

THE GREAT BODY SHOP

Come in and learn about your body!



This is a human embryo at approximately 40 days. It floats in a sac of fluid that cushions and protects it. The actual size is about 1 cm.

The Reproductive System

As difficult as it is to believe, each one of us began life as a single cell no bigger than the period at the end of this sentence. That cell was a combination of an **egg** cell from your mother and a **sperm** cell from your father.

The fact that an egg and a sperm have the ability to grow into a healthy baby is pretty amazing. So is the fact that the developing **embryo** can get all the nutrients and oxygen it needs while safe and warm inside its mother's body. These amazing abilities are brought to you by your body's reproductive system. The reproductive system is composed of all the organs needed to create a baby.

Keep reading—you just may agree that the reproductive system is about the most complex and incredible of all your body systems!

Name: _____



Puberty—The Road to Adulthood

Puberty is the time during which your body changes from that of a child to that of an adult. During this four to six year period, both boys and girls grow taller, develop more body hair, and notice more oil in their skin. Boys become more muscular and their voices start to deepen. Girls develop bigger breasts and their hips widen. A boy notices that his **penis** and **testicles** are growing bigger. A girl will eventually get her **menstrual periods**.

Other, less obvious changes happen as well. All these changes are due to **hormones**, chemicals produced by the **endocrine** (end-o-krin) **glands**. Though there have been hormones in your body your whole life, a few new ones start to be released somewhere between ages 9 and 14. These are the hormones that get the process of puberty started.

The Reproductive Organs

Pictured below are the organs that make up the female reproductive system. Locate the **ovaries** in the diagram. The ovaries are almond-shaped organs that contain eggs, the female's reproductive cells. (Females are born with approximately one half million eggs already inside their ovaries.) Once a female starts to go through puberty, one egg will become ripe each month. When it does, it will leave the ovary (this is called **ovulation**) and begin to travel through the Fallopian tube to the **uterus**. The uterus, meanwhile, has grown a thick lining, rich in blood vessels, to

nourish the egg.

The egg will need that lining only if it has met with a sperm cell. If it has not, the lining and egg will disintegrate. The waste blood then comes out little by little through the **vagina**. This bleeding is called the menstrual period (or "period" for short). It generally occurs once every 28 days or so.

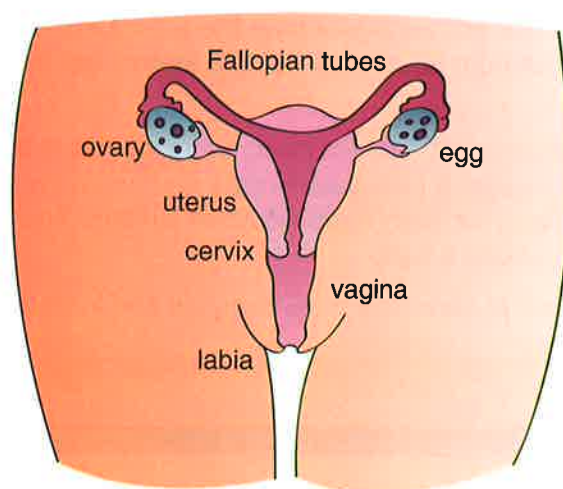
Pictured below are the organs of a male's reproductive system. The penis is usually limp. Occasionally, however, it fills with blood and becomes firmer. This is called an **erection** (ih-rek-shuhn).

Behind the penis is the **scrotum** (skroh-tuhm), a sac-like structure

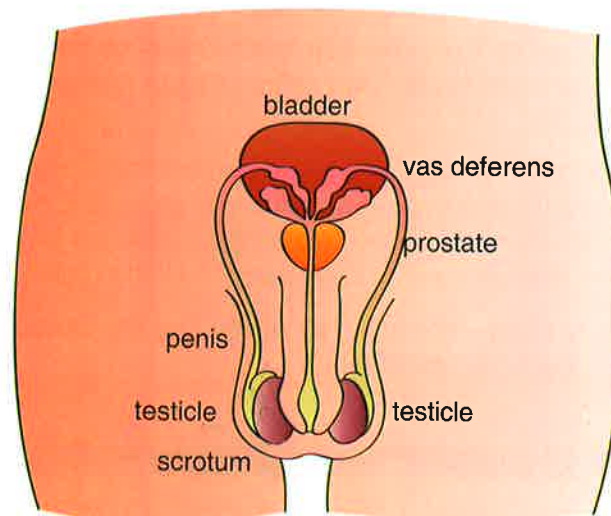
that holds the two testicles.

