Maternity: Test 1 Review

Key Terms:

Certified Nurse Midwife (CNM): Has postgraduate training in the care of normal pregnancy and delivery and is certified by the American College of Nurse Midwives.

Doula: A birth assistant who provides emotional, physical, and educational support to the woman and family during childbirth and the postpartum period.

Mortality: The incidence or number of people who have died over a specific period.

Maternal Mortality Ratio: The annual number of deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, per 100,000 live births, for a specific year.

Fetal Mortality Rate: The intrauterine death of a fetus who is 20 weeks of gestation or more per 1,000 live births.

Neonatal Mortality Rate: The number of infant deaths occurring in the first 28 days of life per 1000 live births.

Infant Mortality Rate: Number of deaths occurring in the first 12 months of life. Also, documented as the number of deaths of infants younger than 1 year of age per 1,000 live births.

Childhood Mortality Rate: The number of deaths per 100,000 population in children 1 to 14 years of age.

Morbidity: The measure of the prevalence of a specific illness in a population at a particular time.

Family: The basic social unit.

Family Structure: The composition of people who interact with one another on a regular, recurring basis in socially sanctioned ways.

Foster Care: A situation in which a child is cared for in an alternative living situation apart from his or her parents or legal guardians.

Discipline: Increasing desirable behavior and decreasing or eliminating undesirable behavior.

Punishment: Involves a negative or unpleasant experience or consequence for doing or not doing something.

Temperament: The manner in which a child interacts with the environment.

Child Abuse and Neglect: Any recent act of failure to act on the part of a parent or caretaker that results in death, serious physical or emotional harm, sexual abuse or exploitation, or an act or failure to act that presents an imminent risk of serious harm to a child.

Enculturation: Acquiring, knowledge and internalizing values, learning patterns of cultural behaviors from their family or community.

Cultural Competence: The ability to apply knowledge about a clients culture so that health care interventions can be adapted to meet the needs of the client.

Ethnicity: Involves group membership by virtue of common ancestry.

Ethnocentrism: A belief that ones own ethnic group is superior to other ethnic groups.

Spirituality: A basic human quality involving the belief in something greater than oneself and a faith that affirms life positively.

Religion: An organized way of sharing beliefs and practicing worship.

Resilience: The qualities that enable a person to cope with significant adverse evenets or stresses and still function competently.

Mature Minor: Adolescent usually over 14 is sufficiently mature and intelligent to make the decision for treatment.

Assent: The child’s participation in the decision making process about health care.
Dissent: Disagreeing with the treatment plan.

Learning Objectives:

Analyze the key milestones in the history of maternal, newborn, and child health and health care

1700s: Female midwives attended the majority of at home births,
1800s: Shift from midwives to doctors. Obstetrician was formed from latin “To Stand Before”. The first C-Section was performed in 1894. The X-Ray was developed in 1895 to access pelvis size for birthing.
1900s: Twilight Sleep was used on women for childbirths. By 1940 50-75% of births were in hospital. Nurseries were started. Amniocentesis was first performed to assess fetal growth in 1966. In 1970’s and 80’s birth reverted back to natural, non-medicated way.
2000s: 1 in 4 women receive c-section.

Examine the Evolution of Maternal, Newborn, and Pediatric Nursing

History of Maternal and Newborn: During the 17th-18th century women giving birth usually died as a result of exhaustion, dehydration, infection, hemorrhage, or seizures. 50% of ALL children died before age 5.
-Granny Midwives handled the birthing process at homes, learning through an apprenticeship with a more experienced midwife.
-Early 1900s physicians attended about half the births in the US.
-Midwives often cared for women who could not afford a doctor.
-Attraction to hospital for pain management, which was not provided at home births.
-1950s natural child birth became popular.
-Public Health Efforts led to a decrease in infant and child deaths.
-Late 19th & 20th centuries, cities became healthier places to live due to urban public health improvements such as sanitation services and treated municipal water.
-Penicillin reduced childhood diseases
-End of 20th century, unintentional injuries surpassed disease as the leading cause of death for children greater than 1 years old.
-Technological advancements changed healthcare for the better, unfortunately poor kids don’t get the same treatment.

Evolution of Pediatric Nursing: 1870 the first pediatric professorship for a physician was awarded in the US to Abraham Jacobi, known as the father of pediatrics.
-Lillian Wald established the HENRY STREET SETTLEMENT HOUSE in New York City, this was the start of public health nursing.
-This facility provided medical and other services to poor families, these services included home health visits to teach mothers about health care.
-Public school nursing started in 1902 with appointment of Lina Rogers.
-1960s led to the Nurse Practitioner role.
-1980s, developed Maternal-Child health standards to provide important guidelines for delivering nursing care.

**Compare the past definitions of health and illness to the current definitions, as well as the measurements used to assess health and illness in children**

At one time health was defined simple as the absence of disease. Health was measured by monitoring the mortality and morbidity of a group.
-The focus of health has shifted to disease prevention, health promotion, and wellness. The new definition of Health, defined by the WHO is, a state of complete physical, mental, and social well being, and not merely the absence of disease or infirmity.

**Assess the Factors that affect maternal and child health**

**Family:** The family greatly influences the development and health of its members. Children learn health care activities, health beliefs, and health values from their family. The family’s structure, the roles assumed by family members, and social changes that affect the family life can influence the woman and child's health status. “The lifestyle of the parents basically is the lifestyle of the children”.

**Genetics:** The child’s biological traits, including gender, race, some behavioral traits, and the presence of certain diseases or illnesses, are directly linked to genetic inheritance.
-A person's gender can influence many aspects such as physical characteristics, attitudes and behaviors. EX: Scoliosis is more common in females and color blindness in males.
-Race: EX- Sickle cell anemia occurs more often in African Americans.
-Temperament

**Society:** Major impacts of health include social roles, socioeconomic status, the media, and the expanding global nature of society.
-Social roles are generally carried out in groups with which the individual has intimate daily contact, such as the family, school, or workplace.

**Culture**

**Chapter 2**

**Key Terms:**

**Family Centered Care:** The collaborative partnership among the individual, family, and caregivers to determine goals, share information, offer support, and formulate plans for health care.

**Evidence-Based Nursing Practice:** Involves the use of research or evidence in establishing a plan of care and then implementing that care.
Case Management: A collaborative process involving assessment, planning, implementation, coordination, monitoring, and evaluation.

Atraumatic Care: The delivery of care that minimizes or eliminates the psychological and physical distress experienced by children and their families in the health care system.

Verbal Communication: Communicating through use of words, either written or spoken.

NonVerbal Communication: AKA Body language, includes attending to others and active listening.

Health Literacy: Ability to read, understand, and use of health care info to make appropriate health care decisions.

Epidemiology: Study of causes, distribution and control of disease in a population.

Family centered care recognizes the concept of the family as the constant. The health and functioning ability of the family influences and impacts the health of the client and other members of the family. Family-centered care recognizes and respects family strengths and individuality, encourages referrals for family support, and facilitates collaboration.

-Open, honest lines of communication are essential for nurses. The use of an interpreter may be necessary to ensure effective communication with women, children, and their families in the community setting. Maintaining confidentiality and privacy are key.

