



Animal Tissue

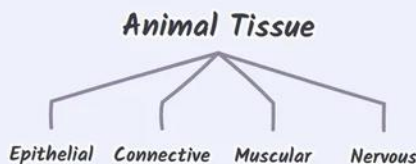


epithelial, connective, muscular, nervous: the four tissues every organ is built from



Tissue and Histology

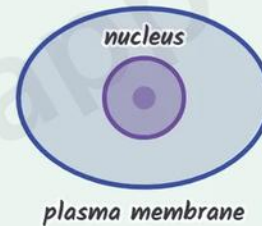
- a tissue is a group of cells with the same embryonic origin, structure and function
- tissues combine into organs, organs into organ systems, systems build the body
- histology** is the study of tissue structure and arrangement
- four animal tissue types: epithelial, connective, muscular, nervous
- cells are two kinds: **somatic cells** (all body cells except sperm and ova)
- germ cells** are sperm and ova, of the reproductive system



the four types every organ is built from combining

Epithelial Tissue, general features *

- epi (above) + thelium (layer of cells): the covering layer
- covers inner and outer surfaces of the body and organs
- cells compactly arranged, little intercellular matrix, rest on a non-cellular **basement membrane**
- tissue is **avascular** but regenerates well
- functions: protection, and also absorption, transport, filtration, secretion
- two classes by layer count: **simple epithelium** (single layer)
- compound epithelium** (two+ layers), lowest layer rests on the basement membrane



a generic animal cell: plasma membrane on the outside, nucleus at the centre, the starting point every tissue's cells are built from

Simple Epithelium, Six Types

Squamous

flat, thin, polygonal, serrated margin; fit like pavement tiles. Blood vessels, alveoli, coelom

Cuboidal

cuboidal cells, spherical central nucleus. Pancreatic/salivary ducts, kidney tubules

Columnar

tall, pillar-like, broad free end with microvilli, nucleus in lower half. Intestine, gall bladder, gastric glands

Ciliated

cuboidal/columnar with cilia on the free end, moves material in one direction. Trachea, oviduct

Glandular

columnar/cuboidal/pyramidal with secretory granules; unicellular (goblet cells) or multicellular (salivary gland)

Sensory

modified columnar + neurosensory cells with sensory hairs. Nose, ear, eye

a seventh type, germinal epithelium, divides meiotically to give haploid gametes: lining of seminiferous tubules, outer covering (surface epithelium) of the ovary

