

# Human Development and Birth

# Put the following in order...

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.

Sperm fertilizes ova

Sperm travels through uterus

Sperm passes through cervix

Sperm travels through vagina

Sperm passes the seminal vesicle getting fluids to help with nourishment

Sperm is produced in the testicles

Sperm is stored in the epididymis

Sperm is ejaculated out of urethra

Sperm enters into fallopian tube

Sperm travels through the vas deferens

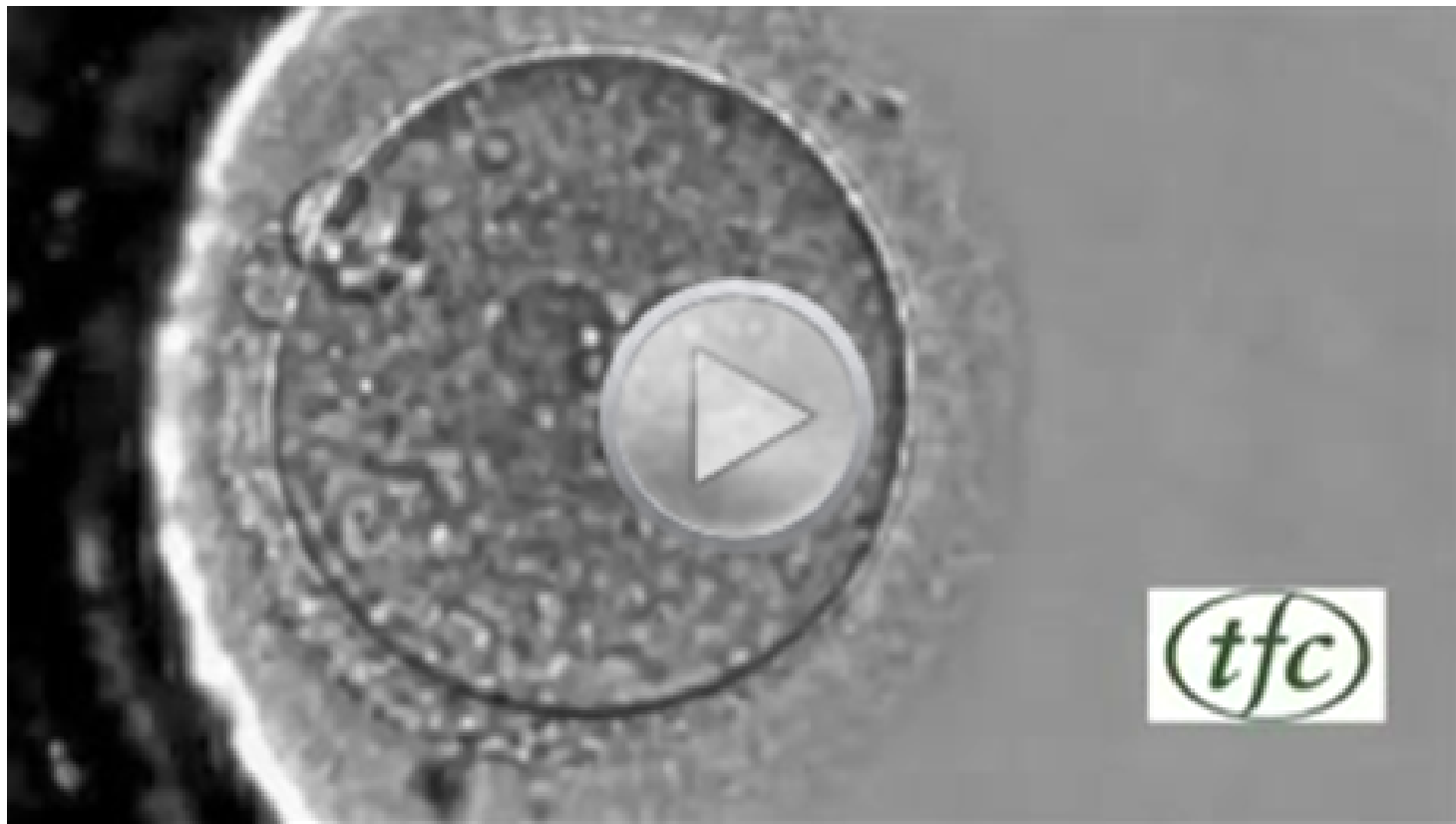
Sperm passes prostate and Cowper's gland getting fluids that help with acidity, and suspension

