

**INFORMATION ABOUT
FETAL DEVELOPMENT**

This information is prepared by the
Department for Public Health, Cabinet for Health
Services as required by KRS 311.720.

The following information describes **NORMAL**
human development. Unless otherwise noted, the
photographs and sketches depict the embryo or fetus at
the point in time for which fetal development is
described.

A separate, publication is available to you that
gives a brief description of public and private agencies
accessible to pregnant women who need assistance. Ask
your health care provider.

Development begins on the day of fertilization-
when one sperm unites with a woman's egg to form one
cell. The fertilized egg takes about 3-4 days to travel to the
uterus (womb) where it then attaches to the lining by the
end of the first week.

A pregnant woman may notice her first missed
menstrual period at the end of the second week after
conception (fertilization), or about four weeks after the first
day of her last normal period. The length of pregnancy can
be calculated from the first day of the last menstrual period
or from conception. Based on a 28-day menstrual cycle,
there are about 280 days (40 weeks) in a full-term
pregnancy. Using this method, the length of pregnancy is
referred to as **gestational age**. If the length of pregnancy is
measured counting weeks from the date of conception,
there are about 38 weeks in a full-term pregnancy. Using
this method, the length of pregnancy is referred to as
fertilization age. Both dates are provided in this booklet.

Information on fetal development including length
and weight measurements used in this publication portray
average or usual development and sizes. The crown-rump
method is used to provide the length of measurement in the
fetus. This measurement is taken from the top of the head
to the bottom of the buttocks. This measurement does not
include the legs, which do not accurately reflect early rates
of growth and development.

STAGES OF FETAL DEVELOPMENT

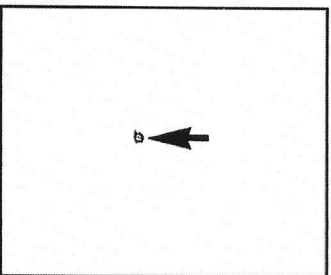
The following descriptions and photographs are designed to give you basic information about normal human development. Thirteen of the photographs are used with permission from Lennart Nilsson, A Child is Born, Dell Publishing, 1990. Lennart Nilsson is a pioneer in medical photography and the photos used in this booklet have been published internationally in scientific journals as well as the popular press and television.



Human Embryo at 12 to 24 hours after fertilization
(The size is about the same size as a point of a pin)

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HUMAN EMBRYO AT FOUR WEEKS AFTER THE FIRST DAY OF THE LAST MENSTRUAL PERIOD (OR TWO WEEKS AFTER FERTILIZATION)



*This drawing shows
the actual size of the
embryo at 4 weeks.*



The usual length of the embryo at this age is 1/100 inch. The egg has now divided and multiplied to form the embryo. It has flattened out and is a saucer-like shape called the embryonic disc. Implantation of the embryo in the uterus wall is complete. A laboratory test may be positive for pregnancy.

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**HUMAN EMBRYO AT SIX WEEKS AFTER
THE FIRST DAY OF THE LAST MENSTRUAL
PERIOD (OR FOUR WEEKS AFTER
FERTILIZATION)**

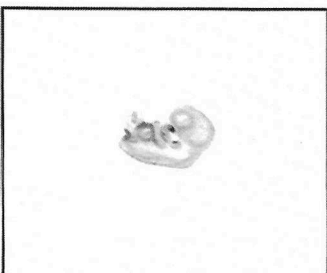


*This drawing shows
the actual size of the
embryo at 6 weeks.*

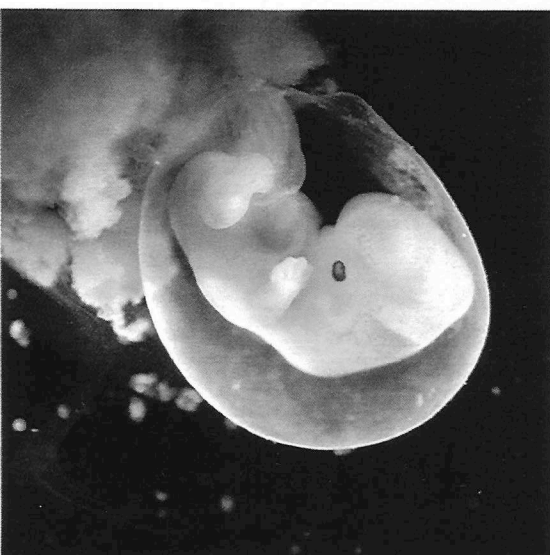


The usual length of the embryo at this age is $\frac{1}{4}$ inch.
The heart-tube begins contracting activity and blood is forming.
The arms, leg buds, and trunk begin to become evident and the primitive nervous system is developing.

