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 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 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 disabilities present at birth 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 malnourished baby happens more often, usually lasts longer, and is more likely to lead to serious outcomes such as brain injury or death.
- 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. People with disabilities 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 breastfeeding 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.

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

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

KEEPING POLIO VACCINE VERY COLD In many countries, ⅓ of vaccines are spoiled by the time they reach the children.

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

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

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.)

- Brain injury 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 physical and mental disabilities can be prevented if mothers avoid most medicines and alcohol 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).
- Vision problems in young children in some countries are 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 vision loss by feeding their children dark green leafy vegetables, yellow fruits, or even certain weeds and wild fruit. Also, some kinds of hearing loss and cognitive delay can be prevented by using iodized salt during pregnancy (see pp. 276 and 282). Some disabilities related to bone development, such as rickets, can be prevented when mothers and children get enough foods with vitamin D and calcium (see p. 125).

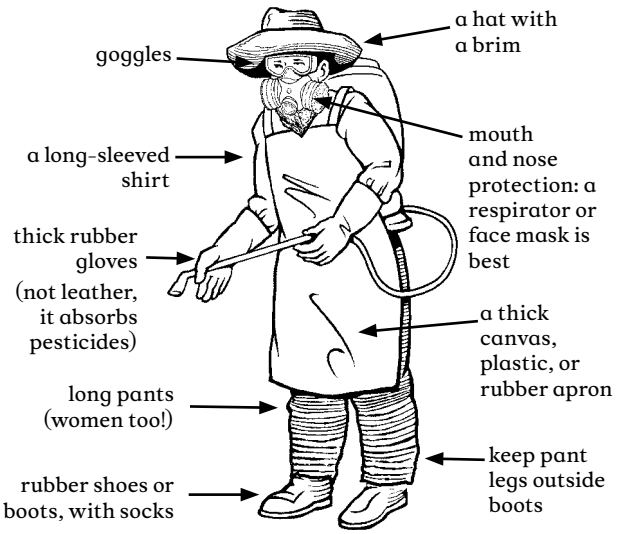
- Disability caused by poisons in food, water, air, or workplace. The recent, common, worldwide use of chemicals to kill insects and weeds has become a major health problem. Often villagers use these pesticides without any knowledge of their risks, or of the precautions they should take. As a result,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

  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.

- Hunger and drought force people to eat "poisonous" foods when they have nothing else. "Lathyrism," a paralysis caused by eating a type of peas in India, and "konzo," paralysis from eating bitter cassava in Mozambique, will only be cured by food security: fair wages and access to land.

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 breastfeeding, stay away from all pesticides.

- 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, vision loss, 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 vision loss 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.

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 people without disabilities 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 people with disabilities themselves and their families. Based on this concern, they can become leaders and community educators for disability prevention.

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

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

Or children with disabilities 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 breastfeeding and vaccination (see p. 74). In Project PROJIMO, Mexico, rehabilitation workers with disabilities 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 to work with children with disabilities will also work actively to prevent disability.

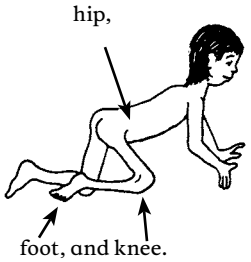
PREVENTING SECONDARY DISABILITIES

So far we have talked mainly about preventing original or primary disabilities, such as 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.

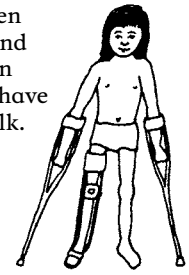
For example, consider a child with polio or cerebral palsy who at first is unable to walk. She gradually loses the full range of motion of joints in her legs. These "contractures" keep her legs from straightening. This secondary disability may limit the child's ability to function or to walk even more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

This child, after polio, gradually developed contractures in her hip, foot, and knee.



