**The Reproductive System**

1. **What is the Human Reproductive System?**

**Definition:** The system of organs and parts which function in reproduction consisting in the male especially of the testes, penis, seminal vesicles, prostate, and urethra and in females especially the ovaries, fallopian tubes, uterus, vagina, and vulva.

It is important to note that because **the location of the reproductive organs** overlaps the urinary system, the development of the reproductive system can also be described as **“the development of the urinary and reproductive organs”**.

1. **Specialists**

**\_\_\_ Obstetrician/Gynecologist A.** An expert with a Master of Science degree in

the understanding and adaptation to the medical, psychological, and familial implications of genetic contributions to disease.

**\_\_\_ Obstetric Nurses B.** Physicians trained in Reproductive

Endocrinology and Infertility to treat both infertility and hormonal dysfunctions.

**\_\_\_ Midwife C.** Professional specializing in pregnancy,

childbirth, postpartum, women’s sexual and reproductive health, and newborn care. They are sometimes nurses.

**\_\_\_ Doula D.** Physician who specializes in the prevention,

diagnosis, and treatment of cancer.

**\_\_\_ Genetic Counselor E.** An allied health professional who specializes

in the clinical management of breastfeeding.

**\_\_\_ Fertility Specialist F.** Physician specializing in the medical care of

infants, children, and adolescents.

**\_\_\_ Urologist G.** Physician who specializes in health of

reproductive system, breasts, pregnancy, childbirth, and the postpartum period.

**\_\_\_ Proctologist (Colorectal Surgeon) H.** Physician specializing in surgical and medical

diseases of the male and female urinary-tract system and the male reproductive organs.

**\_\_\_ Oncologist I.** Physician trained in anesthesia and

perioperative medicine.

**\_\_\_ Lactation Consultant J.** A nonmedical person who assists women

before, during, or after childbirth, as well as her spouse and family, by providing physical assistance and emotional support.

**\_\_\_ Anesthesiologist K.** Physicians specializing in the disorders of the

rectum, anus, and colon.

**\_\_\_ General Practitioner L.** Nurses who work with patients who are

attempting to become pregnant, are pregnant, or have recently delivered.

**\_\_\_ Pediatrician M.** Physician who specializes in comprehensive health care for all ages.

1. **The Male Reproductive System**

**Definition:**

The male reproductive system consists of a number of sex organs that play a role in the process of human reproduction. These organs are located on the outside of the body and within the pelvis.

**External Organs:**

1) : Male intromittent organ that delivers sperm.

\* : Removal of foreskin.

2) : Holds and protects the testicles.

3) and Muscles: during times of lower temperature, the

contracts and pulls the scrotum closer to the body while the

gives it a wrinkled appearance. When temperatures increase, these muscles relax to bring down the scrotum away from the body.

4) : Produce sperm and androgens (steroid hormone), primarily testosterone.

**Internal Organs:**

1) : a whitish mass of tightly coiled tubes cupped against the testicles, which acts as maturation and storage for sperm before they pass into the vas deferens.

2) : also known as the “sperm duct”; a thin tube approximately 30 cm long that starts from the epididymis to the pelvic cavity. It carries sperm from the epididymis to the ejaculatory duct.

3) : provide fluids that lubricate the duct and nourish sperm cells.

a.

b.

c.

1. **The Female Reproductive System**

**Definition:** The **female reproductive system** is made up of internal and external sex organs that function in human reproduction. The female reproductive system is immature at birth and develops to maturity at puberty to be able to produce ova and carry a fetus to full term.

**External Organs:**

All together, these make up the :

* **Mons Pubis:** a rounded mass of fatty tissue found over the pubic symphysis of the pubic bones
* **Pudendal Cleft:** the furrow at the base of the mons pubis where it divides to form the labia majora
* **Labia Majora:** two prominent longitudinal cutaneous folds that extend downward and backward from the mons pubis to the perineum. Also known as the “outer lips”.
* **Labia Minora:** two flaps of skin on either side of the human vaginal opening in the vulva, situated between the labia majora. Also known as the “inner lips.
* **Bartholin’s Glands:** two pea-sized glands that secrete mucus to lubricate the vagina.
* **Clitoris:** human female's most sensitive erogenous zone and generally the primary anatomical source of human female sexual pleasure
* **Vaginal Opening:** located at the outer end of the vulva, posterior to the opening of the urethra.

