

# Prevention of Disabilities

## CHAPTER

# 3

Because this is a book on *'rehabilitation'*, it is mostly about children who are already disabled. However, preventing *disabilities* is also very important. For this reason, in most chapters on specific disabilities, we include suggestions for preventing them.

Notice that **we place the discussion of prevention at the end of each chapter**, not at the beginning. This is because people are usually not concerned about disability until someone they love becomes disabled. Then their first concern is to help that person. **After** we have helped a family to do something for their disabled child, we can interest them in ways to prevent disability in other members of the family and community.

We mention this because when health professionals design community programs, often they try to put prevention first—and find that people do not show much interest. However, when a group of parents comes together to help their disabled children, after their immediate needs are being met, they may work hard for disability prevention.

**For a community program to be successful, start with what the people feel is important, and work from there.**

To prevent disabilities, we must understand the causes. In most parts of the world, **many causes of disability relate to poverty**. For example:

- **When mothers do not get enough healthy foods to eat** during pregnancy, often their babies are born early or underweight. These babies are much more likely to have cerebral palsy, which is one of the most common severe disabilities. Also, some birth defects are related to poor nutrition during the first months of pregnancy.
- **When babies are not breastfed and young children do not get enough to eat**, they get infections more easily and more seriously. Diarrhea in a fat baby is usually a mild illness. But in a very thin, malnourished baby, diarrhea often leads to serious dehydration, high fever, and sometimes brain damage with seizures or cerebral palsy.
- **Poor sanitation and crowded living conditions**, together with poor food, make diseases such as tuberculosis—and the severe disabilities it causes—much more common.
- **Exposure to toxic chemicals** even before birth can cause different kinds of disabilities in children. More dangerous chemicals are used or disposed of in or near poor communities.
- **Lack of basic health and rehabilitation services** in poor communities makes disabilities more common and more severe. Often secondary disabilities develop that could be prevented with early care.

To prevent the disabilities that result from poverty, big changes are needed in our social order. There needs to be fairer distribution of land, resources, information, and power. Such changes will happen only when the poor find the courage to organize, to work together, and to demand their rights. **Disabled persons and their families can become leaders in this process**. Only through a more just society can we hope for a long-term, far-reaching answer to the prevention of disabilities caused by poverty.

Although the most complete prevention of disabilities related to poverty depends on social change, this will take time. However, more immediate actions at family, community, and national levels can help prevent some disabilities. For example,

- **Polio**, in most situations is prevented through **vaccination**. (However, effective vaccination depends on much more than good vaccine. See the box.) →

In places where vaccination is not available or not fully effective, families and communities can help to lower the chance of **paralysis** from polio by breast feeding their children as long as possible (see p. 74).



Why, since a good vaccine exists, is there still so much polio in so many countries?

EFFECTIVE VACCINATION DEPENDS ON MANY FACTORS:

**TECHNICAL**

Production and supply of safe, effective, vaccine.



**EDUCATION** People must understand the value of vaccination and want to cooperate. Health workers must know how important it is to keep polio vaccine frozen.

**ECONOMIC**

(Cost of vaccine and of getting it to the children.) Leaders in poorer countries must decide that stopping polio is worth the expense.



**POLITICAL** Vaccination programs are most successful where the government fairly represents the people and has their full participation in countrywide vaccination campaigns.

**MANAGEMENT**

Knowledge of needs, planning, transportation, and distribution of the vaccine.

**ETHICAL** (Honesty and goodwill) Doctors, health workers, and citizens must try to see that vaccine reaches *all* children. (In some countries, some doctors throw vaccines away and fill out false reports, and health inspectors do not care enough to try to stop what is happening.)

**KEEPING POLIO VACCINE VERY COLD**

(In many countries, 1/3 of vaccines are spoiled by the time they reach the children.)

