

CHAPTER
16

Endocrine and Reproductive Health

LESSON 3

The Female Reproductive System

BIG Idea

The female reproduction system matures at puberty and enables women to reproduce.

Study Coach

T-Chart Set up a T-chart like the one pictured below to organize information about the parts of the female reproductive system and their functions.

Part	Function



READING CHECK

1. Explain What happens during ovulation?

● Before You Read

During puberty, females mature at different rates. On the lines below, list some of the changes that females may experience during puberty. As you read, explain how these changes are related to the maturing female reproductive system.

● Read to Learn

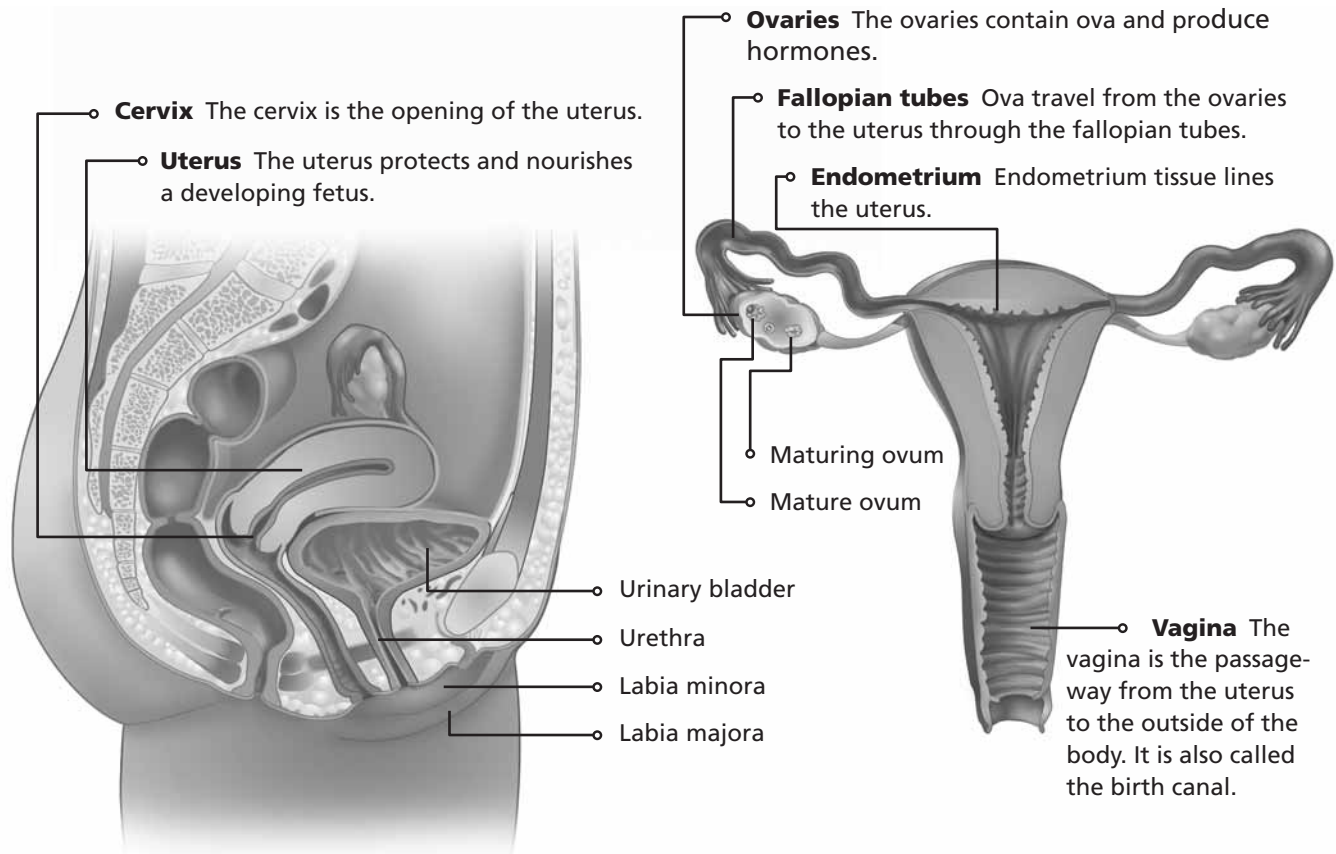
Female Reproductive Organs

The female reproductive system has several functions. These functions include producing female sex hormones and storing egg cells. **Eggs** are the female reproductive cells. Eggs are also known as ova. The **ovaries** are the female sex glands that store the ova and produce female sex hormones. The ovaries are located on each side of the uterus and are connected to the uterus by the fallopian tubes.