Women who have undergone **(**also known as

**)** may be missing the clitoris, labia majora, and/or labia minora and may have their labia or vaginal opening sewn.

**Internal Organs:**

1) : A fibromuscular canal from the outside of the body to the cervix of the uterus. Also called the “birth canal”.

2) : the “neck” of the uterus; the lower, narrow portion where it joins the upper part of the vagina.

3) : the major female reproductive organ also known as the “womb”. Provides mechanical protection, nutritional support and waste removal for the developing embryo and fetus.

4) : Two tubes leading from the ovaries into the uterus. On maturity of an ovum, the follicle and the ovary's wall rupture, allowing the ovum to escape and enter the Fallopian tube. There it travels toward the uterus.

5) : small, paired organs located near the lateral walls of the pelvic cavity. These organs are responsible for the production of the egg cells (ova) and the secretion of hormones.

* If a woman has undergone a , she does not have a uterus and may not have a cervix, ovaries, or fallopian tubes.
* (removal of ovaries) is frequently done together with a hysterectomy to decrease the risk of ovarian cancer.

1. **The Menstrual Cycle**

**Definition:** The menstrual cycle is the regular natural change that occurs in the female reproductive system (specifically the uterus and ovaries) that makes pregnancy possible.

The cycle is required for the production of , and for the preparation of the uterus for pregnancy.

The typical length of time between the first day of one **period** and the first day of the next is to days in young women and to days in adults

(an average of days).

Menstruation stops occurring after which usually occurs between 45 and 55 years of age.

Bleeding usually lasts around 2 to 7 days.

The cycle and cycle make up part of the Menstrual Cycle.

1. **Sex Education**

* **Sex education** is instruction on issues relating to:
  + Human Sexuality, including emotional relations and responsibilities
  + Human Sexual Anatomy
  + Sexual Activity
  + Sexual Reproduction
  + Age of Consent
  + Reproductive Health
  + Reproductive Rights
  + Safe Sex
  + Birth Control
  + Sexual Abstinence

1. **Sexually Transmitted Infections (STIs)**

Also known as (STDs) and (VD).

1. : 2. :

- Chancroid - Yeast Infection

- Chlamydia

- Gonorrhea

- Syphilis

3. : 4. :

- Trichomoniasis - Hepatitis B

- Herpes

- HIV/AIDS

- HPV (Human Papillomavirus)

5. :

- Crab louse (“crabs”)

- Scabies

1. **Birth Control**

**Definition:** Also known as  and  , is a method or device used to prevent pregnancy.

Planning, making available, and using birth control is called  **.**

Some cultures limit or discourage access to birth control because they consider it to be morally, religiously, or politically undesirable.

**Types of Birth Control**

* Sterilization:
  + Male:
  + Female:
* Intrauterine Devices (IUDs): both and
* Implantable Birth Control
* Hormone-Based Methods
  + Oral Pills
  + Patches
  + Vaginal Rings
  + Injections
* Physical Barriers
  + Condoms (Male and Female)
  + Diaphragm
  + Birth Control Sponge
* Fertility Awareness Methods (“Natural Family Planning”)
* Spermicide
* Withdrawal Before Ejaculation (“Pull Out Method”)

1. **Preconception and Genetic Counseling**

**Preconception Counseling:** Meeting with a healthcare professional (typically, a doctor or midwife) by a woman *before* attempting to become pregnant.

It generally includes a   for any potential complications of pregnancy as well as modifications of risk factors, such as:

* increasing folic acid intake to reduce the risk of neural tube defects
* counseling on smoking cessation, alcohol reduction, and medications that may compromise fetal development

**Genetic Counseling**: The process by which the patients or relatives at risk of an **inherited disorder** are advised of the consequences and nature of the disorder, the probability of developing or transmitting it, and the options open to them in management and family planning.

