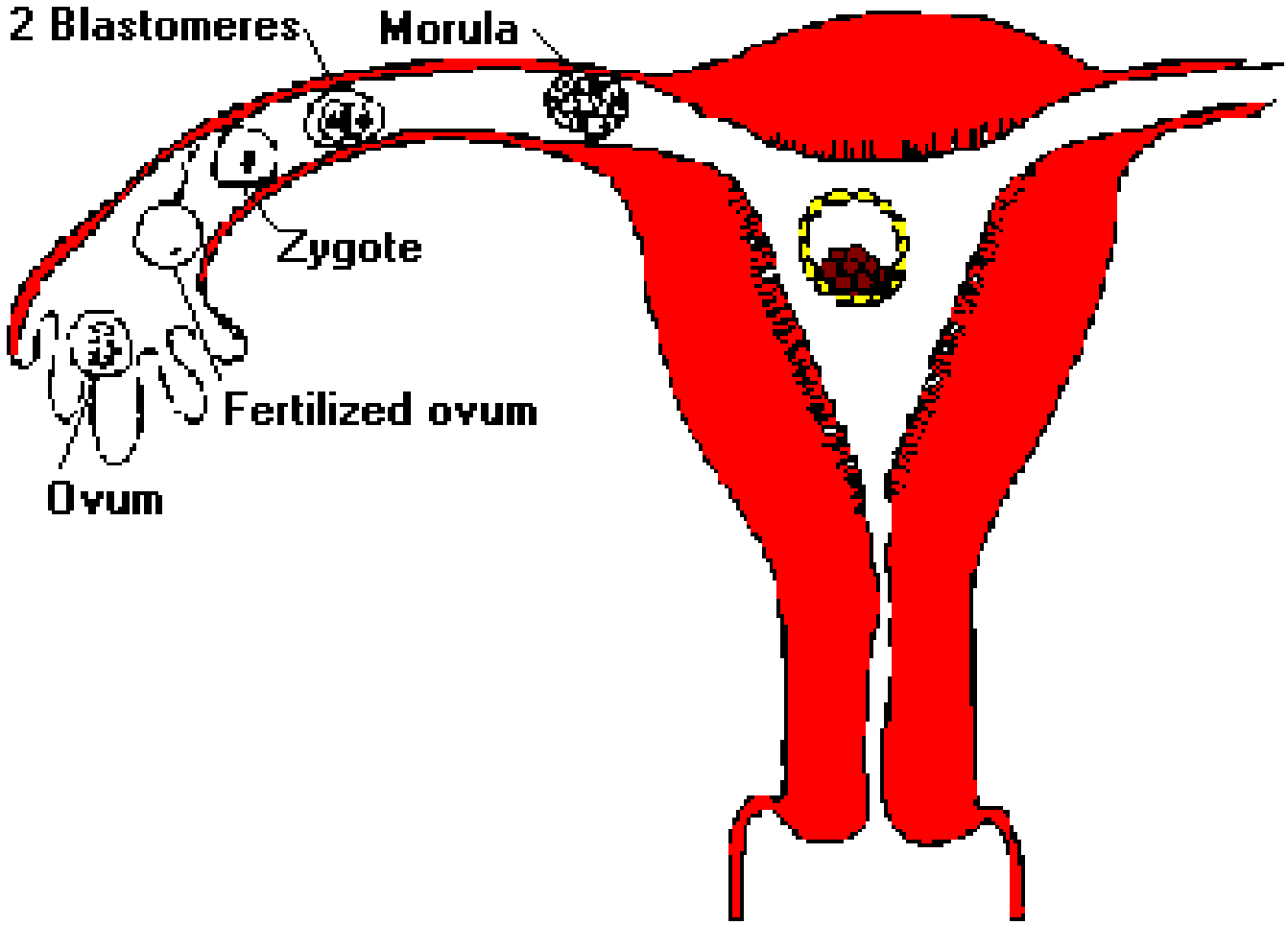
Prenatal Development

- 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.

