eyes with a clean cloth moistened with cool, boiled water. Pull down the lower lid of each eye, and put a little bit of ointment inside the lower lid. Putting ointment outside the eye does not do any good.



If a baby gets an eye infection soon after birth, he can go blind. Eye infections can be caused by germs that get into the baby's eyes during birth, if the mother has an infection herself. The germs are from gonorrhea or chlamydia, which are infections that spread from one person to another during sex. Many people have these infections without knowing it because they have no signs of sickness. Because it is difficult to tell if a woman has an infection, it is important to treat all babies with eye ointment within a few hours after birth (see box above).

If a baby who is a few days old gets red, swollen eyes or has pus coming out of his eyes, he may have an eye infection and needs to be treated right away, whether or not he was given eye ointment after birth. The mother and her partner or partners should also be treated.

Signs of infection in a baby:

- red, swollen eyes
- pus in eyes
- lids matted shut, especially upon waking



Signs of gonorrhea or chlamydia in a woman:

- yellow or green discharge from the vagina or anus
- pain or burning when passing urine
- fever
- pain in the lower belly
- pain or bleeding during sex
- or no signs at all

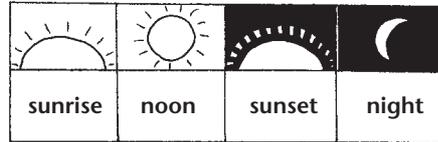
Remember even if the mother has no signs of infection, **if the baby has signs of infection then the baby needs to be treated.** The mother and her partner will also need treatment.

Treatment for the baby:

Pus should be cleaned from the eyes as soon as possible with a clean cloth and clean water.

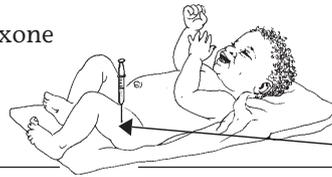
The baby needs 2 different medicines

Give erythromycin syrup by mouth. Give 40 mg of syrup 4 times a day for 14 days.



Also:

Inject 125 mg ceftriaxone into muscle one time only.



The best place to inject a baby is the upper outer part of the thigh.

If an infant has redness, swelling or pus in the eyes for more than 2 weeks, or these problems come and go for longer than 2 weeks, the baby may need more or different medicine. See a health worker.

Note: If your baby has lost some sight, the medicine will not help her get her sight back. But the medicine can help prevent her from losing more of her sight.

Treatment for the mother and her partner:

The mother and her partner need 2 different medicines

These are safe to take even if a woman is breastfeeding.

Take 500 mg of erythromycin by mouth 4 times a day for 7 days.

OR

Take 500 mg of amoxicillin 3 times a day for 10 days.

Also:

Take 400 mg of cefixime by mouth one time only.

OR

Inject 250 mg ceftriaxone into muscle one time only.



When women cannot speak with their partners about using condoms and protecting their sexual health, they risk becoming infected with gonorrhoea and chlamydia. If more women were able to protect themselves, fewer babies would go blind.

TRACHOMA

Trachoma is a disease that is spread by flies. Once a person is infected, the disease gets worse slowly, usually over many years, unless it is treated. Trachoma is most common in poor, crowded living conditions, where there is little access to clean water.

Signs:

1. Trachoma begins with red, watery, sore eyes. But sometimes there are no early signs.
2. After about a month:
 - small yellowish-white or pink-gray dots form inside the upper eyelids
 - the top edge of the colored part of the eye may look cloudy
 - the white upper part of the eye gets a little red
3. Years later, the lumps inside the eyelids begin to go away, leaving white scars. These scars may pull the eyelashes down into the eye, scratching it and eventually causing blindness.

Treatment:

To learn how to put medicine in the eye, see page 160.

