After studying this chapter, you will be able to

- **describe** the early signs of pregnancy.
- **explain** the role of the environment on prenatal development.
- **explain** the relationship between the health of the mother and the health of the baby.
- **describe** how diseases, drugs, radiation, environmental pollutants, and congenital problems can harm the fetus.

**Terms to Know**

- obstetricians
- environmental factors
- premature
- low birthweight
- Rh factor
- diabetes
- pregnancy-induced hypertension (PIH)
- sexually transmitted infections (STIs)
- acquired immunodeficiency syndrome (AIDS)
- fetal alcohol syndrome (FAS)
- congenital problem
- pre-term birth
- miscarriage
- stillbirth
- ultrasound
- chorionic villus sampling (CVS)
- amniocentesis

**Reading Advantage**

Take two-column notes as you read the chapter. Fold a piece of notebook paper in half lengthwise. On the left side of the column, write main ideas. On the right side, write subtopics and detailed information. After reading the chapter, use the notes as a study guide. Fold the paper in half so you only see the main ideas. Quiz yourself on the details and subtopics.

**Companion Web Site**

Interactive Activity

Learn more about health hazards to avoid during pregnancy by completing the Read, Discuss, and Analyze Activity for Chapter 5 at g-wlearning.com.

**Academic English Language Arts Standards**

This chapter is correlated to IRA/NCTE 1, 3, 4, 5, 6, 7, 8, and 12. The complete list of standards is located in the front of the text.
The prenatal period, which lasts about 280 days, is the shortest stage in the life span. This formative stage is also the most critical time for a child’s development. For this reason, proper prenatal care is crucial for all mothers-to-be.

At no other time are two people closer than a mother and baby during the prenatal period. Even before the mother knows she is pregnant, the baby affects her life. The mother’s body changes to prepare for nine months of growth. The baby continues to affect the mother’s body through delivery.

As you read in Chapter 1, the environment influences growth and development. The unborn’s first environment is the mother’s body. She has a great effect on her baby’s development.

The mother gives the baby a safe “home” in her uterus. She eats, breathes, and gets rid of wastes for them both, and her body works to bring the baby into the world.

As you read in Chapter 1, the environment influences growth and development. The unborn’s first environment is the mother’s body. She has a great effect on her baby’s development.

The March of Dimes urges mothers to “Be good to your baby before it is born.” Parents-to-be should take this slogan seriously. Because experts know more about pregnancy, childbirth, and infant care than ever before, parents-to-be can take many steps to keep mother and baby healthy and safe.

Ideally, these steps should begin before a woman becomes pregnant. Good health habits throughout the younger years help prepare a woman for childbirth. Through a complete medical checkup, the couple’s doctor will suggest how to prepare for a healthy pregnancy.

As soon as a woman believes she is pregnant, she should seek prenatal care. This medical care is important, whether it is a first, second, or later pregnancy. Starting good prenatal care early in pregnancy greatly reduces the risk of complications.

Signs of Pregnancy

A woman cannot feel the sperm and egg unite. She cannot feel cells divide as the baby begins to develop. Nevertheless, her body immediately begins to nourish and protect the new life. Hormones trigger changes in some of the woman’s organs. The signs of pregnancy help a woman recognize these changes.

Pregnancy is a normal process, not an illness. If a woman is healthy and happy about having a child, she may even feel better than before she became pregnant. The signs of pregnancy are divided into presumptive and positive signs, 5-1. The presumptive signs could be signs of pregnancy or a medical condition. Doctors must determine their cause. However, doctors identify positive signs as definitely being caused by pregnancy.

Medical Care

Medical care is the best way to make childbearing safe and successful. If a woman believes she is pregnant, she should make an appointment with a doctor as soon as possible. Many pregnant women choose to visit obstetricians, or doctors who specialize in pregnancy and birth.

The First Appointment

The first prenatal appointment sets a foundation for medical care throughout the pregnancy. It is a
Chapter 5 Prenatal Care

Signs of Pregnancy

Presumptive Signs

- Amenorrhea (menstruation stops)—If the woman is usually regular in her menstrual cycle, a delay of 10 or more days is a sign.
- Nausea—Nausea is present in about ½ to ⅔ of all pregnancies. Because it often occurs in the morning hours, it is called morning sickness. Nausea may happen at any time of the day. Nausea occurring at the same time daily from weeks 4 to 12 is a sign.
- Tiredness—Many women feel tired during the first few months of pregnancy.
- Frequency of urination—The growing uterus puts pressure on the bladder. Hormones may also cause more frequent urination.
- Swelling and tenderness of the breasts—This is often the first sign women note.
- Skin discoloration—Stretch marks may be seen as the breasts and abdomen enlarge. Darkening of skin may occur on the face and nipples.
- Internal changes—Doctors often note softening of the cervix (Goodell's sign). There may also be a softening of the lower part of the uterus (Hegar's sign) and a bluish tinge to the vagina and cervix due to circulatory congestion (Chadwick's sign). The uterus is also enlarged with irregular areas of firmness and softness (Piskacek's sign).
- Other signs—Other symptoms include backache, groin pains, dizziness, abdominal swelling, leg cramps, varicose veins, and indigestion.

Positive Signs

- HCG (Human Chorionic Gonadotrophin)—HCG is a hormone found in the blood and urine of pregnant women. Lab tests may detect the hormone's presence as early as the first two weeks of pregnancy.
- Fetal Heartbeat—This can be heard through a special device at 12 weeks and through a stethoscope at 16 weeks.
- Fetal movement—Spontaneous movement begins at 11 weeks, but is not felt until 16–18 weeks.
- Fetal image—This may be seen with ultrasound scanning.
- Fetal shape—The baby's shape may be felt through the abdominal wall.
- Uterine contractions—A doctor may note these painless contractions.

Presumptive signs could be signs of pregnancy, or they might be signs of other conditions. Positive signs, however, are definitely caused by pregnancy.

Vocabulary

Help students differentiate between presumptive signs and positive signs of pregnancy. Refer to Figure 5-1 to show examples of each type of sign.
The visit continues with a complete physical exam for the mother-to-be. The doctor will weigh the woman and take her pulse, blood pressure, and respiration rates. He or she will check the woman’s breasts and perform a pelvic exam. The doctor may measure the woman’s pelvis to be sure it is large enough to allow the baby’s head through during delivery. Urine tests and blood tests will be done. The blood tests check for blood type, anemia (a condition caused by lack of iron), and diseases that can harm an unborn child. In some women, a test will also be done for blood sugar level.

