Cheatography

Anatomy & Physiology #1: The Human Organism Cheat Sheet by Ten (apollo_10) via cheatography.com/143064/cs/30733/

Anatomy

The scientific study of the structure and relationships between body parts.

Physiology

The scientific discipline of how the body and its parts come together to **function**.

Structural and Functional Organization	
Chemical Level	Atoms combine to form molecules.
Cell Level	Molecules form organelles, such as the nucleus and mitochondria, which make up cells.
Tissue Level	A group of similar cells and the materials surrounding them.
Organ Level	Two or more tissue types that together perform one or more common functions.
Organ System Level	A group of organs classified as one unit because of a common function/set of functions.
Organism Level	Any living thing considered as a whole.
Chemical \rightarrow Cell \rightarrow Tissue \rightarrow Organ \rightarrow Organ System \rightarrow Organism	

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Organi- zation	The scientific interrelatio- nships among the parts of an organism and how those parts interact to perform specific functions.
Metabolism	The ability to use energy to perform vital functions.
Responsiv- eness	The ability of an organism to sense changes in the enviro- nment and make the adjust- ments that help maintain its life.
Growth	Refers to an increase in size of all or part of the organism.
Develo- pment	Changes an organism undergoes through time.
Reprod- uction	Formation of new cells or new organisms.

Homeostasis

The ability of all living systems to maintain stable, internal conditions no matter what changes are occurring outside the body.

Four interacting components of most homeostatic mechanisms:

 $Stimulus \rightarrow Receptor \rightarrow Control \ Center \rightarrow Effector$

Stimulus - Indicates that the value of the variable has deviated from the set point/- normal range.

Receptor - Monitors the value and sends data to the control center.

Control Center - Establishes the set point. **Effector** - Acts on the signal from the control center to move the variable back to the set point.

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Homeostatic Mechanisms

Negative Feedback		Positive Feedback
Serves to <i>reduce an</i> <i>excess response</i> and keep a variable within the normal range.		Serves to <i>intensify a</i> <i>response</i> until endpoint is reached.
The response <i>stops</i> the effector.		e The response <i>keeps</i> the reaction going.
Ex. Temperature & blood pressure regulation		Ex. Childbirth & blood clotting
Pady Desitio	20	
Body Positio	ns	
Anatomical position	A person the face upper lin side, and hands fa	n standing erect with directed forward, the nbs hanging to the d the palms of the acing forward.
Supine position	When a <i>upward</i>	person is <i>lying face</i>
Prone position	When a <i>downwa</i>	person is <i>lying face</i> ard
Directional Terms		
Anterior/Ventral		Front of the body
Posterior/Dorsal		Back of the body
Superior/Cranial		Towards the top

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Directional Terms (cont)		
Inferior/- Caudal	Towards the <i>bottom</i>	
Proximal	Towards the trunk	
Distal	Further from the trunk	
Medial	Structures toward the midline	
Lateral	Structures <i>farther away from the midline</i>	

r lanes	
Sagittal Plane	Divides the body into <i>left and right sides</i> (vertically)
Median Plane/- Mid-Sa- gittal Plane	Passes through the midline of the body; divides the body into <i>left and right halves</i>
Parasa- gittal Plane	<i>Parallel</i> to the sagittal plane, but off to one side
Frontal/C- oronal Plane	Divides the body into <i>front</i> and back (vertically)
Transvers- e/Hori- zontal Plane	Divides the body into <i>top and bottom</i> (horizontally)

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Body Parts and Regions		
Axial Parts	Head, neck, and trunk	
Appendicular	Arms and legs (upper &	
Parts	lower limbs)	

The Abdomen



Abdominal quadrants consist of *four subdivisions*.

Abdominal regions consist of *nine subdivisions*.

Body Cavities



The *two main cavities* are called the **ventral** and dorsal cavities.

Ventral Cavity - Consists of the following: the *thoracic cavity. abdominal cavity*, and the *pelvic cavity*.

Dorsal Cavity - Contains organs lying more posterior in the body. Can be divided into *two portions*: (1) the upper portion or the cranial cavity houses the *brain* (2) the lower portion or vertebral canal houses the *spinal cord*.

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Ventral Cavities

Thoracic cavity	It is surrounded by the rib cage, separated from the abdominal cavity by the diaphragm, and is divided into right and left parts by a median structure called <i>mediastinum</i> .
Abdominal cavity	Bounded primarily by the abdominal muscles and contains the stomach, intest- ines, liver, spleen, pancreas, and the kidneys.
Pelvic cavity	A small space enclosed by the bones of the pelvis and contains the urinary bladder, part of the large intestine, and the internal reproductive organs.

Mediastinum - Is a partition containing the heart, thymus, trachea, esophagus, and others. *Two lungs* are located on each side of the mediastinum.

The abdominal and pelvic cavities are not physically separated and sometimes are called the **abdominopelvic cavity**.

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Serous Membranes



Serous membranes - Secrete fluid that fills the space between the parietal and visceral membranes. The serous membranes protect organs from friction.

Serous membranes lining the thoracic cavity:

Heart: Pericardial cavity - visceral & parietal pericardium - pericardial fluid Lungs: Pleural cavity - visceral & parietal pleura - pleural fluid

Serous membranes lining the abdominopelvic cavity:

Peritoneal cavity - visceral & parietal peritoneum - peritoneal fluid

Mesenteries & Retroperitoneal Organs

Mesenteries - Are parts of the peritoneum that hold the abdominal organs in place and provide a passageway for blood vessels and nerves to organs.

Retroperitoneal organs - Are found *behind the parietal peritoneum* and consists of the *kidneys, adrenal glands, pancreas, parts of the intestines,* and the *urinary bladder*.



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Major Organ Systems Integumentary Skeletal Muscular Lymphatic Respiratory Digestive Nervous Endocrine Cardiovascular Urinary Reproductive

Major Organs of the Body

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Last updated 3rd February, 2022.



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