Put 1% tetracycline or erythromycin eye ointment inside both eyes 3 times each day.	OR	Use 3% tetracycline or erythromycin eye ointment 1 time each day.
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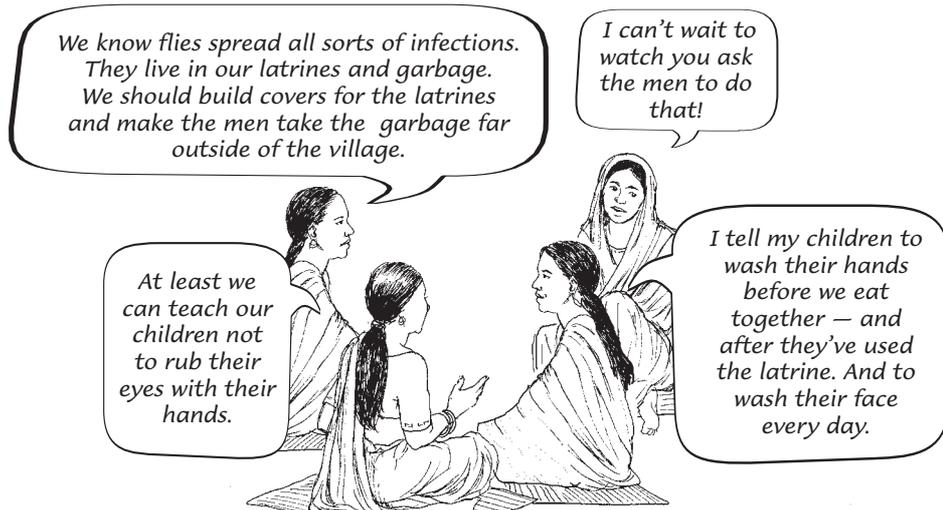
Do this for 30 days. Put this ointment in the eyes of other children in the house, too.

For severe cases of trachoma, when the infection covers half or more of the inside of the eyelid, also give erythromycin by mouth for 14 days:

Age	Dose of erythromycin
under 3 years	75 to 150 mg 4 times a day, with food
3 to 7 years.....	150 mg 4 times a day, with food

Prevention:

Keep latrines covered and be strict about training your children to wash their hands with soap and water after they use the latrine.



CATARACTS

When a child has a cataract, the lens (a part of the eye just behind the black circle in the center) becomes white or milky. This causes a child to not see very well, as though everything were covered by a cloud. Cataracts may affect one or both eyes.

Cataracts are most common in older people. But some babies and children also get cataracts. Cataracts may be passed down in families (hereditary) or be caused by an eye injury. Often the cause of cataracts is unknown. Sometimes cataracts are caused by a German measles (rubella) infection during the first 3 months of pregnancy. Rubella can cause hearing loss as well as cataracts, so a child who has cataracts should also have his hearing tested. Cataracts are painless.

Signs:

- Blurred eyesight and a dimming of vision which get worse over time.
- The cataract may be seen from the outside. At first the center of the eye looks gray and then it becomes white.



Treatment:

Cataracts cannot be treated with medicine. An operation is needed to remove the cataract. After the operation, strong glasses may be needed.

Prevention:

- Pregnant women should stay away from people with German measles (rubella) or anyone sick with a fever and rash.
- Look for the signs of cataracts in children so they can be treated as early as possible.

RIVER BLINDNESS (ONCHOCERCIASIS)

River blindness is a disease caused by tiny worms that are spread by tiny black flies or “buffalo gnats.” When the fly bites you, the worms carried by the fly get under your skin. If these worms get in the eye, they can cause blindness.



The black fly has a humped back and looks like this but is much smaller, like this



Signs:

- Lumps under the skin that slowly grow to a size of 2 to 6 cm (about 1 to 2½ inches).
- There may be itching when the baby worms are spreading.
- Pain in the back, shoulders, or hips (or pains all over).
- Skin changes. The skin on the back or belly may become thicker, darker, or scaly. Later, the skin becomes wrinkled, like the skin of an old person.
- Eye problems. First the eyes get red and watery, then very painful and itchy. Next, the center of the eye gets dull and pitted, as in ‘dry eyes’ (see page 157). Finally, the person becomes blind.



Treatment:

Some of the medicines used to treat river blindness may be harmful for children and should only be given by a health worker. Try to take your child to a health worker as soon as the first signs of river blindness appear. If treated early, your child can be cured.

