



How Your Fetus Grows During Pregnancy

Pregnancy is a time of major change. From the very start, your **fetus** alters 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 take place in a fairly standard 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

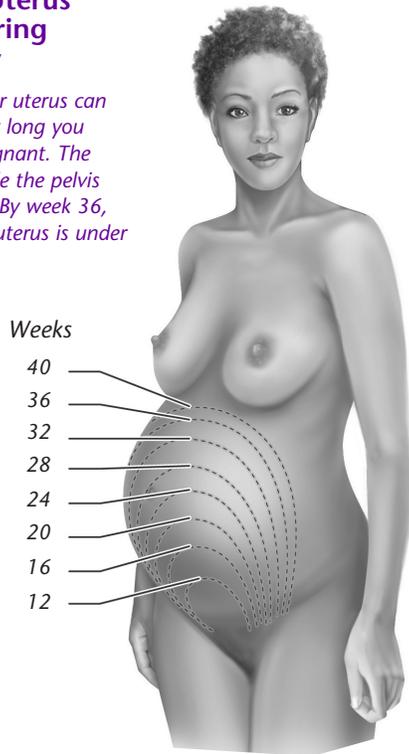
Fertilization, the union of an **egg** and a **sperm** into a single **cell**, is the first step in a complex series of events that leads to pregnancy. Fertilization takes place in the **fallopian tube**. Over the next few days, the single cell divides into multiple cells. At the same time, the small cluster of dividing cells moves through the fallopian tube to the lining of the **uterus**. There it implants and starts to grow. From implantation until the end of the eighth week of pregnancy, it is called an **embryo**. From the ninth week of pregnancy 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** from the mother are transferred across the placenta to reach the fetus, and waste products from the fetus are transferred to the mother 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.

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.



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 or other health care professional. He or she 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. Therefore, an extra 2 weeks is counted at the beginning of your pregnancy when you are not actually pregnant. Pregnancy “officially” lasts 10 months (40 weeks)—not 9 months—because of these extra weeks.

Pregnancy also can be divided into weeks and sometimes days. A pregnancy that is “36 and 3/7 weeks” means

“36 weeks and 3 days of pregnancy.” The 40 weeks of pregnancy often are grouped into three **trimesters**. Each trimester lasts about 12–13 weeks (or about 3 months):

- First trimester: 0 weeks–13 and 6/7 weeks (Months 1–3)
- Second trimester: 14 and 0/7 weeks–27 and 6/7 weeks (Months 4–7)
- Third trimester: 28 and 0/7 weeks–40 and 6/7 weeks (Months 7–9)

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 time line for certain tests that you will have throughout your 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”—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”)—is measured. 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**, the EDD is set by the age of the embryo and the date that the embryo is transferred to the uterus.

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 to your obstetrician or other health care professional.

Changes in Your Body During Pregnancy

The First Trimester

- Your 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 feel nauseated and may vomit.
- You may crave certain foods or lose your appetite.
- You may have heartburn or indigestion.
- You may feel bloated and have excess gas.
- 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. By the end of this trimester, the top of your uterus will be near your rib cage.
- You will begin to feel the fetus move.
- 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 often as the fetus drops and puts extra pressure on your bladder.
- 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.

Month 1-2

Weeks 1-8

Length: 1/2 inch

Weight: 1/4 ounce



- Placenta begins to form.
- The brain and spinal cord begin to form.
- The tissues that will form the heart begin to beat. The heartbeat can be detected during an ultrasound exam at about 6 weeks of pregnancy.
- Buds for limbs appear with paddle-like hands and feet.
- The eyes, ears, and nose begin to develop. Eyelids form, but remain closed.
- The genitals begin to develop.
- By the end of the eighth week, all major organs and body systems have begun to develop.

Month 4

Weeks 13-16

Length: 5 inches

Weight: 5 ounces



- Arms and legs can flex.
- External sex organs are formed.
- The outer ear begins to develop.
- The fetus can swallow and hear.
- The neck is formed.
- Kidneys are functioning and begin to produce urine.

Month 6

Weeks 21-24

Length: 12 inches

Weight: Just over 1 pound



- The fetus may hiccup.
- The brain is rapidly developing.
- Tear ducts are developing.
- Finger and toe prints can be seen.
- The lungs are fully formed but not yet ready to function outside of the uterus.