-Nurses play a major role in educating women, children, and their families. For children, teaching is provided based on the child’s developmental level.

-Discharge Planning provides a comprehensive plan for the safe discharge of a client from a health care facility and for continuing safe and effective care in the community. Case management focuses on coordinating healthcare services while balancing quality and cost outcomes. Both contribute to improved transition from the hospital to the community for women, children, their families, and the health care team.

-Advocacy and Resource management help ensure that the client and family have the necessary resources and appropriate health care services available to them.

Chapter 3

Key Terms:

Vulva: The external female reproductive organs.

Vagina: Highly distensible canal situated in front of the rectum and behind the bladder.

Uterus: Pear shaped muscular organ at the top of the vagina.

Endometrium: The mucosal layer that lines the uterine cavity in non pregnant women.

Cervix: The lower part of the uterus, opens into the vagina and has a channel that allows sperm to enter the uterus and menstrual discharge to exit.

Ovulation: When the ovaries release an egg.

Fallopian Tubes: Hollow, cylindrical structures that extend 2-3 inches from the upper edges of the uterus toward the ovaries.

Ovaries: A set of paired glands resembling unshelled almonds that are set in the pelvic cavity below and to either side of the umbilicus.
Breasts: Accessory organs of the female reproductive system that are specialized to secrete milk following pregnancy.

Menstruation: The normal, predictable physiologic process whereby the inner lining of the uterus is expelled by the body.

Menarche: The start of menstruation in females, is 12.8 years old, with a range between 8 and 18.

Gonadotropin-Releasing Hormone (GnRH): Secreted from the hypothalamus in a pulsatile manner throughout the reproductive cycle. It pulsates slowly during the follicular phase and increases during the luteal phase. GnRH induces the release of FSH and LH to assist with ovulation.

Follicle Stimulating Hormone (FSH): Secreted by the anterior pituitary gland and is primarily responsible for the maturation of the ovarian follicle. FSH secretion is highest and most important during the first week of the follicular phase of the reproductive cycle.

Luteinizing Hormone (LH): Secreted by the anterior pituitary gland and is required for both the final maturation of preovulatory follicles and luteinization of the ruptured follicle. As a result, estrogen production declines and progesterone secretion continues. Thus, estrogen levels fall a day before ovulation, and progesterone levels begin to rise.

Estrogen: Secreted by the ovaries and is crucial for the development and maturation of the follicle.

Progesterone: Secreted by the corpus luteum. Progesterone levels increase just before ovulation and peak 5-7 days after ovulation.

Ovarian Cycle: The series of events associated with a developing oocyte (Ovum or Egg) within the ovaries. Women are born with a single lifetime supply of ova.

- **Follicular Phase:** The phase when the follicles in the ovary grow and form a mature egg.
  - Starts on day 1 of menstrual cycle and continues until ovulation, approximately 10-14 days later.
  - The hypothalamus initiates this phase.
  - Increasing levels of estrogen secreted from the maturing follicular cells and the continued growth of the dominant follicle cell induce proliferation of the endometrium and myometrium.
  - Hypothalamus-> pituitary gland releases FSH-> Stimulates the very to produce 5-20 immature follicles.
  - Each follicle holds an immature oocyte or egg. The follicle will soon rupture and expel a mature oocyte in the process of ovulation.
  - A surge in LH from the ANTERIOR PITUITARY GLAND is actually responsible for affecting the final development and subsequent rupture of the mature follicle.

- **Ovulation:** A mature follicle ruptures in response to that surge of LH, releasing a mature oocyte. This usually occurs on day 14 in a 28 day cycle.
  - When ovulation occurs, there is a drop in estrogen.
  - Typically ovulation occurs 10-12 hours after the LH peak and 24-36 hours after estrogen levels peak.
  - Lifespan of ovum is 24 hours unless it meets with sperm.
  - During ovulation, cervix produces thin, clear, stretchy slippery mucus that is designed to help help the sperm travel up through the cervix to meet the ovum for fertilization.
  - Ovulation takes place 14 days before menstruation.

- **Luteal Phase:** Begins at ovulation and lasts until the menstrual phase of the next cycle.
  - Days 15-28 of a 28 day cycle. After follicle ruptures as it releases the egg, it closes and forms a corpus luteum.
  - Corpus Luteum secretes increasing amounts of the hormone progesterone, which interacts with the endometrium to prepare it for implantation.
  - Progesterone secreted by the corpus lute causes the temp of body to rise slightly until the start of the next period.

Endometrial Cycle:
**Proliferative Phase:** Enlargement of the endometrial glands in response to increasing amounts of estrogen.
- Blood vessels dilate and the endometrium increases in thickness dramatically from .5-5mm in height to prepare for implantation of the ovum.
- Starts on day 5 of menstrual cycle and lasts to the time of ovulation.
- This phase coincides with the follicular phase of the ovarian cycle.

**Secretory Phase:** Begins at ovulation to about 3 days before the next menstrual period.
- This phase lasts from day 15 to day 28 and coincides with the luteal phase.
- In absence of fertilization by day 23 of the menstrual cycle, the corpus luteum begins to degenerate and consequently ovarian hormones levels decrease.
- As Estrogen and Progesterone levels decrease, the endometrium undergoes involution.

**Ischemic Phase:** IF fertilization does not occur, the ischemic phase begins.
- Estrogen and progesterone levels drop sharply during this phase as the corpus luteum starts to degenerate.
- Spasm of arterioles, resulting in ischemia of the basal layer.
- Ischemia leads to shedding of the endometrium down to the basal layer, and menstrual flow begins.

**Menstrual Phase:** Begins as the spiral arteries rupture secondary to ischemia, releasing blood into the uterus, and the sloughing of the endometrial lining begins.
- If fertilization does not occur, corpus Luteum degenerates.
- The beginning of the menstrual flow marks the end of one menstrual cycle and the start of a new one.
- Most women report bleeding for an average of 3-7 days.
- 1 ounce per cycle.

**Chapter 4**

**Amenorrhea:** Absence of menses during the reproductive years.
- Normal in prepubertal, pregnant, postpartum, and postmenopausal females.

**Primary Amenorrhea:**
1) Absence of menses by age 14, with absence of growth and development of secondary sexual characteristics or
2) Absence of menses by age 16, with normal development of secondary sexual characteristics.

**Therapeutic Management for Primary:** Depends on the underlying disorders.
- If pituitary tumor is cause, might be treated with drug therapy, surgical resection, or radiation.
- Surgery may be needed to correct any structural abnormalities of the genital tract.

**Therapeutic Management for Secondary:**
- Cyclic progesterone, when the cause is involution, or oral contraceptives
- Bromocriptine to treat hyperprolactinemia
- Nutritional counseling to address anorexia, bulimia, or obesity
- GnRH when the cause is hypothalamic failure
- Thyroid hormone replacement, when the cause is hypothyroidism.

**Nursing Assessment:** Thorough health history and physical examination.
- Questions about women’s menstrual history
- Past illnesses, hospitalizations and surgeries, obstetric history, use of prescription drugs or OTC drugs.
- Physical Examination: Nutritional status and general health.
- Sensitive and gentle approach to the pelvic examination is critical in young women.
- Anorexia symptoms: Hypothermia (low fat for warmth), bradycardia, hypotension.
- Facial hair and acne might be evidence of an androgen excess secondary to a tumor.
- Presence or absence of axillary and pubic hair may indicate adrenal and ovarian hypo secretion or delayed puberty.

