Maternal – Child Nursing Obstetrics

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Important Terms

- Obstetrics – stand by. Care of the woman during pregnancy, childbirth, and postpartum period.
- Obstetrician – physician specializing in care of woman during pregnancy, labor and birth, and postpartum period.

Human Reproduction

- Puberty
  - Define – rapid change in boys and girls where the reproductive systems mature and become capable of reproduction. Begins with secondary sex characteristics. Ends when mature sperm and menstrual cycles occur.

Puberty

- The Male
  - Changes – 10 to 16 yrs old.
  - Hormone – testosterone – primary male hormone.
  - Nocturnal Emission – wet dreams.
  - Change in Voice – squeaks or cracks before reaching its final peak.

Male Reproductive System

- External Genitalia
  - Penis -
  - Scrotum – contains tests.

Male Reproductive System

- Internal Genitalia
  - Testes – pair of oval glands housed in scrotum that are responsible for production of sperm and secretion of hormones.
  - Ducts
    - Epididymus – found on each side of testes. Store and carry sperm to the penis.

Female Reproductive System

- Internal Genitalia
  - Vagina – muscle and membranous tissue that connect the external genitalia to the uterus.
    - Rugae – allows the vagina to stretch during delivery.
  - Uterus – womb – looks like upside down pear or light bulb.
  - Cervix – lubricates vagina. Produces mucous plug in cervical canal during pregnancy.
  - Fallopian Tubes - known as oviducts. 3 to 5 inches.
  - Ovaries –two almond shaped glands size of walnut. Found in lower abd cavity, one on each side of utereus.

Female Reproductive System

- Female Pelvis
  - Types
    - Gynecoid –round ant and post segments. Most favorable for vaginal birth. Classic female pelvis.
  - Pelvic Diameters – must be adequate for fetus to pass through.

Female Reproductive System

- Breasts – mammary glands. First sign of puberty.
  - Function – produce milk, after birth to allow nourishment and maternal antibiotics.
  - Structure – nipples in the cneter and surrounded by pigmented areola.
    - 15 to 24 lobes in each breast.
    - Adipose and fibrous tissues.
  - Glands
    - Montgomery – small subaceous glands in the areola that secrete a substance to lubricate and protect breast during lactation.

Female Reproductive System

- Female Reproductive Cycle and Menstruation
  - Anterior Pituitary Gland
    - FSH and LH.
  - Ovulation
    - Mature ovum released about 14 days before next menstrual period.
  - Menarche
    - Menstruation
    - Fibrinolysin
  - Climacteric
    - Yrs when reproduction gradually declines.
  - Menopause
    - Final menstrual period..

Prenatal Development

- DNA
  - Genetic Code – DNA – any defects can cause inherited disorders. Traits and features of an individual.
- Autosomes
  - Body Chromosomes – begin in pairs, one from mom and dad. 46 chromosomes made up of 22 pairs of autosomes and one pair of sex chromosomes to determone the sex.
- Teratogens
  - Damage to the cells. Ex. Drug use, malnutrition,and smoking.

Cell Division And Gametogenesis

- Mitosis – cont process in which body grows and develops and dead cells are replaced.
  - Diploid – 46 chromosomes in body cell.
  - Spermatogenesis – mitosis in sperm.
  - Oogenesis – mitosis in ovum.

Cell Division and Gametogenesis

- Meiosis
  - Haploid – chromosomes in each cell is reduced to half or 23, each with one sex chromosome.
  - Fertilization – sperm and ova unite.
  - 23 chromosomes from ova and 23 from sperm.
  - Now return to diploid number of chromosomes 46.

Fertilization

- Fertilization
  - Restore 46 chromosomes.
  - Outer third of the fallopian tybe, near the ovary.
  - Whiplike or flagellar activity.