The doctor will advise the couple on health habits to follow in pregnancy. Most of these pertain to the mother, but the father can be involved, too. For example, the couple could work together to quit smoking. This will protect their baby’s health, as well as their own. The father-to-be can also encourage his partner to eat right, be active, and get enough rest. He can join her in following these healthful habits.

At the end of the checkup, the obstetrician estimates the due date for the baby’s birth (which is now given as the expected week of birth). This date may be adjusted later.

Couples then set the date for the next appointment. Usually the doctor sees a pregnant woman once a month during the first six months of pregnancy. Visits increase to twice a month during the seventh and eighth months. During the ninth month, visits increase to once a week or more. Going to each of these appointments is important. Having a doctor monitor the pregnancy lessons the discomforts and increases the confidence of the couple. More importantly, doctor visits increase the chance of delivering a healthy baby.

**The Unborn Baby’s Environment**

At the moment the sperm enters the egg, the baby begins to form traits from both the mother and father. These inherited traits, or genetic factors, are merged into a unique new person. They will influence the child’s growth and development throughout life. However, development is not determined solely by genetic factors.

Immediately after conception, the environment begins to exert an influence on the unborn’s traits. **Environmental factors** are those factors caused by a person’s surroundings. The prenatal environment is the mother’s body and will affect the baby, 5-2.

*Note*
Calculating the due date can be hard when a woman has a history of irregular menstrual periods. In these cases, ultrasound can be used at a later stage of pregnancy to help confirm or adjust the due date.

*Math Activity*
If the first day of a pregnant woman’s last menstrual period was February 8, use a calendar to calculate her due date. Figure approximate dates for routine checkups prior to delivery based on the guidelines in the text.

*Discuss*
Why is quality prenatal care started early in pregnancy important?
Factors That Affect the Baby’s Health

An unborn baby depends on the mother for a healthy start. Women with good health habits before pregnancy most often have healthy babies. Some women are called high-risk mothers-to-be. This describes a pregnant woman with environmental factors that do not promote a healthy pregnancy. What are these factors?

Mother’s Age

In regard to health, the ideal time for a woman to have a baby is between ages 21 and 28 years. Teens and women over 36 are high-risk mothers-to-be. Because pregnant teens are still growing themselves, their bodies cannot always meet the needs of babies. Very young teens tend to have babies who are premature (born too soon), have low birthweights (weigh less than 5½ pounds at birth), have disabilities, or are born dead. Women over age 36 have a higher rate of babies with health problems, disabilities, and disorders.

Mother’s Physical Health

The mother’s prepregnancy health greatly affects the outcome of pregnancy. Healthy women will most likely have healthy pregnancies. Unhealthy women will likely have health problems in pregnancy. Mother’s health affects the baby’s health before and after birth, too.

Any health problems a woman has may play a role in pregnancy. Women should ask their doctors (before pregnancy, if possible) how these problems might affect the pregnancy. In many cases, steps can be taken to protect the unborn. The doctor will want to monitor health problems more closely during pregnancy. Special testing might be done, and medications or treatments might need to be adjusted for the safety of the unborn. With good health care during pregnancy, women can overcome many health problems.

It is also important for a woman to enter pregnancy at a healthy weight for her age, height, and body type. Being underweight or overweight before pregnancy can lead to serious health problems for mother and baby.

Closely related to healthy weight are nutrition and activity level. Women who have good eating habits and engage in regular physical

Focus on Health

Healthy Pregnancy Weight

Women who start pregnancy at 15 percent or more under healthy weight more often have low-birthweight infants than women of healthy weight. Being underweight can also lead to other problems that endanger the health of both mother and baby. Women who start pregnancy at 20 percent or more over their healthy weight have more complications, too. They experience more fatigue, high blood pressure, heart strain, and blood sugar problems.

Each woman should know her healthy weight, which is based on body build and age. If unsure, doctors can provide this information. Reaching a healthy weight before becoming pregnant should be the goal. However, women who are already pregnant should discuss their weight with a doctor or dietitian. Why is a large or sudden weight change not advised in pregnancy?

Activity

List environmental factors that can affect prenatal development.

Resource

Pregnancy and Health, reproducible master 5-2, TR. Have students write brief interpretations of the statements given. Use this activity to open a discussion on this topic.

Reflect

Do you agree or disagree about the ages given as the ideal ages for a mother to give birth? Explain your reasons.
activity are more likely to have healthy pregnancies. Being inactive or having poor eating habits often result in problems during pregnancy.

**Rh Factor**

The Rh factor is a protein substance found in the red blood cells of about 85 percent of the population. People who have the substance are called Rh positive (Rh+), and those who do not are called Rh negative (Rh–).

The only time this factor can cause the baby a problem is when the father is Rh+ and the mother is Rh–. This combination occurs in 12 percent of all marriages. If the baby inherits the Rh+ blood type from the father, the baby may develop Rh disease. Rh disease is a type of anemia that destroys the baby’s red blood cells.

Rh disease does not affect the first Rh+ unborn. However, during any pregnancy, some of the baby’s Rh+ cells may enter the mother’s bloodstream during birth. This happens in about four percent of cases. These cells are foreign to the mother’s Rh– system. Her body fights these Rh+ cells by making antibodies. This then makes the mother immune to the blood cells of future Rh+ babies. In the next pregnancy, these antibodies cross the placenta. If the baby has Rh+ blood, the antibodies destroy the baby’s red blood cells.

A vaccine called anti-Rh-immune globulin now greatly reduces the danger of Rh disease. An Rh– mother receives the vaccine within 72 hours after the birth of each Rh+ baby. The vaccine blocks the growth of antibodies in her body. The vaccine is given after the loss of an Rh+ baby, too. An Rh– female should also receive the vaccine after a transfusion of Rh+ blood anytime during her life. The vaccine is almost 100 percent effective unless the woman’s body has already made antibodies to Rh+ cells.

**Mother’s Emotional Health**

Positive thoughts and feelings are important for a woman to have a healthy baby. Negative feelings can stimulate the nervous system and the flow of the hormone adrenaline. Both the nervous system and adrenaline control heart rate, breathing, and muscle tension. This makes the body ready to deal with stress.

When a mother is happy and relaxed, her adrenaline level is low, her heartbeat and breathing are slow, and her muscles are relaxed. When the mother is
under stress, adrenaline crosses the placenta to the baby, carrying stress signals. The mother’s stress increases her heartbeat and muscle tension as well as the baby’s. Later in the pregnancy, the baby not only receives the adrenaline signal, but also hears changes in the mother’s heartbeat and breathing.

Can stress harm the unborn baby? The unborn baby can handle some stress. However, if the stress is long-lasting, severe, or frequent, the mother may have a more difficult delivery. The baby may be smaller, fussy, or quite active. Thus, emotional support during pregnancy is good for both mother and baby.