Once a boy reaches puberty, his testicles will start to make sperm. Sperm are his reproductive cells. The **vas deferens** (vas def-uh-renz) are the tubes that carry sperm from the testicles to the **prostate**. As sperm move through the prostate, they are mixed with fluids.

Sometime during puberty, a boy will find that his penis can discharge a white-colored fluid when it is erect. This fluid is **semen** (see-muhn), and it contains millions of sperm cells.



Female Reproductive Organs

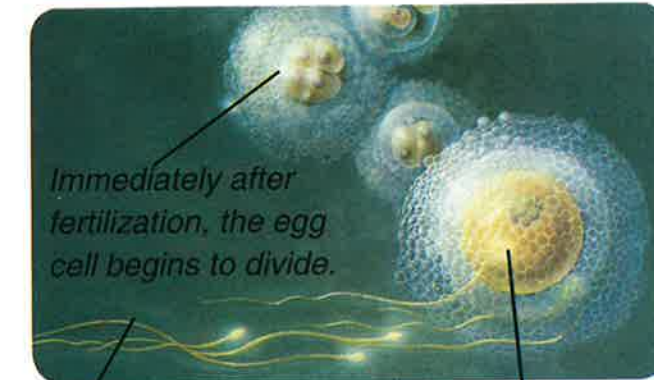
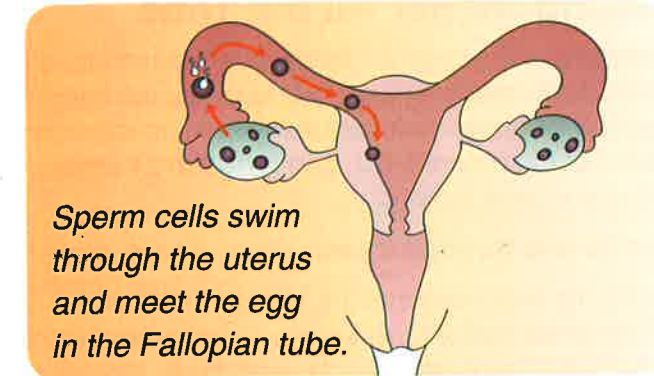


Male Reproductive Organs

Fertilization

During sexual intercourse, semen is expelled (discharged) from the penis. Remember, semen contains millions of sperm cells. These sperm cells swim up the woman's vagina and into the **Fallopian tubes**. If there is an egg in one of the Fallopian tubes, one of these sperm will penetrate the egg and join with it. (The other sperm will just disintegrate and be absorbed or expelled by the woman's body.) This joining, of egg and sperm, is called **fertilization**.

The fertilized egg immediately begins dividing, and quickly becomes a tiny bundle of cells. Within a few days, it makes its way from the Fallopian tube to the uterus. There it attaches to the wall of the uterus and continues to divide. When the fertilized egg implants itself into the uterine wall and begins to grow, we say a woman is pregnant. At this point, the cell bundle is called an **embryo** (em-bree-oh). The thick lining full of blood vessels that the uterus has made feeds the embryo, so that it gets plenty of nutrients and oxygen. As the embryo grows, its cells begin to take on different jobs. Some become skin cells, some will form the heart, some form the brain, etc.



Sperm cells have a long "tail" to help them move.

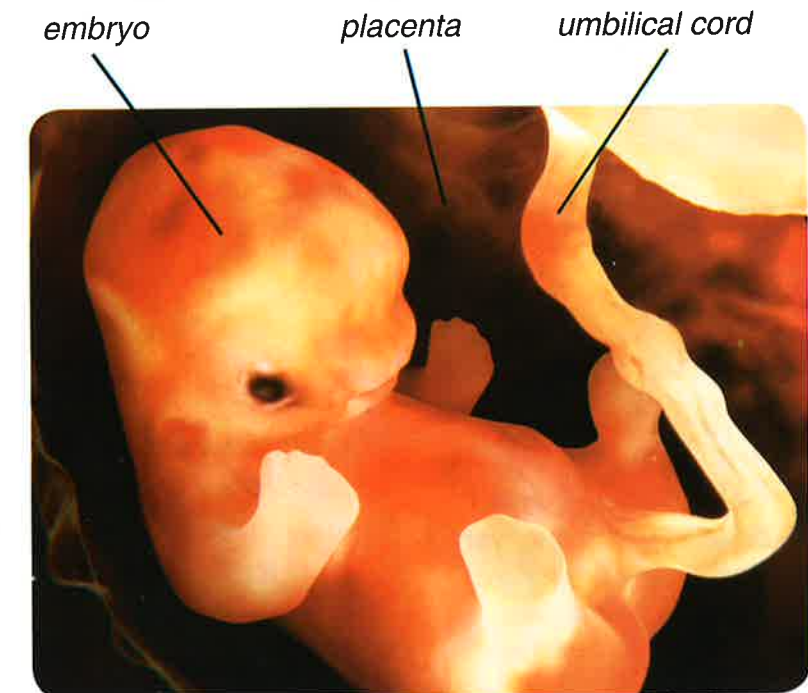
Only one sperm cell can join with the egg.