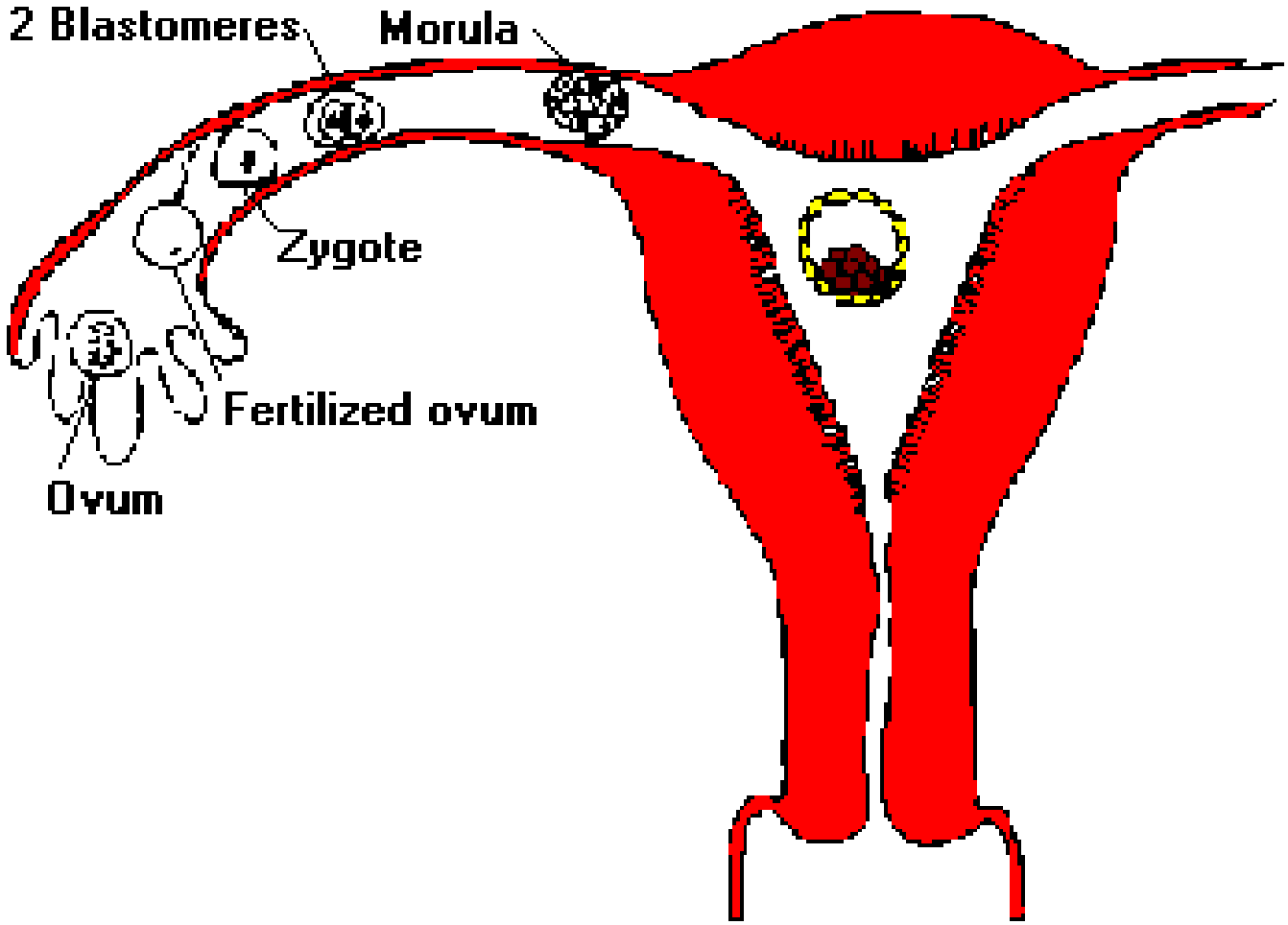
Fertilization

- Sex Determination
  - Ovum has X chromosome.
  - Sperm carries X and Y chromosome.
  - X and Y meet – female.
  - X and Y meet- male.


23 chromosomes
23 chromosomes

Prenatal Development

- Tubal Transport of the Zygote
  - Zygote
    - Union of the sperm and egg.
  - Blastomere
    - Cell divides.
  - Morula
    - Solid ball.
  - Blastocyst
    - Inner layer of the solid mass.
  - Trophoblast
    - Outer layer.
  - Chorion
    - Embryonic membrane.


2 Blastomeres
Morula
Zygote
Fertilized ovum
Ovum

Prenatal Development

- Implantation Of The Zygote
  - Endometrium
    - Prepared lining of uterus.
  - Decidua
    - New name for endometrium.

Prenatal development

- Cell Differentiation
  - Chorion
    - Villi – thick membrane with fingerlike projections.
  - Amnion
    - Second membrane that protects the embryo.
  - Yolk Sac
    - Occur in he ninth day after fertilization in the blastocyte.

Accessory Structures Of Pregnancy

- Placenta
  - Afterbirth – fetal rep, nutrition, and excretion.
  - Placenta Transfer
    - Thin membrane that separates the maternal and fetal blood.
    - Two umbilical arteries
    - One umbilical vein.

Accessory Structures Od Pregnancy

- Umbilical Cord
  - Development
    - Develops with the placenta and fetal blood vessels.
  - Wharton's Jelly
    - Cushions and covers the cord vessels and keeps the three vessels separated.
  - Length
    - 55cm or 22 inches.

Prenatal Developmental Milestones

- First stage
  - Zygote continues to grow and develops as it passes through the fallopian tube and implants into the wall of the uterus.

Prenatal Developmental Milestones

- Second Stage
  - Occurs from the second to the eighth week of development.
  - Known as the embryonic stage, because of the developing infant is called embryo.
  - Circulation of blood through the placenta to the fetus is established after week 4 of gestation.