**HUMAN EMBRYO AT EIGHT WEEKS AFTER
THE FIRST DAY OF THE LAST MENSTRUAL
PERIOD
(OR SIX WEEKS AFTER FERTILIZATION)**

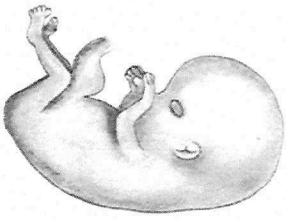
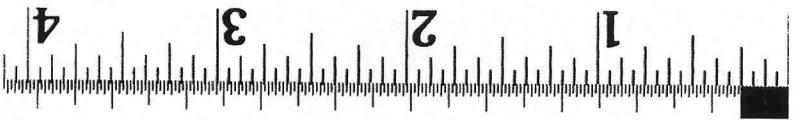


*This drawing shows
the actual size of the
embryo at 8 weeks.*



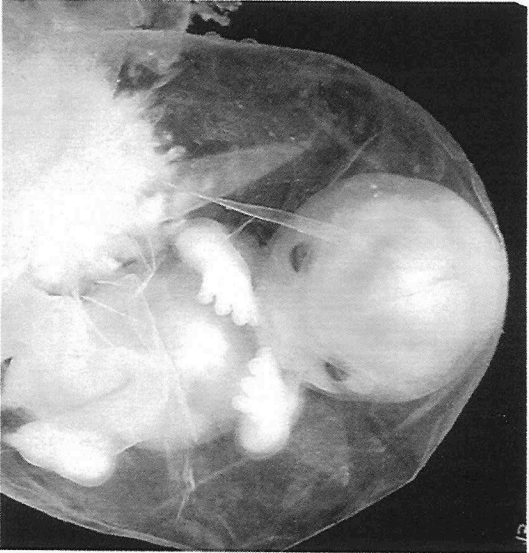
The length of the embryo at this age is less than $\frac{1}{2}$ inch.
The 4 major chambers of the heart have formed and the heartbeat may be detectable on ultrasound.
The mouth, eyes, ears, jaws, lungs, stomach, intestines and liver are forming.
The hands and feet are paddle-shaped and recognizable.

**HUMAN EMBRYO AT TEN WEEKS AFTER
THE FIRST DAY OF THE LAST MENSTRUAL
PERIOD
(OR EIGHT WEEKS AFTER FERTILIZATION)**

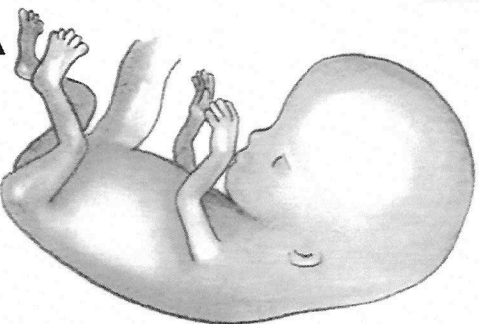


This drawing shows the actual size of the embryo at 10 weeks.

The usual length of the embryo at this age is less than 1¼ inches.
Fingers and toes have lost their webbing and become separate.
Development of the nose, eyes, and eyelids continues.
Beginnings of all internal and external structures are present.



