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CHAPTER

# 12

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## PREVENTION: HOW TO AVOID MANY SICKNESSES

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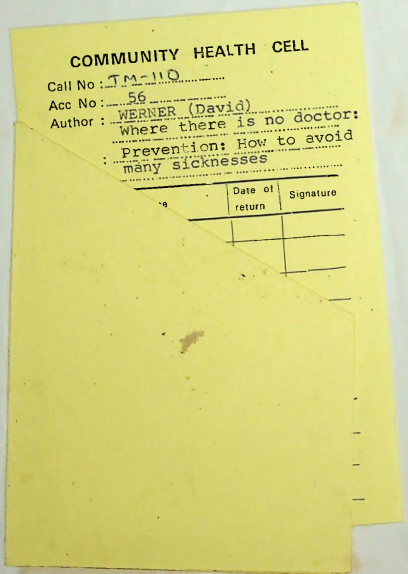
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# 12

## PREVENTION: HOW TO AVOID MANY SICKNESSES

*An ounce of prevention is worth a pound of cure!* If we all took more care to eat well, to keep ourselves, our homes, and our villages clean, and to be sure that our children are vaccinated, we could stop most sicknesses before they start.

### CLEANLINESS AND ENOUGH FOOD PREVENT MOST OF THE COMMON AND SERIOUS ILLNESSES

Many people in our country do not have enough to eat even for one meal or enough water even to drink. And why is there no food or water for these people?

- Is it because the land and the only well in the village belongs to the high caste people?
- Is it because the people do not have the money to buy good food or firewood to boil the water?
- Is it because each person in the village does not have enough land or work to support himself?
- Is it because the people do not look or plan ahead? Because they do not realize that by working together and sharing, they can change the conditions in which they live?

As a health worker, it is your job to help people understand and do something to improve their conditions. Your advice about prevention will have meaning only if you help people find answers to these questions.

Good nutrition not only prevents sicknesses, it also helps the sick person fight against his disease, see Chapter 11.

Cleanliness is of great importance in the prevention of many kinds of infections—infections of the gut, the skin, the eyes, the lungs, and the whole body. Personal cleanliness (or *hygiene*) and public cleanliness (or *sanitation*) are both important.

### HOW ARE DISEASES SPREAD

**Feces-to-mouth:** They can be spread either by eating shit (see p 156), through water or flies. Diseases spread this way include

- several types of intestinal worms
- diarrhoea, dysentery (caused by amebas and parasites)
- cholera, typhoid, and hepatitis
- certain types of diseases like polio

**Direct Contact:** These diseases are spread by touching the infected person, using his clothes, sleeping on his bed, his blankets. They include

- skin diseases like scabies, ringworm
- lice, ticks
- venereal diseases like syphilis, gonorrhoea are spread by sexual contact.

**Coughing ,sneezing:** When a person coughs or sneezes , the germs present in his respiratory passage are thrown out with a great force. Other persons who breathe these germs can then get the disease. If an infected person spits out phlegm, the phlegm gets mixed up with the dust around. The phlegm has the germs of the disease in it. The dust is carried around by the air and other persons who breathe this air get the disease. These types of diseases include:

- tuberculosis
- measles, chickenpox
- common cold
- pneumonia
- diphtheria

**By insects and other animals:** Sometimes, some germs which cause disease need to spend a part of their lives in an insect or animal. When the insect bites us, or if we eat raw meat from the infected animal, or if the infected animal bites us, we can also get infected and sick.

Diseases spread this way include:

- malaria
- filaria (elephantiasis)
- tapeworm infection
- rabies

### Feces-to-mouth infection

The way these infections are transmitted can be very direct.

For example: A child who has worms and who forgot to wash his hands after his last bowel movement, offers his friend a biscuit. His fingers, still dirty with his own stool, are covered with hundreds of tiny worm eggs (so small they cannot be seen). Some of these worm eggs stick to the biscuit. When his friend eats the biscuits, he swallows the worm eggs, too.

Soon the friend will also have worms. His mother may say this is because he ate too many sweets. But no, this is because he ate shit!



Many times pigs, dogs, chickens, and other animals spread intestinal disease and worm eggs. For example:

A man with diarrhea or worms has a bowel movement behind his house.



