

CARTILAGE, BONE, BLOOD: specialized connective tissues

CARTILAGE

Functions:

- flexible mechanical support for soft tissues
- shock absorbing
- low-friction surface in joints
- first stage in long bone development

Cells

chondroblasts

chondrocytes

Matrix (ground substance)

macromolecules

fibres

Types of cartilage

hyaline cartilage

elastic cartilage

fibrocartilage

BONE

Functions:

- stiff, durable mechanical support for soft tissues, protection
- levers in musculoskeletal system
- calcium reservoir
- hematopoietic site

Cells

osteoblasts

osteocytes

osteoclasts

Matrix

osteoid-organic

mineral

Lamellar bone structure

Compact bone

osteon = Haversian system

Cancellous bone = spongy bone

Connective tissue

periostium

endostium

WHOLE BLOOD

FORMED ELEMENTS

PLASMA

PLATELETS

WATER

CELLS

PROTEINS

ERYTHROCYTES

CLOTTING

FACTORS

LEUKOCYTES

NUTRIENTS

GRANULOCYTES

WASTES

EOSINOPHILS

HORMONES

BASOPHILS

GASES

NEUTROPHILS

AGRANULOCYTES

LYMPHOCYTES

MONOCYTES