**TWELVE WEEKS AFTER THE FIRST DAY
OF THE LAST MENSTRUAL PERIOD
(OR TEN WEEKS AFTER FERTILIZATION)**

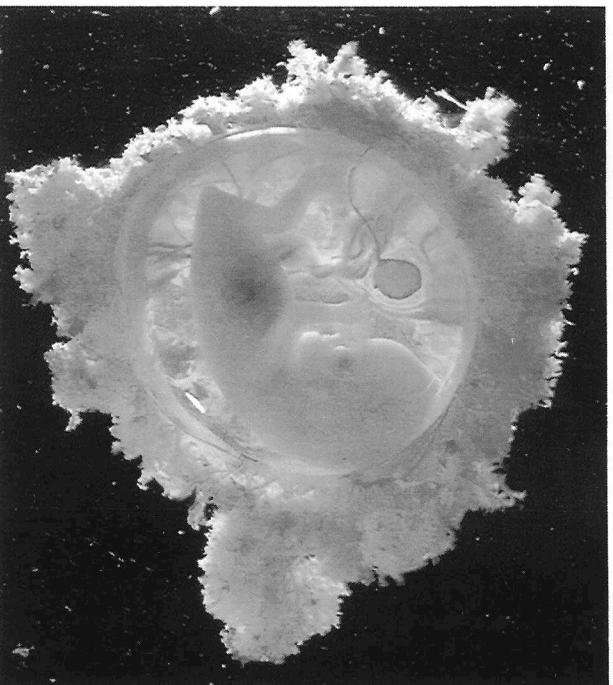


This drawing shows the actual size of the embryo at 12 weeks.

At the beginning of the ninth week after fertilization, the human embryo is referred to as a fetus.
The average length of a fetus at 12 weeks after the first day of the last menstrual period is about 2½ inches and the average weight is less than one ounce.
The face has a human profile and appearance.
All organs are complete but immature.
The fetus starts to move from 11-14 weeks after the first day of the last menstrual period but the woman usually cannot feel these early movements.



**FOURTEEN WEEKS AFTER THE FIRST DAY OF
THE LAST MENSTRUAL PERIOD
(OR TWELVE WEEKS AFTER FERTILIZATION)**



The average length of a fetus at this age is about 3½ inches and the weight is about 1½ ounces. External genitalia have been developing so that the sex can be determined. Buds are present for the first set of teeth. The kidneys function and the fetus begins to swallow. The heartbeat can be heard with a special-type of medical stethoscope (called a Doppler).

**SIXTEEN WEEKS AFTER THE FIRST DAY OF
THE LAST MENSTRUAL PERIOD
(OR FOURTEEN WEEKS AFTER FERTILIZATION)**



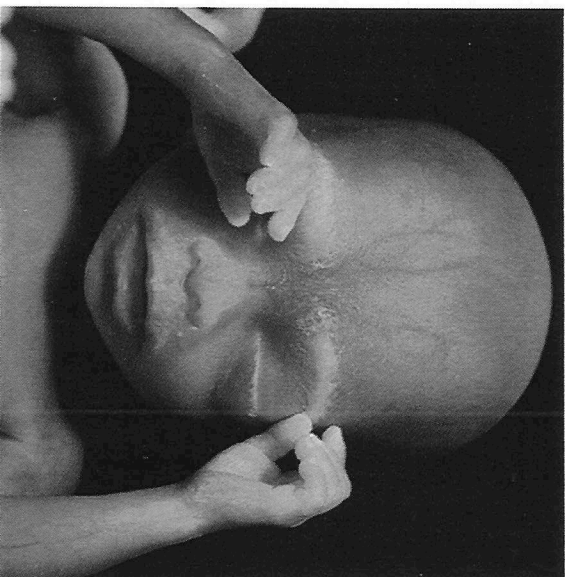
The average length of a fetus at this age is about 4¾ inches and the weight is about 4 oz. The brain has developed its basic components and shape. The head is erect and the legs are developing. The pregnant woman may feel faint fetal movements.

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**EIGHTEEN WEEKS AFTER THE FIRST DAY OF
THE LAST MENSTRUAL PERIOD
(OR SIXTEEN WEEKS AFTER FERTILIZATION)**



