

## PrenatalU4

1. It's a well-known fact that pregnancy changes a woman's body. Among most visible are weight gain, changes of the body composition, raised heart rhythm. The questions that modern studies are trying to answer are about to what extent the body of a pregnant woman changes and how it happens. Days after fertilization embryo implants in the lining of the uterus exposing woman's body to the new DNA. Hypothetically the mother's immune system should attack and destroy those invading cells but it doesn't happen. Some of the immune cells of the mother start protecting fetus from being harmed. As the fetus grows, it pushes on the mother's diaphragm that limits its' range of motion. As a result, pregnant women breathe faster and often feel shortness of breath. It's interesting that breathing becomes less of a problem before the childbirth because shortly before the delivery the fetus drops down and the pressure on the diaphragm decreases that allows pregnant women take deeper breaths. The least studied effect of pregnancy is the one that happens in the brain. Some of the changes appear to be adaptive, like a mother that has a new born is good at recognizing facial expressions. It might be connected to an inability of baby to talk.
2. Lanugo is the type of very fine hair that babies develop in the womb that function as a type of insulation to keep the baby warm. It's essential since the baby doesn't have enough fat for thermoregulation. The lanugo together with the amniotic fluid help to reduce friction within the womb. During 7<sup>th</sup> or 8<sup>th</sup> month lanugo hair gradually drop out and get replaced by normal vellus hair.

Meconium is a kind of fetal feces that first appear in the late 3<sup>rd</sup> and early 4<sup>th</sup> month of fetal development. Lanugo hair and meconium appear simultaneously, because the fetal feces are partially composed of the hair that are being shed and swallowed by the fetus. Digestive system of the fetus is being tested months before the baby is born.

Vernix is the waxy white substance produced by the fetus's sebaceous glands. It's composed of a combination of sebum and dead skin cells. Vernix protects the skin of the fetus.

3. Chorionic Villus Sampling (CVS) is a test that is given to women between 10<sup>th</sup> and 12<sup>th</sup> weeks of pregnancy. It allows to obtain genetic and chromosomal information about the fetus. CVS can cause pregnancy complications and miscarriage and is only used when there is moderate to high risk of chromosomal or genetic defects or other anomalies. Risk evaluation can be based on maternal age, birth defects in a previous pregnancies or family history of genetic disorders or defects. During CVS test a small sample of the villi is taken for the analysis. The test reveals any genetical abnormalities the fetus may have since fetal cells and the cells from villi carry the same genetic information.

CVS can be transcervical and transabdominal depending on how the sample is taken.

Transcervical CVS is more common.

Amniocentesis involves taking and testing a small sample of cells from amniotic fluid and usually performed between 15<sup>th</sup> and 20<sup>th</sup> weeks of pregnancy. It is used for diagnosing genetical and chromosomal abnormalities of the fetus. Amniocentesis is used at a later point in the pregnancy when CVS becomes more risky. Amniocentesis has higher accuracy and provides more comprehensive genetic and chromosomal profile of the

fetus, but it cannot identify cleft palate and congenital heart disease. It's also used to identify problems of baby's lungs prior to delivery.

4. On the 5<sup>th</sup> month of pregnancy fetus's REM can be measured. During this type of sleep children and adults are most likely to dream. Fetus spends most of the time in REM sleep. REM sleep is very important for fetal brain development. Brain activity in REM sleep provides stimulation to the developing brain. During this sleep fetal brain practices all its' functions.
5. Irregular sleep is common during pregnancy. It's caused by hormonal changes and overall fatigue. Early in pregnancy women tend to feel sleepier and many choose to take naps while this may not be the best since it can result in nighttime insomnia. As fetus grows larger, physical changes of the woman's body make finding comfortable sleep position difficult. The best position to sleep during pregnancy is lying on a side, that helps breathing, blood flow and kidney function. Pressure of the growing uterus on the bladder makes a woman get up and urinate during nighttime and, as a result, sleep is often disturbed. Other factors such as vivid dreams, congestion, heartburn, fetal movement can also influence sleep quality. Many women experience backaches during pregnancy that can get significantly worse combined with the lack of sleep.
6. According to the recent studies sexual intercourse and orgasm do not increase risks of miscarriage, premature birth, premature water breaking and birth defects. This includes sexual activity during last months of pregnancy. Some studies showed that women who engaged in sexual activity in the 3<sup>rd</sup> trimester had lower rates of premature births. As the pregnancy progresses couples have to adjust sexual positions and choose the ones

that accommodate the changes in the woman's body. In some cases when a woman is at risk for premature labor, prostaglandins from semen can trigger preterm labor. Other reasons to avoid sexual intercourse are vaginal bleeding, incompetent cervix, or placenta previa.

7. Preeclampsia is a disorder that affects both the mother and the baby. It's characterized by following symptoms: hypertension, proteinuria, swelling, change in reflexes, sudden weight gain, visual change and headaches. Preeclampsia affects 5-8% of all pregnancies and usually occurs in the late 2<sup>nd</sup> or 3<sup>rd</sup> trimesters. Without treatment it can progress to eclampsia that includes symptoms such as seizures and convulsions on top of the symptoms of preeclampsia. Although, it's unknown what causes preeclampsia, but older age of a woman, obesity, placental hormonal disfunctions, diabetes, lupus, thrombophilia and exposure to bacterial infections are among the risk factors. Proper treatment of preeclampsia helps to avoid seizures and convulsions of eclampsia. Monitoring blood pressure, diet, weight gain are necessary to prevent harm to the mother and the baby.