**Diagnostic Tests:**
- Karyotype; might be positive for **Turners Syndrome** (defective development of the ovaries)
- Ultrasound to detect ovarian cysts.
- Quantitative human chorionic gonadotropin (hCG) test to rule out pregnancy.
- Thyroid function studies to determine thyroid disorder
- Prolactin Level (elevated level might indicate pituitary tumor)
- FSH level (elevated might indicate ovarian FAILURE)
- LH level (elevated level might indicate gonadal dysfunction)
- 17- Ketosteroids (an elevated level might indicate an adrenal tumor)

**Nursing Management**

Counseling and Education are PRIMARY INTERVENTIONS.
- Inform the woman purpose of each diagnostic test, how it is performed, and when the results will be available to discuss with her.
- Listening sensitively, interviewing, and presenting treatment options are paramount to gain the women cooperation and understanding.
- Nutritional Counseling is also VITAL for managing the disorder.

**Dysmenorrhea:** Refers to painful menstruation. AKA *Cyclic Perimenstrual pain*. Very frequent and very painful uterine contractions.

*Caused by increased Prostaglandin production by the endometrium in an ovulatory cycle*
- These levels are highest during the first 2 days of menses, when symptoms peak.

**Therapeutic Management:**

Vary from OTC remedies to hormonal control.
- Satisfactory pain relief is difficult to achieve and alternative options are increasingly being sought.
- Complementary therapies such as ACUPUNCTURE, are gaining popularity and the evidence base for their use is growing.
  - **Therapeutic intervention is DIRECTED toward PAIN RELIEF and building coping strategies that will promote a productive lifestyle.**

**Health history and Clinical Manifestations**

Ask questions pertaining to Menstrual cycle.
- When was first period
- Have they always been painful
- When do you feel the pain
- Do you have any other symptoms
- etc.

Affected women experience **SHARP, INTERMITTENT, SPASMS OF PAIN**, usually in the suprapubic area.

**Lab Tests and Diagnostic Tests**

- CBC to rule out Anemia
- Urinalysis to rule out bladder infection
- Pregnancy test (HCG level) to rule out pregnancy
- Cervical Culture to exclude STI
- Erythrocyte sedimentation rate to detect an inflammatory process
- Stool Guaiac test to exclude GI bleed
- Pelvis or vagina ultrasound to detect pelvic masses or cysts

**Nursing Management**

- Educating the client about the normal events of the menstrual cycle and the etiology of her pain is paramount in achieving a successful outcome.
- Provide monthly graphs or charts to record menses, the onset of pain, the timing of meds, relief afforded, and coping strategies used. This involves the women in her care.
- Explain in detail the dosing regimen and side effects of the medication therapy selected.
- NSAIDS are commonly prescribed.
  - Primary goal of NSAIDS is to preempt the production of prostaglandins.
  - Encourage women to apply a heating pad or warm compress to alleviate menstrual cramps.

**Dysfunctional Uterine Bleeding (DUB):** Disorder that occurs most frequently in women at the beginning and end of their reproductive years. Defined as irregular, abnormal bleeding, that occurs with no identifiable anatomic pathology.
- Related to hormone disturbance
- DUB is similar to several other types of uterine bleeding disorders and sometimes overlap
  - Menorrhagia (abnormally long, heavy periods)
  - Oligomenorrhea (bleeding occurs at intervals of more than 35 days)
  - Metrorrhagia (Bleeding between periods)
  - Menometrorrhagia (bleeding occurs at irregular intervals with heavy flow lasting more than 7 days)
  - Poly-menorrhoea (too frequent periods)

**Therapeutic Management:**
Depends on the cause of the bleeding, when known, the underlying cause of the problem is treated. Otherwise the goal is to normalize the bleeding, correct the anemia, prevent or diagnose early cancer, and restore quality of life.
- Oral Contraceptives are used as cycle regulation as well as contraception
- Estrogens: causes vasospasm of the uteri arteries to decrease bleeding.
- Progestins: Used to stabilize an estrogen primed endometrium.
- Oral Contraceptives: regulate the cycle and suppress the endometrium
- NSAIDS: Inhibit prostaglandin in ovulatory menstrual cycles.
- Progesterone-releasing IUSs: Suppress endometrial growth
- Androgens: Create a high androgen/low estrogen environment that inhibits endometrial growth
- Iron Salts: replenish iron stores lost during heavy bleeding.

**Clinical Manifestations:** Vaginal bleeding between periods, irregular menstrual cycles, infertility, mood swings, hot flashes, vaginal tenderness, variable menstrual flow.

**Nursing Management:**
Educate the client about normal menstrual cycles and the possible reasons for her abnormal pattern. Inform the woman about treatment options.
- Instruct client about side effects for any medications.
- Anti-emetics for estrogens, eat light before.

**Premenstrual Syndrome (PMS):** Describes a constellation of recurrent symptoms that occur during the LUTEAL phase or last half of the menstrual cycle and resolve with the onset of menstruation.
  - Symptoms can be categorized as.
    - A-Anxiety: Difficulty sleeping, tenseness, mood swings, clumsiness.
    - C-Craving: Cravings for sweets, salty foods, chocolate
    - D-Depression: Feelings of low self-esteem, anger, easily upset
    - H-Hydration: Weight gain, abdominal bloating, breast tenderness
    - O-Other: hot flashes, cold sweats, nausea, change in bowel habits, acne or pain, dysmenorrhea.
**Endometriosis:** One of the most common gynecologic diseases. Bits of functioning endometrial tissue are located outside of their normal site, the uterine cavity. “Pieces” of functioning tissue get lodged in fallopian tubes, between the vagina and rectum, and the bowels, and will bleed when the endometrial bleeds causing “mini periods”.

- The two most common symptoms are INFERTILITY and PELVIC PAIN.
- The cardinal sign is the presence of tender nodular masses on the uterosacral ligaments, the posterior uterus, or the posterior cul-de-sac
- Nurses can offer a thorough explanation of the condition and set up appointments for imagine studies and laprascomy.

**Infertility:** The inability to conceive a child after 1 year of regular sexual intercourse unprotected by contraception. -Secondary infertility is the inability to conceive after a PREVIOUS pregnancy.

**Contraception:** Any method that prevents conception or child birth, including oral contraceptives, sterilization of the female, and the male condom.

**Fertility Awareness:** Refers to any natural contraceptive method that does not require hormones, pharmaceutical compounds, physical barriers, or surgery to prevent pregnancy.

EX: timing the women’s fertility period.

**Cervical Mucus Ovulation Method:** Used to assess the character of the cervical mucus. Cervical mucus changes in consistency during the menstrual cycle. Plays a vital role of fertilizing the egg.

**Basal Body Temperature (BBT):** Refers to the lowest temperature reached on AWAKENING.

- Preovulation temperatures are suppressed by estrogen
- Postovulation temperatures are increased under the influence of heat inducing progesterone.