- **Brain damage** and **seizures** can become less frequent if mothers and midwives take added **precautions during pregnancy** and childbirth, and if they vaccinate children against measles. (See p. 107.)
- Some **birth defects** and **mental slowness** can be prevented if mothers **avoid most medicines** during pregnancy, and spend the money they save on **healthy foods**.
- **Spinal cord injury** could be greatly reduced if fathers would spend on **education and community safety** what they now spend on **alcohol and guns**.
- **Leprosy** could mostly be prevented if people would **stop fearing and rejecting persons with leprosy**. By being more supportive and encouraging early home treatment, the community could help prevent the spread of leprosy, since persons being treated no longer spread it. (See p. 215.)
- **Blindness** in young children in some countries is caused by not eating enough foods with **vitamin A**. Again this relates to poverty. However, many people do not know that they can prevent this blindness by feeding their children dark green leafy vegetables, yellow fruits, or even certain weeds and wild fruit. Also, some kinds of **deafness** and **mental slowness** can be prevented by using **iodized salt** during pregnancy (see p. 276 and 282).

- **Disability caused by poisons in food, water, air, or workplace.** The recent, common, worldwide use of chemicals to kill insects and weeds has become a major health problem. Often villagers use these pesticides without any knowledge of their risks, or of the precautions they should take. As a result, many become paralyzed, blind, or disabled in other ways.

To prevent these problems, people need to learn about the dangers, not only to themselves and their children but to animals, birds, land, and to the whole 'balance of nature'. Less dangerous ways to control pests give better results over time. Laws are also needed to prohibit the most dangerous products and to provide clear warnings.

- **Poisonous foods** in some areas are a major cause of disability. In parts of India, thousands of farm workers who are paid with a poisonous variety of lentils suffer paralysis from 'lathyrism'. The poor know the danger but have nothing else to eat. Fair wages and less corruption are needed to correct this situation.

- **Fluoride poisoning** (fluorosis), mainly from drinking water, is a common cause of bone deformities (knock-knees) in parts of India and other places. Public health measures are needed to provide safe water. \*

- **Dangerous work conditions**, poisons in the air, and lack of basic safety measures result in many disabilities. These include burns, amputations, blindness, and back and head injuries. In some countries, the use of asbestos for roofs or walls in schools, work places, and homes causes disabling lung diseases. Strict public health measures and an informed, organized people are needed to bring improvements.
- **Certain dangerous medicines**, known to sometimes cause disabilities, are now prohibited in the countries that make them, but are still sold in other countries. For example, diarrhea medicines containing clioquinol caused thousands of cases of blindness and paralysis in Japan.

**The high cost, overuse, and misuse of medicines** in general adds greatly to the amount of poverty and disability in the world today. Better education of both doctors and people, and more effective international laws are needed to bring about more sensible supply and use of medicines.

\*Note: Although too much fluoride is harmful, some is necessary for healthy bones and teeth. In some areas fluoride needs to be removed from drinking water; in other areas it needs to be added.

**TO PROTECT AGAINST PESTICIDE POISONING**

- Stand so that wind blows spray away from you.
- Wear protective clothing, covering the whole body.

- Wash whole body and change clothes immediately after spraying.
- Wash clothes after spraying.
- Do not let wash water get into drinking supply.
- Do not use spray containers for food or water.
- Do not let children play with spray containers.

**CAUTION:** Make sure that children, and women who are pregnant or breast feeding, stay away from all pesticides.

The 4 biggest causes of 'crippling' in India, affecting over 2 million people, are reported to be polio, iodine deficiency, fluorosis, and lathyrism. **Given the political will, all could be completely prevented!**

## WHO SHOULD BE RESPONSIBLE FOR DISABILITY PREVENTION

Notice that many of the specific preventive measures we have discussed, just like the more general social measures, depend on increased awareness, community participation, and new ways of looking at things. These changes do not just happen. They require a process of education, organization, and struggle led by those who are most deeply concerned.

Most able-bodied persons are not very concerned about disability or trying to prevent it. Often people think, "Oh, that could never happen to me!"—until it does.

Those who are most concerned about disability are usually disabled persons themselves and their families. Based on this concern, they can become leaders and community educators for disability prevention.

They can do this in an informal, person-to-person way. For example,



Disability can affect everybody, and sometime in our lives it usually does.