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 their own chapter (Chapter 8) and we discuss preventing them due to specific conditions throughout the book. 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), and 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 disabilities that are commonly caused by medical treatment or orthopedic aids. For example,

- Phenytoin, a medicine for seizures, 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 (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 pp. 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.

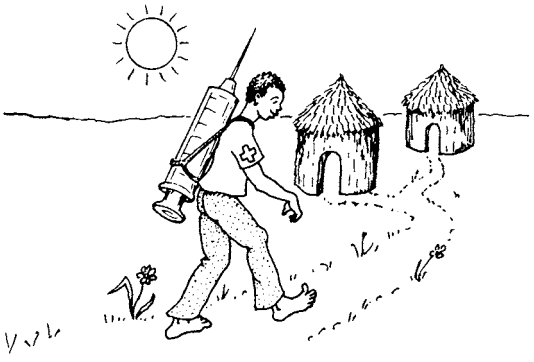
In addition to secondary disabilities that are physical, others may be psychological or social (affecting the child's mind, behavior, or place in the community).

Some children with disabilities 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 understand their children's behavior to help them improve.

A major challenge many people with disabilities face is 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 people with disabilities and helping them to meet their needs. In PART 2 we also discuss what people with disabilities and their families can do in the community to promote better understanding and prevent disability from becoming a serious impairment.

Prevention of secondary disability is a basic part of rehabilitation.

USING MEDICINES SAFELY AND EFFECTIVELY



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

Some medicines, when used correctly and given in safe conditions, are of great importance to health. These include vaccines that prevent illness and antibiotics for treating infections. But the incorrect use of medicines is a major cause of health problems and disabilities in the world.

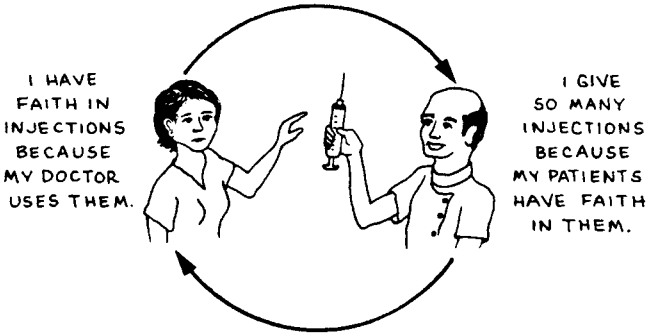
Sometimes medicines are given when they are not needed or are not safe to use. And sometimes when medicines are needed, they may not be given in the safest way.

IS MEDICINE NEEDED AND SAFE TO USE?

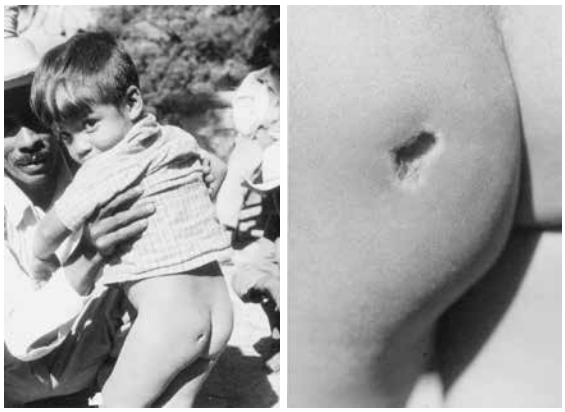
All over the world, in high- and low-resource countries, medicines are given when they are not needed. For example, antibiotics are given to cure problems they do not work against, such as viruses. Or medicines are given when they are not safe to use, as in pregnancy when they can harm a developing baby (see p.119). Before giving or using a medicine, think about whether the illness can get better without medicine, if a different medicine will work better, and if the benefits of using medicine are greater than the risks.

IS AN INJECTION NEEDED?

When medicine is needed, it may not be given in the best way. Injections are often used when giving a medicine by mouth would be safer and as effective. People may demand injections because they believe injections work better or faster than medicines by mouth. Providers may overuse injections because they can charge more or because patients demand them. This creates a cycle in which people demand injections because doctors and health workers often use them, and doctors and health workers use them too often because people demand them.



