

SECTION 4

Avoiding Environmental Hazards

OBJECTIVES

- Identify the hazards that alcohol and other drugs pose to prenatal development.
- Discuss other environmental hazards that should be avoided during pregnancy.

In every pregnancy, the mother-to-be is responsible for taking the most important step in increasing the chances of having a healthy baby: She must take care of herself and keep herself safe and healthy. One important part of good prenatal care is understanding the harmful effects of environmental hazards such as alcohol and other drugs, smoking, X rays, and infections.

Alcohol

Though many people still avoid realizing this fact, alcohol is a drug—and it can be a dangerous one. Ever since ancient times, writers have commented on the poor mental and physical health of children born to alcoholic women. Modern medicine has confirmed these observations. Women who drink alcohol during pregnancy often bear children with a variety of birth defects, some of which can be fatal.

A woman who drinks during pregnancy risks having a child with **fetal alcohol syndrome**, a condition of physical deformities and cognitive problems resulting from a mother's consumption of alcohol during pregnancy. Almost all babies born with fetal alcohol syndrome are mentally retarded. This is because alcohol interferes with tissue growth and development, and brain tissue is most easily injured by this interference. Many children born with fetal alcohol syndrome also have other problems, such as slow growth, poor coordination, behavior problems, heart defects, and facial disfigurement.

Children whose mothers drink less alcohol during pregnancy may suffer from **fetal alcohol effects**, a less severe condition involving some, but not all, of the symptoms of fetal alcohol syndrome. There is no safe amount of alcohol that a woman can drink during pregnancy without taking the chance of causing harm to her unborn child.

The degree of damage to the child is usually directly related to the amount of alcohol the mother consumed during pregnancy. It may also be affected by the stage of the pregnancy during which she drank and by the presence of other drugs in her system. Because the damage is done before birth, there is no cure for fetal alcohol syndrome or fetal alcohol effects.

Although fetal alcohol syndrome and fetal alcohol effects can't be cured, they can be prevented. Doctors do not yet know just how much alcohol presents a danger to the developing baby. For this reason, most health professionals recommend that pregnant women safeguard the health of their babies by avoiding alcohol altogether when they plan a pregnancy, as well as during pregnancy.

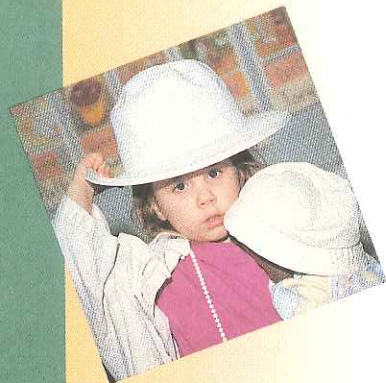
Other Drugs

Many doctors believe that drugs taken during pregnancy are among the major causes of birth defects linked to environmental factors. The drugs of which pregnant women should be especially aware include the following:

- Alcohol, as you have just read.
- Medicines that doctors prescribe.
- Over-the-counter remedies such as aspirin, cold medicines, nose drops, and vitamins.
- Chemicals such as caffeine, found in some foods and beverages, and nicotine, found in tobacco.
- Illegal drugs such as heroin, LSD, marijuana, crack, and other forms of cocaine.
- Inhalants—fumes that are inhaled into the lungs.

Prescription and Over-the-Counter Drugs

Every pregnant woman should remember that there is no such thing as a completely safe drug. Even over-the-counter drugs, such as aspirin, cold remedies, and antihistamines, can be dangerous for the unborn child. One extreme example is thalidomide, which was considered a safe drug for relieving the symptoms of morning sickness in pregnant women during the late 1950s. Thalidomide caused severe birth defects in more than 5,000 infants before its effects were discovered.



TERMS TO LEARN

fetal alcohol effects
fetal alcohol syndrome



Over 62,000 nonprescription drugs and other environmental hazards carry warning labels for pregnant and nursing women.

HEALTH TIP

It is almost always impossible to predict the effect that any particular dose of a specific medication will have on a developing baby. For this reason, a woman who even suspects she may be pregnant—or who intends to become pregnant—should avoid medicines and other drugs altogether.

Medicines or infections that reach the fetus through the third month of pregnancy will have their most devastating effect. Any drug a pregnant woman takes reduces the flow of nutrition-bearing blood to the baby. During these months, the body systems, organs, arms, and legs are being formed, so the chances of malformation are greatest during this period. Brain development is also at a critical period, and mental retardation can be caused.

In the last six months of pregnancy, harmful substances that reach the fetus usually cause slow growth, infections, or abnormal bleeding at birth. Drugs taken just before delivery will still be in the baby's body at birth and may cause serious problems.