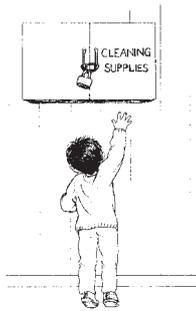
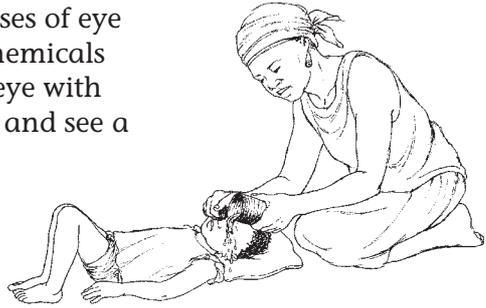
Prevention:

- Black flies usually breed near fast-running water. Cleaning brush and vegetation back from the banks of fast-running streams may help reduce the number of flies.
- Avoid sleeping out-of-doors — especially in the daytime, which is when the flies usually bite. Mosquito nets can keep the flies away from you while you sleep.
- Cooperate with programs for the control of black flies.
- Watch for the signs of river blindness in children so they can get treatment as soon as possible.

EYE INJURIES

Many chemicals in the house — like acid, lye, and cleaning solutions — are common causes of eye problems in children. If one of these chemicals gets in the eye, immediately rinse the eye with cool, clean water for 15 to 20 minutes, and see a health worker right away.

Be careful not to get water in the other eye. Tilt the child's head to the side and put the eye you are washing closest to the ground.



Injuries to the eye or scrapes on the eye can also cause blindness or problems seeing. Keep all sharp pointed objects, and also chemicals, out of the reach of children and keep play areas safe by removing objects that could cause eye injury. Warn children about the danger of throwing things at other people, or of throwing closed bottles, cans, or bullets into the fire. Also warn them about local plants and medicines that can injure the eyes.

Traditional beliefs and eye medicines

People have different traditional beliefs about what causes blindness. Some people believe that a child is blind because the parents have done something wrong. Others believe that a “black witch moth” flew by the baby’s face, causing her to be blind. And some people think that a child is blind because someone has done evil to the child’s mother and the child is “witched.” None of these cause blindness.

There are traditional medicines which can help treat eye problems. But before using any medicine, traditional or modern, make sure that the medicine cannot harm the person in any way. Here are some general things to remember about traditional cures for health problems:

- The more cures there are to treat the same problem, the less likely it is that any of them will help.
- Disgusting cures rarely help people.
- Never use human or animal excrement as a cure. It can give the person an infection.
- The more the cure looks like or resembles the sickness, the more likely its benefits come only from the power of belief.

Eyes are fragile. It can be dangerous to put herbs and other materials in the eye because they can cause infections.

Other ways to prevent blindness

Keep your children's eyes clean. When their eyes are infected or have pus, clean them often with a clean cloth wet with clean water. Anyone with an eye infection should try to see a health worker.

Eyes should not be touched if you or your child has a cold sore anywhere. The infection that causes cold sores can cause blindness if it gets into the eye.



Wipe each eye from the corner of the eye by the nose to the corner of the eye by the ear. Use a different part of the cloth to clean each eye.



Women need to take special care of themselves when they are pregnant. They need to have enough good food to eat. A health worker can help pregnant women learn how to:

- stay healthy
- prevent blindness in their babies by staying away from people with German measles (rubella)
- avoid using certain medicines