Or disabled children and families can join together to form prevention campaigns. In one village, mothers put on short plays to inform the whole community about the importance of breast feeding and vaccination. (See p. 74.) In Project PROJIMO, Mexico, disabled rehabilitation workers have helped to vaccinate children in remote mountain villages.

In PART 1 of this book, where we discuss different disabilities, we also include basic information on prevention. **We hope that those of you who use this book for children who are already disabled, will also work actively towards disability prevention.**

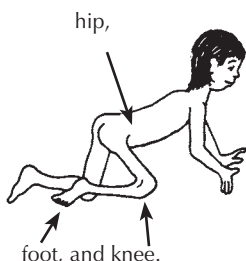
## PREVENTING SECONDARY DISABILITIES

So far we have talked mainly about preventing original or 'primary' disabilities, such as polio or spinal cord injury. But the prevention of 'secondary' disabilities is also very important, and is one of the main concerns of rehabilitation.

By 'secondary' disabilities we mean further disabilities or complications that can appear after, and because of, the original disability.

For example, consider a child with polio or cerebral palsy who at first is unable to walk. She gradually loses the normal range-of-motion of joints in her legs. Shortened muscles, called '**contractures**', keep her legs from straightening. This secondary disability may limit the child's ability to function or to walk even more than the original paralysis:

This child, after polio, gradually developed contractures in her



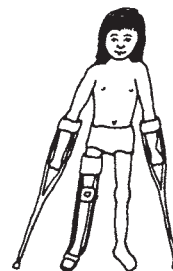
The contractures (not the original paralysis) kept her from being able to stand or walk.



If the contractures had been prevented through early and continued range-of-motion exercises, the child would have been able to stand and walk.

Most contractures can be corrected. But it may take a long time and a lot of expense—perhaps even surgery. It is far better to:

**PREVENT CONTRACTURES BEFORE THEY START.**



Because contractures develop as a common complication in many disabilities, we discuss them in a separate chapter (Chapter 8). Range-of-motion exercises to help prevent and correct contractures are described in Chapter 42. Use of plaster casts to correct contractures is described in Chapter 59.

**Many other secondary disabilities** will also develop unless preventive measures are taken. Some examples are **pressure sores** in children with spinal cord injury (see Chapter 24), **spinal curve** in a child with a weak back or with one leg shorter than the other (see Chapter 20), **head injuries** due to seizures (see p. 235). Preventive measures for many other secondary disabilities are discussed in the chapters on the specific disabilities.

In several places we discuss problems or **disabilities that are commonly caused by medical treatment or orthopedic aids**. For example,

- The **medicine for seizures**, phenytoin, produces serious swelling of the gums in some children. This can partly be prevented by brushing the teeth regularly. (See p. 238.)
- **Crutches** that press hard under the armpit can damage nerves and gradually paralyze the hands. Shorter crutches, or lower-arm crutches (like those shown above) prevent this problem. (See p. 393.)
- Surgery is sometimes done to remove contractures that actually help a child to move or function better. So worse difficulties result. The benefits or possible harm of surgery should be carefully evaluated **before** it is done. (See p. 530.)
- Some braces or aids that help a child at first, may later actually hold her back. (See p. 526 to 529.)

To prevent these mistakes, it is essential to **evaluate the needs of each child carefully, and repeat evaluations periodically**. We must take great care to prevent further disability caused by treatment.

**The first responsibility of a  
rehabilitation worker or parent, like  
the healer, should be to: DO NO HARM**

In addition to secondary disabilities that are physical, others may be psychological or social (affecting the child's mind, behavior, or place in the community).

Some disabled children develop serious **behavior problems**. This is often because they find their bad behavior brings them more attention and 'rewards' than their good behavior. Chapter 40 discusses ways that parents can help prevent tantrums and bad behavior in disabled children.