### Health Habits During Pregnancy

Good health habits are always important. Health habits for pregnant women are similar to good health habits for all people. However, when a woman is pregnant, health habits have an even greater effect on her health and her baby’s health. In sum, there are major environmental factors affecting the unborn baby.

During pregnancy, certain health habits change. A pregnant woman may have to eat more of some foods. She may have to take vitamin supplements. A mother-to-be may also need to be more cautious about her physical activities. She may need to give up active sports, such as volleyball. Every pregnant woman should take care of herself. Because each pregnancy differs, the mother-to-be should ask her doctor for health guidelines to follow.

### Nutrition

The old saying that mothers-to-be are eating for two (or maybe more) is correct. During the first week, the baby is fed entirely on the contents of the ovum’s yolk sac. After embedding, the fertilized egg feeds on mucous tissues that line the womb. By the twelfth week, the baby completely depends on the mother for food.

Scientists now feel a woman needs essential nutrients throughout her life to prepare for pregnancy. Providing for her own needs and those of her baby may put a nutritional strain on the woman’s body. Good nutrition before pregnancy builds nutrient stores in her body that will help meet these needs. Pregnant teens under 17 years of age have more nutritional problems because they are still growing. Their bodies have not had time to build these stores.

Good nutrition during pregnancy is vital. There is a direct link between what a pregnant woman eats and the following factors:

- her weight gain
- the unborn’s weight gain
- the infant’s growth
- the infant’s mental capacity
- the infant’s physical performance

Thus, a nutritious diet is essential. Cells need proteins, fats, carbohydrates, minerals, and vitamins to help them grow. A healthful pregnancy diet includes foods rich in these nutrients. Like all Americans, pregnant women should follow the food guidance system developed by the USDA, 5-4. While this is a good basic guide,
# Prenatal Development and the Newborn

## For Moms

### 1st Trimester Apr – Jun
Based on a 2200 calorie pattern*

- **GRAINS**
  - Make half your grains whole
  - 7 ounces a day
  - Aim for at least 3½ ounces of whole grains a day

- **VEGETABLES**
  - Vary your veggies
  - 3 cups a day
  - Aim for this much weekly:
    - Dark green veggies – 3 cups
    - Orange veggies – 2 cups
    - Dry beans & peas – 3 cups
    - Starchy veggies – 6 cups
    - Other veggies – 7 cups

- **FRUITS**
  - Focus on fruits
  - 2 cups a day
  - Eat a variety of fruit
  - Go easy on fruit juices

- **MILK**
  - Get your calcium-rich foods
  - 3 cups a day
  - Go low-fat or fat-free when you choose milk, yogurt, or cheese

- **MEAT & BEANS**
  - Choose lean with protein
  - 6 ounces a day
  - Choose low-fat or lean meats and poultry.
  - Vary your protein routine—choose more fish, beans, peas, nuts, and seeds.

### 2nd Trimester Jul – Sep
Based on a 2400 calorie pattern*

- **GRAINS**
  - Make half your grains whole
  - 8 ounces a day
  - Aim for at least 4 ounces of whole grains a day

- **VEGETABLES**
  - Vary your veggies
  - 3 cups a day
  - Aim for this much weekly:
    - Dark green veggies – 3 cups
    - Orange veggies – 2 cups
    - Dry beans & peas – 3 cups
    - Starchy veggies – 6 cups
    - Other veggies – 7 cups

- **FRUITS**
  - Focus on fruits
  - 2 cups a day
  - Eat a variety of fruit
  - Go easy on fruit juices

- **MILK**
  - Get your calcium-rich foods
  - 3 cups a day
  - Go low-fat or fat-free when you choose milk, yogurt, or cheese

- **MEAT & BEANS**
  - Choose lean with protein
  - 6½ ounces a day
  - Choose low-fat or lean meats and poultry.
  - Vary your protein routine—choose more fish, beans, peas, nuts, and seeds.

### 3rd Trimester Oct – Dec
Based on a 2600 calorie pattern*

- **GRAINS**
  - Make half your grains whole
  - 9 ounces a day
  - Aim for at least 4½ ounces of whole grains a day

- **VEGETABLES**
  - Vary your veggies
  - 3½ cups a day
  - Aim for this much weekly:
    - Dark green veggies – 3 cups
    - Orange veggies – 2½ cups
    - Dry beans & peas – 3½ cups
    - Starchy veggies – 7 cups
    - Other veggies – 8½ cups

- **FRUITS**
  - Focus on fruits
  - 2 cups a day
  - Eat a variety of fruit
  - Go easy on fruit juices

- **MILK**
  - Get your calcium-rich foods
  - 3 cups a day
  - Go low-fat or fat-free when you choose milk, yogurt, or cheese

- **MEAT & BEANS**
  - Choose lean with protein
  - 6½ ounces a day
  - Choose low-fat or lean meats and poultry.
  - Vary your protein routine—choose more fish, beans, peas, nuts, and seeds.

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* These are only estimates of your needs. Check with your health care provider to make sure you are gaining weight appropriately.

The calories and amounts of food you need can vary with each trimester of pregnancy. Your plan may show different amounts of food for different months, to meet your changing nutritional needs. Changing the amount of calories you eat each trimester also helps you gain weight at the correct rate.

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Know your limits on fats, sugars, and sodium

<table>
<thead>
<tr>
<th>OILS</th>
<th>EXTRAS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim for this much:</strong></td>
<td><strong>Limit extras (solid fats and sugars) to this much:</strong></td>
</tr>
<tr>
<td>1st Trimester</td>
<td>6 teaspoons a day</td>
</tr>
<tr>
<td>2nd Trimester</td>
<td>7 teaspoons a day</td>
</tr>
<tr>
<td>3rd Trimester</td>
<td>8 teaspoons a day</td>
</tr>
</tbody>
</table>

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This sample diet is based on a moderately active 26-year-old woman who is 5’5” and who weighs 125 pounds before pregnancy. Nutritional needs differ slightly during pregnancy, so women should consult their doctors or dietitians about what to eat during pregnancy.
the need for some nutrients does increase during pregnancy.

A pregnant woman’s doctor or dietitian can advise her what specific diet changes she should make during pregnancy. Diets for pregnant and nursing mothers provide more calcium, iron, folic acid, and protein than diets for nonpregnant women. Folic acid is a B-vitamin that can be found in most enriched breads, pastas, rice, and cereals, as well as multivitamins. Pregnant women need 600 micrograms of folic acid daily. Folic acid prevents birth defects of the baby’s brain (anencephaly) and spine (spina bifida).

