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# List of distinct cell types in the adult human body

There are many different types of cell in the human body.

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# Cells derived primarily from endoderm

## Exocrine secretory epithelial cells

- Brunner's gland cell in duodenum (enzymes and alkaline mucus)
- Insulated goblet cell of respiratory and digestive tracts (mucus secretion)
- Stomach
  - foveolar cell (mucus secretion)
  - chief cell (pepsinogen secretion)
  - parietal cell (hydrochloric acid secretion)
- Pancreatic acinar cell (bicarbonate and digestive enzyme secretion)
- Paneth cell of small intestine (lysozyme secretion)
- Type II pneumocyte of lung (surfactant secretion)
- Club cell of lung

## Barrier cells

- Type I pneumocyte (lung)
- Gall bladder epithelial cell
- Centroacinar cell (pancreas)
- Intercalated duct cell (pancreas)
- Intestinal brush border cell (with microvilli)

## Hormone-secreting cells

- Enteroendocrine cell
  - K cell (secretes gastric inhibitory peptide)
  - L cell (secretes glucagon-like peptide-1, peptide YY<sub>3-36</sub>, oxyntomodulin, and glucagon-like peptide-2)
  - I cell (secretes cholecystikinin (CCK))
  - G cell (secretes gastrin)
  - Enterochromaffin cell (secretes serotonin)
  - Enterochromaffin-like cell (secretes histamine)
  - N cell (secretes neurotensin)
  - S cell (secretes secretin)
  - D cell (secretes somatostatin)
  - Mo cell (or M cell) (secretes motilin)
  - other hormones secreted: vasoactive intestinal peptide, substance P, alpha and gamma-endorphin,

bombesin

- Thyroid gland cells
  - Thyroid epithelial cell
  - Parafollicular cell
- Parathyroid gland cells
  - Parathyroid chief cell
  - Oxyphil cell
- Pancreatic islets (islets of Langerhans)
  - Alpha cell (secretes glucagon)
  - Beta cell (secretes insulin and amylin)
  - Delta cell (secretes somatostatin)
  - Epsilon cell (secretes ghrelin)
  - PP cell (gamma cell) (secretes pancreatic polypeptide)

## Cells derived primarily from ectoderm

### Exocrine secretory epithelial cells

- Salivary gland mucous cell
- Salivary gland serous cell
- Von Ebner's gland cell in tongue (washes taste buds)
- Mammary gland cell (milk secretion)
- Lacrimal gland cell (tear secretion)
- Ceruminous gland cell in ear (earwax secretion)
- Eccrine sweat gland dark cell (glycoprotein secretion)
- Eccrine sweat gland clear cell (small molecule secretion)
- Apocrine sweat gland cell (odoriferous secretion, sex-hormone sensitive)
- Gland of Moll cell in eyelid (specialized sweat gland)
- Sebaceous gland cell (lipid-rich sebum secretion)
- Bowman's gland cell in nose (washes olfactory epithelium)

### Hormone-secreting cells

- Anterior/Intermediate pituitary cells
  - Corticotropes
  - Gonadotropes
  - Lactotropes
  - Melanotropes
  - Somatotropes

- Thyrotropes
- Magnocellular neurosecretory cells, secrete oxytocin and vasopressin
- Parvocellular neurosecretory cells, secrete thyrotropin-releasing hormone (TRH), corticotropin-releasing hormone (CRH), vasopressin, oxytocin, neurotensin, and prolactin
- Chromaffin cells (adrenal gland)

## Epithelial cells

- Keratinocyte (differentiating epidermal cell)
- Epidermal basal cell (stem cell)
- Melanocyte
- Trichocyte (gives rise to hair and nail cells)
  - Medullary hair shaft cell
  - Cortical hair shaft cell
  - Cuticular hair shaft cell
  - Huxley's layer hair root sheath cell
  - Henle's layer hair root sheath cell
  - Outer root sheath hair cell
- Surface epithelial cell of cornea, tongue, mouth, nasal cavity, distal anal canal, distal urethra, and distal vagina
- basal cell (stem cell) of cornea, tongue, mouth, nasal cavity, distal anal canal, distal urethra, and distal vagina
- Intercalated duct cell (salivary glands)
- Striated duct cell (salivary glands)
- Lactiferous duct cell (mammary glands)
- Ameloblast (deposit tooth enamel)

## Other

- Odontoblast (tooth dentin formation)
- Cementoblast (tooth cementum formation)

## Nervous system

There are nerve cells, also known as neurons, present in our human body. They are branched out. These cells make up nervous tissue. A neuron consists of a cell body with a nucleus and cytoplasm, from which long thin hair-like parts arise.