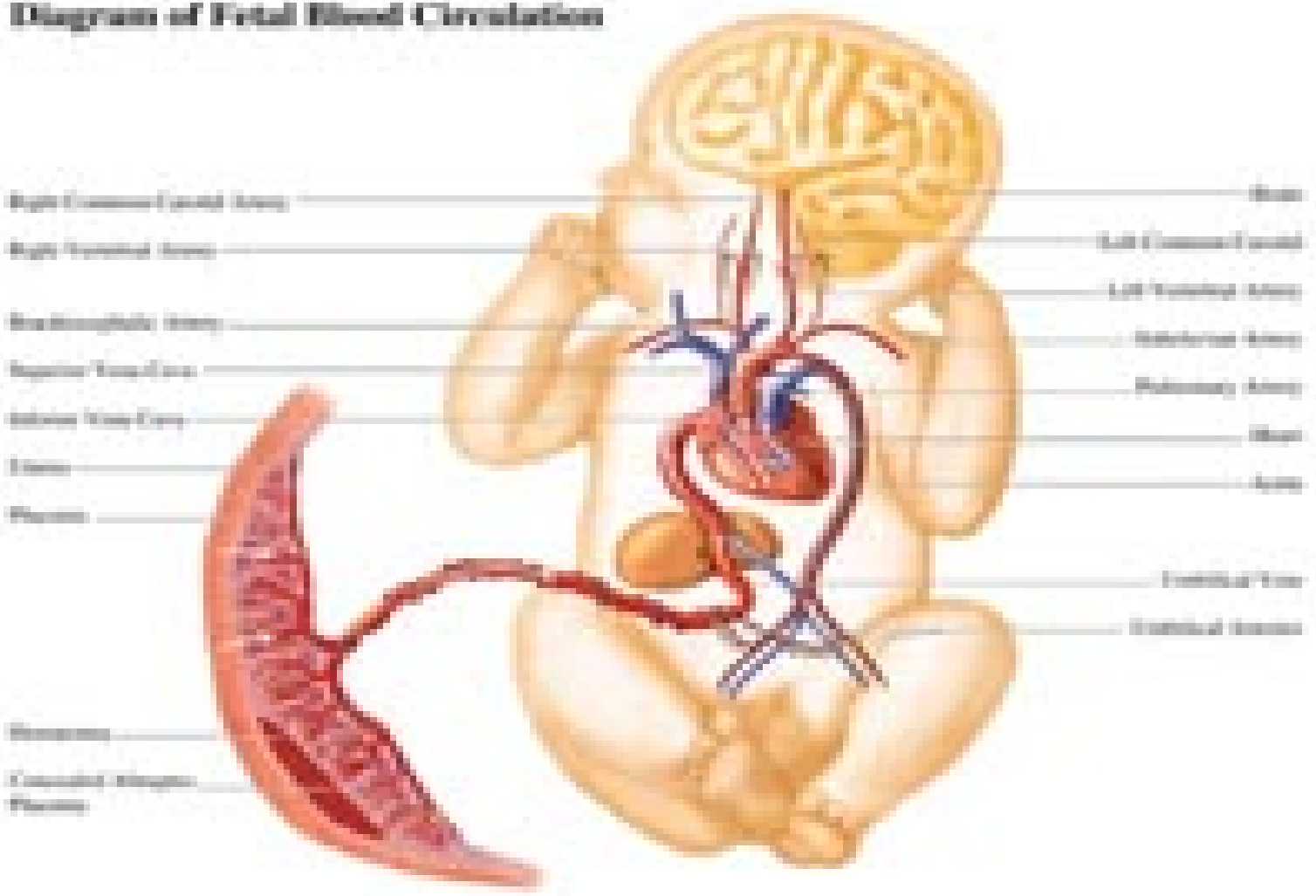
Fetal Circulation

- 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.