A pig eats his stool, dirtying its nose and feet.



Then the pig goes into the house.



In the house a child is playing on the floor. In this way, a bit of the man's stool gets on the child, too.



Later the child starts to cry, and the mother takes him in her arms.



Then the mother prepares food, forgetting to wash her hands after handling the child.



The family eats the food.



And soon, the whole family has diarrhea or worms.



If the family had taken **any** of the following precautions, the spread of the sickness could have been prevented:

- if the man had used a latrine or out-house,
- if there was no latrine and the man had covered his shit with mud,
- if the family had not let the pigs come into the house,
- if they had not let the child play where the pig had been,
- if the mother had washed her hands after touching the child and before preparing food

Flies and other insects also spread many infections of the digestive system.  
For example:



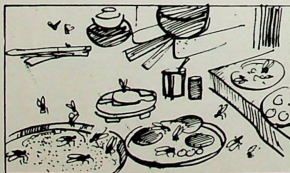
A man with cholera has a bowel movement near his house.



Flies sit on his stools and the germs which cause cholera stick to their legs.



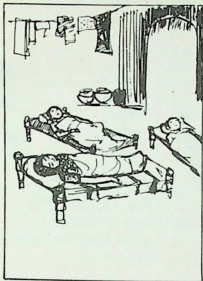
Some of these flies enter the kitchen



The flies sit on the food and rub their legs.



The family eats this food



The family gets cholera



The mother has a bowel movement near the house



Flies sit on her stools



Some of these flies enter a sweet shop and sit on the sweets.



A child buys and eats these sweets



And soon, he also gets cholera.

If the people had taken **any** of the following precautions, the spread of cholera could have been prevented:

- If the man (and the other patients) had used a latrine or outhouse
- If there was no latrine, if they had covered their stools with mud
- If the food in the kitchen was kept covered
- If the sweets in the shop were kept covered
- If the child had not bought uncovered sweets

To prevent cholera and other diseases which are spread by flies.

- if possible, put a wire netting on the kitchen doors and windows so that flies cannot enter
- keep all food and water covered



This man has hepatitis (jaundice).



He has a bowel movement near a pond. The germs of the disease get into the water.



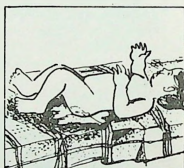
This woman takes water from the pond to her house.



Her family drinks the water.



They all get hepatitis.



The baby passes stools and dirties his clothes.



Another woman takes water from this well.



Her family drinks this water.



Her family also gets hepatitis.

If the people had taken **any** of the following precautions, they could have prevented the spread of hepatitis:

- if the man had not passed stools near the source of drinking water.
- if both the women had boiled the water before giving it to their families to drink
- if the woman had not washed infected clothes near the well
- if the well had been protected with a wall and a platform.

Because they are spread easily, intestinal infections often strike a whole village or community at the same time (epidemic).

If there are many cases of intestinal sicknesses like diarrhoea, worms, typhoid, cholera, hepatitis, people are not being careful about cleanliness. If many children die from diarrhoea, it is likely that poor nutrition is also part of the problem. To prevent deaths from infections of the digestive system, both cleanliness and good nutrition are important (p. 341 and Chapter 11).

### Infections spread by direct contact:

Many of these infections are transmitted through touch, or using or sharing the same clothes, beds, blankets, towels. Some of these infections can also be spread by just sitting together. For example: Lice, scabies.



His brother has now got scabies.







If the boy and his family has taken **any** of the following precautions they could have prevented the spread of scabies:

- if the boys had slept separately and had sat separate at school
- when the family knew the boy had scabies, if they had taken treatment for it all together.
- if they had regularly washed their clothes and dried them in the sun.

Venereal diseases also spread directly from one person to the other through sexual contact. For example:



This man has syphilis

He had sexual contact  
with an unknown  
woman

She got syphilis from him



She gave this other man the germs of syphilis when she had sexual contact with him.



This man had sexual contact with his wife and gave her syphilis



His wife became pregnant.



When she delivered her baby, the baby was born with syphilis.