**Symphothermal Method:** Relies on a combo of techniques to recognize ovulation, including BBT, cervical mucus changes, alterations in the position and firmness of the cervix, and other symptoms of ovulation, such as increased libido, etc.

**Standard Days Method (SDM):** Women with menstrual cycles between 26-32 days long can use the SDM to prevent pregnancy by avoiding unprotected intercourse on days 8-19 of their cycles.

**Coitus Interruptus:** “Pull Out” method.

**Lactational Amenorrhea Method (LAM):** Effective temporary method of contraception. Continuous breastfeeding can postpone ovulation, thus prevent pregnancy.

**Menopausal Transition:** The transition from a woman’s reproductive phase of her life to her final menstrual period.

*Humans are virtually the only species to outlive their reproductive capacities.*

- Affects all body systems
- Brain: Hot flashes, disturbed sleep, mood and memory problems.
- Cardiovascular: Lower levels of high density lipoprotein (HDL) and increased risk of CVD.
- Skeletal: rapid loss of bone density that increases risk of osteoporosis.
- Breasts: Replacement of duct and glandular tissues by fat.
- Genitourinary: Vaginal dryness, stress incontinence, cystitis.
- Integumentary: Dry, thin skin and decreased collagen levels.
- Body Shape: More abdominal fat, waist size that swells relative to hips.

**Dyspareunia:** Difficult or painful sex.

**Chapter 9**

**Intimate Partner Violence (IPV):** Actual or threatened physical or sexual violence or psychological/emotional abuse.

**Cycle of Violence:** Tension-Building Phase, Acute Battering Phase, and the Honeymoon Phase.
**Tension Building:** Longest phase, tension escalates between the couple. Excessive drinking, jealousy, or other factors might lead to name calling, hostility, and friction. He is on Edge.

**Acute Battering:** Explosive of violence. The batterer loses control both physically and emotionally. Victim may be assaulted or murdered. Most victims consider themselves lucky that abuse was not worse, no matter how severe the injuries. They often deny the seriousness of their injuries and refuse to seek medical treatment.

**Honeymoon:** Period of calm, loving, contrite behavior on the part of the batterer. May be genuinely sorry for the pain he caused Expresses guilt.

**Battered Woman Syndrome:** The woman experienced deliberate and repeated physical or sexual assault by an intimate partner. She is terrified and feels trapped, helpless, and alone. She reacts to any expression of anger or threat by avoidance and withdrawal of behavior.

**Female Genital Cutting (FGC):** AKA female genital mutilation (FGM) or female circumcision.
- Removal of clitoris (Type 1)
- Removal of Clitoris and labia minora (Type 2)
- Removal clitoris, labia minora, labia majora, and then suturing remaining tissue, leaving a small opening for urination, menstruation, intercourse, childbirth. (Type 3)

**Chapter 10**

**Preembryonic Stage:** Fertilization through the second week.

**Embryonic Stage:** End of the second week through the eighth week.

**Fetal Stage:** End of the eight week until birth.

**Fertilization:** Also known as conception.

**Embryonic Stage:** Begins at day 15 AFTER conception and continues through WEEK 8.
- Basic structures of ALL major body organs and the main external features are completed during this time period.
- Amniotic Fluid surrounds the embryo and increases in volume as the preg. progresses, reaching 1L at term
- Amniotic Fluid is transported from the maternal blood across the amnion and fetal urine.
- Volume of Amniotic Fluid is important in determining fetal well being.

Too Little amniotic fluid (Less than 500mL at term) is called **Oligohydramnios.**
Too much amniotic Fluid (more than 2000 mL at term) is called **Hydramnios.** Both associated with maternal diabetes, neural tube defects, chromosomal deviations, and malformations of the central nervous system.

Placenta develops end of the second week, the umbilical is formed from the AMNION at that time.
- Whartons Jelly surrounds the 3 blood vessels in the umbilical cord to prevent compression, which would cut off fetal blood and nutrient supply.
- The cord reaches its maximum length at 30 weeks
- THE PLACENTS IS USUALLY COMPLETED BY 12 WEEKS
- hCG preserves the corpus Luteum and its progesterone production so that the endometrial lining of the uterus is maintained.

**Fetal Stage:** Average pregnancy lasts 280 Days from the first day of the last menstrual period. The fetal stage is the time from the end of the 8th week until birth.
- Longest period of prenatal development.
- Mature enough to be called a fetus

**Genetics:** Study of heredity and its variation.
**Genomics:** Study of all genes and includes interactions among genes as well as interactions between genes and the environment.

Any change in gene structure or location leads to a mutation, which may alter the type and amount of protein produced.
 Allele: One of Two or more alternative versions of gene at a given position or locus on a chromosome that imparts the same characteristic of that gene.

Mosaicism: The abnormality do not show up in every cell, only some cells or tissues carry the abnormality.

Monosomies: Only 1 copy of a particular chromosome instead of the usual pair. (an entire single chromosome is missing)

Trisomies: There are 3 of a particular chromosome instead of the usual 2. An entire single chromosome is added.

Genetic Counseling: Communication and educational process where the genetic influence of health is explained along with info regarding a specific genetic disorder, its transmission, its inheritance, and options available in management and family planning.

Chapter 11

A pregnancy is divided into three trimesters of 13 weeks each.

Ballotttement: Examiner pushes against the woman’s cervix during a pelvic examination and feels a rebound from the floating fetus.

Braxton Hicks Contractions: Begin during the FIRST Trimester. Spontaneous, irregular, and painless contractions. Continue throughout pregnancy becoming especially noticeable during the last month, when they function to thin out or efface the cervix before birth.

Hegar’s Sign: Softening and compressibility of the lower uterine segment results in exaggerated uterine anti-flexion during the early months of pregnancy, which adds to urinary frequency.

Goodell’s Sign: Cervix begins to soften due to vasoconstriction.

Chadwick’s Sign: Increased vascularization of the cervix (Blueish cervix)

Physiologic Anemia of Pregnancy: Plasma increase exceeds the increase of RBC production, normal hemoglobin and hematocrit values decrease.

Linea Nigra: Skin in the middle of the abdomen may develop a pigmented line, which extends from the umbilicus to the pubic area.

Dietary Reference Intakes (DRI’s): They recommend pregnant women to take supplements of 30mg of ferrous iron and 400 to 800mcg of folic acid per day.

Pica: The compulsive ingestion of nonfood substances. (Soil, Clay, Ice, Laundry Starch)

Presumptive Signs (Subjective) of Pregnancy:
- Signs that the mother can perceive.
- The most obvious sign is absence of menstruation. (Though that is not a reliable sign of pregnancy).
- Fatigue, breast tenderness, nausea and vomiting, Amenorrhea, Urinary Frequency, Hyperpigmentation of the skin, quickening, uterine enlargement, and breast enlargement.