A is an expert with a Master of Science degree in genetic counseling.

* Work as members of a health care team and act as patient advocates as well as genetic resources to physicians.
* Provide information and support to families who have members with or  , and to families who may be at risk for a variety of inherited conditions.
* They identify families at risk, investigate the problems present in the family, interpret information about the disorder, analyze inheritance patterns and risks of recurrence, and review available **genetic testing** options with the family.

Genetic Counseling can occur before conception (ex. Tay-Sachs carriers) through to adulthood (ex. Huntington’s Disease).

1. **Infertility**

**Definition:** The inability of a person, animal or plant to reproduce by natural means.

Existing definitions of infertility lack uniformity, rendering comparisons in prevalence between countries or over time problematic.

**World Health Organization Definition of Infertility:** a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse (and there is no other reason, such as breastfeeding or postpartum amenorrhoea).

* is infertility in a couple who have never had a child.
* is failure to conceive following a previous pregnancy.
  + Infertility may be caused by infection in the man or woman, but often there is no obvious underlying cause.

A couple that tries unsuccessfully to have a child after a certain period of time is sometimes said to be  , meaning less fertile than a typical couple.

**In the United States**, couples are eligible for fertility treatments when:

* a woman under 35 has not conceived after months of contraceptive-free intercourse.
* a woman over 35 has not conceived after months of contraceptive-free sexual intercourse.

**Male Infertility:**

* Low Semen Quality
* Low Sperm Count
* Testicular Malformations
* Hormone Imbalance
* Blockage of Duct System
* Primary Ciliary Dyskinesia

**Female Infertility:**

* Ovulation Problems
* Tubal Blockage
* Pelvic Inflammatory Disease
* Age-Related Factors
* Uterine Problems
* Previous Tubal Ligation
* Endometriosis

**Examples of Infertility Treatments:**

* Fertility Medication
  + *Ex. Ovarian Stimulating Medication*
* Cervical Cap
* IUI (Intrauterine Insemination)
* Assisted Reproductive Technology
  + *Ex. In Vitro Fertilization (IVF)*
* Intracytoplasmic Sperm Injection (ICSI)

1. **Pregnancy, Childbirth, Termination, and Breastfeeding**

**Pregnancy,** also known as  , is the time during which one or more offspring develops inside a woman**.**

* **The first trimester**is from week through and includes conception.
  + **Conception** is when the sperm fertilizes the egg. The fertilized egg then travels down the fallopian tube and attaches to the inside of the uterus, where it begins to form the **embryo** and **placenta**.
  + The first trimester carries the highest risk of  (natural death of embryo or fetus.)
* **The second trimester** is from week through .
  + Around the middle of the second trimester, movement of the **fetus** may be felt.
  + At 28 weeks, more than % of babies can survive outside of the uterus if provided with high-quality medical care.
* **The third trimester** is from 29 weeks through 40 weeks.

Professionals involved in pregnancy management and childbirth:

* **Obstetricians**
* **Family Physicians**
* **Midwives**

improves pregnancy outcomes.It may include taking extra folic acid, avoiding drugs and alcohol, regular exercise, blood tests, and regular physical examinations.

**Childbirth:**

* **Stage 1: Latent Phase**
  + Beginning at the point at which the woman perceives regular uterine contractions.
  + , the thinning and stretching of the cervix, and  occur during the closing weeks of pregnancy and is usually complete or near complete by the end of the latent phase.
* **Stage 1: Active Phase**
  + In the US, the definition of active labor was changed from 3 to 4 cm, to 5 cm of cervical dilation for , mothers who had given birth previously, and at 6 cm for , those who had not given birth before.
* **Stage 2: Fetal Expulsion**
  + Begins when the cervix is fully dilated (10 cm), and ends when the baby is born.
* **Stage 3: Placenta Delivery**
  + The period from just after the fetus is expelled until just after the placenta is expelled.
* **Stage 4: Postnatal**
  + The period beginning immediately after the birth of a child and extending for about .
  + The terms postpartum and postnatal are often used to describe this period.