Pregnant women should have eight 8-ounce glasses of water daily. Caffeine intake should be limited during pregnancy. Daily intake of caffeine from all sources (including coffee, tea, soft drinks, and chocolate) should not exceed the amount of caffeine found in one cup of coffee.

Weight Gain

Experts suggest women gain between 25–35 pounds in pregnancy. More weight should be gained for multiples, such as 40–45 pounds for twins. The exact amount depends on the woman’s height and prepregnancy weight. Women who enter pregnancy underweight may be advised to gain more. Overweight women may be advised to gain less than this amount.

To meet the nutrient needs for themselves and their babies, pregnant women need to eat 300 extra calories per day, starting in the fourth month. More calories are added for multiple babies.

Weight Gained During Pregnancy

<table>
<thead>
<tr>
<th>Portion of Added Weight</th>
<th>Weight Gain in Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby</td>
<td>7.5</td>
</tr>
<tr>
<td>Uterus</td>
<td>2.0</td>
</tr>
<tr>
<td>Placenta</td>
<td>1.5</td>
</tr>
<tr>
<td>Amniotic fluid</td>
<td>2.0</td>
</tr>
<tr>
<td>Increased maternal blood</td>
<td>3.5</td>
</tr>
<tr>
<td>volume</td>
<td></td>
</tr>
<tr>
<td>Increased maternal breast</td>
<td>1.5</td>
</tr>
<tr>
<td>mass</td>
<td></td>
</tr>
<tr>
<td>Increased maternal stored fat</td>
<td>4.0</td>
</tr>
<tr>
<td>and protein</td>
<td></td>
</tr>
<tr>
<td>Increased maternal fluid</td>
<td>4.0</td>
</tr>
<tr>
<td>retention</td>
<td></td>
</tr>
<tr>
<td><strong>Total weight gain</strong></td>
<td><strong>26.0</strong></td>
</tr>
</tbody>
</table>

Weight gain is a necessary part of pregnancy, but this weight gain has many causes.
throughout her pregnancy. The following amounts are common:

- during the first three months—about four pounds total
- from four to nine months—about three to four pounds per month (with most of the weight gain occurring from seven to nine months)

Hygiene Practices

Women should continue their normal grooming and body care habits during pregnancy. Paying attention to her appearance may help the mother-to-be feel better during physical discomfort or emotional stress.

Many doctors suggest pregnant women do the following:

- Have a dental checkup. (Recent studies show a link between gum disease in pregnancy and early birth.)
- Avoid very cold or very hot baths and hot tubs.
- Wear comfortable clothes with low-heeled shoes.
- Replace tub baths with showers or sponge baths during the last four to six weeks of pregnancy. (This helps to prevent internal infection. It also helps to prevent possible falls due to the woman’s larger body size.)

Rest and Sleep

A mother-to-be needs much rest and sleep. Many doctors advise eight to nine hours of sleep a night. In addition, pregnant women need at least one 15- to 30-minute rest (with or without sleep) during the day. Many women feel the most tired during the first few months and last weeks of pregnancy. Exhaustion is never good, especially in pregnancy. However, a sleepless night is not dangerous. If a woman has frequent sleep problems, she should talk with her doctor. She should never take drugs (even over-the-counter medicines) unless prescribed by her doctor.

Physical Activity and Exercise

Unless advised by her doctor to limit physical activity, a pregnant woman can and should be active. Activity helps keep weight within normal limits, strengthens muscles women use in delivery, increases energy, and relieves tension, 5-6.

Many doctors advise mothers-to-be to avoid contact sports, activities that jolt the pelvic region, and activities that could result in falls. On the other hand, doctors often advise women to walk during pregnancy. Some women take special exercise classes for pregnant women.

In childbirth classes, women may learn conditioning exercises to relieve back and leg strain of later pregnancy. They can also learn exercises that prepare the muscles for delivery.

Health Hazards to Avoid

Many health problems in the unborn can be prevented if the mother protects herself before and during pregnancy. Only about 20 percent of disabilities present at birth are caused by genetic factors. Most are caused by environmental factors.
Harmful substances can enter the mother’s body, pass through the placenta, and enter the baby’s body. Some substances can pass from mother to baby during the birth process. Any substance may be harmful if passed to an unborn child at a critical time during growth. In most cases, the strength of the substance may be less important than the time when it reaches the baby. For example, in the 1950s a drug called thalidomide was used to treat morning sickness. Some mothers took the drug only a few times while others took it often. Taking any amount of the drug during the embryonic stage resulted in a baby born with severe birth defects. Other substances are equally dangerous throughout pregnancy.

**Diseases or Illnesses in the Mother**

Maternal illnesses may exist prior to pregnancy. They may also develop during pregnancy. Some illnesses have few effects on the fetus, while others severely affect the baby.

**Diabetes**

Diabetes is a disorder caused by the body’s inability to use sugar properly. In diabetes, the body inadequately produces or uses the hormone insulin. Some women might have diabetes before they become pregnant. If so, they should talk to their doctors about how to manage the disorder during pregnancy.

**Note**

During pregnancy, it is extremely important not to take any drugs or medicine except under the advice of a doctor. If a pregnant woman becomes ill, she should call her doctor and only take medication the doctor has recommended.

**Enrich**

Research (individually or in groups) the following infections that cause congenital problems: rubella; chicken pox, mumps, and measles; fifth disease; Lyme disease; and toxoplasmosis. Describe the infections, problems that exposure can cause in an unborn baby, and safe methods used to correct the situation.
Another kind of diabetes can occur during pregnancy. It is called gestational diabetes, and it appears in women who did not have diabetes before pregnancy. Soon after pregnancy ends, gestational diabetes usually disappears. However, these women are prone to diabetes later in life.

Women with gestational diabetes usually have larger babies, often weighing 10 to 12 pounds at birth. A large baby is a risk to the mother during delivery. In addition, these babies are at risk for high blood pressure, congenital problems, heart problems, and infant death. The chances of diabetes increase for these children.

Careful balance of diet, physical activity, and medication (if needed) will keep both types of diabetes under control. Pregnant women with this condition should work closely with their doctors and dietitians to plan for a healthy pregnancy.

Pregnancy-Induced Hypertension (PIH)

Pregnancy-induced hypertension (PIH) is the name for high blood pressure caused by pregnancy. This dangerous condition can also be referred to as preeclampsia or toxemia. It includes a sudden increase in blood pressure, protein in the urine, and swelling. PIH appears late in pregnancy, but its cause is unknown. It affects 8 percent of all pregnancies, especially those of older women and those

Learn More About

Rubella and Other Infections

Rubella (formerly called German measles) is a virus that can cross the placenta and affect the baby during the first three months of pregnancy. For the mother, this disease is mild. Infected babies, however, may be born blind, deaf, with a mental disability, or with heart problems.