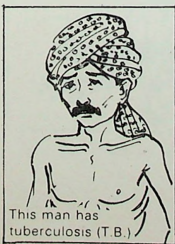


All venereal diseases spread through sexual contact. If you suspect you have a venereal disease, tell the health worker. And stop having sexual contact with anyone till the health worker says you can.

### Infections spread by coughing and sneezing:

These infections are very easy to get as the air around us normally has the germs causing such sicknesses. For example

This man has tuberculosis (T.B.)



He coughs out his phlegm, which has T.B. germs in it.



Another person Standing near him breathes in these germs



He also gets T.B.



He smokes a hookah and passes the germs onto the hookah.

His friend smokes the same hookah and gets T.B.



He passes the germs to his pregnant wife. (by coughing)



When she delivers her baby, the baby also gets T.B. after some time.



The mother starts taking treatment to cure her disease. The health worker tells her that she must continue treatment for at least 1½ years.



After 6 months, the mother feels better.



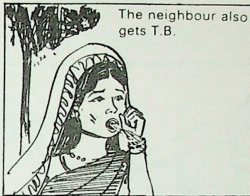
She stops treatment and the germs inside her become resistant to the medicines.



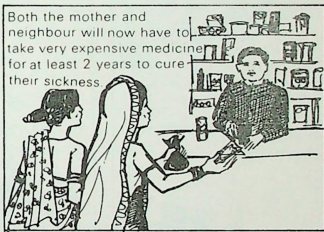
She coughs and passes these resistant germs to her neighbour



The neighbour also gets T.B.



Both the mother and neighbour will now have to take very expensive medicine for at least 2 years to cure their sickness.

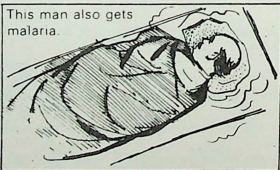
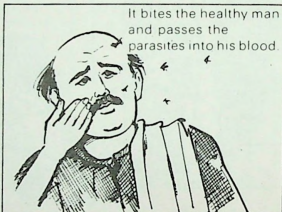


If all these people had taken the following precautions they would have stopped spreading T B :

- if the man had covered his nose and mouth when coughing.
- if the man had spat his phlegm in a covered container and then burnt it.
- if the man had not given his hookah to his friend
- if they all had taken early treatment
- if the mother had taken complete regular treatment for 1½ years
- if they had all taken vaccination against T.B. before getting the disease.

## Infections spread by insects and other animals:

Among the diseases spread this way is malaria.



If the man had taken **any** of the following precautions, he would not have got malaria

- if he had slept under a mosquito net, or covered himself
- if he had got his house sprayed with an anti-mosquito medicine.

Most kinds of infections are passed from person to person in the ways just shown. Most of them can be prevented by personal and public cleanliness.

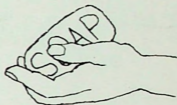
If there are many cases of diarrhea, worms, and other intestinal parasites in your village, people are not being careful enough about cleanliness. If many children die from diarrhea, it is likely that poor nutrition is also part of the problem. **To prevent death from diarrhea, both cleanliness and good nutrition are important** (see p.185 and Chapter 11).

## BASIC GUIDELINES OF CLEANLINESS

### PERSONAL CLEANLINESS (HYGIENE):

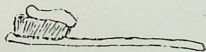
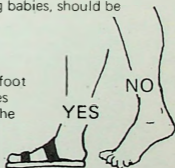


1. Always wash your hands with soap when you get up in the morning, after having a bowel movement, and before eating or preparing food. Do not use mud or clay to wash hands.



2. Bathe often—every day when the weather is hot. Bathe after working hard or sweating. Frequent bathing helps prevent skin infections, dandruff, pimples, itching, and rashes. Sick persons, including babies, should be bathed daily.

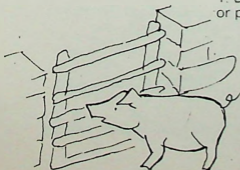
3. In areas where hookworm is common, do not go barefoot or allow children to do so. Hookworm infection causes severe anemia. These worms enter the body through the soles of the feet (see p 195).



4. Brush your teeth every day and after each time you eat sweets. If you do not have a toothbrush and toothpaste, rub your teeth with salt and baking soda (see p. 274)

### CLEANLINESS IN THE HOME:

1. Do not let pigs come into the house or places where children play.



2. Do not let dogs lick children or climb up on beds. Dogs, too, can spread disease.





3. If children or animals have a bowel movement near the house, clean it up at once. Teach them to use a latrine or at least to go farther from the house.