# Gestation - the period of time between conception and birth when a baby grows and develops inside the mother's womb

- It's impossible to know exactly when conception occurs so gestational age is measured from the first day of the mother's last menstrual cycle to the current date
  - It is measured in weeks.
- This means that during weeks 1 and 2 of pregnancy, a woman is not yet pregnant. This is when her body is preparing for a baby.
  - A normal gestation lasts anywhere from 37 to 41 weeks.
  - We talk about 3 trimesters each separated by 3 months

# Stages Human Development 1st Trimester

- Cleavage - Immediately after fertilization, the zygote begins to divide (mitotic) into 2 then 4 then 8 then 16 then 32 cells etc. The cell is no longer a zygote, it is called a morula and then a blastocyst. This division all happens as the zygote descends down the uterine tube.



Zygote to  
day 6  
blastocyst.

<http://www.youtube.com/watch?v=RcjJ8LUvdkc>

# Stages Human Development 1st Trimester

- .Growth - now called an embryo, along with division of cells, daughter cells now get bigger and bigger
- Embryo implants in the wall of the uterus and body will secrete HCG hormone
- Embryo is now about the size of the period in a standard textbook

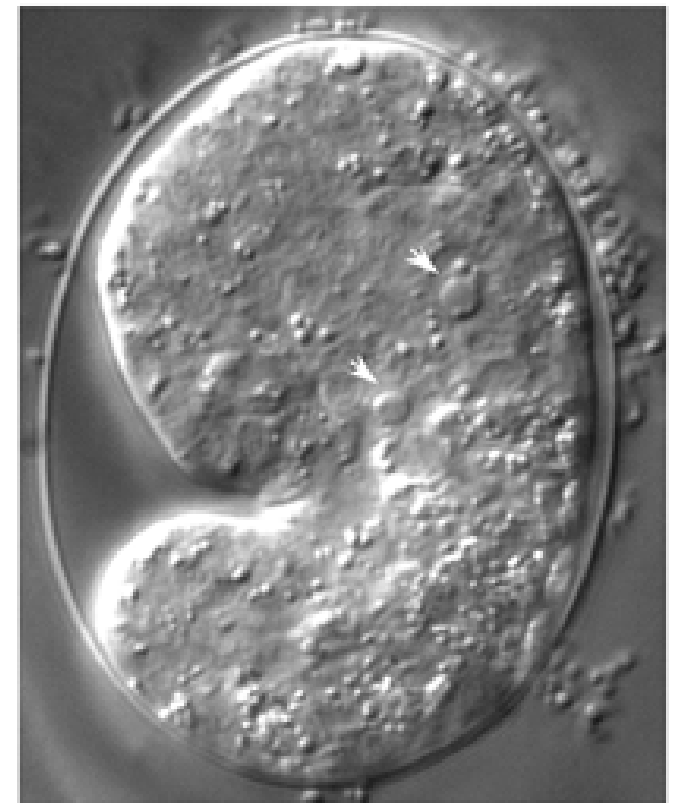
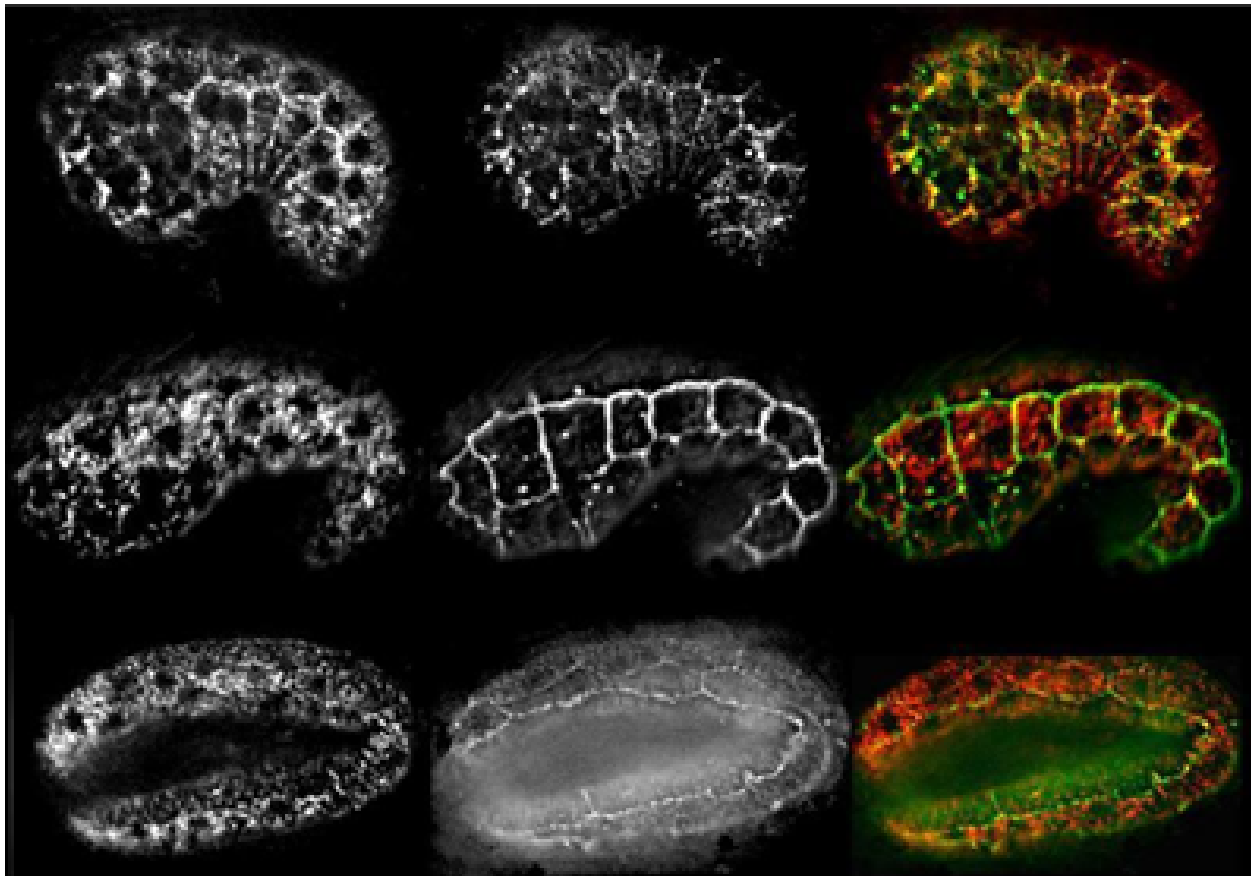
# Stages Human Development 1st Trimester