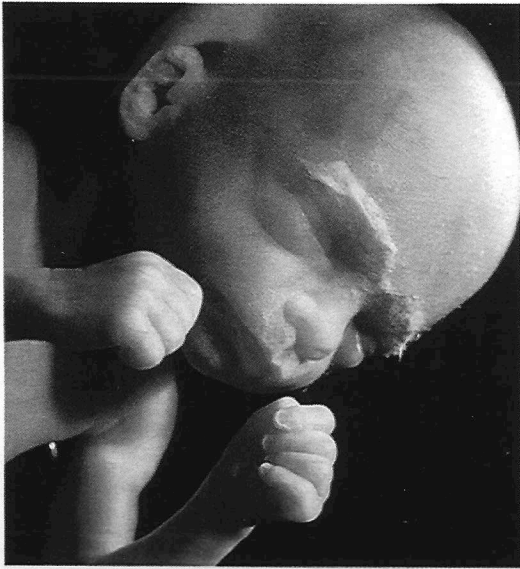
↑
The average length of a fetus at this age is about 5½ inches and the average weight is about 7 ounces.
The skin is pink and transparent and the ears stand out from the head. The legs are now more proportionate to the body. Fetal movements are stronger and felt by the woman. Survival outside the uterus (womb) is not possible.

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**TWENTY TWO WEEKS AFTER THE FIRST
DAY OF THE LAST MENSTRUAL PERIOD
(OR TWENTY WEEKS AFTER
FERTILIZATION)**



↑
The average length of a fetus at this age is about 7½ inches and the average weight is a little over 1 pound. Hair and eyebrows are visible. Urine is formed in the kidneys. Internal sex organs are nearly completed.

**TWENTY SIX WEEKS AFTER THE FIRST
DAY OF
THE LAST MENSTRUAL PERIOD
(OR TWENTY FOUR WEEKS AFTER
FERTILIZATION)**



**(Picture is of a fetus at 24 weeks after last menstrual period
or 22 weeks after fertilization)**

The average length of a fetus at this age is about 9 inches and the average weight is a little less than 2 pounds.

Fingernails are present and the skin is pink-red color.

The fetus is still lean without much body fat.

If a fetus is born at this age, more than half will survive but will likely require intensive care treatment due to the immaturity of the lungs and nervous system.

**THIRTY WEEKS AFTER THE FIRST DAY
OF THE LAST MENSTRUAL PERIOD
(OR TWENTY EIGHT WEEKS AFTER
FERTILIZATION)**



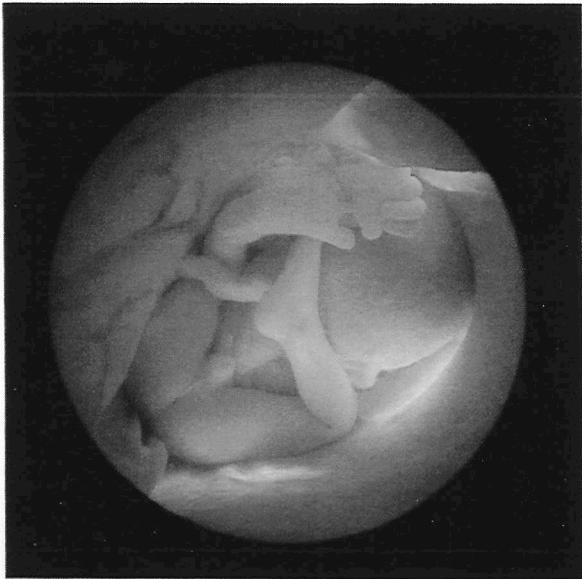
The average length of a fetus at this age is about 11 inches and the average weight is almost 3 pounds.

The skin is slightly wrinkled due to continued fat formation. The eyes may open.

Survival rate if born at this age is about 90%.

Those born at this age may experience respiratory problems due to immaturity of the lungs.

**THIRTY FOUR WEEKS AFTER THE FIRST DAY
OF THE LAST MENSTRUAL PERIOD
(OR THIRTY TWO WEEKS AFTER
FERTILIZATION)**



The average length of a fetus at this age is about 12 inches and the average weight is almost 4½ pounds.
The skin is pink and smooth and the fingermails reach the fingertips.
The lungs become more mature and capable of breathing air.
Survival rate of a fetus born at this age is about 99% and those who survive have fewer long-term medical problems.

**THIRTY EIGHT WEEKS AFTER THE FIRST DAY
OF THE LAST MENSTRUAL PERIOD
(OR THIRTY SIX WEEKS AFTER
FERTILIZATION)**



The average length of a fetus at this age is about 13 inches and the weight is about 6½ pounds.
The body is usually plump or “chubby”.
The limbs are flexed and the fetus has a firm grasp.
Fine body hair that covers the fetus during development is almost absent.
Pregnancies are considered full-term after completion of the 38th week.



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