Doctors advise strict limits on the use of medications during pregnancy. A pregnant woman should not take any medicines—even aspirin or vitamins—unless they are specifically prescribed by her physician.

Drugs that are necessary in managing serious conditions, such as diabetes and high blood pressure, can be taken under a doctor's direction. However, a pregnant woman should be encouraged to give up medications for complaints like headaches and hay fever; avoiding such medications can be a worthwhile contribution to the normal development of her baby. In fact, any woman who is likely to become pregnant would be wise to avoid taking unnecessary drugs. Usually, a woman does not know she is pregnant until several weeks after conception has taken place.

An expectant mother should not take any medication unless it is prescribed or recommended by a doctor who knows of the pregnancy. Even vitamin supplements can pose a risk to the unborn baby unless taken under a doctor's advice.

PARENTING
IN ACTION

Decisions Affecting the Unborn

Five-year-old Susan and her four-year-old sister Emily are playing together in their quiet backyard. Emily runs to hide behind a tree. Her movements, however, are slower than those of other four-year-olds. Susan tries to chase Emily. However, instead of running directly to the tree, she stumbles past it.

The girls' mother, Char, sits on a lawn chair and watches them sadly. She recognizes that both her daughters have below-average intelligence, little strength, and, at times, no muscle control. She also sees that, although both girls are quite pretty, slight irregularities in their facial features indicate abnormalities.

For Char, the worst part of her daughters' problems is the knowledge that she herself is the cause of those problems. Char married when she was eighteen.

Since her husband was serving in the army, the couple had to move from one military base to another. Char found it difficult to make new friends, knowing that in a few months she would have to start all over again somewhere else. She began drinking to relieve her loneliness and boredom. Char continued drinking throughout her two pregnancies.

Susan's ailments did not become apparent until after Emily was born. Several months later, the specialists gave the verdict: Both the girls had defects resulting from their mother's drinking during pregnancy.

Char explains, "I'd do anything for my girls. Of course I would have quit drinking—if only someone had told me!" Char did stop drinking, but the change came too late for Susan and Emily.

THINK AND DISCUSS

1. Why did Char drink during her pregnancies? Why do you imagine no doctor discussed the problem with her? Why do you think her husband and other family members might have avoided discussing it?
2. What could Char have done to overcome her loneliness and boredom instead of drinking?
3. What do you think Char can do now to help her family?
4. Where would you go if you had a drinking problem? What—if anything—would you say to a friend who had a drinking problem?



Caffeine

Of all the compounds that have been investigated as possible causes of birth defects, none has been so completely taken for granted as caffeine. Caffeine is widely found in beverages such as coffee, tea, cocoa, and many soft drinks, as well as in some foods and many medications. Because it is so common, caffeine

is often not considered a drug. However, pregnant women—and those likely to become pregnant—should be cautious. Women who take in moderate amounts of caffeine probably don't need to worry about birth defects. It is known, however, that feeding large doses of caffeine to pregnant mice and rabbits causes birth defects in their offspring. Doctors usually advise women to be cautious about drinking coffee, tea, and cola during pregnancy.

Tobacco

The nicotine in cigarettes is also a drug—and a potentially dangerous one. The more a mother smokes, the smaller her baby is likely to be. This is important because the weight of the newborn is a critical factor in the ability to survive. Heavy smoking is also believed to cause premature birth. Doctors advise smokers that they should try to stop smoking before becoming pregnant. If they cannot quit smoking, they should at least cut down during pregnancy.

Illegal Drugs

Increases in the use of cocaine, marijuana, and other “street drugs” have presented physicians with new problems in preventing birth defects.

A mother who is addicted to drugs at the time of delivery usually passes her addiction on to her baby. Immediately after birth, these addicted infants must go through a period of withdrawal—painful illness resulting from the body's dependence on drugs. Some addicted babies even die as a result of severe withdrawal symptoms. For the babies who survive withdrawal, the future is uncertain. Experts are concerned that the long-range effects of this prenatal addiction may be serious, possibly affecting a child's learning ability and behavior. Many of these children seem unorganized; they are able to follow only very simple directions and are often unable to understand school classes.

Little is known about the specific effects of such drugs as marijuana, cocaine, barbiturates, and amphetamines on a developing fetus. However, considering the fact that even over-the-counter medications are cause for concern, you can see the potential danger of these drugs. Cocaine is known to cause miscarriage, stillbirth, prematurity, and birth defects. Similar results are suggested in studies on marijuana. While this kind of research continues, the best advice is to avoid taking *any* drugs before or during pregnancy.

