

Stages of prenatal development and prenatal care



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Prenatal development

The miraculous development of a baby is amazing, but not without its few complications. During the development of a baby, it goes through three phases before it's fully grown, this includes, germinal, embryonic, and fetal stage. During these stages, harmful agents can affect the baby's growth. Something that is known as a teratogen is any environmental agent that can cause severe destruction during a woman's' pregnancy. The main function of a teratogen is that it can cause harmful effects on a fetus during prenatal development depending on the mother's heredity, age, and many other negative factors. There are also many other environmental influences such as prescription and nonprescription drugs, illegal drugs such as marijuana, cocaine, and heroin, tobacco, and alcohol. As a result, it can cause several things such as miscarriages, low birth weight, premature labor, placental abruption, fetal death, and possibly death.

Stages of development

Before going through the effects of teratogens, drugs, and alcohol, let's look at the development of a baby during the prenatal stages. The germinal stage is first and takes place from the moment of conception up until two weeks. During this stage, the fertilized eggs, or zygotes divide, multiply, and then they specialize soon after. The cell begins from being as one, two, four, then eight cells, and continuing. This process of the cells dividing is called mitosis. Mitosis is a very sensitive process and less than half of the zygotes survive past the first two weeks. As the cells are dividing they become more specialized and eventually form different organs and body parts of the baby.

After, the zygotes then attach itself to the uterine wall about ten days after conception. It's important that during this stage the mother is going to see a doctor for check-ups just to make sure she and the baby are doing okay and are healthy (Jordan, 2014).

The second stage is the embryonic stage, which starts from implantation at two weeks until eight weeks of the pregnancy. Soon after the zygote attaches itself to the uterine wall and after seven to ten days of dividing and once it has 150 cells, the bundle of cells then form into two parts. The internal cells become the embryo, which is the human organism. The external cells and new blood vessels begin to grow and they become the placenta, which provides oxygen and nutrients for the baby. The placenta not only provides nutrients for the growing embryo but it also aids in stopping any dangerous agents from reaching the fetus. Viruses, drugs, and other substances that can harm the embryo or fetus during the prenatal development also known as teratogens can sometime past without the placenta noticing and leave negative effects on the wellbeing of the fetus. The baby gets all of this through their umbilical cord. Formation of organs takes place during the embryonic stage, and they begin to slowly operate. During the first week of the embryonic stage, the embryonic disk separates into three layers. These layers are called ectoderm, mesoderm, and endoderm. The ectoderm is the outer layer and will later be the nervous system and outer skin layers. The mesoderm will become the circulatory system, muscles, skeleton, reproductive system, and the inner layer of skin. Lastly, the endoderm will be the respiratory system, part of the digestive system, and the urinary tract (Niranjan, 2016). The first part of the embryo

to develop during this stage is the neural tube which will become the spinal cord and brain later. As the nervous system slowly starts to develop, the tiny heart pumps blood, and other parts of the body such as the digestive tract and the backbone begin to appear. In the second half of the embryonic stage, the growth of the baby is very quick. The eyes, ears, nose, and jaw develop. In addition, the heart is developing chambers and the intestines are continuing to grow.

The remainder of the time is spent in the fetal stage, which is from nine weeks until birth which can be between 38 and 40 weeks. At around nine weeks the embryo can then be called a fetus. At this time the fetus is about the size of the kidney bean and slowly begins to take the right form of looking like a human. Between nine and twelve weeks, reflexes become apparent, the arms and legs start to move, but the mother won't be able to feel the movement for another couple weeks. Also during this time, the sex organs begin to differentiate. The fingers and toes are fully developed, and the fingerprints are visible. By the time the fetus reaches their 6 months of development of 24 weeks, it can weight up to 1. 4 pounds and the organs are well developed enough for the possibility of surviving outside of the womb. The hearing is developed at this time, so the fetus can respond to the surrounding sounds (Bravo, 2014).