## Sensory transducer cells

- Auditory inner hair cell of organ of Corti

- Auditory outer hair cell of organ of Corti
- Basal cell of olfactory epithelium (stem cell for olfactory neurons)
- Cold-sensitive primary sensory neurons
- Heat-sensitive primary sensory neurons
- Merkel cell of epidermis (touch sensor)
- Olfactory receptor neuron
- Pain-sensitive primary sensory neurons (various types)
- Photoreceptor cells of retina in eye:
  - Photoreceptor rod cells
  - Photoreceptor blue-sensitive cone cell of eye
  - Photoreceptor green-sensitive cone cell of eye
  - Photoreceptor red-sensitive cone cell of eye
- Proprioceptive primary sensory neurons (various types)
- Touch-sensitive primary sensory neurons (various types)
- Chemoreceptor glomus cells of carotid body cell (blood pH sensor)
- Outer hair cell of vestibular system of ear (acceleration and gravity)
- Inner hair cell of vestibular system of ear (acceleration and gravity)
- Taste receptor cell of taste bud

### Autonomic neuron cells

- Cholinergic neural cell (various types)
- Adrenergic neural cell (various types)
- Peptidergic neural cell (various types)

### Sense organ and peripheral neuron supporting cells

- Inner pillar cell of organ of Corti
- Outer pillar cell of organ of Corti
- Inner phalangeal cell of organ of Corti
- Outer phalangeal cell of organ of Corti
- Border cell of organ of Corti
- Hensen cell of organ of Corti
- Vestibular apparatus supporting cell
- Taste bud supporting cell
- Olfactory epithelium supporting cell
- Schwann cell
- Satellite glial cell (encapsulating peripheral nerve cell bodies)
- Enteric glial cell

### Central nervous system neurons and glial cells

- Neuron cells (large variety of types, still poorly classified)
  - Interneurons
    - Basket cells
    - Cartwheel cells
    - Stellate cells
    - Golgi cells
    - Granule cells
    - Lugaro cells
    - Unipolar brush cells
    - Martinotti cells
    - Chandelier cells
    - Cajal–Retzius cells
    - Double-bouquet cells
    - Neurogliaform cells
    - Retina horizontal cell
    - Amacrine cells
    - Spinal interneuron
      - Renshaw cells
  - Principal cells
    - Spindle neurons
    - Fork neurons
    - Pyramidal cells
      - Place cells
      - Grid cells
      - Speed cells
      - Head direction cells
      - Betz cells
    - Stellate cells
      - Boundary cells
    - Bushy cell
    - Purkinje cells
    - Medium spiny neurons
- Astrocyte (various types)
- Oligodendrocyte
- Ependymal cells
  - Tanocytes
- Pituicyte

## Lens cells

- Anterior lens epithelial cell
- Crystallin-containing lens fiber cell

# Cells derived primarily from mesoderm

## Metabolism and storage cells

- Adipocytes:
  - White fat cell
  - Brown fat cell
- Liver lipocyte

## Secretory cells

- Cells of the Adrenal cortex
  - Cells of the Zona glomerulosa produce mineralocorticoids
  - Cells of the Zona fasciculata produce glucocorticoids
  - Cells of the Zona reticularis produce androgens
- Theca interna cell of ovarian follicle secreting estrogen
- Corpus luteum cell of ruptured ovarian follicle secreting progesterone
  - Granulosa lutein cells
  - Theca lutein cells
- Leydig cell of testes secreting testosterone
- Seminal vesicle cell (secretes seminal fluid components, including fructose for swimming sperm)
- Prostate gland cell (secretes seminal fluid components)
- Bulbourethral gland cell (mucus secretion)
- Bartholin's gland cell (vaginal lubricant secretion)
- Gland of Littre cell (mucus secretion)
- Uterus endometrium cell (carbohydrate secretion)
- Juxtaglomerular cell (renin secretion)
- Macula densa cell of kidney
- Peripolar cell of kidney
- Mesangial cell of kidney

