



## The First Trimester: Changes to Your Body

During pregnancy, many changes will happen to your body to help nourish and protect your baby. Women experience these changes differently. Some symptoms of pregnancy continue for several weeks or months. Others are only experienced for a short time. Some women experience many symptoms, and other women experience only a few or none at all. The following is a list of changes and symptoms that may happen during the first trimester:

- The mammary glands enlarge, causing the breasts to swell and become tender in preparation for breast-feeding. This is due to an increased amount of the hormones estrogen and progesterone. A supportive bra should be worn.
- Your areolas (the pigmented areas around each breast's nipple) will enlarge and darken. They may become covered with small, white bumps called Montgomery's tubercles (enlarged sweat glands).
- Veins become more noticeable on the surface of your breasts.
- The uterus is growing and begins to press on your bladder. This causes you to need to urinate more often.
- Partly due to surges in hormones, you may experience mood swings similar to premenstrual syndrome, a condition experienced by some women that is characterized by mood swings, irritability and other physical symptoms that happen shortly before each menstrual period.
- Increased levels of hormones to sustain the pregnancy may cause "morning sickness," which causes nausea and sometimes vomiting. However, morning sickness does not necessarily happen just in the morning and rarely interferes with proper nutrition for the mother and her fetus.
- Constipation may happen as the growing uterus presses on the rectum and intestines.
- The muscular contractions in the intestines, which help to move food through the digestive tract, are slowed due to high levels of progesterone. This may, in turn, cause heartburn, indigestion, constipation and gas.
- Clothes may feel tighter around the breasts and waist, as the size of the stomach begins to increase to accommodate the growing fetus.
- You may experience extreme tiredness due to the physical and emotional demands of pregnancy.
- Cardiac volume increases by about 40 to 50 percent from the beginning to the end of the pregnancy. This causes an increased cardiac output. An increased cardiac output may cause an increased pulse rate during pregnancy. The increase in blood volume is needed for extra blood flow to the uterus.

## The First Trimester: Fetal Development

The most dramatic changes and development happen during the first trimester. During the first eight weeks, a fetus is called an embryo. The embryo develops rapidly and by the end of the first trimester, it becomes a fetus that is fully formed, weighing approximately 0.5 to 1 ounce and measuring, on average, 3 to 4 inches in length.

## Fetal Growth From 8 to 40 Weeks



## First Trimester Fetal Growth and Development Benchmarks

The chart below provides benchmarks for most normal pregnancies. However, each fetus develops differently.

By the end of four weeks

- All major systems and organs begin to form.
- The embryo looks like a tadpole.
- The neural tube (which becomes the brain and spinal cord), the digestive system, and the heart and circulatory system begin to form.
- The beginnings of the eyes and ears are developing.
- Tiny limb buds appear, which will develop into arms and legs.
- The heart is beating.

By the end of eight weeks

- All major body systems continue to develop and function, including the circulatory, nervous, digestive, and urinary systems.
- The embryo is taking on a human shape, although the head is larger in proportion to the rest of the body.
- The mouth is developing tooth buds, which will become baby teeth.
- The eyes, nose, mouth, and ears are becoming more distinct.
- The arms and legs can be easily seen.
- The fingers and toes are still webbed, but can be clearly distinguished.
- The main organs continue to develop and you can hear the baby's heartbeat using an instrument called a Doppler.
- The bones begin to develop and the nose and jaws are rapidly developing.
- The embryo is in constant motion but cannot be felt by the mother.

From embryo to fetus

- After 8 weeks, the embryo is now referred to as a fetus, which means offspring.
- Although the fetus is only 1 to 1.5 inches long at this point, all major organs and systems have been formed.

During weeks nine to  
12

- The external genital organs are developed.
- Fingernails and toenails appear.
- Eyelids are formed.
- Fetal movement increases.
- The arms and legs are fully formed.
- The voice box (larynx) begins to form in the trachea.

The fetus is most vulnerable during the first 12 weeks. During this period of time, all of the major organs and body systems are forming and can be damaged if the fetus is exposed to drugs, infectious agents, radiation, certain medications, tobacco and toxic substances.

Even though the organs and body systems are fully formed by the end of 12 weeks, the fetus cannot survive independently.