Chicken pox results in birth defects for 1–2 percent of babies whose mothers are infected during the first 20 weeks of pregnancy. Babies exposed to chicken pox between 5 days before and 2 days after birth can develop a very serious, even fatal, form of the disease.

The only way to protect babies is to prevent their mothers from catching these diseases. Mothers should have received vaccinations for all these during childhood. As a general rule, most vaccinations, except for flu, must be avoided during pregnancy. A pregnant woman should avoid exposure to anyone she knows that has any of these diseases.

Many other infections can be dangerous during pregnancy. These cannot be prevented by childhood vaccinations. One such disease is fifth disease. Women who had this disease as a child are immune. Although fetal infection is rare, the virus can be deadly for infected babies.

Another infection is toxoplasmosis, which is caused by a parasite that primarily infects cats. Because this infection can damage an unborn’s nervous system, pregnant women should avoid contact with cats. Women should also avoid contact with the cat’s litter box or soil used by cats. The parasite is also found in raw meats. Pregnant women must be very careful when they handle raw meats and must eat only properly cooked meats.
with a multiple pregnancy. If untreated, PIH can lead to damage or death of the mother, baby, or both. Early treatment can help both mother and baby avoid serious health problems. This may include bed rest, medicine, and perhaps early delivery of the baby.

Sexually Transmitted Infections (STIs)

Sexually transmitted infections (STIs) are infectious illnesses that are passed primarily through sexual intercourse. They are also known as sexually transmitted diseases (STDs). Contracting an STI has very serious health consequences. A mother could be infected with an STI and not even realize it because she may not show any signs of infection. This could be extremely dangerous to her unborn baby. For example, some STIs can enter the bloodstream of the mother and cross the placenta to reach the unborn. Others infect the mother’s reproductive tract and can pass to the baby during delivery. Still other STIs can be passed from mother to infant during breast-feeding.

All STIs are dangerous to unborn babies, 5-7. None is more dangerous, however, than acquired immunodeficiency syndrome (AIDS). This disease is caused by the human immunodeficiency virus (HIV). AIDS develops when this virus attacks the body’s immune system until it is no longer able to fight illness. HIV is spread through sexual relations or by contact with contaminated blood and bodily fluids. Among drug users, HIV can spread through the sharing of contaminated intravenous needles. HIV can also pass from mother to unborn baby during pregnancy, childbirth, or breast-feeding. Among babies born to mothers with HIV, about one in four also have the virus. Scientists continue to work on a cure for AIDS. Prevention, however, is the best way to keep unborn babies safe from this disease.

Drugs

The term drugs includes medications, alcohol, nicotine (from cigarettes), and illegal drugs. Each of these drugs can cross the placenta and reach an unborn baby. Some drugs harm the baby in the early months of pregnancy, and many harm the baby throughout pregnancy. Other drugs, such as aspirin, are most hazardous near delivery.

Medications

The effects of most medications on unborn babies are not known. Therefore, a pregnant woman should not take any medication without consulting her doctor. This includes prescriptions, over-the-counter medicines, dietary supplements, and herbal products. A woman’s doctor can identify the risk of taking a medication. He or she can then weigh this risk against the woman’s need for the medicine. In some cases, a severely ill mother may be given medicines because the benefits outweigh the risks. This is best decided by the woman’s doctor on a case-by-case basis.

Alcohol

Doctors advise women never to drink alcohol during pregnancy. Any alcoholic drink, whether beer, wine, or hard liquor, can harm an
### STIs and Their Effects on the Unborn/Newborn

<table>
<thead>
<tr>
<th>STI</th>
<th>Transmission</th>
<th>Effects on Baby</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syphilis</td>
<td>Contracted by mother through sexual activity. Crosses the placenta beginning in the eighteenth week of pregnancy.</td>
<td>Effects prevented if treated before the sixteenth week. Untreated infection causes deafness, brain damage, skin lesions, bone and facial deformities, and fetal death.</td>
</tr>
<tr>
<td>Cytomegalovirus (CMV)</td>
<td>Transmitted by respiratory contact or sexual activity. CMV crosses the placenta.</td>
<td>Fatal for embryo or young fetus. In older fetuses, causes brain, liver, and blood problems. No treatment or means of prevention.</td>
</tr>
<tr>
<td>Herpes Simplex (herpes)</td>
<td>Contracted primarily by sexual relations. Transmitted to baby at or shortly before delivery by baby’s contact with infected secretions.</td>
<td>Newborns develop skin lesions and brain damage, and 50 percent die. May result in increased risk for mental health problems. No treatment available. C-sections may prevent contact with secretions.</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>Contracted by sexual relations. Transmitted to baby at or shortly before delivery by baby’s contact with reproductive tract infection.</td>
<td>Blindness if untreated. Treatment includes placing silver nitrate in the infant’s eyes and treating baby with antibiotics.</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>Transmitted through sexual relations. (Twice as common as gonorrhea.) Women rarely experience symptoms. May lead to sterility.</td>
<td>Miscarriage, low birthweight, and death of infants due to lung disorders.</td>
</tr>
<tr>
<td>Acquired Immunodeficiency Syndrome (AIDS)</td>
<td>Acquired by mother through sexual relations or contact with infected blood or body fluids. Infected mothers transmit the virus in 25 percent of births. (Women who are pregnant usually have HIV only with full-blown AIDS following pregnancy.)</td>
<td>Illness and perhaps very early death of child. Treatment of symptoms. No cure.</td>
</tr>
</tbody>
</table>

STIs can have serious effects on the unborn baby.
unborn baby. Taking even one drink may cause the baby to be abnormal. Almost 40,000 babies are born with damage from alcohol. Fetal alcohol syndrome (FAS) is a group of symptoms that occurs in infants whose mothers drank during pregnancy. Babies with FAS are shorter and weigh less than other babies. Their growth and development are slow. These babies have small heads, unusual facial features, heart defects, poor motor development, and disabilities. Fetal alcohol effect (FAE), a term used to describe less severe damage, causes children to have serious learning problems.

**Nicotine**

When a pregnant woman smokes, her baby feels the effects. Babies of smokers are usually smaller than average or premature. Nicotine raises the mother’s heart rate, blood pressure, and breathing rate, and reduces the flow of blood. While a mother is smoking, the baby’s oxygen is greatly reduced. Babies need oxygen as they grow, especially during the prenatal period. Studies now show that cleft lip/palate risks are increased when mothers smoke.

Smoking, especially after 16 weeks of pregnancy, is very risky because it raises a woman’s chance to lose her baby. There is also a higher risk of delivery problems when a woman smokes.