Probable (Objective) Signs of Pregnancy
-Signs that can be detected on physical examination by a health care professional.
-Common Signs: softening of the lower uterine segment (Hegars Sign), softening of the cervix (Goodells sign), and a blueish purple coloration of the vaginal mucosa and cervix (Chadwicks sign)
- Other probable signs include changes in the shape and size of the uterus, abdominal enlargement, Braxton Hicks contractions, and Ballotttement.
Positive Signs of Pregnancy
- Usually within 2 weeks after a missed period, enough subjective symptoms are present so that a woman can be reasonably sure she is pregnant.
- **Visualizing the fetus by ultrasound, palpating for fetal movements, and hearing a fetal heartbeat are all signs that make the pregnancy a certainty.**

Physiologic Changes that occur During Pregnancy

**Uterus**
- Uterus undergoes a tremendous increase in size, weight, length, width, depth, volume, and overall capacity thought pregnancy.
- Weight goes from 70g to about 1100-1200g at term. (38 Weeks.)
- Blood vessels elongate, enlarge, dilate, sprout new branches, LARGE increase in uterine blood flow.
- Uterus remains in pelvic cavity for first 3 months of pregnancy
- Then Ascends into abdomen
- As it grows it presses on the bladder, Urinary Frequency increases
- Last trimester can cause Vena Cava compression, which causes orthostatic stress.
- Uterus starts as pear shape then becomes ovoid as length increases over width.
- By 20 weeks the funds is at the level of the umbilicus.
- Fundus reaches highest level which is the Xiphoid process and 36 weeks.
- At 38 Weeks fundal height drops as the fetus begins to descend and engage into the pelvis.
- By 40 weeks the fetal head begins to descend and engage in the pelvis which is called LIGHTENING.
- First time pregnancy, lightening occurs 2 WEEKS BEFORE LABOR, for previous pregnancy, begins ONSET OF LABOR.
- Breathing becomes easier because of the descent, not urinary frequency occurs again because of the pressure on the bladder.

**Cervix**
- Goodells Sign begins between week 6-8
- Chadwick sign begins about 4 weeks before birth.

**Vagina**
- Vaginal mucosa thickens
- Connective tissue loosens
- Smooth muscle hypertrophy
- Vaginal vault begins to lengthen
- Increased whitish vaginal discharge called LEUKORRHEA (normal unless accompanied with itching)

**Ovaries**
- Increased blood supply to ovaries causes them to enlarge until the 12-14 week of gestation.
- Ovaries are not palpable after that time because the uterus fills the pelvic cavity
- Ovulation ceases because of elevated estrogen and progesterone, which block FSH and LH from the anterior pituitary.

**Breasts**
- Increase in fullness, become tender, and grow larger
- Become highly vascular and veins become visible
- Nipples become larger and more erect
- Nipples and areola become deeply pigmented, and Montgomery glands become prominent (sebaceous glands keep the nipples lubricated for breast feeding.)
- Creamy, yellowish breast fluid called COLOSTRUM can be expressed by the THIRD TRIMESTER.
- Colostrum provides nourishment for the newborn during first few days of life

**GI System**
- Gums become swollen and bleed easier due to estrogen and increased proliferation of blood vessels and circulation
- Saliva becomes more acidic
- PTyalism: Excessive salvation
- Peridontal disease linked with preterm birth and low birth weight.
Smooth muscle relaxation and decreased peristalsis occur related to the influence of progesterone.
Slowed gastric emptying with relaxation of the cardiac sphincter allows reflux, causing heartburn.
Heartburn is a universal problem for pregnant women.
Morning sickness plague 80% of pregnant women (highest incidence occurs between 6-12 weeks)

**Cardiovascular System**

- Blood volume increases by approximately 1,500 ml or 50% by 30th week of gestation.
- Blood increase needed to adequate hydration of fetal and maternal tissues, supply blood flow to perfuse enlarging uterus, and to provide a reserve to compensate for blood loss at birth during postpartum.
- Increase in cardiac output associated with an increase in venous return and greater right ventricular output.
- Heart rate increases 10-15 BPM between 14-20 weeks
- Slight hypertrophy of heart to accommodate increase in blood volume and cardiac output
- BP declines during pregnancy. Usually reaches a low point mid pregnancy and then increases to prepregnant levels until term.
- Any significant rise in blood pressure during pregnancy should be investigated to rule out gestational hypertension
- # of RBCs increase throughout pregnancy to a level of 25% to 33% higher than non pregnant values.
- Iron requirements during pregnancy increase because of the demands of the growing fetus and the increase in maternal blood volume

**Nutritional Guidelines during Pregnancy**

- Increase your consumption of fruits and veggies
- Replace saturated fats with unsaturated
- Avoid hydrogenated or partial hydrogenated fats
- Do not consume alcohol
- Use fat reduced spreads and dairy products instead of full fat
- Eat at least 2 servings of fish weekly, with one being an oily fish
- Consume at least 2 quarts of water a day.
- **Good sources of FOLIC ACID:** Dark greens vegetables, broccoli, romaine lettuce, and spinach; baked beans, black eyed peas, citrus fruits, peanuts and liver.
- Increase of women protein from 60 to 80g a day
- Iron from 18-27g a day
- Folic acid from 400 to 800 mcg a day

**Maternal Emotional Responses**

**Ambivalence:** Having conflicting feelings at the same time, is normal when preparing for a lifestyle change and new role.
The realization of a pregnancy can lead to fluctuating responses, possibly at the opposite ends of the spectrum.
- Usually experienced during the FIRST TRIMESTER.

**Introversion:** Focusing on oneself; common during the early part of pregnancy.
- Woman may withdraw and become increasingly preoccupied with herself and fetus.
- May participate less with outside world
- Heightens during FIRST and THIRD trimesters.

**Acceptance**
- During SECOND Trimester, physical changes of growing fetus, bring reality and validity to the pregnancy.

**Mood Swings and Change in Body Image**

**Chapter 12**

**Preconception Care:** The promotion of the health and well being of a woman and her partner before pregnancy.

**Gravid:** The state of being pregnant.
**Gravida:** The pregnant woman.
- Gravida 1 (Primigravida) during the first pregnancy
- Gravida 2 (Secundigravida) During the second pregnancy and so on
Para: The number of deliverys at 20 weeks or greater that a woman has, regardless of whether the newborn is alive or dead.

High Risk Pregnancies: Include those that are complicated by maternal or fetal conditions.

Alpha-Fetoprotein (AFP): A glycoprotein produced initially by the yolk sac and fetal gut, and later predominantly by the fetal liver.

- In a fetus the serum AFP level increases until 14-15 weeks and then falls progressively.
- 30 years ago, elevated AFP levels were linked to fetal neural tube defects.
- AFP present in amniotic fluid in low concentrations between 10-14 weeks of gestation and can be detected in maternal serum beginning at approximately 12-14 weeks of gestation.
- OPTIMAL TIME FOR AFP SCREENING IS 16-18 WEEKS OF GESTATION.

Amniocentesis: Involves a transabdominal puncture of the amniotic sac to obtain a sample of amniotic fluid for analysis.

- The fluid contains fetal cells that are examined to detect chromosomal abnormalities and several hereditary metabolic defects in the fetus before birth.

Chorionic Villus Sampling (CVS): A procedure for obtaining a sample of the chorionic villi for prenatal evaluation of chromosomal disorders, enzyme deficiencies, and fetal gender determination and to identify sex linked disorders such as hemophilia, sickle cell anemia, and Tay-Sachs disease.

Biophysical Profile (BPP): Uses real time ultra sound to allow assessment of various parameters of fetal well being.

