

STAGES OF PRENATAL DEVELOPMENT

During this presentation, refer to the transparency "TIMELINE OF PRENATAL DEVELOPMENT."

The duration of pregnancy is divided into three equal segments called trimesters. The first trimester (months 1-3) is essential to the proper development of the infant and encompasses both the ovum and embryonic period of prenatal development. This is when all organs, nerve cells, and brain cells develop. This is when most spontaneous abortions (miscarriages) occur. They generally are caused by abnormal development of the fetus and are nature's way of eliminating a chromosomal abnormality. It is vital that all necessary nutrients be available to the fetus in order to develop properly.

The second trimester (months 4-6) is often referred to as the "golden trimester." This is when the mother generally feels the best. Morning sickness and nausea have generally disappeared, and the mother is quite comfortable.

The third trimester comprises months 7-9. These are important months for the baby as its organs and body systems mature and prepare to function on their own. The fat accumulated during this time will give the baby a "head start" on life.

The prenatal development is sometimes separated into three developmental periods. The first period is referred to as the period of the zygote. This stage begins at conception and lasts until the zygote is implanted in the mother's uterus. It lasts for about 10-14 days. The zygote grows to be about the size of a pinhead. Roots grow from the zygote into the wall of the uterus where they can receive nutrients from the mother's blood.

The period of the embryo lasts from about 2 weeks to 8 weeks after conception. The embryo is attached to the mother by the umbilical cord (20 inches long), which reaches from the embryo's stomach to the wall of the uterus. The umbilical cord contains arteries that carry the embryo's waste products away from the embryo to the mother's blood system to be purified. It also brings oxygenated and nutrient-rich blood back to the embryo to keep it alive. The umbilical cord is connected to the placenta. The placenta is an organ that serves as a medium for the exchange of nutrients and waste products between the mother and the fetus. *Throughout this period, the embryo is inside the amniotic sac (a bag filled with a watery substance called amniotic fluid).* The fluid will protect the developing baby against bumps, bruises, and temperature changes. During this period, all of the organs that will be present at birth are formed.

The third developmental period is called the period of the fetus. This period extends from the end of the second month of pregnancy until birth. During this stage, the developing baby is referred to as a fetus. The body parts, organs, and systems that were formed during the embryo period will become much more developed and begin to function. The fetus will begin to resemble a human being, and features will increase in clarity.

During the fetal period the baby may increase in length by as much as 12 inches.