- Also during the growth phase, the amniotic cavity forms around the embryo
  - In humans the amniotic fluid acts as an insulator against cold and heat and absorbs shock



# Stages Human Development 1st Trimester

- Morphogenesis - shaping of the embryo occurs as cells will migrate to certain areas



# Stages Human Development 1st Trimester

- .Differentiation - cells taking on specific structures (nervous system first visible)



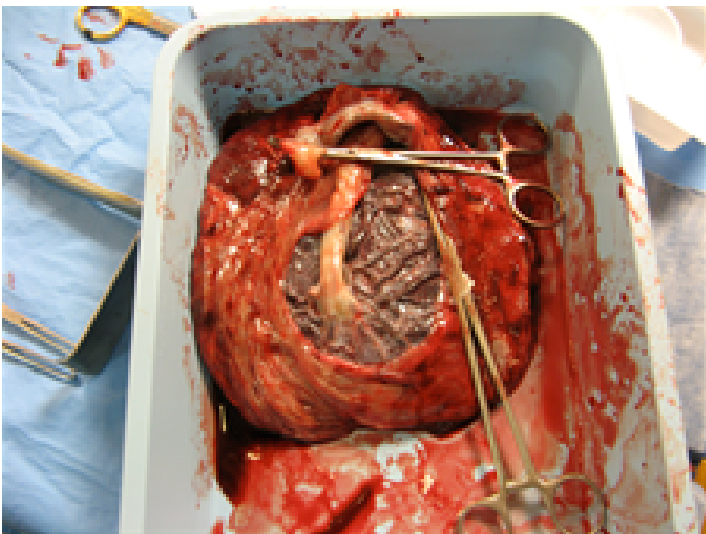
Embryo at 5 weeks



The embryo is considered a fetus in the third through ninth months (2 and 3rd trimester)



- At the beginning of the fetal stage, the placenta has just been fully formed.
- The placenta is where materials like oxygen and nutrients like glucose and amino acids exchange across the membrane from mother's blood to fetus.
- Wastes like urea and carbon dioxide diffuse out of the fetal blood and into maternal blood.