The First Prenatal Visit

- Ideal time to screen for factors that place the women and her fetus at risk for problems and preterm delivery.
- Also a good time to educate client about changes that will be affecting her life.

Special recommendations on the diagnosis and classification of hyperglycemia in pregnancy

- At first prenatal visit only high risk women should undergo testing of fasting plasma glucose hemoglobin A1c or random plasma glucose testing based on risk factors, weight status, and family history.

Common Laboratory and Diagnostic Tests

Complete Blood Cell Count (CBC): Evaluates hemoglobin (12-14 g) and hematocrit (42% + 5) levels and red blood cell count (4.2-5.4 million) to detect presence of anemia, identifies white blood cell level (5,000-10,000/mm^3) which if elevated may indicate an infection. Determines platelet count (150,000-450,000 ml) to assess clotting ability.

Blood Typing: Determines woman’s blood type and Rh status to rule out any blood incompatibility issues early; Rh-negative mother would likely receive RhoGAM (at 28 weeks gestation) and again within 72 hours after childbirth, if she is Rh sensitive.

Rubella Titer: Detects antibodies for the virus that causes German measles, if titer is 1:8 or less, the woman is not immune; requires immunization after birth, and woman is advised to avoid people with undiagnosed rashes.

Hepatitis B: Determines if mother has hepatitis B by detecting presence of hepatitis antibody surface antigen (HbsAg) in her blood.

STI screening: Venereal Disease Research Laboratory (VDRL) or rapid plasma reagin (RPR) serologic tests or by cervical smears, cultures, or visual identification of suspicious lesions: Detects STIs so that treatment can be initiated early to prevent transmission to fetus.

Cervical Smears: Detects abnormalities such as cervical cancer (pap test) or infections such as gonorrhea, chlamydia, or group B streptococcus so that treatment can be initiated positive.
Nagele’s Rule: Can be used to establish the estimated date of birth.
- Subtract 3 months from the month of their last LMP.
- Add 7 days
- Add 1 year

Pelvic Shapes:
Gynecoid Type is the typical female pelvis and offers the best shape for a vaginal delivery.

3 Common Childbirth education methods are Lamaze (Psychoprophylactic), Bradley (Partner-coached childbirth), and Dick-Read (Natural Childbirth).

Chapter 13

Dilation: The opening or enlargement of the external cervical os.

Lightening: Occurs when the fetal presenting part begins to descend into the maternal pelvis.
- With this descent, breathing is usually much easier.
- However cramping, increased pelvic pressure, and frequent urination is normal.

Molding: The change (elongated) shape of the fetal skull at birth as a result of overlapping of the cranial bones.
- Fluid can also collect in the scalp (caput succedaneum) or blood can collect beneath the scalp (cephalohematoma), further distorting the shape and appearance of the fetal head.

Fetal Attitude: Refers to the posturing (Flexion or Extension) of the joints and the relationship of fetal parts to one another.
- The most popular fetal attitude when labor begins is with all joints flexed- The fetal back is rounded, the chin is on the chest, the things are flexed on the abdomen, and the legs are flexed at the knees.

Fetal Lie: Refers to the relationship of the long axis (spine of the fetus) to the long axis (spine) of the mother. There are two primary lies: Longitudinal (most common) and transverse.

Fetal Presentation: Refers to the body part of the fetus that enters the pelvic inlet first (The “presenting parts”).

Fetal Position: Describes the relationship of a given point on the presenting part of the fetus to a designated point of the maternal pelvis.

Fetal Station: Refers to the relationship of the presenting part to the level of the maternal pelvic ischial spines.
- If presenting parts is BELOW the level of the maternal ischial spines, the distance is recorded as MINUS stations.
- If presenting part is ABOVE the level of the maternal ischial spines, the distance is recorded as PLUS stations.

Fetal Engagement: Signifies the entrance of the largest diameter of the fetal presenting part (usually the fetal head) into the smallest diameter of the maternal pelvis.
- Fetus is said to be ENGAGED in the pelvis when the presenting part reaches 0 station.

Uterine Contractions: are monitored and assessed according to three parameters: Frequency, duration, and intensity.

Frequency: Refers to how OFTEN the contractions occur and is measured from beginning of one contraction to the beginning of the next.
Duration: Refers to HOW LONG a contraction lasts and is measured from the beginning of one contraction to the end of that SAME contraction.
Intensity: Refers to the STRENGTH of the contraction determined by manual palpation or measured by an internal intrauterine pressure catheter.

Doula: Greek word meaning “Woman Servant” or “Caregiver”. It now commonly refers to a woman who offers emotional and practical support to a mother or couple before, during and after childbirth.
Premonitory Signs of Labor

_Cervical Changes:_ Cervical softening and possible cervical dilation with descent of the presenting part into the pelvis occur.

_Lightening:_ Occurs when the fetal presenting part begins to descend into the maternal pelvis. The uterus lowers and move into a more anterior position.

_Increased Energy Level:_ Some women report a sudden increase in energy before labor.

- Sometimes referred to as NEStInG, because many women will focus this energy toward child birth preparation by cleaning, cooking, preparing the nursery, and spending extra time with the other children in the household.

- The energy usually occurs 24-48 hours before the onset of labor.

_Bloody Show:_ At the onset of labor or before, the mucus plug that fills the cervical canal during pregnancy is expelled as a result of cervical softening and increased pressure of the presenting part. These ruptured cervical capillaries release a small amount of blood that mixes with mucus, resulting in the pink-tinged secretions known as bloody show.

_Spontaneous Rupture of Membranes:_ One in four women will experience spontaneous rupture of the membranes before the onset of labor. The rupture of membranes can result in either a sudden gush or a steady leakage of amniotic fluid. Although much of the amniotic fluid is lost when the rupture occurs, a continuous supply is produced to ensure protections of the fetus until birth.

- After the amniotic sac has ruptured, the barrier to infection is gone and an ascending infection is possible.

Compare and Contrast True vs. False labor

**True Labor Contractions:** Regular, becoming closer together, usually 4-6 min apart, lasting 30-60 seconds.

**False Labor Contractions:** Irregular, not occurring close together.

**True Labor Contraction Strength:** Become stronger with time, vaginal pressure is usually felt.

**False Labor Contraction Strength:** Frequently weak, not getting stronger with time or alternating.

**True Contraction Discomfort:** Starts in the back and radiates around toward the front of the abdomen.

**False Contraction Discomfort:** Usually felt in the front of the abdomen.

**True, stay or go?** Stay home until contractions are 5 min apart, last 45-60 seconds, and are strong enough so that a conversation during one is not possible.

Critical Factors in labor are the 10 P’s

**Passageway:** Birth Canal

**Passanger:** Fetus and Placenta

**Powers:** Contractions

**Positions:** Maternal

**Psychological Response:**

**Philosophy:** Low tech, high touch

**Partners:** Support, caregivers

**Patience:** Natural timing

**Patient Preparation:** Childbirth knowledge base

**Pain Management:** Comfort Measures

_Pain during child labor is a nearly universal experience for childbearing women. Having a strong sense of self and meaningful support from others can often help women manage labor well and reduce their sensation of pain._

4 Stages of Labor

**1st Stage of Labor**

- Progressive dilation of the cervix, expressed in centimeters.
- First stage ends when cervix dilates to 10cm and is large enough to permit the passage of a fetal head of average size.
-For primagravida, the first stage of labor lasts about 12 hours.
-Multiparous women, it is usually half of that.
-Visceral pain of diffuse abdominal cramping and uterine contractions.

