

**Reproduction ch 18 pg
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Male reproductive system

- The male reproductive system works to produce sperm and deliver it to the female.
- Sperm are sex cells that are produced by the male reproductive organs called **testes** and are needed to fertilize an egg.
- Eggs, or ova (singular ovum) are the sex cells that are produced by the female reproductive organs called **ovaries**.

cont

- The process by which a sperm and an egg and their genetic material join to create a new human life is called **fertilization.**
- The process of producing a new human is called **reproduction.**
- How the male repro system works?

cont

- **Testes**: The testes (testicles) are the male reproductive organs that make sperm and testosterone. At puberty throughout a man's life, they produce several hundred million sperm each day.
- The sperm are made inside tightly coiled tubes called **seminiferous tubules**.
- Testosterone is the major sex hormone of males.

cont

- During puberty, test causes facial and body hair to grow, the shoulders to broaden, and the voice to deepen.
- The 2 testes rest in the **scrotum**, a skin-covered sac that hangs from the body.
- Sperm cannot survive in certain temperatures, this is why they are made outside the body.

Cont.

- The penis is the male repro organ that removes urine from the male and can deliver sperm to female.
- Urine passes through the urethra, a tube that starts at the bladder and ends at the opening of the penis.
- Sperm also leave through the urethra, but not at the same time urine does.

Males cont

- The tip of the penis is covered by a sheath of skin called the foreskin. This is sometimes removed by surgery after birth.
- This procedure is called circumcision.
- There have been debates over this procedure. Many do this for religious reasons, others for health reasons.

Epididymis and vas defrens

- Sperm first travel into a tightly coiled tube called an epididymis, which is where sperm go to mature and be stored.
- The mature sperm then move to the vas defrens, which is also a long tube. As the sperm travel through they mix with fluids made by 3 repro organs:
 - 1st: seminal vesicles: are found near the base of the bladder. They produce fluid that nourish the sperm and help it move easier.

Cont.

- **2nd: Prostate gland:** it encircles the urethra near the bladder. It secretes a fluid that protects the sperm from the acids found in the female repro system.
- **3rd: Cowper's glands:** are found near the urethra below the prostate. It secretes a fluid that protects the sperm from the acids in the male repro system.

Problems of the male repro system

- Good hygiene and preventive healthcare are important for maintaining repro health.
- Jock itch, cystitis, prostatitis, hernia, testicular torsion, undescended testes, prostate cancer, testicular cancer
- U can get any of these even with good health habits

Keeping male repro healthy

- Preventing problems:
- Prevent STD'S
- Prevent jock itch: it is a fungal infection, appears in groin area. Males who are physically active in hot and humid weather are more likely to get it.
- Wear dry clothing, do not stay sweaty.
- Avoid sharing towels.

cont

- Preventing ***trauma***: injuries due to an external force, such as being hit.
- Preventing ***hernias***: This happens when a piece of the intestine bulges into a weak place on the wall of the abdominals. Done by lifting or straining. Use your knees.
- Preventing ***infertility***: Male infertility means the inability to fertilize an egg. Can be genetic, but also from environmental conditions.

Testicular cancer

- It can occur in young men. It is the most common cancer in males between the ages of 15 and 35.
- You should have a yearly check-up for this.
- Prostate cancer occurs usually in older men. As you get older, testosterone can cause the prostate to enlarge.

Female repro system

- The function of the female repro is to make eggs and provide a place to carry the baby.
- How the female repro works:
- It is made up of several internal and external organs.

Ovaries

- The 2 ovaries are found deep within the pelvic area. The **ovaries** are the female repro organs that produce eggs and the hormones estrogen and progesterone.
- All of the eggs a female will ever have are in her ovaries when she is born.
- During puberty, estrogen causes the repro organs to mature into their adult shape and size. Estrogen causes the growth of hair as well, and strengthen bones.
- Both these hormones regulate the monthly release of an egg and prepare the body for pregnancy.

