

How Your Fetus Grows During Pregnancy

Pregnancy is a time of major change. From the very start, your **fetus** changes your body and the way you live. For your entire pregnancy, the fetus depends on you for all the things it needs to grow and thrive. Although each pregnancy is unique, fetal growth and development follow a pattern. Month by month, you and your fetus prepare for birth and a new life.

This pamphlet explains

- how pregnancy begins
- how the fetus grows and develops
- changes in your body during pregnancy
- how your due date is calculated

How Pregnancy Begins

Fertilization, the union of an **egg** and a **sperm** into a single **cell**, is the first step in a complex series of events that leads to pregnancy. Fertilization takes place in the **fallopian tube**. Over the next few days, the single cell divides into multiple cells.

At the same time, the small cluster of dividing cells moves through the fallopian tube to the lining of the **uterus**. There it implants and starts to grow. For 8 weeks after implantation, it is called an **embryo**. From 9 weeks after implantation until birth, it is called a fetus.

The **placenta** is formed from some of these rapidly dividing cells. The placenta functions as a life-support system during pregnancy. **Oxygen**, nutrients, and **hormones** are transferred across the placenta to the fetus. Waste products from the fetus are transferred back across the placenta for removal.

During pregnancy, the lining of the uterus thickens and its blood vessels enlarge to provide nourishment to the fetus. As pregnancy progresses, the uterus expands to make room for the fetus. By the time your baby is born, your uterus will have expanded to many times its normal size.

Changes During Pregnancy

Many changes take place inside your body as your fetus grows. You may not sense many of these changes at first. If you have concerns or questions about what is happening inside your body, talk with your **obstetrician-gynecologist (ob-gyn)**. Your ob-gyn can offer tips for dealing with the normal changes of pregnancy and also determine what may not be normal.

How Long Pregnancy Lasts

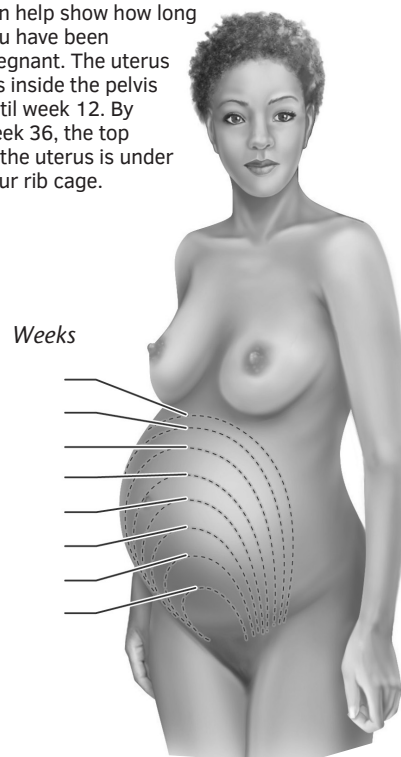
A normal pregnancy lasts about 40 weeks from the first day of your **last menstrual period (LMP)**. Pregnancy is assumed to start 2 weeks after the first day of the LMP. So an extra 2 weeks is counted at the beginning of your pregnancy when you are not actually pregnant. The 40 weeks of pregnancy includes those extra 2 weeks.

Pregnancy also can be divided into weeks and days. A pregnancy that is “36 and 3/7 weeks” means “36 weeks and 3 days of pregnancy.” The 40 weeks of pregnancy are grouped into three **trimesters**:

- First trimester (first day of LMP to 13 weeks and 6 days): The time when

How the Uterus Grows During Pregnancy

The size of your uterus can help show how long you have been pregnant. The uterus fits inside the pelvis until week 12. By week 36, the top of the uterus is under your rib cage.



fertilization and major organ development occurs.

- Second trimester (14 weeks and 0 days to 27 weeks and 6 days): The time of rapid growth and development.
- Third trimester (28 weeks and 0 days to 40 weeks and 6 days): The time when the fetus's weight increases and the organs mature so they will be ready to function after birth.

Your Due Date

The day your baby is due is called the estimated due date (EDD). Only about

1 in 20 women give birth on their due dates. Still, the EDD is useful for a number of reasons. It determines your fetus's **gestational age** throughout pregnancy so that the fetus's growth can be tracked. It also provides a timeline for certain tests that are done throughout pregnancy.

Your EDD is calculated from the first day of your LMP. But when the date of the LMP is uncertain, an **ultrasound exam** may be done during the first trimester to estimate the due date. This method of dating is considered to be the most accurate.