The **uterus** is a hollow, muscular, pear-shaped organ. The uterus receives the fertilized ovum. The uterus nourishes and protects the developing fetus until birth.

A female is born with more than 400,000 immature egg cells. At puberty, hormones from the pituitary gland cause these ova to mature. Each month, an ovary releases a mature ovum into the fallopian tube. This process is known as **ovulation**. ✓

Female Reproductive System



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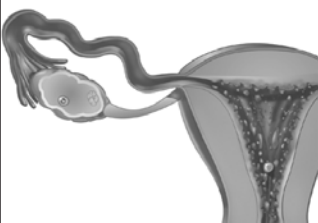
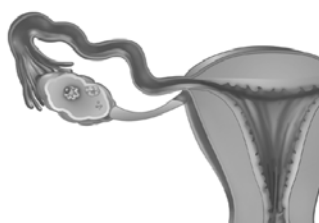
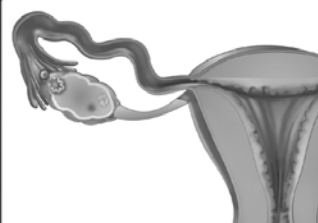
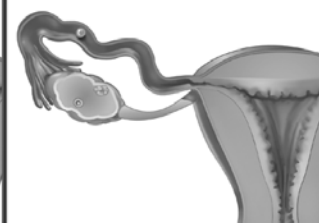
What organs make up the female reproductive system?

When an egg cell is released from an ovary, it moves into one of the two **fallopian tubes**. These tubes connect the ovaries with the uterus. Tiny hairlike structures called *cilia* move the ovum in the fallopian tubes.

Sperm from the male enter the female reproductive system through the **vagina**. This is the passageway that extends from the uterus to the outside of the body. If sperm are present in the fallopian tubes, the sperm cell and ovum may unite. The fertilization of an egg by a sperm produces a cell called a *zygote*. When the zygote leaves the fallopian tube, it enters the uterus. There, the zygote attaches itself to the uterine wall. The uterine wall thickens with blood to nourish the zygote as it grows. The fetus remains in the uterus until birth.

Picture This

2. Describe What is the path of the ovum through the female reproductive system?

The Menstrual Cycle			
Days 1–8	Days 9–13	Day 14	Days 15–28
The cycle begins with the first day of menstruation.	The hormones FSH and LH cause an egg to mature in one of the ovaries.	Ovulation occurs, and the mature egg is released into one of the fallopian tubes.	The egg travels through the fallopian tube to the uterus. If the egg is not fertilized, the cycle starts again.
			

Picture This

3. Describe What happens if the egg is fertilized during the menstrual cycle?

What is menstruation?

After a female matures, the uterus prepares for pregnancy each month. If pregnancy doesn't occur, the lining of the uterus breaks down into blood, tissue, and fluids. These materials pass into the vagina through the **cervix**. This shedding of the uterine lining is called **menstruation**. Females wear sanitary pads or tampons to absorb the blood flow.

Most females begin their first menstrual cycle between the ages of 10 and 15. The menstrual cycle may be irregular at first. As a female grows and matures, her menstrual cycle will become more regular. Poor nutrition, stress, excessive exercise, low body weight, and illness can cause changes in the menstrual cycle. Menstruation occurs from puberty until *menopause*. Menopause occurs when a female is between the ages of 45 and 55. After menopause, the menstrual cycle stops and a female can no longer have children.

Maintaining Reproductive Health

The following health practices will help females care for their reproductive systems:

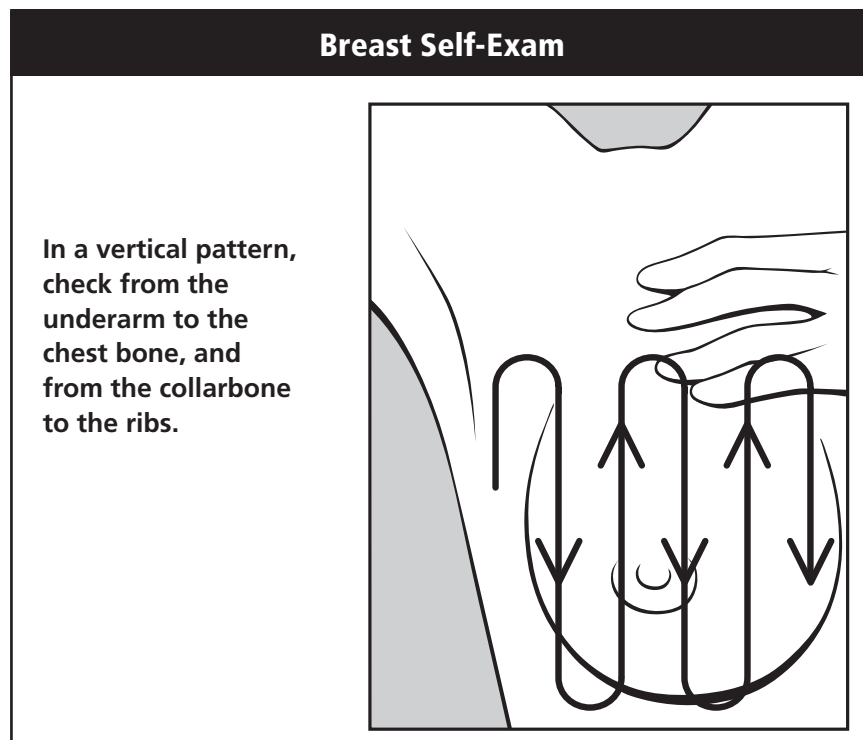
- **Bathe regularly.** Shower or bathe daily. It is also important to change tampons or sanitary pads every few hours during the menstrual period.
- **Have regular medical exams.** These include a test (Pap smear) for cancerous cells on the cervix and a mammogram to test for breast cancer. Report any pain, discharge, or signs of infection to your doctor.
- **Practice abstinence.** Abstain from sexual activity to avoid unplanned pregnancy and STDs.

How is a breast self-exam performed?

Breast cancer is the most common cancer for women in the United States. The American Cancer Society recommends that females examine their breasts once a month. The breast self-exam should be done right after the menstrual period, when breasts are not tender or swollen. Breast cancer that is detected early may be treatable. Follow these steps:

1. Lie down with a pillow under your right shoulder. Put your right arm behind your head. Place the three middle finger pads of your left hand on your right breast. Move your fingers in a circular motion, pressing first with light, then medium, then firm pressure. Feel for any lumps or thickening in the breast. Follow an up-and-down path over the breast. Be sure to check from the underarm edge to the middle of the chest bone and from the collarbone to your ribs. Repeat this step, using your right hand on your left breast.
2. Stand in front of a mirror with your hands on your hips. Inspect your breasts for any changes in size, shape, or appearance. Look for dimpling, rash, puckering, or scaliness of the skin or nipple, or nipple discharge.
3. Next, raise your arms over your head (palms pressed together), and look for changes.
4. Examine your underarms with your arms only slightly raised so you can easily feel these areas. ✓

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READING CHECK

- 4. Explain** What is the purpose of a monthly breast self-exam?

Picture This

- 5. Explain** How can the underarms be checked during a self-exam?

Female Reproductive System Problems

Reproductive problems may include the following:

- **Menstrual cramps.** These can occur at the beginning of the menstrual cycle. Light exercise or applying a heating pad to the abdominal area may help relieve cramps. If cramps are severe, see a health care professional.
- **Premenstrual syndrome (PMS).** PMS is caused by hormonal changes. Symptoms include anxiety, bloating, weight gain, mood swings, and fatigue. This may occur one to two weeks before menstruation. Symptoms can be reduced with physical activity and a healthy diet.
- **Toxic shock syndrome (TSS).** This is a rare but serious bacterial infection. It affects the immune system and the liver, and can be fatal. To reduce the risk of TSS, use tampons with the lowest absorbency and change them often. Symptoms include fever, vomiting, diarrhea, rash, red eyes, dizziness, and muscle aches. Any female with these symptoms should see a doctor immediately.

What can cause infertility in females?

Infertility in females can have several causes:

- **Endometriosis** occurs when uterine tissue is found outside of the uterus. It may occur in the ovaries, fallopian tubes, or the lining of the pelvic cavity.
- **Sexually transmitted diseases** are spread during sexual contact. STDs may lead to pelvic inflammatory disease (PID) if left untreated. PID may cause infertility. Abstinence is the one sure way to avoid STDs. ✓

What are some other reproductive disorders?

Other reproductive disorders include the following:

- **Vaginitis.** This is a vaginal infection or inflammation. Symptoms include discharge, odor, pain, itching, or burning. This can be caused by a bacterial or yeast (*candida*) infection.
- **Ovarian cysts.** These are fluid-filled sacs on the ovary. Small, noncancerous cysts may disappear on their own. Larger cysts may have to be removed surgically.
- **Cervical, uterine, and ovarian cancers.** STDs such as human papillomavirus (HPV) increase the risk of cervical cancer. Regular exams are important for early detection and treatment. The Food and Drug Administration has released a vaccine that prevents infection from four strains of the HPV virus.



READING CHECK

6. Cause and Effect

How might STDs cause infertility?