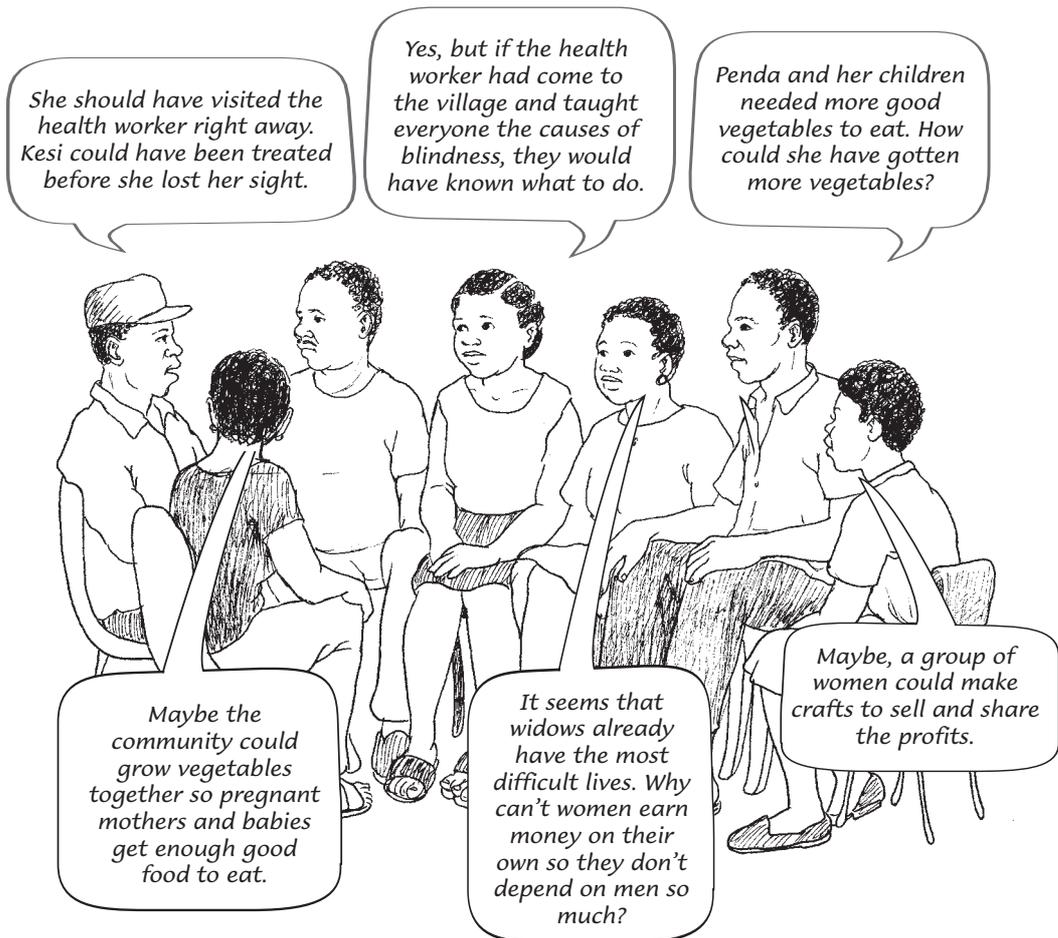
Health workers should promote breastfeeding so women can pass nutrition and immunities to their children through their breast milk.

Health workers can also try to get all children vaccinated against infectious diseases like measles (rubeola) and German measles (rubella).



How can people work together to prevent blindness?

Go back to Penda's story at the beginning of this chapter. Look at the chain of causes that led to her baby losing sight in one eye. How could the story have been changed to have a happier ending? How can people in your community change the conditions that make children go blind when it could be prevented?





Gardening to prevent blindness

In Bangladesh, thousands of children go blind every year because they do not eat enough foods that have vitamin A. Delwara Hasina lives in a village in Bangladesh with her husband and 3 children. Although Mrs. Hasina has no blind children in her own family, she and other people in her village decided to help prevent blindness. So she contacted Banchte Shekha, an organization of women helping other women in rural villages.

At Banchte Shekha, Mrs. Hasina learned that certain fruits and vegetables contain enough vitamin A to prevent blindness. She also got training on how to grow vegetables from Banchte Shekha workers who had been trained earlier by Helen Keller International, an organization that works the world over to prevent blindness. Now Mrs. Hasina grows vegetables on a small plot (30 square meters) next to her home and on another plot the same size next to her parents' home.

"Before, our gardening was seasonal and we grew only a few things like bottle gourd and beans," Mrs. Hasina said. "Now, we grow more than 10 varieties of vegetables, spices, and fruits all year round." She and other women are encouraging families to start gardens. It does not take much space to grow enough vegetables with vitamin A for a family. "I cook some of my family's daily meal from the garden," she says. "My children like red amaranth (lal shak) and Indian spinach, which I grow throughout the year."

Mrs. Hasina sells her extra produce in the local village market. She uses the money to buy additional food and educational materials for her children. "The amount of money is small, but it helps me to meet the children's needs," she said.

Mrs. Hasina's garden is one of more than 600,000 household gardens in Bangladesh that are part of this international gardening project. See page 188 for information about how to contact Helen Keller International and start gardens in your community.