**Latent or Early Phase**
-Start of regular contractions and ends when rapid cervical dilation begins.
-Cervix dilates from 0-3 cm.
-Contractions usually occur every 5-10 minutes, last about 30-45 seconds and are mild
-Effacement of the cervix is from 0% to 40%.
-Most women are very talkative during this period, comparing contactions to menstrual cramps.
-nulliparous woman, latent phase lasts 9 hours, multiparous women it lasts 6.

**Active Phase**
-Cervical Dilation begins to occur more rapidly.
-Dilates from 4-7 cm, with 40-80% effacement taking place.
-Can last up to 6 hours for nulliparous women and 4.5 for multiparous.
-Contractions every 2-5 mins and lasting 45-60 seconds.
-discomfort intensifies.
-1.2cm dilate per hour for nulliparous and 1.5cm per hour for multiparous.

**Transition Phase**
-Last stage of the first stage of labor.
-Dilation slows, progressing from 8-10cm.
-effacement from 80-100%
-most difficult and shortest phase, lasting 1 hour for 1st birth and perhaps 15-30min in successive births.
-Contractions are stronger, more painful, more frequent.
-1-2 min contractions, lasting 60-90 minutes
-Feelings of loss of control, and being overwhelmed “I cant take it anymore”.

**Second Phase:**
-Begins with complete cervical dilation (10cm) and effacement and ends with the BIRTH OF THE NEWBORN.
-Contractions every 2-3 minutes, last 60 to 90 seconds.
-Spontaneous pushing: represents natural way of managing second stage labor.

**Third Stage**
-Begins with birth of newborn and ends with separation and birth of the placenta.

**Placental Separation:**  Uterus contractions after newborn birth causes the placenta to pull away from the uterine wall.
- Uterus rises upwards
- Umbilical cord lengthens
- Sudden trickle of blood is released from the vaginal opening
- Uterus changes its shape to globular

**Placental Expulsion:** After separation, expulsion occurs within 2-30 mins.
- Normal blood loss is 500ml for vaginal birth and 1000ml for c section.

**Fourth Stage**
-Begins with completion of the expulsion of the placenta and membranes and ends with the initial physiologic adjustment and stabilization of the mother (1-4 hours after birth).
-Mother feels sense of peace and excitement, wide awake, and very talkative
-attachment process begins with newborn
-If uterus is boggy, massage it to keep firm
-lochia is red, mixed with small clots, and moderate flow
-focus during this stage is to monitor the mother closely to prevent hemorrhage, bladder distention, and venous thrombosis.
-Uterus fundus usually monitored every 15 minutes for at least 1 hour.

**Chapter 15**
Puerperium: Begins after the delivery if the placenta and last approximately 6 weeks. Body begins to return to its pregnant state, and these changes usually resolve by the 6th week after giving birth.

Involution: Uterus returns to its normal size, involving retrogressive changes that return it to its non pregnant size and condition.

Lochia: Vaginal Discharge that occurs after birth.
   - *Lochia Rubra*: Deep Red mixture of mucus, tissue debris, and blood that occurs for the first 3-4 days after birth.
   - *Lochia Serosa*: Pinkish brown and is expelled 3-10 days postpartum. Contains leukocytes, decimal tissue, rbc, and serous fluid.
   - *Lochia Alba*: Discharge is creamy or white or light brown and consists of leukocytes, decimal tissue, and reduced fluid content. occurs from 10-14 days but can last 3-6 weeks post partum.

Uterine Atony: Caused by urinary retention, which causes excessive bleeding. Recent voiding small amounts (less than 150ml) suggests urinary retention with overflow, and catheterization may be necessary to empty the bladder and to restore tone.

Attachment: Is the formation of a relationship between a parent and his or her newborn through a process of physical and emotional interactions.

Taking In Phase: The time immediately after birth when the client needs sleep, depends on others to meet her needs, and relives the events surrounding the birth process.
   - First 24-48 hours after birth.
   - “he has my nose” “his fingers are long like his fathers”
   - Usually lasts 1-2 days and may be the only phase observed by the nurse in the hospital setting.

Taking-Hold Phase: Dependent and independent maternal behavior. This phase typically starts on the second to third day postpartum and may last several weeks.
   - Concerned with her health, newborns health, and her ability to care for them.
   - Increased autonomy and desire to take charge
   - Expresses strong interest in caring for infant by herself.

Letting-Go Phase: She adapts to parenthood through her new role as mother.
   - Focus of this phase is to move forward by assuming the parental role and to separate herself from the symbiotic relationship that she and her newborn had during pregnancy.

Engrossment:
1. Visual awareness of their newborn- the father perceives the newborn as attractive, pretty, or beautiful
2. Tactile Awareness: father has a desire to touch or hold the new born and considers it pleasurable
3. Perception as perfect: father does not see any imperfections
4. Strong attraction: Focuses all attention on the newborn when he is in the room
5. Awareness of distinct features: The father can distinguish his newborn from others in the nursery.
6. Extreme Elation: The father feels a high after the birth of his child.

3 Stage Developmental Process

Expectation: Pass through stage 1 with preconceptions about what home life will be like with a newborn. Many men may be unaware of the dramatic changes that can occur when this newborn comes home to live with them.

Reality: Occurs when fathers or partners realize that their expectations in stage 1 are not realistic. Sadness, ambivalence, jealousy, and frustration.

Transition to Mastery: Father makes a conscious decision to take control and be at the center of the newborns life regardless of his preparedness.
Bonding: Close emotional attraction to a newborn by the parents that develops during the first 30 to 60 minutes after birth.

Attachment: The development of a strong affection between an infant and a significant other.

En Face Position: Eye to eye contact, “Football hold”

Peribottle: Plastic squeeze bottle filled with warm tap water that is sprayed over the perineal area after each voiding and before applying a new perineal pad.

Sitz Bath: Consists of a basin that fits on the commode, a bag filled with warm water is hung on a hook and connected via a tube onto the front of the basin.

Kegal Exercises: Help strengthen the pelvic floor muscles if done properly and regularly.

Postpartum Blues: Transient emotional disturbances beginning in the first week after childbirth and are characterized by anxiety, irritability, insomnia, crying, loss of appetite, and sadness.

Neonatal Period: Defined as the first 28 days of life.

Surfactant: Is a surface tension-reducing lipoprotein found in the newborn’s lungs that prevents alveolar collapse at the end of expiration and loss of lung volume.

Periodic Breathing: The cessation of breathing that lasts 5-10 seconds without changes in color or heart rate. Apneic periods lasting more than 15 seconds with cyanosis and heart rate changes require further evaluation.

Thermoregulation: The process of maintaining the balance between heat loss and heat production.

Neutral Thermal Environment (NTE): An environment in which body temperature is maintained without an increase in metabolic rate or oxygen.

Cold Stress: Excessive heat loss that requires a newborn to use compensatory mechanisms (such as non shivering thermogenesis and tachypnea) to maintain core body temperature.