The Care and Feeding of an Embryo

The embryo grows so fast that soon the lining of the uterus is not enough to nourish it. A mass of tissue and blood vessels, called the **placenta**, is formed from the fertilized egg. Nutrients and oxygen are stored in the placenta, and reach the embryo through the umbilical (um-bill-i-kal) cord. (The baby will not breathe in and out as you do until birth.) The cord also carries waste material from the embryo out to the mother's blood, so the mother's body can get rid of it.

The placenta absorbs nutrients from the food the mother eats. Of course, the placenta will absorb drugs, alcohol, and nicotine from the mother as well. Women who take these substances may have babies who are addicted to drugs, mentally disabled, or smaller and less healthy than normal. Many of these babies also die.

Doctors are careful not to give many medicines, which are drugs, to a woman who is pregnant. Women who eat nutritious foods, get plenty of rest, exercise, and stay drug-free, have healthier babies.



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Getting Bigger All the Time

It takes roughly nine months from fertilization for a baby to be ready to live on its own. As the baby grows, the mother's uterus stretches. The uterus starts out the size of a fist, and grows to 24 times that size in nine months!

Months one through three:

During the first three months after fertilization, amazing changes are taking place in the embryo. Its heart begins beating; its fingers, toes, and even its face take shape; and its nervous system begins developing. Some bones have formed, and the lungs and digestive system have their beginnings. By the end of the second month, the embryo has really begun to look like a miniature baby. We begin to call it a **fetus** (feet-us). By the end of month three, the fetus is about two-and-a-half inches long and weighs about one-half ounce.

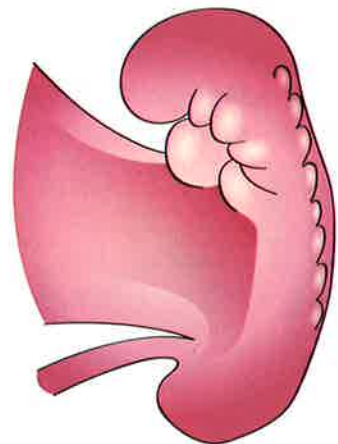
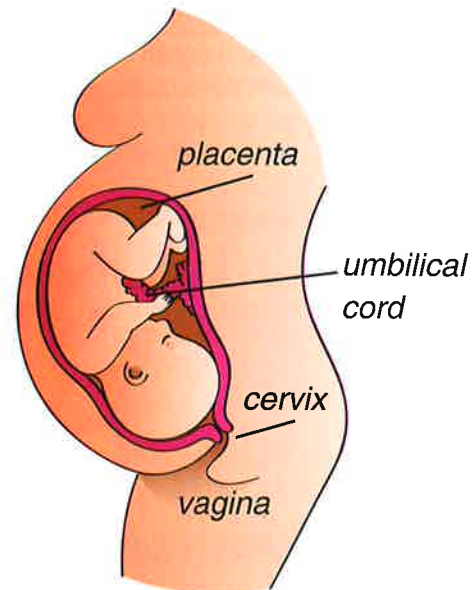
Months four through six:

About this time, many of the fetus's muscles get into working order. The mother may begin to feel "kicks" as the fetus moves. Hair, fingernails, and teeth form. By the end of month six, the baby is just about fully formed, though it weighs only two pounds!

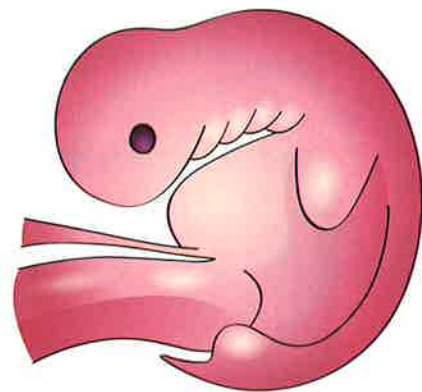
Months seven through nine:

Now, the baby's internal organs finish developing. Mostly, however, the baby spends its time growing. It will also gain a very important layer of fat, which will help regulate body temperature after birth. Just before birth, the baby should turn so that he or she is born head first. (Coming out feet first can cause complications.) At birth, the average baby weighs over seven pounds and is about 20 inches long.