Smoking can cause a baby’s brain to develop abnormally. This can lead to learning problems, hyperactivity, and poor attention spans. Ear infections and breathing problems are also more common among babies exposed to smoke during pregnancy. Newborn and infant deaths are increased in homes where parents smoke. Secondhand smoke affects an unborn baby’s health in similar ways.

**Illegal Drugs**

About four percent of babies are born to mothers using illegal drugs, such as cocaine, crack, heroin, and marijuana. These drugs cross the placenta quickly and reach the baby. If a woman is addicted to drugs, chances are her baby is, too.

Pregnant women who use drugs often have low-birthweight and premature babies. One of the greatest problems for these babies happens after they are born. Because they are no longer receiving the drugs, their bodies go through withdrawal. This causes the baby great stress. Symptoms of the baby’s withdrawal include a high-pitched cry, shaking, poor feeding, and fever.

Cocaine has devastating effects on babies. It can cause women to lose their babies or have babies born too soon. These babies also grow more slowly. Cocaine can damage a baby’s brain, eyes, heart, limbs, intestines, and urinary tract. By the first month, these babies’ attention spans worsen rather than improve.

Pregnant women who use illegal drugs often neglect their own health. In many cases, these women eat poorly, smoke, or abuse alcohol. Some never see a doctor during pregnancy. For these reasons, babies whose mothers use illegal drugs have a slim chance of living a healthy life.

**Radiation Exposure**

During pregnancy, X-rays should be avoided if possible. This is because...
X-rays aimed toward the fetus increase the likelihood of childhood cancer. Some studies also link the use of X-rays in pregnancy to congenital disabilities in the fetus.

Pregnant women should always inform their doctors or dentists if they are pregnant so the baby can be protected from harmful X-rays.

If an X-ray is necessary before delivery, it must be low in intensity, taken away from the fetus, and done only when the abdomen is shielded by a lead safety drape.

Environmental Pollution

Parents should determine whether their home and workplace are safe. Lead, chemicals, pesticides, and herbicides all pose risks to the unborn baby. Pregnant women should check to be sure their environments do not harm their babies.

Complications of Pregnancy

Pregnant women can greatly reduce the chance of problems in their pregnancies by receiving prenatal care, following their doctors’ advice, and practicing good health habits. However, complications (problems) can occur in any pregnancy. The major complications of pregnancy are described in 5-8. Complications can damage the mother’s health. Some can result in congenital problems or the loss of the baby before birth. Prenatal care helps doctors note problems early, which allows for needed early treatment.

Congenital Problems

A **congenital problem** is a physical or biochemical problem in a baby that is present at birth. It may be inherited or caused by environmental factors. These disabilities and diseases occur with varying degrees of severity. Figure 5-9 describes the most common congenital problems.

Pre-Term Birth

**Pre-term birth** is a delivery that occurs before 37 weeks of pregnancy. These births account for almost 13 percent of live births in the United States. Pre-term births are increasing and are possibly due to more multiple births and to teen and older mothers-to-be.

Pre-term labor is the main cause of death in the first month of life. Pre-term labor can trigger many problems, such as cerebral palsy, chronic lung disease, and delays in development. Pre-term births take an emotional and financial toll on families. There have not been many advances in stopping pre-term births. Studies are now looking at a hormone (progesterone) as a way to prevent some pre-term births. The best preventive is good health habits in pregnancy.

Miscarriage

A **miscarriage** is the expulsion (forcing out) of the baby from the mother’s body before week 20 of pregnancy. The medical term for miscarriage is *spontaneous abortion*. **Stillbirth** is the loss of the fetus after 20 weeks of pregnancy. In a stillbirth, the baby is born dead.
## Complications in Pregnancy

<table>
<thead>
<tr>
<th>Problem</th>
<th>Causes</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ectopic pregnancy (development of fetus outside of uterus)</td>
<td>Blocked fallopian tube</td>
<td>Spotting and cramping; uterus does not enlarge as it should; rupture of fallopian tube</td>
</tr>
<tr>
<td>Too much amniotic fluid</td>
<td>Uncontrolled diabetes; multiple pregnancy; incompatible blood types; congenital problems</td>
<td>Excessive pressure on mother’s body; breathing problems, congenital problems in the newborn</td>
</tr>
<tr>
<td>Too little amniotic fluid</td>
<td>Congenital problems, growth problems, death of fetus</td>
<td>Fetal movement slows or stops</td>
</tr>
<tr>
<td>Bleeding in late pregnancy</td>
<td>Placenta abruptio; placenta previa; vaginal or cervical infection</td>
<td>Bleeding—often heavy</td>
</tr>
<tr>
<td>Placenta abruptio (placenta becomes detached from the uterine wall before it should)</td>
<td>Unknown Occurs more in women who smoke, have high blood pressure, have had previous children or a history of detached placenta, suffered injury to the abdomen, and are carrying multiples</td>
<td>Bleeding, cramping, abdominal tenderness</td>
</tr>
<tr>
<td>Placenta previa (placenta attaches itself to the uterus near or covering the cervix rather than in the upper half of the uterus)</td>
<td>Scarring of the uterine wall from a prior pregnancy; tumors of the uterus; surgery of the uterus; more common among women who smoke or use drugs, are older than 35, and are carrying multiples</td>
<td>Bright red bleeding without pain or tenderness of the abdomen</td>
</tr>
<tr>
<td>Pregnancy-Induced Hypertension (also called preeclampsia or toxemia)</td>
<td>Multiple fetuses; teen pregnancy or pregnancy of woman over 40 years of age; high blood pressure; kidney disease</td>
<td>Sudden swelling of hands and face; high blood pressure; headache; dizziness; fever; irritability; protein in urine; abdominal pain; blurred vision; seizures</td>
</tr>
</tbody>
</table>

Complications in pregnancy require immediate medical treatment to protect the health of mother and baby.

