PERSPECTIVE Connective Tissue Types in Human Body

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Description

The human body contains a wide variety of epithelial tissues. They line bodily cavities and hollow organs, make up the majority of the tissue in glands, and cover every surface of the body. Protection, secretion, absorption, excretion, filtration, diffusion, and sensory reception are just a few of the many tasks they carry out. The tissues produce coverings and linings, leaving the cells with one free surface that is not in contact with other cells. This membrane is composed of a mixture of proteins and carbohydrates released by the cells of the epithelium and connective tissue. A tissue is a cluster of cells with comparable structures and roles. The intercellular matrix, a non-living substance, fills the spaces between the cells. A particular tissue may have special components in its intercellular matrix, such as fibers and salts that are specific to that tissue and give it specialized properties. The body is made up of four different types of tissue: epithelial, connective, muscular, and nervous. Each has a purpose for which it was created.

Connective tissue

In addition to holding structures together and providing support for organs and the body as whole, connective tissues also store fat, move substances, fend off disease, and aid in tissue healing. They can be found all over the body. Intercellular matrix predominates in connective tissues, although cell density is low. There are several different types of connective tissue, including blood, cartilage, osseous tissue (bone), dense fibrous connective tissue, and elastic connective tissue. Squamous, cuboidal, or columnar epithelial cells can be arranged in a single layer or in several layers. Simple cuboidal epithelium cells are nearly as tall as they are wide. They have a single layer of cuboidal cells with massive, centralized spherical nuclei. Their primary roles are secretion and absorption. Additionally, due to their significant thickness, the cytoplasm of these cells can contain many mitochondria and other organelles, allowing for highly

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active transport across the epithelium. The pigment layer of the retina is similarly lined by the straightforward cuboidal epithelium.

A single layer of cells that is taller than they are wide make up a simple columnar epithelium. This kind of epithelium lines the small intestine and is responsible for absorbing nutrients from the gut's lumen. The stomach has simple columnar epithelia as well, which secretes mucus, acid, and digesting enzymes.

Pseudostratified columnar epithelia are tissues made of just one layer of cells, but when viewed in cross section, they appear to be made of many layers. These epithelial cells' nuclei are located at various levels, giving the appearance of stratification. Although the cells in this tissue do not share an apical surface, they are all in contact with the basement membrane since it is formed of a single layer of cells. The term "glandular epithelium," sometimes known as "glandular tissue," refers to a particular type of epithelial tissue that is involved in the production and release of numerous secretory products, including hormones, saliva, breast milk, perspiration, and digestive enzymes. The glandular epithelium is organized into organs called glands, which may consist of a single cell or a collection of cells with specialized functions for manufacturing and secreting a particular material. Different glands release chemicals that play crucial functions in the functioning of the human body. Along with connective tissue, muscular tissue, and nerve tissue, the epithelial tissue is one of the four main tissues in the human body. Epithelial tissues are made up of one or more layers of epithelial cells that are separated from the connective tissue beneath by the basement membrane, a thin collagen sheet that gives the epithelium shape. The majority of the body's inner and outer surfaces, including the skin, urogenital system, digestive tract, and respiratory system, are covered by epithelium. Epithelial tissue can be divided into secretory glandular epithelium and non-secretory surface epithelium based on their primary functions.

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