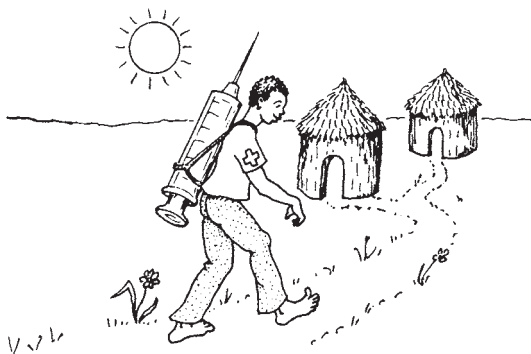
**The biggest secondary handicap for many disabled children (and adults) usually comes from the lack of understanding and acceptance by other people.** PART 2 of this book talks about how the community can be involved in taking a more active, supportive role in relating to the disabled and helping them to meet their needs. In PART 2 we also discuss what disabled persons and their families can do, in the community, to promote better understanding and prevent disability from becoming a serious handicap.

**Prevention of secondary disability is a basic part of rehabilitation.**

## THE NEED FOR MORE SENSIBLE AND LIMITED USE OF INJECTIONS

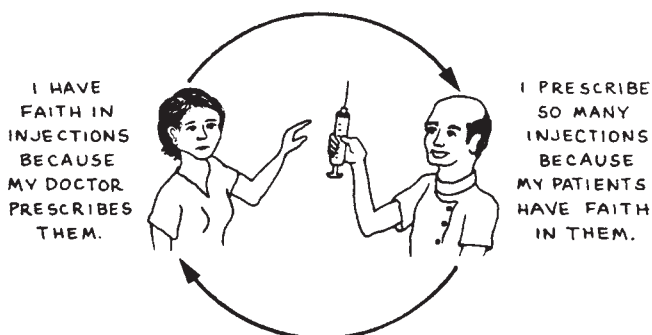


**The overuse and misuse of medicines in the world today has become a major cause of health problems and disabilities.** This is partly because medicines are so often prescribed or given wrongly (for example, certain medicines taken in pregnancy can cause birth defects, see p. 119). And it is partly because both poor families and poor nations spend a great deal of money on overpriced, unnecessary, or dangerous medicines. The money could be better spent on things that protect their health—such as food, vaccinations, better water, and more appropriate education. Some medicines, of course, when correctly used are of great importance to health. But most are not. **Of the 30,000 medicinal products sold in most countries, the World Health Organization says that only about 400 are needed.**



In most of the world, doctors, health workers, and the people make giving and getting injections too big a part of health care.

In many countries, **injections have become the 'modern magic'**. People demand them because doctors and health workers often prescribe them, and doctors and health workers prescribe them too often because people demand them.





## HOW INJECTIONS DISABLE CHILDREN



This child was injected with a needle that was not clean enough. The dirty needle caused an infected abscess (pocket of pus) that burst. The child had been injected for a cold. It would have been better to give him no medicine at all.

When used correctly, certain injected medicines, like some vaccinations, are important to protect a child's health and prevent disability. However, giving injections with an unclean needle or syringe is a common cause of infection and can pass the germs that spread HIV and other serious diseases like hepatitis (see *Where There Is No Doctor*, pages 399 to 401, and 172).

Dirty needles and syringes can also cause infections that lead to paralysis or spinal cord injury (see the story on p. 192), or death. **A needle or syringe must never be used to inject more than one person without first disinfecting it again.**

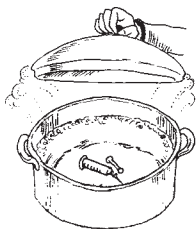
Also, some injected medicines can cause **dangerous allergic reactions, poisoning, and deafness.** And the overuse of **injectable hormones** to speed up childbirth and 'give force' to the mother is a major cause of babies born with **brain damage.**

### How to clean and disinfect injection needles and syringes

Most syringes and needles are disposable (are used only once) and come in sterile packages. Some of them can be taken apart, boiled, and reused several times before they fall apart. We do not recommend this, but if you must reuse them, follow these instructions first:

1. Put on a pair of heavy gloves to protect your hands.
2. Draw clean water (or even better, mix 1 part bleach with 7 parts water) up through the needle into the syringe barrel. **If you use bleach, make a fresh solution each day or it will not be strong enough to kill germs anymore.**
3. Squirt out the water or bleach. Do this several times.
4. If you have used bleach, rinse everything several times with clean water.
5. Take apart the syringe and needle and boil them in water for 20 minutes (as long as it takes to cook rice), or steam them for 20 minutes.

