

Stages of prenatal development



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The intricate details of life begin with a single cell that develops into a full term fetus within approximately 38-40 weeks. The prenatal development stages outline the growth of the child and give a clearer picture of the development of the child in the womb. The course of this prenatal development is divided into three main periods: germinal, embryonic, and fetal. The germinal/conception stage begins with conception, occurs within the first 2 weeks. This journey begins when the sperm and egg cell unite in one of the two fallopian tubes.

The fertilized egg, known as a zygote, then moves toward the uterus, a journey that can take up to a week to complete. Cell division begins and continues rapidly forming a blastocyst. Finally, the blastocyst arrives at the uterus and attached to the uterine wall, a process known as implantation. The conception stage is basically the preparatory and preliminary process of prenatal development that readies and prepares the body for the impending pregnancy. Once implantation has occur the the blastocyst is develops into an embryo.

This second stage, the embryonic period occurs 2-8 weeks after conception. This is referred as the most important stage of prenatal devllopment as the foundational development of the embryo begins here. During this period, the rate of cell division increases, support systems for the cells form, and organs appear. The mass of cells attached to the uterine wall forms two layers and is now called the embryo. The inner layer of cells of the embryo is the endoderm which develops into digestive and respiratory systems.

The ectoderm which is the outer layer of cells will become the nervous system and sensory receptors such as ears, nose, and eyes, and skin. The middle layer known as the mesoderm will develop into the circulatory system, bones, muscle, excretory system, and reproductive system. By the 8th week teeth and intestines start to form as well. From the 11th week onwards, the child is called a fetus, and this stage is the last of the prenatal development timeline. This stage culminates in the birth of the child.

Development of the fetus continues rapidly throughout most of this period. The fetus develops hair, nails, vocal cords, genitals, hardened bones, and a functioning liver and kidneys. By about the 20th week fat starts accumulating under the skin, the heart starts pumping more amounts of blood each day, and the baby also starts experiencing hiccups. The rate of development continues slowly as other body systems such as ligaments, brain and eyes continue developing. Up to the 40th week, the main task is the formation of the lungs, as most other body parts and organs are ready.

The child starts developing necessary immunities, and also starts fattening up to face the outer environment. By about the 39th week, the child will be ready to be born into this world. During pregnancy there are 3 trimesters. A trimester is referred to as a three months period. Most commonly, the first trimester is defined as from conception through week 14. The second trimester is from week 14 through week 28. And the third trimester is from week 28 through labor and delivery, which varies considerably but averages at week 40.