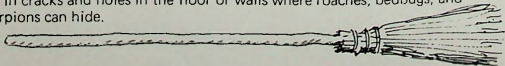
4. Hang or spread sheets and blankets in the sun often. If there are bedbugs, pour boiling water on the cots and wash the sheets and blankets—all on the same day.

5. De-louse the whole family often (see p. 242). Lice and fleas carry many diseases. Dogs and other animals that carry fleas should not come into the house.



6. Do not spit on the floor. Spit can spread disease. When you cough or sneeze, cover your mouth with your hand or a cloth or handkerchief.

7. Clean house often. Sweep and wash the floors, walls, and beneath furniture. Fill in cracks and holes in the floor or walls where roaches, bedbugs, and scorpions can hide.

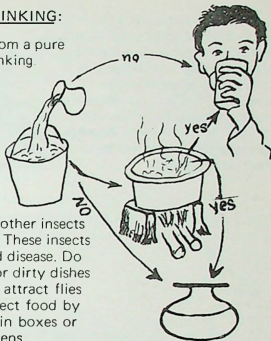


8. Smear kutcha houses with cowdung and wet mud regularly so as to keep away flies.

## CLEANLINESS IN EATING AND DRINKING:

1. Ideally all water that does not come from a pure water system should be boiled before drinking. This is especially important for small children and at times when there is a lot of diarrhea or cases of typhoid, hepatitis, or cholera. Water from holes or rivers, even when it looks clean, may spread disease if it is not boiled before use.

Keep boiled water in covered mud pots.

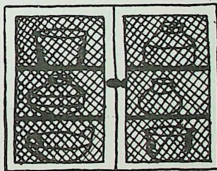


2. Do not let flies and other insects land or crawl on food. These insects carry germs and spread disease. Do not leave food scraps or dirty dishes lying around, as these attract flies and breed germs. Protect food by keeping it covered or in boxes or cabinets with wire screens.

**ALWAYS EAT FOOD THAT IS KEPT COVERED**

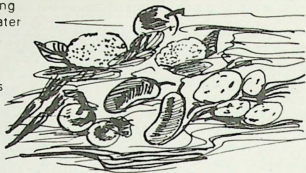


Food that is sold outside on the roads or shops, such as laddus, jalebis, sweets, cut fruits, is usually kept uncovered. You may have noticed flies sitting on them. They contaminate the food. If you eat this food, you may get diarrhoea. Cholera and typhoid also spread this way.





3. Often the water used for farming and gardening is not clean. The water contains germs causing diarrhoea. Fruits and other vegetables, especially vegetables which grow under the ground like carrots, radishes, turnips, lie in this water and have germs in them. **Always wash vegetables and fruits before eating them.**



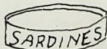
4. Before eating fruit that has fallen to the ground, wash it well. Do not let children pick up and eat food that has been dropped —wash it first.



5. Only eat meat that is well cooked. Be careful that roasted meat, especially pork, does not have raw parts inside. Raw pork carries dangerous diseases.



6. Do not eat food that is old or smells bad. It may be poisonous. Do not eat canned food if the can is swollen or squirts when opened. Be especially careful with canned fish.



7. People with tuberculosis, flu, colds, or other infectious diseases should eat separately from others. Plates and utensils used by sick people should be boiled before being used by others.

### HOW TO PROTECT YOUR CHILDREN'S HEALTH:



1. A sick child like this one

should sleep apart from children who are well

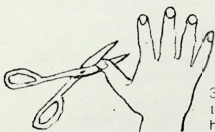


Sick children or children with sores, itchy skin, or lice should always sleep separately from those who are well. Children with infectious diseases like whooping cough, measles, or the common cold should sleep in separate rooms, if possible, and should not be allowed near babies or small children.

2. Protect children from tuberculosis. People with long-term coughing or other signs of tuberculosis should cover their mouths whenever they cough. They should **never** sleep in the same room with children. They should see a health worker and be treated as soon as possible.



Children living with a person who has tuberculosis should be vaccinated against TB (B.C.G. Vaccine).