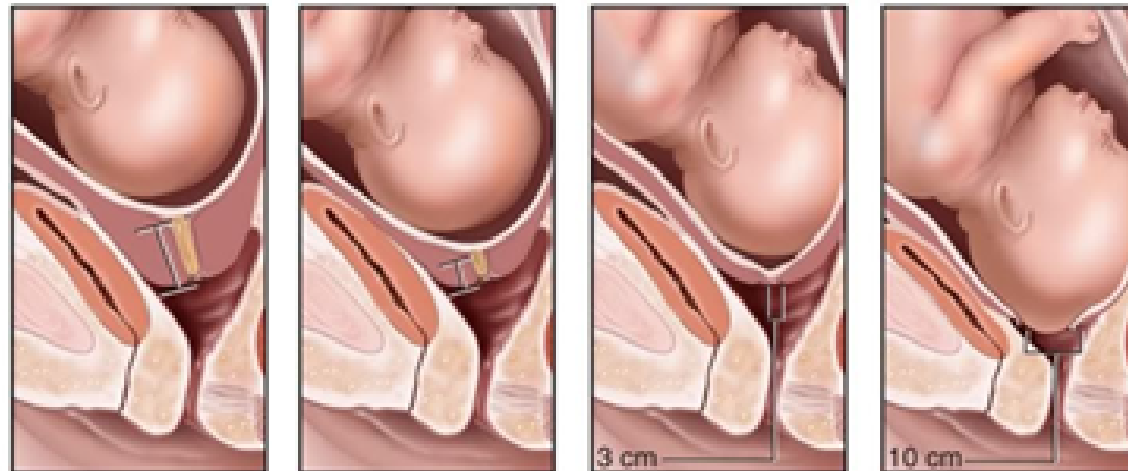


- One end of the placenta is attached to the fetus through the umbilical cord.
- One end of the placenta is attached to mother's uterus.



Normally, after the gestational period is over the stages of labor begin.

- Stage 1 - Effacement - uterine contractions occur to allow the cervical canal to slowly disappear as the lower part of the uterus is pulled upward toward the baby's head



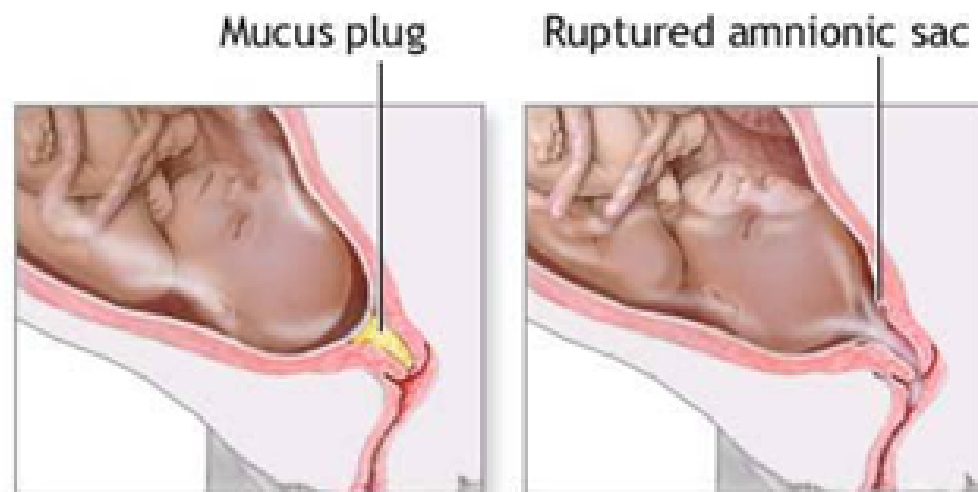
1. Cervix is not effaced or dilated.

2. Cervix is 50% effaced and not dilated.

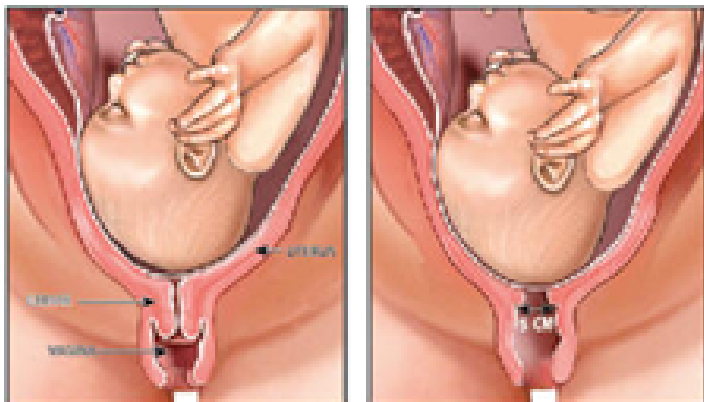
3. Cervix is 100% effaced and dilated to 3 cm.