During this ultrasound exam, the "crown–rump length" is measured. This is

the length of the embryo or fetus from the top of the head ("crown") to the bottom of the area that will become the buttocks ("rump"). If you are less than 7 weeks pregnant, it is not possible to see the embryo's crown or rump, so the greatest length of the embryo is measured. A formula then is used to estimate the gestational age based on this measurement.

If you have had **in vitro fertilization (IVF)**, the EDD is set by the age of the embryo and the date that the embryo is transferred to the uterus.

Changes in Your Body During Pregnancy

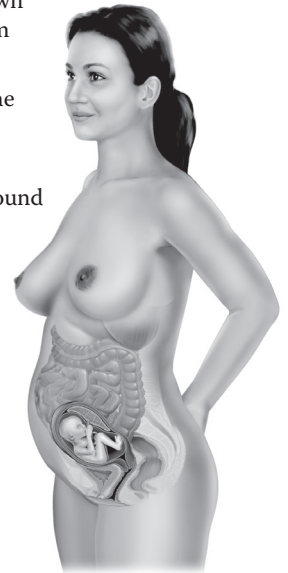
The First Trimester

- Your **menstrual period** stops.
- Your breasts may become larger and more tender.
- Your nipples may stick out more.
- You may need to urinate more often.
- You may feel very tired.
- You may have nausea and vomiting.
- You may crave certain foods or lose your appetite.
- You may have heartburn or indigestion.
- You may be constipated.
- You may gain or lose a few pounds.



The Second Trimester

- Your appetite increases and nausea and fatigue may ease.
- Your abdomen begins to expand.
- The skin on your abdomen and breasts stretches and may feel tight and itchy. You may see stretch marks.
- Your abdomen may ache on one side or the other, as the ligaments that support your uterus are stretched.
- A dark line, the linea nigra, may appear on your skin and run down the middle of your stomach from your navel to your pubic hair.
- You may get brown patches ("the mask of pregnancy") on your face.
- Your areolas, the darker skin around your nipples, may darken.
- Your feet and ankles may swell.
- You may feel your uterus in your lower abdomen.



The Third Trimester

- You can feel the fetus's movements strongly.
- You may be short of breath.
- You may need to urinate more.
- Colostrum—a yellow, watery pre-milk—may leak from your nipples.
- Your navel may stick out.
- You may have contractions (abdominal tightening or pain). These can signal false or real labor.



How Your Fetus Grows

Note: The weeks shown here represent the gestational age, which is calculated from the date of the first day of your last menstrual period.

Months 1 to 2

Weeks 1 to 8

- The brain and spine begin to form.
- Cardiac tissue starts to develop.
- Muscles of the eyes, nose, and mouth form.
- Webbed fingers and toes poke out from developing hands and feet.
- The lungs start to form the tubes that will carry air in and out after birth.
- The inner ear begins to develop.

By the end of week 8, the embryo is about half an inch long.



Month 3

Weeks 9 to 12

- Cartilage for the limbs, hands, and feet start to form but won't harden into bones for a few weeks.
- Eyelids form but remain closed.
- **Genitals** begin to form.
- Liver begins development.
- Kidneys begin making urine.
- Pancreas starts making insulin.
- Fingernails form.

By the end of week 12, the fetus is about 2 inches long and weighs about half an ounce.



Month 4

Weeks 13 to 16

- Bones harden, especially the long bones.
- Skin is thin and see-through but will start to thicken soon.
- Toenails form.
- Neck is defined and lower limbs are developed.
- Hearing starts to develop.
- Lungs begin to form tissue that will allow them to exchange oxygen and carbon dioxide when breathing starts after birth.

By the end of week 16, the fetus is more than 4 inches long and weighs more than 3 ounces.



Month 5

Weeks 17 to 20

- The part of the brain that controls motor movements is fully formed.
- Digestive system is working.
- Ears, nose, and lips are recognizable on an ultrasound exam.
- In girls, the uterus and **vagina** are starting to form.
- Soft, downy hair called **lanugo** starts to form and cover the body.

By the end of week 20, the fetus is more than 6 inches long and weighs less than 11 ounces.



Month 6

Weeks 21 to 24

- Kicks and turns are stronger.
- Sucking reflex is developing.
- Fat is forming under the skin.
- Ridges form in the hands and feet that later will be fingerprints and footprints.
- Skin is wrinkled and reddish from visible blood vessels.