Vagina

- The female repro organ that connects the outside of the body to the uterus and receives sperm.
- Also part of the birth canal in which the baby travels.
- The urethra is above and separate from the vagina. It carries urine from the bladder to the outside of the body.

Fallopian tubes and uterus

- From the ovaries, the egg travels into the **fallopian tubes**: the female repro organs that transport an egg from the ovary to uterus.
- The **uterus** is the female repro organ that provides a place to support a baby. It is the size of your fist. It is a muscular organ.
- The uterus meets the vagina at its lower end called the **cervix**.

How the menstrual cycle works

- This occurs in most females from puberty to menopause. The **menstrual cycle** is a monthly series of hormone controlled changes that prepare the uterine lining for a pregnancy.
- Increasing levels of 2 hormones (FSH and LH) cause the maturation and release of an egg.
- The release of an egg is called **ovulation**.

Cont.

- Prior to ovulation, increasing levels of estrogen cause the uterine lining to thicken.
- This lining nourishes and supports the growing human during pregnancy.
- If pregnancy does not occur (egg not fertilized) estrogen and progesterone levels quickly fall.
- Menstruation is the breakdown and discharge of the uterine lining. Usually lasts from 3 to 7 days.

cont

- The average menstrual cycle lasts 28 days. This can vary from person to person, month to month. Ovulation usually occurs on the 14th day of the cycle.
- Environmental factors, stress, diet, travel, exercise, weight gain or weight loss, illness can impact this.

Problems of the female repro system

- Cystitis
- Vaginitis
- Delayed puberty
- Menstrual cramps
- PMS premenstrual syndrome
- Toxic shock syndrome
- Endometriosis

cont

- Ovarian cysts
- Cervical cancer
- How to keep the female repro system healthy:
- Prevent STD's
- Prevent vaginal irritation
- Relieve menstrual cramps
- Prevent infertility: the inability to get pregnant

Annual exams

- Females should have an annual exam, which is yearly.
- This is called a **pap smear**. It examines cells of the cervix. Prevents cancers

Sec 3 pregnancy and development

- How life begins: with the union of an egg and sperm. **Sexual intercourse**, how sperm is transferred to female. Millions of sperm are delivered.
- **Fertilization:** The sperm travel from the vagina through the uterus and into the fallopian tubes. Only a small # of sperm actually make it to the egg.

Fertilization cont.

- Once a sperm penetrates the egg, a chemical change prevents other sperm from entering the egg.
- The genetic material of the egg and sperm combine to form one cell, called a zygote.
- All the genetic information needed to create a human is found in the zygote.

Egg divides

- The zygote travels down the fallopian tube toward uterus. This journey takes about 3 to 5 days.
- As it travels, it divides into 2 cells, then 4, etc....

Embryo implants

- A developing human from fertilization through the first 8 weeks is called an **embryo**.
- The embryo travels from the fallopian tube into the uterus. Within 3 to 5 days, the ball of cells implants itself on the uterine wall. This is called **implantation**.
- Once implantation happens, a woman is said to be pregnant. Baby stays in the uterus until birth.

Placenta and support

- The growth of the baby in the uterus depends on a placenta. This is a blood vessel-rich organ that forms in a mother's uterus and provides nutrients and oxygen and removes wastes from baby.
- Most substances, including alcohol and drugs pass through the placenta to baby.

How the baby develops

- **1st trimester:** This is the 1st 3 months. It is a major time of growth and change. By the 4th week of development, the heart starts beating, arm and leg buds appear, and the eyes and brain begin to develop.
- The embryo is about $\frac{1}{4}$ inch long or about the size of a BB pellet.
- Surrounding the embryo is a thin, fluid filled membrane called the amnion.

cont

- The amnion protects the growing embryo.
- The umbilical cord is another new development, it connects the embryo to the placenta.
- The term for a developing human from the start of the 9th week of pregnancy until delivery is called a **fetus**.
- Brain waves can be detected and muscle movement begins. The bones and muscles are developing. By the end of the 1st trimester, all major body parts have formed. The most critical development is complete.