Prenatal Developmental Milestones

- Third Stage
  - Occurs from the ninth week of development until birth where the developing infant us called a fetus.
  - During week 25, the aveoli begin

Fetal Circulation

- Circulation before birth
  - 4th week of gestation, circulation of blood through the placenta to the fetus is established.
- Ductus Venosus
  - Diverts some blood away from the liver from the placenta.
- Foreman Ovale
  - Diverts blood from the right atrium directly to the left atrium instead of circulating it to the lungs.
- Ductus Ateriosus
  - Diverts blood from the pulmonary artery into the aorta.

Fetal Circulation

- Circulation Before Birth
  - Oxygenated bld enters the fetal body through the umbilical vein.
  - Half of the bld goes to the liver and the rest enter the inferior vena cava through the ductus venous.
  - Blood from the inferior vena cava enters the right atrium where most pass to the left atrium through the foramen ovale. Small amt of blood is pumped to the lungs by the right ventricle.
  - Blood from the right ventricle joins fro the left ventricle through the ductus arteriosus.
  - After circulation is done throughout the fetal body, blood containing waste products returns to the placenta through the umbilical arteries.

Circulation After Birth

- Foramen ovaule closes due to the pressure on the right side of the heart falls as the lungs become inflated.
- The infant's blood oxygen level ow rises and causes the ductus arteriosus to constrict.
- Ductus venosus closes when the flow from the umbilical cord ceases.