**Note**

*Abruptio* means “to break off.” *Previa* means “leading the way.” When placenta previa occurs, the placenta is lower than the fetus and leads the way in a vaginal delivery—a fatal complication for the mother.
# Congenital Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Symptoms</th>
<th>Causes</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleft lip/palate</td>
<td>Noticeable at birth. A cleft lip occurs when the two sides of the upper lip fail to grow together properly. A cleft palate occurs when an opening remains in the roof of the mouth. This creates problems in breathing, talking, hearing, and eating.</td>
<td>Variable; often caused by a number of factors working together; smoking and severe dieting may be factors</td>
<td>Corrective surgery and speech therapy</td>
</tr>
<tr>
<td>Cystic fibrosis</td>
<td>A chemical failure affects lungs and pancreas. Thick sticky mucus forms in the lungs, causing breathing problems. Reduced amounts of digestive juices cause poor digestion of food. An excess amount of salt is excreted in perspiration.</td>
<td>Recessive gene</td>
<td>No cure; physical therapy, synthetic digestive enzymes, salt tablets, and antibodies can lessen the effect of the symptoms; may have shorter-than-normal life span because of higher susceptibility to respiratory diseases</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Metabolic disorders cause high blood sugar. The person feels thirsty, hungry, and weak and usually loses weight.</td>
<td>A number of factors working together</td>
<td>No cure; can be controlled by insulin injections, careful diet, and physical activity</td>
</tr>
<tr>
<td>Down syndrome</td>
<td>Distinct physical features are evident. Slanting eyes; large, misshapen forehead; oversized tongue; single crease across palm of each hand; and varying degrees of mental retardation are typical.</td>
<td>Chromosome abnormality; more likely to occur when mother is over age 35</td>
<td>Special educational needs; life span may be nearly normal</td>
</tr>
<tr>
<td>Huntington's chorea</td>
<td>The brain and central nervous system gradually deteriorate when the person is between 30 and 40 years old. This causes involuntary jerking, loss of mental abilities, insanity, depression, and finally death.</td>
<td>Dominant gene</td>
<td>None</td>
</tr>
<tr>
<td>Condition</td>
<td>Description</td>
<td>Genetic Considerations</td>
<td>Treatment/Prognosis</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Hydrocephalus</td>
<td>Extra fluid is trapped in the brain. The person’s head is larger than normal.</td>
<td>A number of factors working together</td>
<td>Surgical removal of excess fluid; without treatment, children rarely survive</td>
</tr>
<tr>
<td>Muscular dystrophy</td>
<td>A group of disorders which damage muscles. They cause progressive weakness and finally death.</td>
<td>Often sex-linked</td>
<td>No cure; therapy and braces offer some relief</td>
</tr>
<tr>
<td>Phenylketonuria (PKU)</td>
<td>An enzyme deficiency makes the person unable to digest a certain amino acid. The baby appears normal at birth, but slowly develops mental retardation because the amino acid builds up in the body and causes brain damage.</td>
<td>Recessive gene</td>
<td>A carefully prescribed diet that balances the enzyme deficiency; the effects of the disease can usually be avoided if treatment begins within the first six weeks of birth</td>
</tr>
<tr>
<td>Sickle-cell anemia</td>
<td>Red blood cells are sickle-shaped rather than round. They cannot carry oxygen efficiently throughout the body. People become pale, tired, and short of breath. They have occasional pains and low resistance to infection. Their life span is often shorter than normal.</td>
<td>Recessive gene</td>
<td>No cure; various treatments relieve some symptoms; blood transfusions are needed occasionally</td>
</tr>
<tr>
<td>Spina bifida</td>
<td>A condition that causes partial paralysis due to an incompletely formed spinal cord.</td>
<td>Heredity and environmental factors</td>
<td>Corrective surgery and physical therapy</td>
</tr>
<tr>
<td>Tay-Sachs Disease</td>
<td>A lack of a specific chemical in the blood resulting in an inability to process and use fats. Leads to severe brain damage and death, often by age two or three years.</td>
<td>Recessive gene</td>
<td>None</td>
</tr>
</tbody>
</table>

(Continued.)
About fifteen percent of all known pregnancies end in the loss of the baby. Some miscarriages occur even before the couple is aware of the pregnancy. Miscarriage is most common in the first three months, but it can occur later. Losses frequently occur for unknown reasons. Most miscarriages result from congenital problems of the fetus. Miscarriages also occur more often with pregnancy complications and certain diseases. Habits of the mother, such as smoking, drinking, or using drugs, can also lead to fetal loss.

Having a miscarriage does not mean a couple will never have a baby. Their risk of a second miscarriage is higher than that of couples who have never miscarried. However, with good medical care, many couples can conceive again and deliver healthy babies after having a miscarriage.

**Monitoring the Baby’s Development**

Monitoring the baby helps doctors determine the baby’s health and exact age. Monitoring also indicates the size and gender of the baby. It will show if there is one or more than one baby in the mother’s uterus. It will also indicate the baby’s position before delivery.

**Blood Test**

A blood test, called a *triple-screen*, is given at 12 weeks. It measures AFP (alpha-fetoprotein), HCG (human chorionic gonadotropin), and estriol (a protein found during pregnancy). This test screens for neural tube defects, Down syndrome, and other severe abnormalities. If the results of the blood test are questionable, other tests are given.

Experts are now studying a new way to treat samples of maternal blood. The newer method may increase the amount of fetal DNA that can be studied. This technique promises to give the same information as the more invasive methods of getting DNA samples from the chorion or the amniotic fluid.

Other blood tests are used to check for conditions other than possible abnormalities in the fetus. Blood tests can screen for STIs at a mother’s first medical visit. Another blood test given at six or seven months screens for gestational diabetes.

**Ultrasound**

One test that is done to monitor an unborn baby is *ultrasound*. This is a test in which sound waves bounce off the fetus to produce an image of the fetus inside the womb. The picture of the fetus the ultrasound produces is called a *sonogram*.

The technician holds a *transducer* over the mother’s abdomen. The transducer emits sound waves. The waves are deflected or absorbed at different rates, depending on whether they hit bone, organ tissue, blood, or water. These differences are changed into electrical impulses. This produces a visual image of the fetus on a computer monitor.
see whether the baby seems to be developing correctly.

A new 3-D ultrasound can help specialists look at the severity of structural defects. For example, these machines can detect the thickness of a fluid-filled area behind the unborn baby’s neck (called nuchal translucency). This test can confirm Down syndrome early in the pregnancy.

Because ultrasounds are considered safe, they are used fairly routinely. Medical doctors discourage women from having ultrasounds made by retailers who simply make photos for parents.

Ultrasound technicians use equipment to collect reflected echoes to form an image that may be videotaped, transmitted, or photographed for interpretation and diagnosis by a physician. Obstetric and gynecologic ultrasound technicians specialize in the imaging of the female reproductive system and the fetus of a pregnant woman to track the baby’s growth and health.

**Education:** Ultrasound technicians are often trained in accredited programs and are registered. They may train in hospitals, vocational-technical institutions, colleges and universities, and the Armed Forces.

**Job Outlook:** Job opportunities should be favorable, as ultrasound becomes an increasingly attractive alternative to radiologic procedures.
Chorionic Villus Sampling

Chorionic villus sampling (CVS) is a procedure for finding abnormalities in the unborn. This procedure is performed by testing a small sample of the chorion, which will later develop into the fetal part of the placenta. CVS is used between weeks 10 and 12 of pregnancy. This test can detect serious problems with the fetus early in the pregnancy.