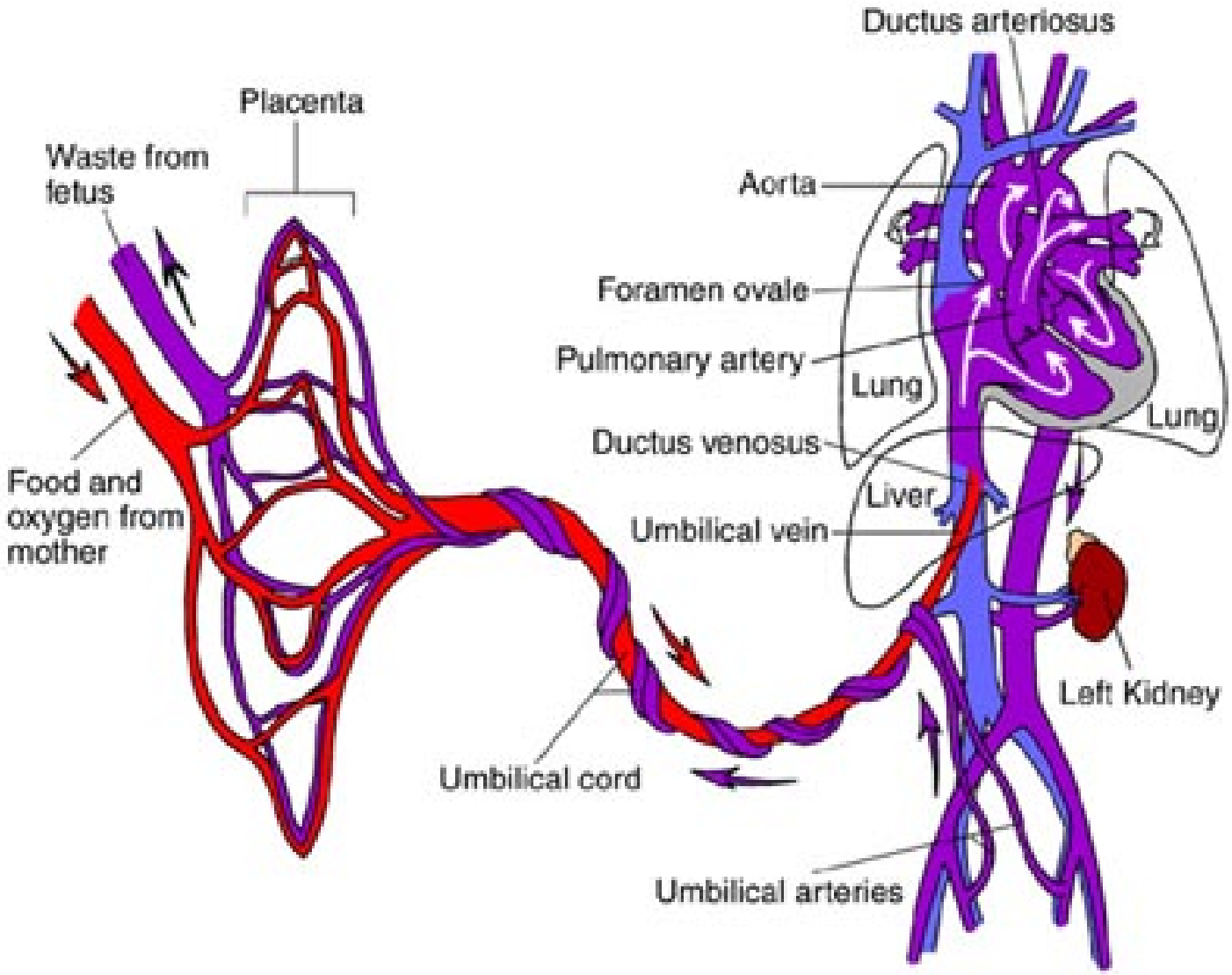
Circulation After Birth

- 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.

Prenatal Development And Healthy People 2010

- Health Education
  - Undernutrition
  - Exposure to toxins
  - Malnutrition

Multifetal Pregnancy

- Multifetal
  - Occur because of genetics or by hormones.
- Dizygotic
  - Fraternal twins
- Monzygotic
  - Identical twins