CAN AN INJECTION BE GIVEN SAFELY?



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

When an injection of medicine is necessary to treat an illness, needles and syringes must be sterile. This means germs that cause infections have been killed. Giving injections with needles or syringes that are not sterile can spread germs and cause serious infections such as HIV and hepatitis (see ***Where There Is No Doctor***, pp. 399 to 401, and 172). Unsterilized 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 sterilizing it again.

Reusable syringes and disposable syringes

Some syringes can be used again and again because they can be taken apart for cleaning and are made of materials that can be sterilized. Reusable syringes must be cleaned and sterilized after every use (see ***Where There Is No Doctor***, p. 74).

Most syringes and needles come in sterile packages and are made to be used only once. They cannot be sterilized again. Disposable syringes can be disinfected and reused, but we do not recommend doing this because a syringe that has only been disinfected and not sterilized can still spread infections, including hepatitis and HIV. This should be done only when it is necessary to save someone's life.

HOW TO WASH AND DISINFECT A DISPOSABLE SYRINGE AND NEEDLE

To most safely reuse a disposable syringe, wash and disinfect it right after using it and again right before you reuse it. **Disinfecting a syringe makes it less likely to spread infection, but does not prevent it completely.**

1. Wear gloves to protect your hands from cuts and germs.
2. Pour clean water into 2 cups, and full-strength bleach into a third cup.
3. Draw clean water from one cup through the needle into the syringe. Shake or tap the syringe for at least 30 seconds to loosen anything stuck inside (take care not to stick yourself with the needle). Squirt the water into a sink or bowl, not back into the water cup.
4. Repeat step 3 until water in the syringe is clear (no blood).
5. Draw full-strength bleach from its cup through the needle into the syringe. Shake or tap the syringe for at least 30 seconds to loosen anything stuck inside. Squirt out the bleach into a bowl or sink
6. Repeat step 3, but with water from the second clean water cup.

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

ARMED CONFLICT AS A CAUSE OF CHILD DISABILITY

Armed conflict takes many forms in the world, including wars, police and gang violence, and conflict related to drug activity. This violence often affects civilians as well as locations, like hospitals or schools, that were once considered "safe havens." Worldwide, more than 1 in 6 children are affected by armed conflict. In the first decade of the 21st century, most of the deaths from armed conflicts were civilians, and many of these were children.

Nicaraguan child injured 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*.)

Combat and weapons are a threat to children, but many of the harms of armed conflict don't come directly from the fighting, or end when the fighting stops. Violence often creates conditions that lead to injury, disability, and death in children. These include destruction of education and healthcare systems, increased poverty, starvation, environmental damage, and unsafe living conditions that force people to leave their homes or separate children from their families. These conditions have long-lasting impacts on children's physical and mental development.

For children already affected by conflict, encouraging their participation in their care and recovery can help them feel more in control of their situation. Letting these children know what will happen during their care and incorporating play into rehabilitation can support their healing processes. Recognizing the needs of their caregivers and connecting their families to resources also supports their long-term well-being.

We must also work to prevent further harm to children from armed conflict. In areas subject to violence, programs that promote children's access to education and families' access to sources of income are vital to this effort. The resources below provide more information.

Resources

Emergency Response Tool Kits, available in more than 20 languages, from Capacitar International, office@capacitar.org
Available online: capacitar.org/capacitar-emergency-kits-to-download/

Refugee and Immigrant Core Stressors Toolkit, how stress and trauma affects refugees and immigrants and ways to help, from Boston Children's Hospital
Available online: redcap.tch.harvard.edu/redcap_edc/surveys/?s=RCDFFHWK4P7THRL4

War Child: legal, psychosocial, educational and financial support to children and families affected by armed conflict.
info@warchild.org.uk, www.warchild.org.uk