4. Cervix is fully dilated to 10 cm.

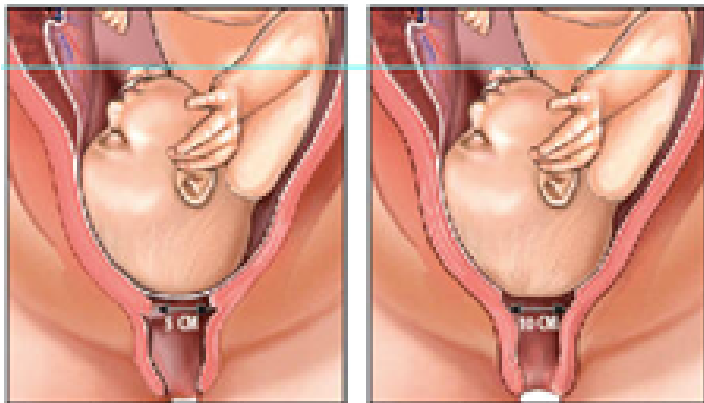
- Stage 1 cont. - amniotic sac ruptures and releases amniotic fluid which leaks out of the vagina (water breaking)



- Stage 1 - cervix continues to dilate until 10cm








A. Cervix is not effaced or dilated. B. Cervix is fully effaced and dilated to 1 cm.



C. Cervix is dilated to 5 cm. D. Cervix is fully dilated to 10 cm.

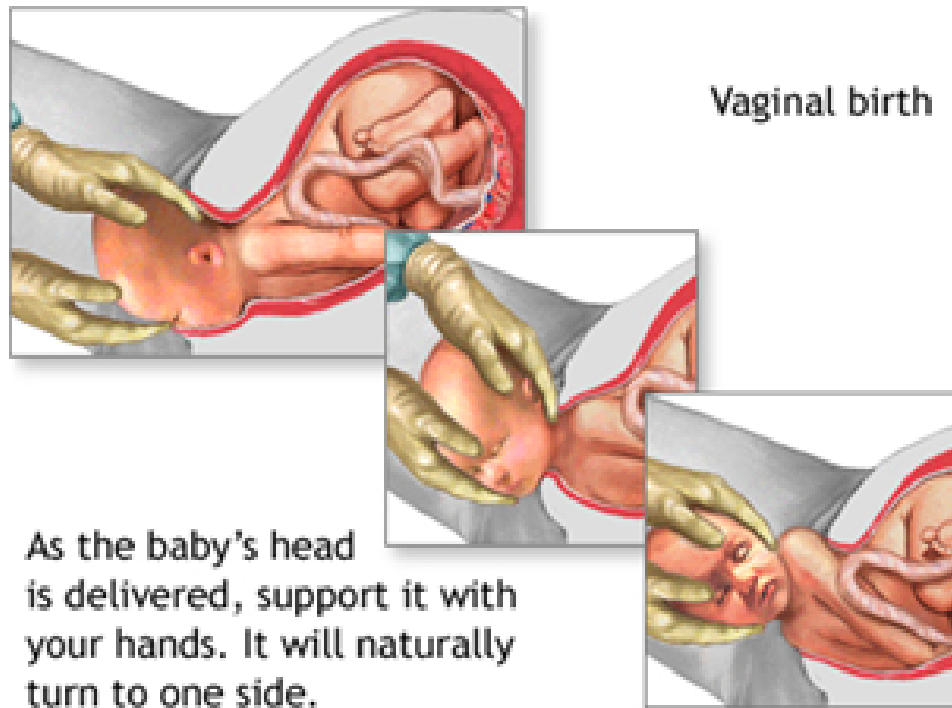
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### Cervical Dilation A Visual Aid

2cm = penny	
4cm = oreo	
6cm = soda can	
8cm = donut	
10cm = roll of cheap TP <small>(the good stuff &amp; bigger)</small>	

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- Stage 2 - cervix is dilated completely, contractions occur every 1-2 minutes with the desire to push, the baby's head descends into the vagina, baby's head is delivered followed by the shoulders and the rest of the baby follows



- Stage 2 - cervix is dilated completely, contractions occur every 1-2 minutes with the desire to push, the baby's head descends into the vagina, baby's head is delivered followed by the shoulders and the rest of the baby follows, once the baby is breathing normally, the umbilical cord is cut and tied





- Stage 3 - uterine muscle contractions shrink the uterus and dislodge the placenta which is expelled into the vagina

