Class Objectives

- What is Developmental Psychology?
- Prenatal Development
- Factors that influence prenatal development

Module 10: Prenatal development and Infancy

Three types of change

1. Physical - Involve changes in an individual's biological nature.
2. Cognitive - Involve changes in an individual's thought, intelligence, and language.
3. Socio-emotional - Involve changes in an individual's relationships with other people, in emotions, and in personality.

Developmental psychologists seek to understand how nature and nurture influence development.

Development refers to the pattern of continuity and change that occurs throughout the course of life.

Developmental psychologists are interested in how people change, physically and psychologically as they age.

These physical, cognitive, and socio-emotional processes are intricately interwoven

Researchers in developmental psychology are interested in the ways that these processes change over the human life span.

How can we define Nature versus Nurture?
Which influences development most?

- **Nature** refers to a person’s biological inheritance
  - Genes

- **Nurture** refers to the individual’s environmental and social experiences.

Determining which one is more influential to our development has been a long-running debate in psychology.

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**Prenatal Development**

**TRUE OR FALSE...**

The study of development begins at birth.

The study of development begins at the moment of conception

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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.

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**True or false?**

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

**TRUE!**
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

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

4 Week Embryo

6-9 week Embryo
TRUE OR FALSE?

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

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

It was previously thought that emotions were only expressed after birth

Test Your Knowledge!
True or False?

- Most babies are born healthy and most hazards can be avoided. **TRUE!**

- There are very few prenatal factors that can harm a developing person. **FALSE!**

- Prenatal exposure to a dangerous substance is only harmful in the first trimester of the pregnancy. **FALSE!**

- Research has proven that drinking alcohol (in any amount) during pregnancy is safe. **FALSE!**
Is the prenatal environment that important??

- YES! There are many factors that can negatively impact the developing person.
- Teratogens are substances that can lead to birth defects or even death during the prenatal period.

It’s all about timing...

- The effect of a teratogen is very personal because the impact depends on the timing of exposure.
- Critical period is the time when a particular organ or body part is the most susceptible to damage.
- Different teratogens can cause damage at different times during development and each body structure has its own critical period.

Fetal Alcohol Syndrome (FAS)

- This syndrome is caused by a mother drinking excessive amounts of alcohol during pregnancy.
  - Heavy drinking during the second trimester seems to cause more features of FAS.
  - Particularly weeks 10-20

Fetal Alcohol Syndrome (FAS) Table

- This table shows the time of exposure and the effects on major organs.

What does FAS look like?

- Facial Characteristics
  - Flattened features
  - Low-set ears
  - Down syndrome-like appearance

Facial abnormalities are an obvious indicator of FAS

- Small head circumference
- Small, widely spaced eyes
- Prolongation of the fold of the upper eyelid
- A short, upturned nose
- Flat mid-face, lowered nasal bridge
- Thin upper lip
Approximately 10,000 infants are born each year with physical or cognitive disabilities associated with maternal drinking (Jacobson, 1997).

- Every 1 in 750 births

The presence of alcohol in the fetus’s bloodstream triggers widespread cell death in the fetal brain.

Other Factors
- Sexually Transmitted Diseases
  - HIV, gonorrhea, syphilis can infect the fetus before or during delivery and increased still births and pre-term births
- Nutrition
  - Especially folic acid
- Maternal age
  - Negatively affect development if mom is an adolescent or over the age of 35
- Emotional states and stress
  - When a pregnant woman experience intense fears, anxieties, and other emotions – physiological changes occur that may affect her fetus