

Prenatal Development

Chapter 9
Life Span Development I



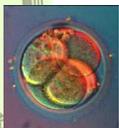
TRUE OR FALSE...
The study of development begins at birth.



FALSE!

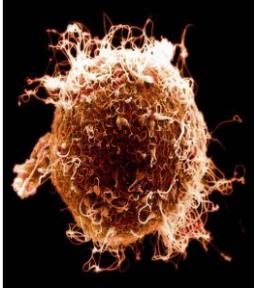
The study of development begins at the moment of conception

CLASS OBJECTIVE: We will examine the biological process of human development.

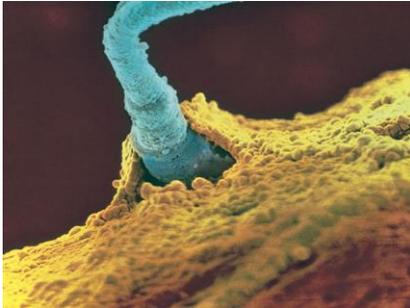


The real “Amazing Race”

- Every human begins very simply with the meeting of one sperm and one ovum (egg).



The sperm “fight” to be the only one that can successfully fertilize the egg.



The first form of life

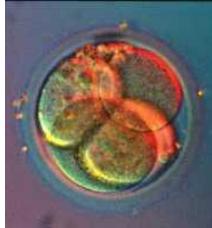


- At conception the genetic material from each parent is fused.
- A living cell called the zygote is formed within hours.

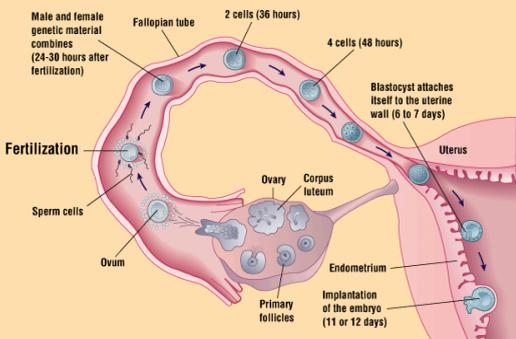
True or false?

50% of fertilized eggs are lost before a woman finds out she's pregnant.

TRUE!



The Journey of the Ovum Toward the Uterus



From Zygote to human??

- The Zygote will become transformed through a process of three stages:
- Germinal period- The first two weeks after conception
- Embryonic period- The 3rd to the 8th week after conception
- Fetal period- The ninth week after conception to birth

Hello Embryo!

During the *Embryonic stage*, it is still not recognizable as a human.

The *neural tube* forms (at 22 days), which becomes central nervous system



4 Week Embryo



From 4 to 6 weeks...
Look at the difference!



6 Week-Old Embryo



TRUE OR FALSE?

- Approximately 20% of all embryos are aborted spontaneously
- **TRUE!** This is most often due to chromosomal abnormalities

7 Weeks...Now what do you see?



- Legs, feet and webbed toes have begun to develop
- A blood vessel that will become heart begins pulsating around this time.
- The embryo is 2 ½ centimeters long —

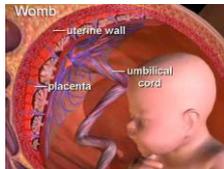
8 Weeks

- The embryo is now recognizable as a human
- The embryo now weighs 1 gram and is 1 inch long
- All the basic organs and body parts of a human being (except sex organs)
- The "tail" is no longer visible and is now incorporated into the lower spine



The placenta also forms during this early period

- The placenta is a mass of tissue attached to the uterine wall that acts as a life-support system for the fetus
- Connects its circulatory system with the mother
- The embryo and placenta are connected by the umbilical cord



The Fetus: Week 9-Birth

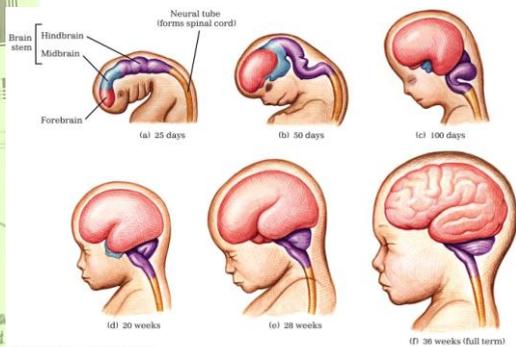
- The Brain grows dramatically (6 times in size) and becomes responsive during this time.
- At 22 weeks the fetus reaches the "Age of viability", which is the age a preterm baby can survive.
- There is only a 50% survival rate at 26 weeks

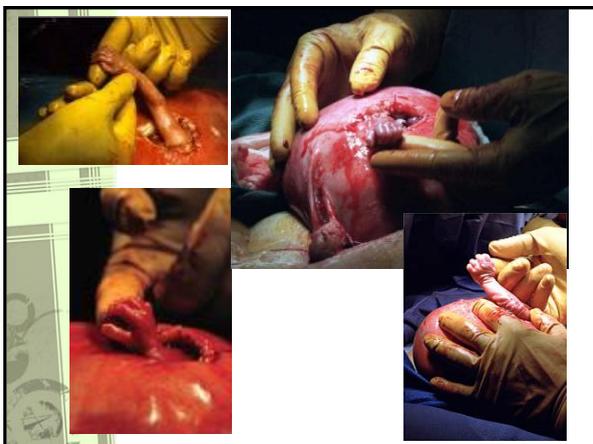


The Brain MUST be able to sustain the body for survival

Without proper brain development, the most advanced technology cannot keep the body alive

It's All About the Brain!





Research shows that fetuses can develop sight very early in the womb.

FALSE!



Fetuses spend roughly 90% of their time in the womb asleep.

TRUE!



14-16 Weeks



24-28 Weeks



36-38 Weeks



It was previously thought that emotions were only expressed after birth



Next Class...

- What factors can influence prenatal development?