Often during these times, the mother or father will sing or talk to them. This interaction helps them to get to know the parent before they are born.

Throughout the fetal stage, the brain continues to develop and doubling in size from sixteen weeks to twenty-eight weeks. The new brain growth helps the fetus to experience new behaviors. The cerebral cortex grows larger and

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the fetus is up for longer periods now (Toulmin, 2015). The fetus can move with more coordination, allowing the mother to now feel the movement. The nervous system is controlling more bodily functions and the fetus personality even starts to develop. By twenty-eight weeks, thalamic brain connections form, which mediate sensory input. The fetus is also sensitive to light at this time, that when the doctor shines a flashlight through the stomach the fetus will attempt to shield their eyes and the mother can then feel that movement. Between thirty to thirty-two weeks growth begins to slow down but the fetus is still going through other changes. Around 36 weeks, the fetus is almost ready to come out. It weighs about 6 pounds and can be about 18.5 inches long. By 37 weeks, the fetus is fully developed and can live outside of the womb without any serious risks of possible death. If the fetus does not come out by 37, then it continues to grow by 40 weeks, and there is very little room to move around (Bravo, 2014). At this time if the baby is too big for the mom then the doctors will offer the option of a C-section.

Prenatal and Postnatal Care

Prenatal care and postnatal care is very important to ensure good health for the mother and baby. It can also decrease health risks and can make sure that the mother is not overdosing on things she's not supposed to be taking. During pregnancy, a mother must stop smoking, and limit their amount of alcohol. It's better to not drink any at all so that the alcohol doesn't get into the babies system and affect their brain and moral development. In addition, it's important for the mother to make sure she is communicating everything with her doctor and sticking to a healthy diet. The more nutritious a mother's diet is, the healthier the baby will be. Right after the baby is born, postnatal <https://assignbuster.com/stages-of-prenatal-development-and-prenatal-care/>

care starts. During this time the mother should be getting enough rest, proper nutrition, and other self-care measures as told by the doctor. For example, after a mother has a C-Section, the mother is advised not to do rigorous work, such as lifting, pushing and pulling heavy objects. After giving birth the doctor usually wants to see the mother 6 weeks after delivery for a checkup (Jordan, 2014).

After birth, some mothers may experience sometimes called postpartum depression. This is when the mother experiences depressed or serious mood swings, crying, trouble attaching with the baby, absence of appetite, trouble sleeping, reduced interest in activities you once used to enjoy and anxiety. It can start as soon as two or three days after delivery and can last from two weeks to months. In addition, postpartum depression is beginning to be seen in fathers. New fathers may feel fatigue or sad and also may be overwhelmed with all the changes that are happening. Fathers who have experienced depression before are more prone to display signs of postpartum depression. Most times if the depression does not fade after two weeks, the mother is advised to see a doctor because it can interrupt with the development of a baby.

Harmful agents

Illegal drugs can be considered substances such as heroin, cocaine, methamphetamines, and prescription drugs that are taken without a medical reason. Using illegal drugs can result in miscarriages, and can also cause birth flaws. During the later weeks of pregnancy, it can also result in interfering with fetal development and growth. The baby when born can be

premature and even fetal death can happen. Mothers who have abused these type of things will need to be specialized and the baby will need extra attention as well. Marijuana even if it is recreational marijuana it should not be used during pregnancy. It can also result in the child having a hard time to be aware and they may tend to act out. Marijuana causes an increase in the risk of a stillbirth which is a delivery of a dead baby and that the baby could be small and weigh less than a normal baby who hasn't been exposed to those type of drugs. (Al-Gubory, 2014).