A baby just before birth.



At three weeks old, the embryo is barely big enough to be seen without a microscope. Notice that the spine is formed.



At approximately six weeks old, the embryo is about 0.4–0.5 inches long. Notice how much the brain, face, and limbs have developed in just three weeks.



At eight weeks old, a fetus looks like a miniature baby, although it is only about two inches long.

The Birth Process

The woman's body signals her that the baby is ready to be born. One of these signs is a series of cramps or pains. These pains occur because the muscles of the uterus are contracting (squeezing) and relaxing. Over a period of time that usually lasts several hours, the pains get stronger and closer together. We say the woman is in **labor**.

Locate the **cervix** in the illustration showing the woman's reproductive organs. It is the opening to the uterus. During labor, the cervix opens up so that the baby can pass through. By this time, the muscle contractions have become very intense. They help the woman push the baby out.

Once the baby is born, the placenta and **umbilical cord** are no longer needed. The umbilical cord is cut. (Cutting doesn't hurt the baby or the mother, because the umbilical cord has no nerves.) The mother's body pushes out the placenta.

During pregnancy, the woman's breasts have become bigger. They contain glands that make milk to feed the baby. Many women choose to breast-feed their babies. There are special nutrients in breast milk that are very good for babies' long-term health. However, some mothers decide to feed their babies formula from a bottle. There are many special benefits to the baby and the mother from breast feeding. For the first few months after birth, the baby can get all the nutrients it needs from breast milk or formula.

Emotional Maturity

During puberty, the body is maturing, or developing. It takes on the look of an adult's body. But looking mature does not mean being mature. After the body matures, the mind has to catch up.

You may find that puberty is a time of great confusion in your life. Many kids feel more pressures in school. Still others have feelings of not being as smart, good-looking, or athletic as the rest of their classmates. Many experience changes in their relationships with their parents, as they try to become more independent. Working out these problems is part of becoming fully mature.

The fact is, you physically can have children years before you should have children. Just because someone is physically mature does not mean he or she is emotionally mature enough to be a parent. Good parents are responsible, mature adults who place an importance on raising emotionally and physically healthy children.

Read and discuss the following statements about maturity. Can you think of others?

1. A mature person is responsible. People know they can count on that person. Being responsible means following through with your obligations (duties), such as going to school, holding down a job, or taking care of household chores. It also means accepting the consequences of your actions.
2. A mature person is independent. A mature person doesn't expect others to do things that he/she could do for him or herself. A mature person doesn't count on others for money, either.
3. A mature person knows what his/her most important goals are, and works to reach them. That means being able to make smart decisions to help reach those goals.



Friendships and Dating

During and after puberty, young people will find that they are attracted to one another in a different sort of way than before. As a teenager, you will form new friendships and find that you are attracted to someone special. Friendships are important, as they help you find out more about yourself and help you develop new interests. Spending more time with friends is normal as you get older.

A good, healthy friendship means having someone who shares your interests. A friend is a good listener when you have problems. He or she is someone who is honest, trustworthy, and has integrity. In turn, you can show you are a good friend by doing the same for that person. Friends also watch out for one another and encourage each other. They don't push their friends into doing dangerous things or taking unhealthy risks.

Like having good friendships, dating becomes important as you mature. It is normal to want to develop a close relationship with that "special someone." Healthy dating relationships have the same qualities as healthy friendships. After dating for many years, most people find one person whom they love and wish to share their



life. But a good, strong relationship involves more than just love. Just as important are common goals and values, and a commitment, or promise, to stay together though good times and bad. Commitment means dedicating yourself to someone or something. These qualities, along with maturity, are necessary for a good long-term relationship, like marriage.



Think about it

- Many teens choose not to have sex. This is called **abstinence**. Why do you think abstinence is a good idea?
- How does waiting to have sex show that you are becoming mature?
- What are some of the consequences of sexual intercourse or other intimate sexual contact?
- How might having sex as a teenager put your health and goals at risk?

Say NO to Harassment!

Each day on the school bus, Cindy watched the same thing happen. A group of guys would rate each girl according to her looks or how she was dressed. Once, one of them tried to flip up a younger girl's skirt. Cindy decided to do something. She wrote down the names of every kid involved, and exactly what they did and said. Then, she gave the list to the principal and school guidance counselor. Cindy knew that sexual

harassment is against the law, and that schools have an obligation to protect their students.

