**Vocabulary: Embryo Development**

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**Vocabulary**

* Blastula – a hollow ball of cells that forms during embryogenesis.
* The blastula consists of a single, spherical layer of cells surrounding an open cavity.
* A smaller ball of cells, the *inner cell mass*, is found inside at one end.
* Carnegie stages – a standardized system of 23 stages used to identify the developmental stage of a vertebrate embryo.
* The stages are identified by the presence common structures (such as limb buds or a heart), not by size of the embryo or time from conception.
* Carnegie stages are most often used to classify human development.
* Other organisms may use different systems, such as the Hamburger–Hamilton stages for chick embryos.
* Differentiation – the process by which less specialized cells change to become more specialized cells that perform a different function than before.
  + Different cells will turn on or off different subsets of genes to allow them to perform different functions.
* Ectoderm – one of the three germ layers in the early embryo that will eventually form cells in the skin and nervous system.
* Embryo – the unborn offspring of a multicellular organism in the early stages of development.
* A human offspring is referred to as an embryo through the 8th week of pregnancy, after which it is referred to as a fetus.
* Embryology – the branch of biology that studies embryo development.
* Embryonic stem cells – Undifferentiated cells that have the potential to develop into any cell in the adult organism.
* Embryonic stem cells are usually derived from the *inner cell mass* in the blastula.
* Endoderm – one of the three germ layers in the early embryo that will eventually form structures including the lining of the digestive and respiratory tracts.
* Fetus - the unborn offspring of a mammal in the later stages of development.
* A human offspring is referred to as a fetus after the 8th week of pregnancy.
* Gastrula – a stage in development when the embryo consists of three layers of cells.
* The three germ layers (endoderm, mesoderm and ectoderm) will become all of the structures in the adult organism.
* Inner cell mass – group of cells inside the blastula that will eventually become the organism, amniotic cavity, and primitive yolk sac.
* Mesoderm – one of the three germ layers in the early embryo that will eventually form structures including connective tissue, bones, and muscles.
* Morula – an early-stage embryo consisting of a solid ball of cells.
* Neurula – a stage in development when the three germ layers of the embryo change shape. The ectoderm folds inward creating a neural tube.
* The nervous system begins to form at this stage.
* Primitive streak – an elongated band of cells that forms along the axis of the developing embryo during gastrulation.
* Epiblast cells migrate into and down below the primitive streak to establish the three germ layers.
* The primitive streak is the precursor to the neural tube and central nervous system.
* Trilaminar disk – a structure that consists of three layers of cells in the gastrula.
* The three germ layers in the trilaminar disk are the endoderm, mesoderm and ectoderm.
* Zygote – a cell formed after fertilization of an egg cell.
* The zygote is the very first structure development.
* Two haploid gametes (a sperm and egg) fuse to form the zygote.