Tobacco smoking and alcohol abuse can affect the way a baby is developing. When a mother drinks, it passes through the placenta and reaches the growing fetus. Because a developing baby's body is very fragile and breaks down slower than a grown adult, a fetus blood alcohol level can rise much higher than its mother's and can stay that high for a long time. The damage can be long lasting and very severe, such as causing damage to the heart or the brain. Even just a small sip, increases the risk of bad child development. Not only does it have these potential health and risk problems, but it may also cause a baby being born with FAS, which is fetal alcohol syndrome. Even if the child does not end up mentally retarded they still have trouble paying attention, learning, bad memory, delayed speech, and maybe have a hard time to hear. The body structure of a baby who has FAS will be a below average head circumference, eyes smaller than the average eye, low nasal bridges, smaller than average midface size, and thin upper lip.

When a woman smokes during her pregnancy she is letting unknown chemicals enter her body which can cause harm to a baby. Nicotine is only one of 4, 000 toxic chemicals and it causes blood vessels to narrow, so it

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results in less oxygen and fewer nutrients reaching the fetus. The same as nicotine damages a mother's heart and lungs, it can also do the same to the fetus. Smoking can also cause a baby to be premature and that means the baby won't be fully developed. These babies will be more prone to sudden infant death syndrome, and more likely to develop asthma and obesity in their childhood. Not only a mother smoking but a mother being around a second hand smoker can be harmful. It can increase the risk of having low birth weight baby by as much as 20%. Infants who are exposed to secondhand smoke will also have an increased risk of experiencing sudden infant death syndrome (Al-Gubory, 2014). Recently E-cigarettes have also been a popular item. E-cigs also contain harmful nicotine, plus a flavoring that is not safe for the fetus as well.

Teratogen affects

According to Chambers, in 1961, a discovery of thalidomide, an antinauseant was being taken by mothers anywhere from 4 to 6 weeks after conception. It was learned that thalidomide caused deformities of the embryo's arms and legs and damaged the babies ears, heart, kidneys, and genitals. In addition, when children were exposed to thalidomide during pregnancy, many scored below average on the intelligence tests or other known as IQ tests (Chambers, 2015). All of this brought more attention to the effects that different drugs and etc have on a pregnant mother and the baby. There are a set of principles that determine the teratogenicity of exposure. The first is that the abnormal development from a teratogenic exposure is usually death, malformations, growth retardation, or a functional disorder. This means that a child could develop severe damage to the central nervous

system and it may cause mental retardation and other long term effects that could show up when the child develops later on as an adult. The second principle states that teratogenesis can be vulnerable to the person at the time of the developmental stage. The third states the dose and duration of a teratogenic exposure also have to be taken into consideration for abnormal development. Whenever a mother is exposed to a teratogenic it may not necessarily be teratogenic every single time. According to chambers, the most 14 days to 60 days of post-conception is when the teratogenic has a chance to develop into a deformation or malformation of the baby (Chambers, 2015). One of the most widely used teratogens is accutane, which is a Vitamin A derivative prescribed to treat severe acne. Many women who are at the child carrying age have taken this. The fourth principle is the teratogenic exposure is also vulnerable depending on fetal and maternal genotype.

Conclusion

As a whole, the development of a baby is miraculous. If the mother takes the right actions and stays away from things such as drugs and alcohol, a very healthy baby will be born. Of course there may be other gene contributions that may happen but for the most part, depending on how the mother takes care of herself, the baby will be healthy. The mother must have a nutritious diet, get enough sleep, and see the doctor regularly to make sure everything is going good. The prenatal stages consist of three main stages such as the germinal stage, embryonic stage, and the fetal stage. The embryonic stage is when most of the development happens in the brain and when the baby can start to move around allowing the mother to feel it. During the germinal <https://assignbuster.com/stages-of-prenatal-development-and-prenatal-care/>

stage, it's important that the mother is taking care of herself because this is a primary time that mothers may experience miscarriages. Mothers also need to keep their diet healthy so that they don't get gestational diabetes. What causes gestational diabetes, is that the placenta can make an enzyme that destroys vasopressin, a hormone that controls how much water you retain. The lack of this can make the mother urinate less and can cause a quenched thirst.

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