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Anatomy & Physiology: Current Research

Commentary

Formation of tissues of the body

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DESCRIPTION

The human body is made up of many types of tissue. These are known as basic tissues. These are known as basic tissues of the body, they are as follows.

1. Epithelial Tissue
2. Connective Tissue
3. Muscular Tissue

Epithelia

An epithelium may be derived from ectoderm, endoderm, or mesoderm. In general, ectoderm gives rise to epithelia covering the external surfaces of the body; and some surfaces near the exterior. Endoderm gives origin to the epithelium of most of the gut, and vof structures arising as diverticulia from the gut e.g. the liver and pancreas. Mesoderm gives origin to the epithelial lining of the greater part of the urogenital tract.

Some epithelia derived from ectoderm:

1. Epithelium of skin, hair follicles, sweat glands, sebaceous glands, and mammary glands.
2. Epithelium over cornea and conjunctiva, external acoustic meatus, and outer surface of tympanic membrane.
3. Epithelium of some parts of the mouth, lower part anal canal, terminal part of male urethra, parts of female external genitalia

Some epithelia derived from endoderm:

1. Epithelium of the entire gut except part of the mouth and anal canal (lined by ectoderm)
2. Epithelium of auditory tube and middle ear.
3. Epithelium of respiratory tract.
4. Epithelium over part of urinary bladder, urethra, vagina.

Some epithelia from endoderm:

1. Epithelium of the entire gut except part of the mouth and anal canal. (lined by ectoderm).
2. Epithelium of auditory tube and middle ear.
3. Epithelium of respiratory tract.
4. Epithelium over part of urinary bladder, urethra and vagina.

Some epithelia derived from mesoderm:

1. Tubules of kidneys, ureter, trigone of urinary bladder.
2. Uterine Tubes, uterus, part of vagina,
3. Testis and its duct system
4. Endothelium lining the heart, blood vessels, and lymphatic's Mesothelium lining the pericardial, peritoneal, and pleural cavities of joints **Mesenchyme**

A small proportion of mesodermal cells give rise to epithelia. The remaining cells that make up the bulk of Mesoderm get converted into a loose tissue called mesenchyme. Mesenchymal cells havethe ability to form many different kinds of cells that in turn give rise to form many different kinds of cells that in turn give rise to various tissues. Chondroblasts arising from mesenchymal cells form cartilage, osteoblasts form bone, myoblasts form muscle, while lymphoblasts and haemocytoblasts from various cells of blood. Mesenchymal cells also give rise to endothelial cells from which blood vessels and the primitive heart tubes are formed. However after all these tissues, have been formed many mesenchymal cells are still left and they give rise to cells of various types of connective tissue

Connective tissue

Connective tissue serves as a connective system binding, supporting and strengthening all other body tissues, together. Connective tissue consist of three components, that is cell, fibres and ground substance. The fibres and the ground substance are synthesized by the cells of the connective tissue. Formation of loose connective tissue at the site of formation of loose connective tissue the mesenchymal cells get converted into fibroblasts. Fibroblast secretes the ground substance and synthesizes the collagen, reticular and elastic fibers. Some mesenchymal cells present in the developing connective tissue also get converted into histiocytes mast cells, plasma cells, and fat cells. Formation of a blood. Blood is a specialized fluid connective tissue which acts as a major transport

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Received: December 10, 2020; **Accepted:** December 24, 2020; **Published:** December 31, 2020

Citation: Gupta S (2021) Formation of tissues of the body. Anat Physiol 11:342.

system within the body. The formation of the cells of blood begins very early in embryonic life (before somites have appreciated) and continues throughout life. Blood formation is especially rapid in the embryo to provide for increase in blood volume with the growth of the embryo. In the third week of embryonic life, formation of blood vessels and blood cells is first seen in the wall of the yolk sac, around the allantoic diverticulum and in connecting stalk, in these situations, clusters of mesodermal cells aggregate to form blood islands. These mesodermal cells are then converted to precursor cells (haemoangioblasts) which give rise to blood vessel and blood cells, cells which are present in the centre of the blood island, form the precursor of all the blood cells (haematopoietic stem cells). Cells at the periphery of the island form the precursor of blood vessels (angioblasts). Blood cells arising in the blood islands as the yolk sac are temporary. They are soon replaced by permanent stem cells, which arise from the mesoderm surrounding the developing aorta development of heart [1-10].

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