2nd trimester

- Is month 4 through 6. it is a time when the organ systems continue to develop. By month 4, the mother can feel the fetus move or “kick”.
- The repro organs can be recognized (girl or boy). By the end of this trimester, the fetus can hear and recognize voices.
- Hair forms on the body, head and facial features become apparent, fingers and toes grow nails. A fetus born towards the end of this trimester may be able to survive with medical assistance.

3rd trimester

- Month 7 through 9. Is a time when the fetus gains most of its weight. A large amount of vitamins and minerals from the mom are needed, (iron/calcium).
- By 8 months most fetuses are about 20 inches long. Brain develops further, and all other organs are almost complete. The fetus can grasp with their hands.

Keeping healthy before and during pregnancy

- Avoid alcohol and other drugs (including caffeine and tobacco). Can lead to all kinds of problems
- Maintain a good diet. A pregnant woman needs about 450 extra calories a day, but should not eat for 2!
- Take prenatal vitamins. Folic acid is very important, reduces birth defects

cont

- Get regular, moderate exercise. It improves circulation, prevents excessive weight gain.
- Have all medical conditions evaluated by doctor. Any pre-existing issues (diabetes, HIV, STD's).
- **Prenatal care** is the healthcare provided for a woman during her pregnancy. Should be checked every 4 weeks.

Problems during pregnancy

- Fetal alcohol syndrome
- Miscarriage
- Ectopic pregnancy: when the egg implants itself within the fallopian tube and not uterus.
- Toxemia
- Gestational diabetes
- Rh incompatibility
- Premature birth

Stages of childbirth

- Childbirth begins with the onset of labor and goes through 3 stages. Contractions of the uterine muscles are the start of labor. The contractions help move the baby along the birth canal.
- *Dilation*
- First stage, the uterus contracts which causes the cervix to dilate, or widen.

Dilation cont

- The membranes around the baby rupture, this is called water breaking. This is the amniotic fluid surrounding baby. The baby's head begins to push into the birth canal. The cervix and vagina have to dilate enough for the baby's head and body to pass. The first stage ends when the cervix is fully dilated to 10 centimeters.

Expulsion

- This is the second stage. The baby's head emerges fully and the shoulders rotate. An episiotomy may be done at this time. This is a surgical incision (cut) of the outer and of the vagina to allow for more room for baby. The second stage ends with the delivery of baby.

Placental

- The 3rd stage. It begins after the delivery of the baby and ends when the uterus expels the placenta (after-birth) and umbilical cord out of the mother's body.
- After the baby is born, the doctor's take the mucus from the mouth so they can breathe. Umbilical cord is cut and tied.
- Breast-feeding helps protect baby from infections and tummy problems.

Types of child birth

- Most mother's deliver a baby in a natural way, called "natural childbirth". Sometimes for health reasons, a woman cannot deliver this way. The baby is then delivered by **cesarean section, or C-section**. A cut is made on the mother's abdomen and the baby is taken out.
- This happens when: the baby is stressed, not head first, when feet are first (**breech birth**), or when the cord is around their necks, or mother is stressed.

Early development

- The fastest period of growth takes place from birth to the age of 1. By 2 months a baby will spend several hours a day awake but mostly sleeps. They can raise their heads and begin to smile.
- By 4 months, babies are rolling from front to back, and they can usually sleep the whole night.
- At 6 months, babies can sit up and have excellent head control. Most start crawling and begin walking by 1 year.

cont

- The 2's are marked by social independence, temper tantrums also begin. Toilet training begins.
- Between 5 and 6 years, most children are ready to begin school.
- By late childhood from 6 to 12, it is a dramatic intellectual and psychological changes.