3. Bathe children, change their clothes, and cut their fingernails often. Germs and worm eggs often hide beneath long fingernails.

4. Treat children who have infectious diseases as soon as possible, so that the diseases are not spread to others.



5. Follow all the guidelines of cleanliness mentioned in this chapter. Teach children to follow these guidelines and explain why they are

important. Encourage children to help with projects that make the home or village a healthier place to live.



6. **Be sure children get enough good food.** Good nutrition helps protect the body against many infections. A well-nourished child will usually resist or fight off infections that can kill a poorly nourished child (read Chapter 11).

### PUBLIC CLEANLINESS (SANITATION):

1. Keep wells and public water holes clean. Do not let animals go near where people get drinking water. If necessary, put a fence around the place to keep animals out.

Do not defecate (shit) or throw garbage near the water hole. Take special care to keep rivers and streams clean upstream from any place where drinking water is taken.

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2. Burn all garbage that can be burned. Garbage that cannot be burned should be buried in a special pit or place far away from houses and the places where people get drinking water.

3. Build latrines (out-houses, toilets) so pigs and other animals cannot reach the human waste. A deep hole with a little house over it works well.



Here is a drawing of a simple out-house that is easy to build.

It helps to throw a little lime, dirt, or ashes in the hole after each use to reduce the smell and keep flies away.

Out-houses should be built at least 20 meters from homes or the source of water.

If you do not have an out-house, go far away from where people bathe or get drinking water. Teach your children to do the same.

**Use of latrines helps prevent many sicknesses.**

Ideas for better latrines are found on the next pages. Also latrines can be built to produce good fertilizer for gardens. For plans write to I.T.D.G. or V.I.T.A. (see p.438).

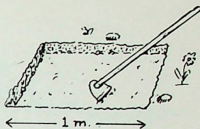
### **BETTER LATRINES:**

The latrine or out-house shown on the previous page is very simple and costs almost nothing to make. But it is open at the top and lets in flies.

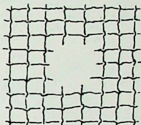
Closed latrines are better because the flies stay out and the smell stays in. A closed latrine has a platform or slab with a hole in it and a lid over the hole. The slab can be made of wood or cement. Cement is better because the slab fits more tightly and will not rot.

One way to make a cement slab:

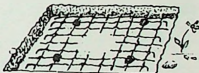
1. Dig a shallow pit, about 1 meter square and 7 cm. deep. Be sure the bottom of the pit is level and smooth.



2. Make or cut a wire mesh or grid 1 meter square. The wires can be  $\frac{1}{4}$  to  $\frac{1}{2}$  cm. thick and about 10 cm. apart. Cut a hole about 25 cm. across in the middle of the grid.



3. Put the grid in the pit. Bend the ends of the wires, or put a small stone at each corner, so that the grid stands about 3 cm. off the ground.



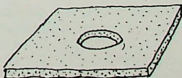
4. Put an old bucket in the hole in the grid.



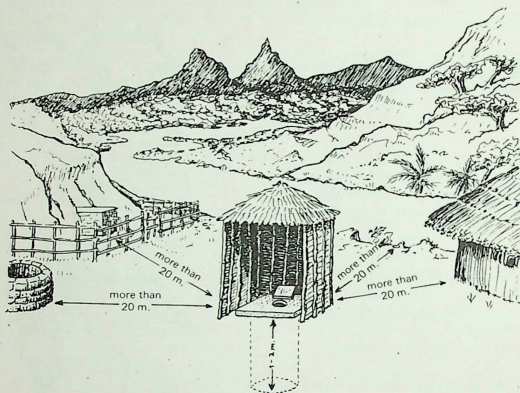
5. Mix cement with sand, gravel, and water and pour it until it is about 5 cm. thick. (With each shovel of cement mix 2 shovels of sand and 3 shovels of gravel.)



6. Remove the bucket when the cement is beginning to get hard (about 3 hours). Then cover the cement with damp cloths, sand, hay, or a sheet of plastic and keep it wet. Remove slab after 3 days.



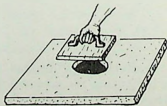
To make the closed latrine, the slab should be placed over a round hole in the ground. Dig the hole a little less than 1 meter across and between 1 and 2 meters deep.



