**Menstrual Cycle, Pregnancy, & Birth**

**Menstrual Cycle**

* A series of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_changes that help to prepare a woman’s body for pregnancy.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**: First female period that usually occurs around age 12.
* A cycle can range from 21-45 days, with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ days being the average.
* Consists of 2 cycles:
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Cycle
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Cycle

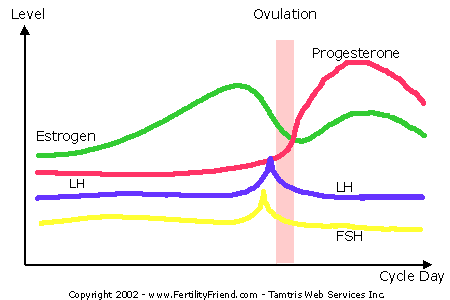
**Ovarian Cycle**

* Involves changes in the ovaries
* Can be divided into 2 phases:
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phase (Days 1-13)
    - First day of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ until \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
    - Egg growth/maturation is occurring in the ovaries.
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phase (Days 14-28)
    - From \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ until \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_begins.

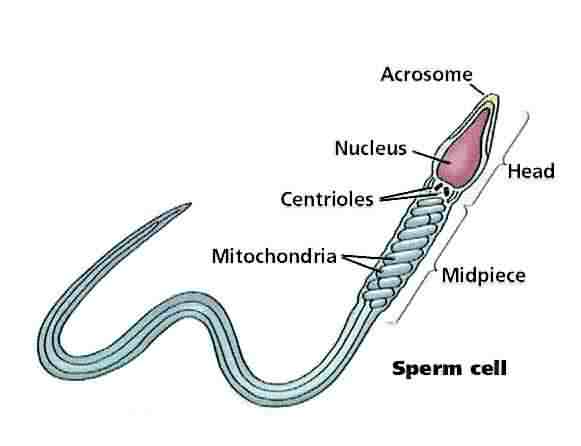
**Uterine Cycle**

* Involves changes in the uterus.
* Occurs together with the Ovarian Cycle.
* Can be divided into 2 phases:
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phase (Days 5-14)
    - Occurs after \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ but before ovulation
    - Endometrium rapidly grows in thickness
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phase (Days 14-28)
    - Occurs at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if fertilization does not occur.
    - Egg & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ begin to break down.

**Ovulation**

* During the first half of the menstrual cycle, as many as 20 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ begin to grow in the ovaries due to Follicle Stimulating Hormone (FSH).
* Half way through the cycle, there is a spike in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hormone (LH) which signals the release of the most \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ egg from the ovary. This is referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.**
* The remaining egg follicles undergo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or cell degeneration.
* If more than one egg follicle grows to maturity, they can also be released from ovary increasing the chance of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ twins or triplets.

**How Conception Occurs**

* Fertilization occurs when a sperm and egg unite in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, creating new life.
* The female egg can only be fertilized for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ hours after being released.
* An average 300 million sperm are released in one ejaculation, however only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ will reach the uterus due to the harsh acidic environment of the vagina.
* Most sperm only survive for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the vagina with a maximum of about \_\_\_\_\_\_\_\_\_\_\_\_\_ hours.
* This environment is necessary to deplete a fatty covering on the sperm that will then allow the sperm to fuse with the egg.

**Sperm Anatomy**

**Sperm Physiology**

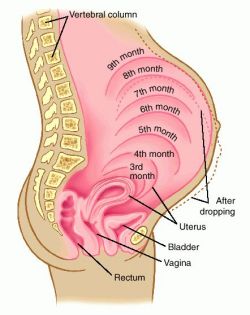
* To fertilize an egg, sperm must undergo a 3-step modification process.

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: Secretions in the female reproductive tract modify the sperm’s membrane to allow it to fertilize the egg.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: They become better, more efficient swimmers.
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reaction: The acrosome creates an enzyme reaction with the egg’s zona pellucida, weakening it and allowing entry.

**Fertilization**

* Once a sperm(\_\_\_\_\_\_\_\_\_\_\_\_\_\_) has penetrated the egg (\_\_\_\_\_\_\_\_), a chemical reaction takes place within the egg making it impossible for another sperm to enter.
* Almost immediately the nuclei of the sperm and egg fuse to produce a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ containing genetic material from both mother and father.
* The sex of the fetus is determined at this point.
  + If an \_\_\_\_\_\_\_\_\_\_sperm meets the X egg = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (XX)
  + If a \_\_\_\_\_\_\_\_\_\_ sperm meets the X egg = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (XY)

**Implantation**

* The fertilized egg will make its way to the uterus where it will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* It takes roughly \_\_\_\_\_\_\_\_\_ days for the fertilized egg (blastocyst) to travel and implant.
* Occasionally a fertilized, dividing egg will attach to the lining of the fallopian tube. This is called an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* This type of pregnancy must be terminated for the safety of the mother. The fallopian tube is not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the growing blastocyst will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the tube.

**Pregnancy**

* A typical pregnancy lasts approximately \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_weeks (280 days)
* These 40 weeks are broken up into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:
  + 1st Trimester: Weeks \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + 2nd Trimester: Weeks \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + 3rd Trimester: Weeks \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Embryonic Development**

* Fertilized egg is called an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ until \_\_\_\_\_\_\_\_\_ weeks after fertilization.

**Fetal Development**

* From weeks \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the baby is termed a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

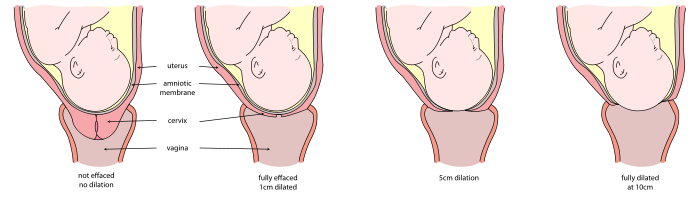
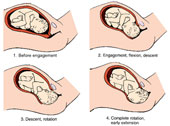
**Birth (Parturition)**

* 3 Stages

1. Shortening/dilation of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Descent/birth of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Delivery of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* **Labor Stage 1: Effacement & Dilation** 
  + As baby moves down, the cervix thins (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).
    - Given as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (75% effaced).
  + Cervix begins to open (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).
    - Assigned a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **Labor Stage 2: Fetal Expulsion** 
  + Cervix must be fully \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + Mother is pushing
  + Baby’s head is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Baby has large \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and must maneuver out in a s

pecific pattern of rotation:

* **Labor Stage 3: Umbilical Cord Clamped & Placenta Expulsion** 
  + Typically the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is clamped & cut in the first \_\_\_\_\_\_\_\_\_\_\_\_\_ minutes of birth.
  + The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is delivered \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ minutes after birth.