**Delivery by Cesarean Section:**

* The use of  to deliver one or more babies.
* A caesarean section is often performed when a would put the baby or mother at risk.
* A caesarean delivery may be performed based upon the shape of the mother's pelvis or history of a previous C-section.
* However, some C-sections are performed without a medical reason, upon request by someone, usually the mother.

Complications of labor and factors increasing the risk associated with vaginal delivery, such as:

Abnormal Presentation Fetal Distress

Cord Prolapse Uterine Rupture

Hypertension after amniotic rupture Tachycardia after amniotic rupture

Placenta Problems (praevia, abruption, or accreta) Failed labor induction

Failed instrumental delivery (forceps, vacuum, etc.) Large baby (macrosomia)

Umbilical cord abnormalities

**Other Pregnancy Related Complications:**

High Blood Pressure Disorders Gestational Diabetes

Iron-Deficiency Anemia Severe Nausea and Vomiting

Maternal Bleeding Complications from Abortion

Maternal Sepsis Obstructed Labor

Pulmonary Embolism Pregnancy Induced Hypertension

Postpartum Depression Postpartum Psychosis

Thromboembolic Disorders Ectopic Pregnancy

PUPPP (Pruritic Urticarial Papules and Plaques of Pregnancy)

Hyperemesis Gravidarum

**Premature Birth, Miscarriage, Stillbirth, and Abortion**

* **Premature Births and Stillbirths**
  + A pregnancy that ends before weeks of gestation resulting in a live-born infant is known as a "**premature birth**" or a "**preterm birth**”.
  + When a fetus dies in utero after viability, or during delivery, it is usually termed "**stillborn**".
  + Premature births and stillbirths are generally not considered to be miscarriages although usage of these terms can sometimes overlap.
* **Abortion and Miscarriage**
  + **Abortion** is the ending of pregnancy by removing a fetus or embryo before it can survive outside the uterus.
    - Types: Medical (pharmaceuticals), Surgical, and Labor Induction.
  + An abortion that occurs is also known as a **miscarriage**.
    - Miscarriage is the unintentional expulsion of an embryo or fetus before the 24th week of gestation.
  + An abortion may be caused purposely and is then called an **induced abortion**, or less frequently, "induced miscarriage”.
  + A similar procedure after the fetus could potentially survive outside the womb is known as a " ”.

**Breastfeeding**

* Lactation describes the secretion of milk from the  and the period of time that a mother lactates to feed her baby.
  + Also known as nursing.
* Health professionals recommend that breastfeeding begin within the first hour of a baby's life and continue as often and as much as the baby wants.
* are available to help mothers breastfeed.
* Mothers may pump milk so that it can be used later when breastfeeding is not possible.

1. **Menopause**

**Definition:** Also known as the climacteric, is the time in most women's lives when menstrual periods stop permanently, and they are no longer able to bear children.

* Menopause typically occurs between and years of age.
* Medical professionals often define menopause as having occurred when a woman has not had any vaginal bleeding for .
* It may also be defined by a decrease in  by the ovaries.
* In those who have had surgery to remove their uterus but still have ovaries, menopause may be viewed to have occurred at the time of the surgery or when their hormone levels fell.

**Premature Ovarian Failure:** The cessation of ovarian function before the age of .

**Premenopause**: the years leading up to the last period, when the levels of reproductive hormones are becoming more variable and lower, and the effects of hormone withdrawal are present.

**Perimenopause**: the menopause transition years, a time  *and*  the date of the final episode of flow. This transition can last for four to eight years.

**Postmenopause**:women who have not experienced any menstrual flow for a minimum of

, assuming that they have a uterus and are not pregnant or lactating.

**Symptoms: Treatments for Symptoms:**

Hot Flashes Menopause Hormone Therapy

Vaginal Dryness Gabapentin

Trouble Sleeping Selective Serotonin Reuptake Inhibitors

Mood Changes