Month 3

Weeks 9-12

Length: 2 inches

Weight: 1/2 ounce



- Buds for future teeth appear.
- Fingers and toes start to form. Soft nails begin to form.
- Bones and muscles begin to grow.
- The intestines begin to form.
- The backbone is soft and can flex.
- The skin is thin and transparent.
- The hands are more developed than the feet.
- The arms are longer than the legs.

Month 5

Weeks 17-20

Length: 10 inches

Weight: 1/2-1 pound



- The sucking reflex develops. If the hand floats to the mouth, the fetus may suck his or her thumb.
- The skin is wrinkled, and the body is covered with a waxy coating (vernix) and fine hair (lanugo).
- The fetus is more active. You may be able to feel him or her move.
- The fetus sleeps and wakes regularly.
- Nails grow to the tips of the fingers.
- The gallbladder begins producing bile, which is needed to digest nutrients.
- In female fetuses, the eggs have formed in the ovaries. In male fetuses, the testes have begun to descend.
- It may be possible to tell the sex of the fetus on an ultrasound exam.

Month 7

Weeks 25-28

Length: 14 inches

Weight: 2-2 1/2 pounds



- The eyes can open and close and sense changes in light.
- The fetus kicks and stretches.
- The fetus can make grasping motions and responds to sound.
- Lung cells begin to make a substance that will enable breathing.

(continue)

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 the your last menstrual period.

Month 8

Weeks 29–32

Length: 18 inches

Weight: 5 pounds

- With its major development finished, the fetus gains weight very quickly.
- Bones harden, but the skull remains soft and flexible for delivery.
- The different regions of the brain continue to form.
- Hair on the head starts to grow.
- Lanugo begins to disappear.



Month 9

Weeks 33–36

Length: 20 inches

Weight: 6–7 pounds

- The fetus usually turns into a head-down position for birth.
- The brain continues to develop.
- The skin is less wrinkled.
- The lungs are maturing and getting ready to function outside of the uterus.
- Sleeping patterns develop.



Month 10

Weeks 37–40

Length: About 20 inches

Weight: 7 1/2 pounds

- The fetus drops lower into the pelvis.
- More fat accumulates, especially around the elbows, knees, and shoulders.
- The fetus gains about half a pound per week during this last month of pregnancy.



Conversion Chart

1 inch = 2.54 centimeters 1 ounce = 28 grams 1 pound = 453.59 grams

Glossary

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

Egg: The female reproductive cell produced in and released from the ovaries; also called the ovum.

Embryo: The stage of prenatal 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: Joining of the egg and sperm.

Fetus: The stage of prenatal development that starts 8 weeks after fertilization and lasts until the end of pregnancy.

Gestational Age: The age of a pregnancy, usually calculated from the number of weeks that have elapsed from the first day of the last normal menstrual period and often using findings from an ultrasound examination performed in the first or second trimester of pregnancy.

Hormones: Substances made in the body by cells or organs that control the function of cells or organs. An example is estrogen, which controls the function of female reproductive organs.

In Vitro Fertilization: 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.

Oxygen: A gas that is necessary to sustain life.

Placenta: Tissue that provides nourishment to and takes away waste from the fetus.

Sperm: A cell produced in the male testes that can fertilize a female egg.

Surfactant: A substance produced by cells in the respiratory system that contributes to the elasticity of the lungs and keeps them from collapsing.

Trimesters: The three 3-month periods into which pregnancy is divided.

Ultrasound Exam: A test in which sound waves are used to examine internal structures. During pregnancy, it can be used to examine the fetus.

Uterus: A muscular organ located in the female pelvis that contains and nourishes the developing fetus during pregnancy.

This Patient Education Pamphlet was developed by the American College of Obstetricians and Gynecologists. Designed as an aid to patients, it sets forth current information and opinions on subjects related to women's health. The average readability level of the series, based on the Fry formula, is grade 6–8. The Suitability Assessment of Materials (SAM) instrument rates the pamphlets as “superior.” To ensure the information is current and accurate, the pamphlets are reviewed every 18 months. The information in this pamphlet does not dictate an exclusive course of treatment or procedure to be followed and should not be construed as excluding other acceptable methods of practice. Variations, taking into account the needs of the individual patient, resources, and limitations unique to the institution or type of practice, may be appropriate.

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