**Note:** For both boiling and steaming, start counting the 20 minutes after the water is fully boiling.



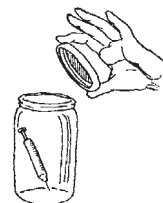
To boil them, make sure water covers everything in the pot the entire time. If possible, put a lid on the pot.



To steam them, you need a steamer pot with a lid (a pot with holes in it that fits inside another pot). Use enough water to keep steam coming out the side of the lid for 20 minutes.

### Storing your needles and syringes

When the needle and syringe have dried, store them carefully in a dry container, like a glass jar with a screw-on lid. Make sure these have also first been cleaned and disinfected. If you are not able to store them this way, boil or steam the needle and syringe again before use.



The **worldwide epidemic of unnecessary injections** each year sickens, kills, or disables millions of persons, especially children. An international campaign is needed to re-educate doctors, nurses, health workers, traditional healers (many of whom also now overuse injections), and the people themselves.



AVOID UNNECESSARY  
INJECTIONS

**Combatting misuse and overuse of medicines is as important to health as vaccination, clean water, or the correct use of latrines.** Health workers, school teachers, and community organizers should all work to help people **weigh the possible risks and benefits** of using any medication. For ideas on teaching about the danger of unnecessary injections, see *Helping Health Workers Learn*, Chapters 18, 19, and 27.

## WAR AS A CAUSE OF CHILD DISABILITY

Armed violence is increasing and has become more deadly. In today's wars, most of the people killed or injured are women and children—not soldiers. And the weapons used in wars, like landmines, drones, cluster bombs, and chemical agents, have become even more dangerous and threatening to everyone.

In the past decade, millions of children have died in wars, and at least 6 million have been injured or disabled. Children, especially boys, are sometimes forced to fight as soldiers, and many are either killed or injured and disabled. Girls are forced to be “sex-slaves” for soldiers and are repeatedly raped. Not only are these children disabled physically, but their mental health is also badly affected.

The increased poverty and ‘hard times’ caused by war also lead to many disabilities. There are more than 65 million refugees around the world, many living under dangerous and unhealthy conditions. 146 million children in poor countries are underweight, mainly from lack of food. Millions are homeless. Yet world leaders continue to spend trillions of dollars on war and arms — \$1,570,000,000,000 in 2016.

Terrorism is too often fought with terrorism.

**“AN EYE FOR AN EYE WILL MAKE THE WHOLE WORLD BLIND.”** –Mahatma Gandhi

War, terrorism, and torture have become tools of the powerful for economic, political and social control. When the peoples of poor countries dare to get rid of their dictators and form popular governments that work toward fairer distribution, the rich,

powerful countries often try to destroy those new governments. They pay for terrorism, long wars, and the destruction of schools, health centers, water and sanitation systems, and food and industrial production. The result is still more poverty, disease, and disability.

**To help change this situation, we disabled persons of the world must join with all who are disadvantaged or treated unfairly, to struggle for a new, more truly human, world.**

Land-mines, cluster bombs, and aerial bombardment cause too many disabilities in the world today, especially among children. Thousands of children are killed or severely injured by them each year—while they are carrying out their daily activities, such as caring for animals, helping with the family farm, or simply playing. Often after an explosion, the child's leg has to be amputated. But only about 1 of every 4 children injured gets a new leg, because they are usually expensive or difficult to get. A group in India has found a way to make a good quality, low-cost, artificial leg called the Mukti Limb. For more information, see [www.muktindia.org](http://www.muktindia.org).



Nicaraguan child disabled by a ‘Contra’ bomb. The Contras were rebel troops supported by the US government to overthrow the government of Nicaragua. (Photo by Marc Krizack, *Links*.)