## Barrier cells

## Urinary system

- Parietal epithelial cell
- Podocyte
- Proximal tubule brush border cell
- Loop of Henle thin segment cell
- Kidney distal tubule cell
- Kidney collecting duct cell
  - Principal cell
  - Intercalated cell
- Transitional epithelium (lining urinary bladder)

## Reproductive system

- Duct cell (of seminal vesicle, prostate gland, etc.)
- Efferent ducts cell
- Epididymal principal cell
- Epididymal basal cell

## Circulatory system

- Endothelial cells

## Extracellular matrix cells

- Planum semilunatum epithelial cell of vestibular system of ear (proteoglycan secretion)
- Organ of Corti interdental epithelial cell (secreting tectorial membrane covering hair cells)
- Loose connective tissue fibroblasts
- Corneal fibroblasts (corneal keratocytes)
- Tendon fibroblasts
- Bone marrow reticular tissue fibroblasts
- Other nonepithelial fibroblasts
- Pericyte
  - Hepatic stellate cell (Ito cell)
- Nucleus pulposus cell of intervertebral disc
- Hyaline cartilage chondrocyte
- Fibrocartilage chondrocyte
- Elastic cartilage chondrocyte
- Osteoblast/osteocyte
- Osteoprogenitor cell (stem cell of osteoblasts)
- Hyalocyte of vitreous body of eye
- Stellate cell of perilymphatic space of ear
- Pancreatic stellate cell



Note: Cephalic connective tissue and bones are derived from the Cranial neural crest which comes from the ectoderm germ layer

## Contractile cells

- Skeletal muscle cell
  - Red skeletal muscle cell (slow twitch)
  - White skeletal muscle cell (fast twitch)
  - Intermediate skeletal muscle cell
  - Nuclear bag cell of muscle spindle
  - Nuclear chain cell of muscle spindle
  - Myosatellite cell (stem cell)
- Cardiac muscle cells
  - Cardiac muscle cell
  - SA node cell
  - Purkinje fiber cell
- Smooth muscle cell (various types)
- Myoepithelial cell of iris
- Myoepithelial cell of exocrine glands

## Blood and immune system cells

- Erythrocyte (red blood cell)
- Megakaryocyte (platelet precursor)
- Platelets if considered distinct cells, currently there's debate on the subject.
- Monocyte (white blood cell)
- Connective tissue macrophage (various types)
- Epidermal Langerhans cell
- Osteoclast (in bone)
- Dendritic cell (in lymphoid tissues)
- Microglial cell (in central nervous system)
- Neutrophil granulocyte
- Eosinophil granulocyte
- Basophil granulocyte
- Hybridoma cell
- Mast cell
- Helper T cell
- Suppressor T cell
- Cytotoxic T cell
- Natural killer T cell
- B cell

- Natural killer cell
- Reticulocyte
- Hematopoietic stem cells and committed progenitors for the blood and immune system (various types)

## Germ cells

- Oogonium/Oocyte
- Spermatid
- Spermatocyte
- Spermatogonium cell (stem cell for spermatocyte)
- Spermatozoon

## Nurse cell

- Granulosa cell (in ovaries)
- Sertoli cell (in testis)
- Epithelial reticular cell (in thymus)

## Interstitial cells

- Interstitial kidney cells

## See also

- List of human cell types derived from the germ layers

## References

## External links

- Types of neurons from NeuroLex ([http://neurolex.org/wiki/Cell\\_Types\\_With\\_Definitions](http://neurolex.org/wiki/Cell_Types_With_Definitions))
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