X Rays

X rays present another potential danger to the unborn baby. Radiation from X rays or other sources can cause birth defects. A pregnant woman who is in an accident or who is sick should inform medical personnel of her pregnancy. They can then take special precautions if X rays are necessary. For the same reason, she should also be sure her dentist or orthodontist is aware of her pregnancy. It is also important to avoid unnecessary X rays before pregnancy. Both men and women should request abdominal shielding during routine X rays.

Rubella

The terrible effect of certain infections on unborn children was highlighted by the epidemic of rubella (sometimes called German measles) that swept the country several decades ago. Thousands of unborn babies were affected when their mothers came down with German measles during pregnancy. Although most of the women had few or even no symptoms of illness, the effects on the developing babies were devastating. Because of their mothers' infection with rubella, babies were born with deafness, blindness, heart disease, and/or mental retardation.

A vaccine for rubella is now available, and millions of children have been vaccinated. The vaccine may be dangerous, however, for women who are pregnant or who become pregnant shortly after receiving it. A woman who is unsure whether she has been vaccinated can check her health records. If records are unavailable, she can consult a doctor, who will be able to determine her immunity with a simple blood test. Every woman should be sure she is immune to rubella before she considers pregnancy.

Sexually Transmitted Diseases (STDs)

Like rubella, sexually transmitted diseases, or STDs, are infections that can have dreadful effects on unborn babies. All the following are sexually transmitted diseases:

- Syphilis.
- Gonorrhea.
- Genital herpes.
- AIDS (acquired immune deficiency syndrome).

- Group B streptococcus.
- Chlamydia.

These and other sexually transmitted diseases can affect prenatal development or be passed on from an infected mother to the developing baby. They can result in serious illness, deformity, or even death.

It is possible for a person to be infected with a sexually transmitted disease without realizing it. For this reason, special measures are often taken to protect unborn babies against the effects of sexually transmitted diseases. Most doctors routinely test pregnant women for syphilis. Such tests are required by law in many states. In addition, doctors usually treat the eyes of newborns with a solution to kill gonorrhea germs that could otherwise cause blindness. The laws of many states make this kind of treatment mandatory.

Drugs and treatment can cure syphilis and gonorrhea and can relieve the symptoms of herpes in adults. Untreated, these diseases can affect the heart, brain, reproductive system, and spinal cord, and can eventually lead to death. No drug can cure the damage to the newborn that results from a delay in diagnosis and treatment. Any pregnant woman who suspects she could have a sexually transmitted disease should discuss the condition frankly with her doctor.

AIDS, a viral infection that attacks the immune system, is a particularly dangerous sexually transmitted disease. There is no cure, and AIDS is invariably fatal. Like other STDs, it can be spread by unprotected sexual intercourse. In addition, individu-

AIDS is a deadly disease with no known cure. Health organizations have developed educational campaigns to inform the public about the realities of AIDS and other sexually transmitted diseases.



als can be infected with AIDS by sharing infected needles or through contact with infected blood. A fetus can be infected with AIDS by the mother. The AIDS virus may lie hidden in a person for many years before causing symptoms, so there is no way to tell whether someone is infected just by looking at him or her. If a woman who has AIDS gives birth to a child, there is a 20 to 50 percent chance that her baby will also develop AIDS and die.

Not all infections in a pregnant woman pose a threat to the developing baby. However, a pregnant woman should tell her doctor about any illness, no matter how mild it may seem.

Genetic Counseling

Genetic counselors can provide information and answer questions for women who have been exposed to any of the above substances or diseases. A genetic counselor can provide information in response to questions such as these: What is the chance that this substance or disease will cause a problem? Is there any special care needed during pregnancy? Should any special tests be considered?

SECTION 4 REVIEW

CHECK YOUR UNDERSTANDING

1. What causes fetal alcohol syndrome? List three kinds of problems associated with fetal alcohol syndrome.
2. During what period of pregnancy are the harmful effects of medications on a fetus most severe? Why?
3. List two problems that can be caused by smoking during pregnancy.
4. How might a pregnant woman be exposed to radiation? What effect can radiation have on a developing baby?
5. List three problems that may result for the developing baby if a pregnant woman is infected with rubella.
6. List four sexually transmitted diseases.

DISCUSS AND DISCOVER

1. With a group of classmates, compile a list of over-the-counter medications that you—and others you know—take routinely. Which of these medications is considered safe to take during pregnancy? Why? What specific risks might be involved in taking these medications during pregnancy?
2. The use of alcohol can result in a variety of fetal abnormalities. The defects seem to be related to the degree of alcohol consumption by the mother. What suggestions would you give to someone who has a drinking problem and is pregnant?
3. It is reported that passive smoking (inhaling others' smoke) has an effect on the unborn child similar to the effect of actually smoking cigarettes. What should a pregnant woman do to protect herself and her developing baby from these harmful effects?