Sexual harassment is "repeated unwanted attention of a sexual nature." Sexual comments or name calling, spreading rumors, sending offensive e-mails, or touching can all be forms of sexual harassment. Boys, as well as girls, can be victims of harassment. If it happens to you or if you witness it, don't put up with it! Tell the person to stop. Then, get help from a teacher, parent, or other trusted adult.

Word Wise

eggs—a female's reproductive cells

sperm—a male's reproductive cells

semen—sperm cells in a white fluid that nourishes them

hormones—chemicals that control many body functions, including those associated with puberty

endocrine glands—the glands that make and release hormones

ovaries—the two organs where a female's eggs are stored

ovulation—the releasing of eggs from the ovary

Fallopian tubes—tubes leading from the ovaries to the uterus

uterus—the place in a female where a fetus grows

prostate—a gland that adds fluid to nourish sperm

bladder—an organ that holds urine

labia—the area that separates the vagina from outside of the female body

menstrual period—a female's monthly bleeding, when the lining of the uterus is shed

cervix—the entrance to the uterus

vagina—the passageway through which menstrual blood comes out, and through which a baby would pass

penis—the male reproductive organ

testicles—two organs behind the penis that make sperm

scrotum—the sac-like structure that holds the testicles

vas deferens—the tubes that carry sperm from the testicles to the penis

erection—the stiffening, or hardening, of the penis when it fills with blood

abstinence—not having sexual intercourse or other intimate sexual contact

fertilization, or conception—the joining of an egg and sperm

embryo—the bundle of cells that have begun to form a fetus

fetus—term used for an embryo that has been growing for two months

umbilical cord—the cord attached to the fetus and the placenta, through which the fetus receives oxygen and nutrients

placenta—the mass inside the uterus that supplies the fetus with nutrients and oxygen

labor—the muscle contractions, or pains, a woman feels just before and during birth



Read All About It

My Body, My Self for Boys (What's Happening to My Body?) Revised 3rd ed.

by Lynda Madaras and Area Madaras. 2007.

The "What's Happening to My Body" Book for Girls, (What's Happening to My Body?) Revised 3rd ed.

by Lynda Madaras and Area Madaras. 2007.

These books are great for understanding physical, emotional, and social changes that happen during puberty.

101 Things Every Kid Should Know about the Human Body

by Samantha Beres. Lowel House Juvenile, 2000.

A review of all the things sixth graders should know about their bodies in an easy-to-use and fun-to-read paperback.



The Reproductive System

This month in THE GREAT BODY SHOP, we'll be talking about the Reproductive System. We ask you to reinforce this material by talking about it at home. The unit will be divided into four lessons:

- Lesson 1:** Growing Up Physically
- Lesson 2:** From Fertilization to Birth
- Lesson 3:** Emotional Maturity
- Lesson 4:** Relationships

The "I Feel" Message

Many times, it's hard for parents and children to communicate because they don't tell each other how they feel. You might scold your child for not completing household chores, for example, without saying why that bothers you. The "I feel" message is a statement that tells how you feel. Note the differences in the following statements:

"You were supposed to be home at dark! You were an hour late! I can't trust you!" (an accusation; places blame; makes the issue larger)

"When you came home late, I was worried and upset. Calling to tell me you're late is the right thing to do." (this tells your child how you feel)

Talk about the "I feel" message with your child. Look for ways you can both use it to get your feelings across.

The Benefits of Togetherness

Time you spend with your son or daughter now makes it easier for them to come to you later with questions and concerns about growing up. Try keeping a chart like the one below.

Day	Activity We Did Together
Sunday	
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	

Reproductive Riddles

At month's end give this quiz. Each numbered statement has three possible endings—a, b), and c)—and only one of them makes the statement wrong. The wrong ending should be crossed out.

1. Fertilization occurs
 - a) when an egg meets sperm.
 - b) when menstrual periods begin.
 - c) in the Fallopian tubes.

2. The placenta
 - a) absorbs nutrients.
 - b) feeds the mother during her pregnancy.
 - c) is rich in blood vessels.

3. The reproductive system can be composed of
 - a) a uterus and Fallopian tubes.
 - b) a penis and testicles.
 - c) a stomach and blood vessels.

4. An embryo is called a fetus
 - a) at fertilization.
 - b) after growing for three months.
 - c) after growing for six months.

5. The umbilical cord
 - a) is cut before the baby is born.
 - b) carries nutrients and oxygen.
 - c) links the baby to the placenta.

6. Maturity means
 - a) being responsible.
 - b) being independent.
 - c) middle age.

Answers:

The following should have been crossed out:
1. b 2. b 3. c 4. a 5. a 6. c