Jaundice: Also known as icterus, refers to the yellowing of the skin, sclera, and mucous membranes that results from increased bilirubin blood levels.

Meconium: Composed of amniotic fluid, shed mucosal cells, intestinal secretions, and blood. It is greenish black, and is usually passed within 12-24 hours of birth.

Neurobehavioral Response: Several predictable responses when interacting with their environment, and how they react to the world.

At birth, the cardiopulmonary system must switch from fetal to neonatal circulation and from placental to pulmonary gas exchange.

One of the most crucial adaptations that the newborn makes at birth is the ADJUSTMENT OF A FLUID MEDIUM EXCHANGE from the placenta to the lungs and that of a GASEOUS ENVIRONMENT.

Neonatal Red Blood Cells have a life span of 80-100 days in comparison with the adult RBC life span of 120 days. This difference in RBC life span causes several adjustment problems.
The newborns primary method of heat production is through NONSHIVERING THERMOGENESIS, a process in which brown fat (adipose tissue) is oxidized in response to cold exposure. Brown fat is a special kind of highly vascular fat found ONLY in newborns.

Heat Loss in the newborn is the result of 4 mechanisms: Conduction, Convection, Evaporation, and Radiation.

Immune system serves 3 purposes: Defense (protection from invading organisms).
Homeostasis (elimination of work-out host cells)
Surveillance (Recognition and removal of enemy cells)

In the newborn, congenital reflexes are the hallmarks of maturity of the CNS, viability, and adaptation to extrauterine life.

Newborns Predictable behavior during the first several hours after birth: TWO periods of reactivity separated by a sleep phase.

Chapter 18

Gestational Age: The stage of maturity.

Assessment of the Newborn: Done in the birthing area, to determine whether baby is stable enough to stay with the parents or resuscitation of other immediate interventions are necessary.

Possible Problems during Newborn Assessment
- Nasal Flaring
- Chest retractions
- Grunting on exhalation
- Labored breathing
- Generalized cyanosis
- Abnormal breath sounds: Rhonchi, Crackles (rales), wheezing, and stridor
- Abnormal respiratory rates (more than 60/min or less than 25/min)
- Abnormal HR (more than 160BPM or less than 100BPM
- Abnormal newborn size: Small or Large for gestational age.

APGAR Score: Used to evaluate the newborns physical condition 1-5 mins after birth. An additional apgar is done at 10 mins, if the 5 min score is less than 7.

A=Appearance (Color)
P= Pulse (HR)
G=Grimace (Reflex Irritability)
A=Activity (Muscle Tone)
R=Respiratory (Respiratory Effort)

A score of 0 points indicates an absent or poor response, a score of 2 indicated a normal response. (For each parameter)

A normal newborn should score between 8-10.

Length and Weight
- Expected full term newborn length is usually 44-55cm
- Expected full term newborn weighs 2,500 to 4,000g (5 pounds 8 ounces to 8 pounds 14 ounces)
- Newborns typically lose 10% of their birth weight by 3-4 days of age.

Vital Signs
- Typical HR is 120-160 BPM
- Respiratory rate; 30-60 respirations
- Heart and Respiratory rates are usually assessed every 30 minutes until stable for 2 hours after birth.
- Temperature is reassessed every 30 mins until it has been stable for 2 hours, then every 8 hours until discharge.
Nursing Intervention: Care focuses on helping the newborn make the transition to extrauterine life. The nursing interventions include maintaining airway potency, ensuring proper identification, administering prescribed medications, and maintaining thermoregulation.

Prescribed Meds immediately After Birth

Vitamin K: Promotes blood clotting by increasing the synthesis of prothrombin by the liver. A deficiency of this vitamin delays clotting and might lead to hemorrhage.
- A single Intramuscular dose of .5-1mg

Eye Prophylaxis: Mandated in all 50 states to prevent Ophthalmia Neonatorum, which can cause neonatal blindness. All vaginally or c section newborns must receive an installation of prophylactic agent in their eyes within an hour or two of birth.
- Erythromycin 05% ophthalmic ointment or tetracycline 1% ophthalmic ointment
- Used to use silver nitrate but has little efficacy in preventing chlamydial eye disease.

Nursing Management during the Early Newborn Period
- The nurses role is to assist the mother and her newborn through this dramatic transition period.
- The newborn needs continued health assessment, and the mother needs to be taught to care for the new baby.
- Nurses play a major role in promoting the newborns transition by providing ongoing assessment and care and in promoting the woman confidence by serving as a role model and teaching about proper newborn care.

Head Circumference: 32-28 cm (13-15 inches)

Chest Circumference: 30-36cm (12-14 inches) Generally equal or 2-3 cm less than the head.

Vernix Caseosa: A thick white substance that protects the skin of the fetus. It is formed by secretion from the fetus’s oil glands and is found during the first 2 or 3 days after birth in body creases and he hair. It does not need to be removed because it will be absorbed into the skin.

Stork Bites: Superficial vascular areas found on the nape of the neck, the eyelids and between the eyes and upper lip. Caused by a concentration of mature blood vessels and are most visible when the newborn is crying.

Milia: Unopened sebaceous glands frequently found on a newborn’s nose. When they appear in a newborn’s mouth and gums, they are termed Epstein Pearls.

Mongolian Spots: Are blue or purple splotches that appear on the lower back and buttocks of newborns. Tend to occur in African American, Asian, and Indian newborns but can occur in dark skinned newborns of all races.

Erythema Toxicum: Newborn rash, is a benign, idiopathic, generalized, transient rash that occurs in up to 70% of all newborns during the first week of life. It consists of small papules or pustules on the skin resembling flea bites.

Harlequin Sign: Refers to the dilation of blood vessels on only one side of the body, giving the newborn appearance of wearing a clown suit.

Nevus Flammeus: Also called a port-wine stain, commonly appears on the newborns face or other body areas.
- Recent studies have shown to maybe be linked to childhood cancer.

Molding: The elongated shaping of the head to accommodate passage through the birth. It occurs with vaginal birth.

Caput Succedaneum: Describes localized edema on the scalp that occurs from the pressure of the birth process.

Cephalhematoma: Localized effusion of blood beneath the periosteum of the skull. This condition is due to disruption of the vessels during birth.

Ortolani Maneuver: Hip click reflex
The newborn with hypoglycemia requires close monitoring for signs and symptoms of hypoglycemia if present. Newborns at high risk need to be identified based on their perinatal history, physical examination, body measurements, and gestational age.

- Blood glucose levels of all newborns are checked within the first few hours after birth and every 4 hours thereafter.

**Chapter 19**

**High Risk Pregnancy**: One in which a condition exists that jeopardizes the health of the mother, her fetus, or both.

**Abortion**: Loss of an early pregnancy usually before week 20 of gestation.

- Abortion can be spontaneous (Miscarriage) or induced.

**Nursing Management**

For a women with spontaneous abortion focuses on providing continue monitoring and psychological support for the family is experiencing acute loss and grief.

**Gestational Trophoblastic Disease (GTD)**: Compromises a spectrum of neoplastic disorders that originate in the placenta. Gestational tissue is present, but the pregnancy is not viable. The incidence is about 1 in 1500 pregnancies in the US. (Molar Pregnancy)