A hollow tube is inserted through the vagina into the uterus and guided to the chorion. Chorionic villi projections from the chorion transport nutrients to, and wastes from, the unborn. A small section of the villi is painlessly suctioned off and analyzed for congenital problems. CVS has a slight risk of infection, which can result in a miscarriage.

Amniocentesis

Amniocentesis is a prenatal test used to check for the presence of over 100 congenital problems. Usually it checks for problems such as Down syndrome, Tay-Sachs disease, and sickle-cell anemia.

To perform the test, a medical specialist inserts a needle through the abdominal wall into the uterus. Ultrasound is done at the same time to position the needle. The specialist draws a small amount of fluid from the amniotic sac.

Why does this fluid give so much information? Cells cast off by the fetus float in the fluid. These cells are cultivated in a lab for three to five weeks and are then checked for congenital problems.

Amniocentesis cannot be done until the fetus is 15 to 18 weeks old. At this time, there is enough amniotic fluid for the test. Due to the lab time required, the woman will be 20 to 21 weeks pregnant when she learns the results.

Amniocentesis is a safe procedure in 99 percent of cases. However, miscarriage or premature birth may result in a few cases. For this reason, amniocentesis is not a routine procedure. It is used only when problems are suspected or the mother-to-be is older.
Chapter 5  Prenatal Care

Environmental factors begin to interact with genetic traits the moment after conception. The first environment for the baby is the mother's body. The condition of her body and her daily health habits have a great effect on her baby's development.

As soon as the signs of pregnancy are detected, a woman should seek medical care. The health of the baby depends on the health of the mother.

Good health habits need to be practiced during pregnancy. Doctors recommend most women gain between 25–35 pounds. Mothers-to-be should rest when they feel tired. They should also remain active during pregnancy.

Many diseases or illnesses in the mother can harm the baby. The health of the fetus is also endangered through drug use. Radiation exposure and environmental pollution can create possible harmful effects.

Congenital problems can occur for various reasons and occur in varying levels of severity.

Pre-term labor is the main cause of infant death in the first month of life. Developmental problems occur in varying levels of severity.

A miscarriage may occur if a pregnancy has complications. This can result because the mother smokes, drinks, uses drugs, or has certain diseases. It can also occur if the baby has congenital problems. Blood tests, ultrasound, CVS, and amniocentesis are tests that monitor the health of the fetus.

Summary

Congenital problems can occur for various reasons and occur in varying levels of severity.

Pre-term labor is the main cause of infant death in the first month of life. Developmental problems occur in varying levels of severity.

A miscarriage may occur if a pregnancy has complications. This can result because the mother smokes, drinks, uses drugs, or has certain diseases. It can also occur if the baby has congenital problems. Blood tests, ultrasound, CVS, and amniocentesis are tests that monitor the health of the fetus.

Companion Web Site

Interactive Activity

Review vocabulary terms and key concepts for Chapter 5 at g-wlearning.com.

Resource

Chapter 5: Prenatal Care, Teacher's PowerPoint Presentations CD. Show students the slide presentation to review chapter material.
Review and Reflect Answers

1. B
2. 21 and 28 years
3. false
4. Diabetes
5. high blood pressure caused by pregnancy
6. false
7. true
8. Fetal alcohol syndrome (FAS)
9. a delivery that occurs before 37 weeks of pregnancy
10. after
11. true
12. blood tests, ultrasound, chorionic villus sampling, amniocentesis

Write your answers to the following questions on a separate sheet of paper.

1. Which is not a sign of pregnancy? (A) enlarged and sore breasts; (B) cravings for pickles and ice cream; (C) missed menstrual cycle; (D) morning sickness.
2. In terms of health, between which ages is it safest for women to become pregnant?
3. True or false. Most doctors advise women to gain as little weight as possible during pregnancy regardless of prepregnancy weight.
4. _____ is a disorder caused by the body’s inability to use sugar properly.
5. What is pregnancy-induced hypertension?
6. True or false. During pregnancy it is safe to take over-the-counter drugs, such as cough medicine and aspirin.
7. True or false. A congenital problem is a physical or biochemical problem in a baby that is present at birth.
8. _____ is a group of symptoms that occurs in infants whose mothers drank during pregnancy.
10. Stillbirth is the loss of the fetus _____ (before, after) 20 weeks of pregnancy.
11. True or false. Good health practices are much the same during pregnancy as they were before pregnancy.
12. Name four tests for monitoring a baby’s development before birth.

Cross-Curricularr Link

13. Health. Create a fill-in booklet for pregnant women. Include sheets of information a pregnant woman would need to give her doctor. Also list questions she needs to ask her doctor. Use these suggested topics to start.

(A) Information the doctor needs—family health history; history of the woman’s menstrual cycle and date of last menstrual period; history of any serious or chronic diseases or conditions; history of woman’s past pregnancies; current use of drugs, including prescription and over-the-counter drugs.

(B) Information the mother-to-be needs—due date; present weight and recommended amount of weight to gain during pregnancy; recommendations regarding nutrition, physical activity, and rest; changes in the treatment of any disease or condition; information on giving birth (place, types of delivery, and arrangement for care of newborn); fees and insurance; appointment dates and how to contact doctor in an emergency.
Placing the booklet in a folder with pockets is often helpful, because many doctors give their patients charts and pamphlets.

14. Reading and Writing. Read at least three articles concerning prenatal care. Write a brief essay describing the main points of each article. Include the title of each article and the author. Check your essay for correct spelling, grammar, and punctuation.

15. Health, Technology. Create an electronic presentation entitled "Eating for Two Requires Careful Planning." Include sample menus for a pregnant woman for one week. You might also include pictures or a list of some fattening, nonessential foods she should avoid. Share your presentations with the class.

16. Science, Writing. Use Internet or print sources to research a congenital problem. Is the congenital problem inherited or caused by environmental factors? What is the possible severity of the disability or disease? What types of treatment are available? Write a report of your findings. Check your report for correct spelling, grammar, and punctuation.

Making Observations

17. Observe pregnant women in informal settings. What healthful activities or behaviors do you see these women use? Do you identify any activities or behaviors they use that are not healthful during pregnancy?

18. Observe a sonogram photo. Which features of the baby can you see?

Thinking Critically

19. Some of the most severe congenital problems are caused by recessive traits. Based on this statement, why is it biologically better for closely related blood relatives not to marry? Explain your answer.

20. Years ago, pregnancy could not be confirmed for several weeks. Today’s tests can confirm pregnancy within days of conception. What advantages occur as a result of early confirmation?