By the end of week 24, the fetus is about 12 inches long and weighs about 1½ pounds.



Month 7

Weeks 25 to 28

- Lungs are fully formed but not yet ready to function outside the uterus.
- Loud sounds can make your fetus respond with a startled movement and pull in the arms and legs.
- Eyelids can open and close.
- Lungs begin to make **surfactant**, a substance needed for breathing after birth.
- Nervous system is developing.
- Skin begins to look smoother as more fat is added.

By the end of week 28, the fetus is nearly 15 inches long and weighs about 2½ pounds.



(continued)

How Your Fetus Grows *(continued)*

Note: The weeks shown here represent the gestational age, which is calculated from the date of the first day of your last menstrual period.

Month 8 Weeks 29 to 32

- The fetus can stretch, kick, and make grasping motions.
- Eyes can sense changes in light.
- Bone marrow is forming red blood cells.
- Head may have some hair.
- In boys, the **testicles** have begun to descend from the **scrotum**.
- Lanugo begins to disappear.

By the end of week 32, the fetus is almost 17 inches long and weighs a little more than 4 pounds.



Month 9 Weeks 33 to 36

- Bones harden but the skull remains soft and flexible.
- Fingernails have grown to the end of the fingers.
- Limbs begin to look chubby.
- The fetus may turn into a head-down position for birth.

By the end of week 36, the fetus is about 18 inches long and weighs a little more than 6 pounds.



Month 10 Weeks 37 to 40

- Circulatory system is done developing.
- Musculoskeletal system also is done developing.
- Lungs, brain, and nervous system are finishing their development.
- Fat continues to be added all over to keep the baby warm after birth.

By the end of week 40, the fetus is 20 inches long and may weigh 7½ to 8 pounds.



Finally...

Knowing how your fetus grows and develops can help you prepare for the coming weeks. The due date provides a reference for measuring the growth of the fetus and the progress of your pregnancy. If you have any questions about what is happening with your fetus or your body, talk with your ob-gyn.

Glossary

Cell: The smallest unit of a structure in the body. Cells are the building blocks for all parts of the body.

Egg: The female reproductive cell made in and released from the ovaries. Also called the ovum.

Embryo: The stage of development that starts at fertilization (joining of an egg and sperm) and lasts up to 8 weeks.

Fallopian Tube: One of a pair of tubes through which an egg travels from the ovary to the uterus.

Fertilization: A multistep process that joins the egg and the sperm.

Fetus: The stage of human development beyond 8 completed weeks after fertilization.

Genitals: The sexual or reproductive organs.

Gestational Age: How far along a woman is in her pregnancy, usually reported in weeks and days.

Hormones: Substances made in the body that control the function of cells or organs.

In Vitro Fertilization (IVF): A procedure in which an egg is removed from a woman's ovary, fertilized in a laboratory with the man's sperm, and then transferred to the woman's uterus to achieve a pregnancy.

Lanugo: Soft, downy hair that covers the fetus's body.

Last Menstrual Period (LMP): The date of the first day of the last menstrual period before pregnancy. The LMP is used to estimate the date of delivery.

Menstrual Period: The monthly shedding of blood and tissue from the uterus.

Obstetrician–Gynecologist (Ob-Gyn): A doctor with special training and education in women's health.

Oxygen: An element that we breathe in to sustain life.

Placenta: An organ that provides nutrients to and takes waste away from the fetus.

Scrotum: The external genital sac in the male that contains the testicles.

Sperm: A cell made in the male testicles that can fertilize a female egg.

Surfactant: A substance made by cells in the lungs. This substance helps keep the lungs elastic and keeps them from collapsing.

Testicles: Paired male organs that make sperm and the male sex hormone testosterone. Also called testes.

Trimesters: The 3-month periods of time in pregnancy. They are referred to as first, second, or third.

Ultrasound Exam: A test in which sound waves are used to examine inner parts of the body. During pregnancy, ultrasound can be used to check the fetus.

Uterus: A muscular organ in the female pelvis. During pregnancy, this organ holds and nourishes the fetus. Also called the womb.

Vagina: A tube-like structure surrounded by muscles. The vagina leads from the uterus to the outside of the body.

This information is designed as an educational aid for the public. It offers current information and opinions related to women's health. It is not intended as a statement of the standard of care. It does not explain all of the proper treatments or methods of care. It is not a substitute for the advice of a physician. For ACOG's complete disclaimer, visit www.acog.org/WomensHealth-Disclaimer.

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