

Process Description: Pregnancy

It is well established that every human has been born through their mother's uterus. As children, we are taught that we came from our mother's stomach and the process is that "simple." As we grow older, we learn that the process of giving birth is much more complex than coming out of a mother's stomach. Pregnancy is the process in which the mother carries a fetus inside her for a span of time in which she nurtures it, aids it, and provides it with care. This fetus is formed through the formation of a zygote caused by the joining of a sperm cell provided by the male genitalia and an egg cell provided by the female genitalia. In reality, there are so many details to pregnancy such as the different trimesters of birth, what the number of weeks signifies as well as the symptoms that lead to being pregnant.

During pregnancy, there are three main stages which are referred to as trimesters, with each one having different phases to it. The first trimester lasts from weeks 1 to 12 [1]. The second trimester lasts from weeks 13 to 26 [1]. Finally, the last trimester lasts from weeks 28 to 40 [1]. During the first trimester at 4 weeks of pregnancy, the fetus is the size of a pea developing organs such as the heart, lungs, and brain [2]. In the third month, the baby's bones and muscles begin to form as well as fingers and toes [2] ending the first trimester. Usually, if there are any deficiencies in the baby, they will show up during the first trimester of pregnancy.

During the second trimester, the baby begins to grow past the woman's pelvic capacity causing the mother's stomach to begin to grow. The baby begins to grow more and more exponentially developing features like fingernails, eyelashes, and hair [2]. Furthermore, the baby begins to start kicking and the mother can sense some movement [2]. Finally, the third trimester starts, and the baby is very responsive to its surroundings. A baby can respond to music, sound,

and light, as well as its bones begin to harden [2]. Furthermore, the baby begins to shift itself into an upside position in which its head is the first to exit the pelvis. Overall you can see that every trimester has its own specifications and signs of development.

With pregnancy comes a lot of precautions and warnings. For example, a woman missing her menstrual cycle, a cycle that occurs every month is a sign of pregnancy. Additionally, during pregnancies, doctors warn the mothers from consuming alcohol as well as stopping them from taking specific medications. With pregnancy you should be visiting your doctor multiple times, doctors check to see if there are abnormalities or deficiencies, as well as to monitor the baby's growth and examine its heart rate. We are able to get all this information from an ultrasound, a technology that allows us to examine the inside of a stomach. Pregnancy is a delicate and painful process, so doctors must ensure that the mother and baby are in the best care.

Finally, at the end of pregnancy, the mother enters the hospital and awaits her contractions of the uterus to widen and thus gives birth to a child. A new life is born into the world. As you can see pregnancy is a long process that lasts around 9 months with some scenarios making it less a little less or a little longer. This delicate process needs to be monitored through every step to ensure the best quality of birth for the child as well as the safety of the mother.



[3]

1. The formation of the embryo:

i. Zygote being created: The sperm cell and egg cell combine when the sperm cell fuses into the egg cell by penetrating its wall to create a single-celled zygote.

ii. The blastocyst stage: The zygote cell then begins to divide and create a ball of cells known as the blastocyst which attaches to the lining of the mother's uterus [3].

iii. Embryonic stage: After a month and the reoccurring division of cells the embryo begins to form vital organs like the heart, lungs, heart, and brain. After these organs form the embryo is considered an organism and regarded as a fetus [3].

2. **The placenta appears:** During pregnancy, the baby needs nutrients and oxygen to further develop. Just like a child needs food and nutrients to grow an embryo inside the mother's uterus needs nutrients to grow. The question is how they receive these nutrients, oxygen, and excrete wastes from the body. The answer is in the placenta, the placenta is an organ that develops as

soon the embryo develops. It attaches to the uterus wall and acts as a connecting link between the mother and fetus providing oxygen and nutrients. Medical conditions present in the mother's body can affect the placenta. For example, blood clotting disorders, high blood pressure, substance misuse, etc [4].

3. Organs Develop: Around the second month the baby has developed enough to begin developing its sensory organs, the spinal cord, the brain, lungs, and heart [5]. At first, everything is very tiny and a mushy piece of cartilage that forms into more solid like bones.

4. A sense of the baby and the heart: It has now been 4 months and the mother has gone in for another checkup at the doctor's office. Using a doppler both the doctor and the mother can hear the heartbeat of the baby [5]. By the fourth month of pregnancy, eyebrows, eyelashes, fingernails and the neck all form, and the skin has a wrinkled appearance. At 18 weeks, we can even determine the sex of the baby.

5. A gooey sense: During the 5th month, the mother will start to feel the movement of the baby. This could be kicking and moving around. The baby's skin develops a white coating that protects it from exposure to the amniotic fluid. It is a "gooey" substance that is wrinkly due to being in a fluid-like environment for multiple months, this gooey substance sheds off at birth [5].

6. A loaf of bread: The 6th month is when the baby starts responding to movement and sound. If it feels pressure, it could hiccup and the mother can feel some jerking around [5]. Its eyelids

begin to open and the finger and toe prints form. It is about 12 inches long and weighs 2 pounds [5]. It is because of these measurements I like to compare the baby's size to a footlong sub.

7. **Beginning of the end:** It is the 7th month and the amniotic fluid is slowly diminishing. It is also building its body fat. In the next 2 months, most of the baby's weight is built. The brain is developing and its five senses are intact. It responds to light, pressure, and sound. Lungs are fully forming, eyes are blinking, and the baby is ready to be functioning outside of the uterus. Blood flow is close to normal and breathing is regulated [5]. If the baby were born now it would be able to survive.

8. **No Pain No Gain:** After 9 months, the baby is ready for delivery. The first indication that the mother is going into labor is when her water "breaks." This term is used to explain the release of the fluid in the mother's uterus. At this point, it is a sign that labor is on the brink and a trip to the hospital is due. The mother is now experiencing slower contractions of the uterus [5]. In a healthy, and normal pregnancy the baby is positioned headfirst towards the birth canal. However, sometimes issues, like the head of the baby is too big or not positioned properly, can occur. This calls for a procedure called a C-section in which the doctor would make incisions at the bottom lining of the stomach in which the baby would be delivered.

After the baby is delivered they are transmitted to the intensive care unit as both the baby and mother rest after a long and tedious process. The baby is observed to make sure there are no abnormalities or malfunctions of the baby's organs. After 3 days both the mother and baby are able to go home and what was a 9 month process was now held in his mother's arms.

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