To be safe, the latrine should be at least 20 meters from all houses, wells, springs, rivers, or streams. If it is anywhere near where people go for water, be sure to put the latrine **downstream**.

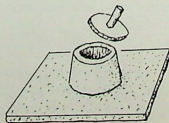
Keep your latrine clean. Wash the slab often. Teach children and others not to get it dirty.

Be sure the hole in the slab has a cover and that the cover is kept in place. A simple cover can be made of wood.



If you prefer to sit when you use the latrine, you can make a cement seat like this:

You will have to make a mold or you can use 2 buckets of different sizes, one inside the other.



## VACCINATIONS (IMMUNIZATIONS)— SIMPLE, SURE PROTECTION

Vaccines give protection against many dangerous diseases. If health workers do not vaccinate in your village, take your children to the nearest health center to be vaccinated. It is better to take them for vaccinations while they are healthy, than to take them for treatment when they are sick or dying. Vaccinations are usually given free.

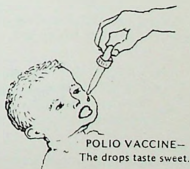
The most important vaccines for children are:

**1. B.C.G., for tuberculosis.** A single injection is given into the skin of the right shoulder. Children can be vaccinated at birth or any time afterwards. Early vaccination is especially important if any member of the household has tuberculosis. The vaccine makes a sore that heals after four weeks leaving a scar.

**2. SMALLPOX.** This vaccination, put into the skin of the left shoulder, or buttocks can be given at birth or anytime afterwards. It should make a sore and leave a scar. It may cause a little fever. Try to keep children from scratching the sore. Cut their fingernails very short. **Do not put cowdung, ash or ghee on the sore.** Do not give small pox vaccination to those who have eczema. In many areas smallpox is completely under control and the vaccine is no longer necessary.

**3. D.P.T., for diphtheria, whooping cough (pertussis), and tetanus.** For full protection, the child needs three injections: first at 3 months old, the second at 5 months, and the third at 2 years of age. After 3 years, D.T. is given.

**4. POLIO (infantile paralysis).** The child needs drops in the mouth once each month for 3 months. In some countries, polio vaccine is first given shortly after birth; in other countries, when the baby is 2 months old. Do breast feed the baby for 2 hours before and after giving the drops.



**5. TETANUS.** For adults and children over 12 years old, the most important vaccine is for tetanus (lockjaw). One injection every month for 3 months, another after a year, and then one every 10 years. Everyone should be vaccinated against tetanus—especially pregnant women, so that their babies will be protected against tetanus of the newborn (see p. 223 and 296).

**6. TYPHOID (TAB).** This is given once in 6 months. It is better to give this vaccination during the summer months. The person may have pain and swelling at the site of the injection. Give aspirin tablets to relieve pain.

**7. CHOLERA VACCINE:** To be given once in 6 months, especially in summer or if there is any case of cholera in your area. The person may get fever and pain at the site of the injection. Give aspirin tablets to relieve the fever and pain.

**DO NOT GIVE ANY INJECTION DURING THE RAINY SEASON. THIS IS THE SEASON OF POLIO EPIDEMIC. EVEN ONE INJECTION MAY CAUSE PARALYSIS OF THE LIMBS.**

**Vaccinate your children on time.  
Be sure they get the complete series of each vaccine they need.**

## OTHER WAYS TO PREVENT SICKNESS AND INJURY

In this chapter we have talked about ways to prevent intestinal and other infections through **hygiene, sanitation, and vaccination**. All through this book you will find suggestions for the prevention of sickness and injury—from building healthy bodies by eating nutritious foods to the wise use of home remedies and modern medicines.

The **Introduction to the Village Health Worker** gives ideas for getting people working together to change the conditions that cause poor health.

In the remaining chapters, as specific health problems are discussed, you will find many suggestions for their prevention. By following these suggestions you can help make your home and village healthier places to live.

Keep in mind that one of the best ways to prevent serious illness and death is early and sensible treatment.

**Early and sensible treatment is an  
important part of preventive medicine.**

Before ending this chapter, I would like to mention a few aspects of prevention that are touched on in other parts of the book, but deserve special attention.