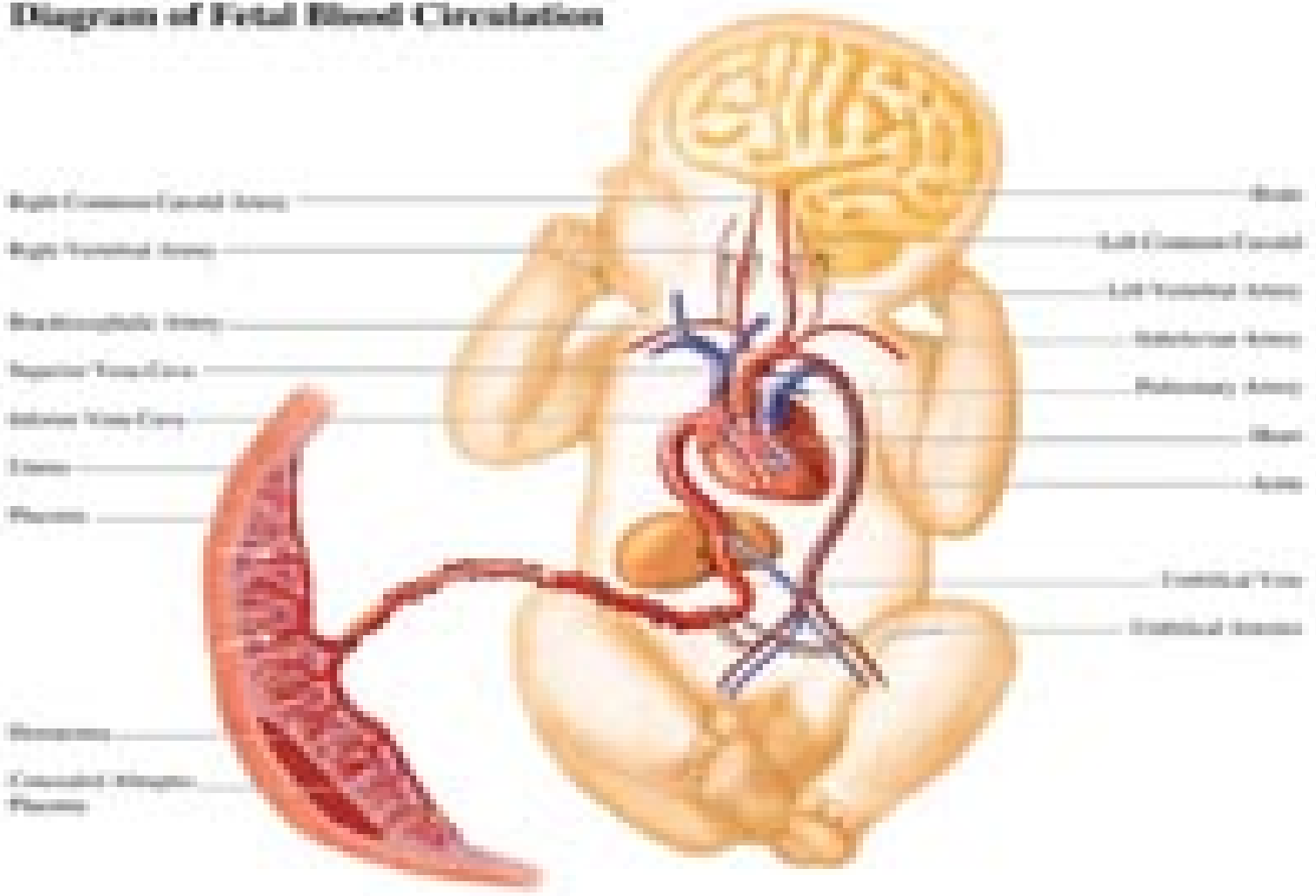
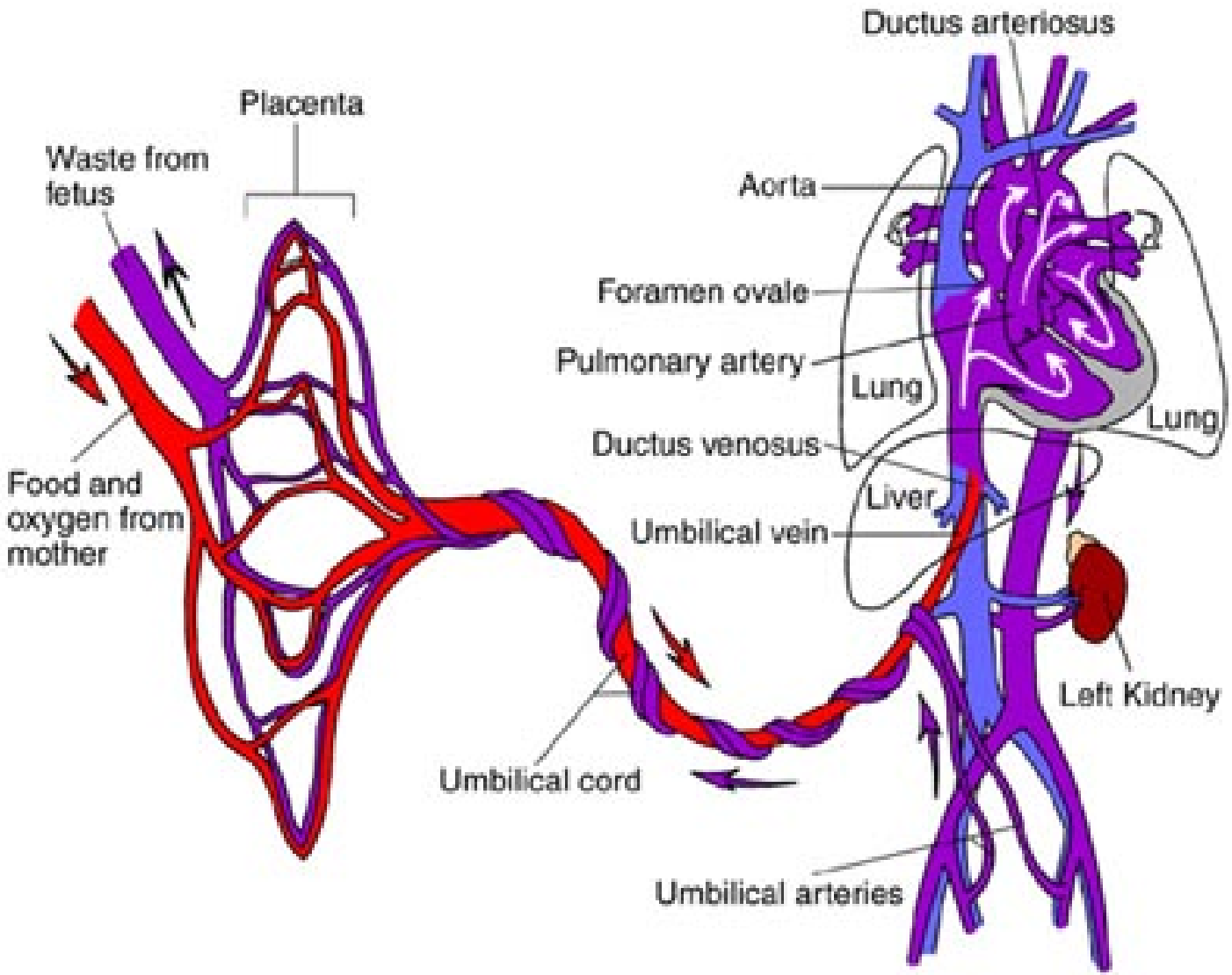


Diagram of Fetal Blood Circulation

Fetal Circulation



Placental Transfer

- Fetal deoxygenated blood and waste products leave the fetus through the two umbilical arteries.
- Fetal blood releases carbon dioxide and waste products and takes in oxygen and nutrients before returning to the fetus through the umbilical vein. Vein is responsible for transporting richly oxygenated blood from the placenta to the fetus.