## Habits that Affect Health

Some of the habits that people have not only damage their own health but in one way or another harm those around them. Many of these habits can be broken or avoided—but the first step is to understand why breaking these habits is so important.

## DRINKING:

If alcohol has brought much joy to man, it has also brought much suffering—especially to the women and children of men who drink. A little alcohol now and then may do no harm. But too often a little leads to a lot. In much of the world, heavy or excessive drinking is one of the underlying causes of major health problems—even for those who do not drink. Not only can drunkenness harm the health of those who drink (through diseases such as cirrhosis of the liver, p. 374) but it also hurts the family and community in many ways. Through loss of judgment when drunk—and of self-respect when sober—it leads to much unhappiness, waste, and violence, often affecting those who are loved most.



How many fathers have spent their last money on drink when their children were hungry? How many sicknesses result because a man spends the little bit of extra money he earns on drink rather than on improving his family's living conditions? How many persons, hating themselves because they have hurt those they love, take another drink—to forget?

Once a man realizes that alcohol is harming the health and happiness of those around him, what can he do? First, he must admit that his drinking is a problem. He must be honest with himself and with others. Some individuals are able to simply decide to stop drinking. More often people need help and support—from family, friends, and others who understand how hard it may be to give up this habit. People who have been heavy drinkers and have stopped are often the best persons to help others do the same.

Drinking is not so much a problem of individuals as of a whole community. A community that recognizes this can do much to encourage those who are willing to make changes. If you are concerned about the misuse of alcohol in your community, help organize a meeting to discuss these problems and decide what actions to take.

**Many problems can be resolved when people work together and give each other help and support.**

## SMOKING:

There are many reasons why smoking is dangerous to your own and your family's health.



1. Smoking increases the risk of cancer of the lungs and lips. (The more you smoke, the greater the chance of dying of cancer.)

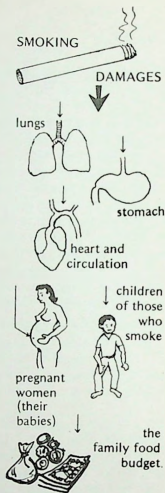
2. Smoking causes serious diseases of the lungs, including chronic bronchitis and emphysema (and is deadly for persons who already have these conditions or have asthma).

3. Smoking can help cause stomach ulcers or make them worse.

4. Children whose parents smoke have more cases of pneumonia and other respiratory illness than children whose parents do not smoke.

5. Smoking increases your chance of suffering or dying from heart disease or stroke.

6. Babies of mothers who smoked during pregnancy are smaller and develop more slowly than babies whose mothers did not smoke.



7. Parents, teachers, health workers, and others who smoke set an unhealthy example for children and young people, increasing the likelihood that they too will begin smoking.

8. Also, smoking costs money. It looks like little is spent, but it adds up to a lot. In poorer countries, many of the poorest persons spend more on tobacco than the country spends per person on its health program. **If money spent on tobacco were spent for food instead, children and whole families could be healthier.**

**Anyone interested in the health of others should not smoke, and should encourage others not to smoke.**

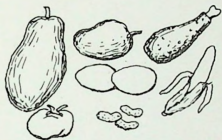
#### CARBONATED DRINKS (soft drinks, soda):

In some areas these drinks have become very popular. Often a poor mother will buy **coloured** drinks for a child who is poorly nourished, when the same money could be better used to buy 2 eggs or other nutritious food.

IF YOU WANT HEALTHY CHILDREN  
AND HAVE A LITTLE MONEY TO BUY THEM SOMETHING . . .

buy them a couple of eggs or  
other nutritious food,

not tea, coffee or soda



YES



NO

Carbonated drinks have no nutritional value apart from sugar. And for the amount of sugar they contain, they are very expensive. Children who are given a lot of carbonated drinks and other sweet things often begin to get cavities and rotten teeth at an early age. Carbonated drinks are especially bad for persons with acid indigestion or stomach ulcer.

Natural drinks you make from fruits are healthier and often much cheaper than carbonated drinks.

**Do not get your children used to drinking carbonated drinks.**

The book *Where There Is No Doctor* is available at Rs 29/- plus postage. Multiple copies of reprints of various chapters are also available.

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