**Chapter 1- The Human Body: An Orientation Notes**

I. Overview of Anatomy and Physiology—

 a. Anatomy studies \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b. Physiology studies \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 c. “Structure determines function” means:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

II. Levels of Structural Organization

Chemical level-

1. atom-
2. molecule-
3. organelle-

Cellular level-

1. cell-
2. tissue-
3. organ-
4. organ system-

Organismal level

 h. organism-

III. What is Life?

Characteristics of living things:

1. 5.

2. 6.

3. 7.

4. 8.

All of these characteristics depend upon \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes that occur within body parts. These changes are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

IV. Survival Needs of Organisms

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are both important.

Organisms need these things to survive:

1. 3. 5.

2. 4.

V. Homeostasis

Communication within the body is essential for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It is accomplished chiefly by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ systems that use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ signals delivered by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or blood borne \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as information carriers.

The factor/event being regulated in the body is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

All homeostatic control mechanisms have at least 3 components:

1.

2.

3.

There are 2 pathways that information follows within this mechanism:

1. afferent- from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. efferent- from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The results of the response “feed back” to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_ the stimulus.

Positive feedback is when the stimulus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Negative feedback is when the stimulus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A. Positive Feedback

* Always \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the original stimulus; called “cascade”
* Not used for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ well-being.
* Produces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ body conditions and can cause \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Examples of positive feedback\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B. Negative Feedback

* Responds by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the original stimulus; used in making adjustments for moment-to-moment well-being of body
* Returns body to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ state
* The goal of negative feedback is to prevent sudden \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the body.
* Examples of negative feedback\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explain the steps of a specific negative feedback mechanism from the text. (p. 9-10)

VI. Organ System Overview (p. 6-7 in text)

|  |  |  |
| --- | --- | --- |
| System | Functions | Organs |
| Skeletal |  |  |
| Muscular |  |  |
| Nervous |  |  |
| Integumentary |  |  |
| Endocrine |  |  |
| Cardiovascular |  |  |
| Lymphatic |  |  |
| Respiratory |  |  |
| Digestive |  |  |
| Urinary |  |  |
| Reproductive |  |  |



Label the torso above using the terms in the chart. (Use p. 857 to label diagram)

|  |  |  |
| --- | --- | --- |
| **Organ/Structure** | **Function** | **Body System****(for organs only)** |
| Larynx |  |  |
| Trachea |  |  |
| Lungs (R & L) |  |  |
| Diaphragm |  |  |
| Liver |  |  |
| Gallbladder |  |  |
| Cystic Duct |  |  |
| Duodenum |  |  |
| Large Intestine-Ascending Colon-Transverse Colon-Descending Colon-Sigmoid Colon |  |  |
| Appendix |  |  |
| Mesentery |  |  |
| Thyroid |  |  |
| Thymus Gland |  |  |
| Heart |  |  |
| Stomach |  |  |
| Spleen |  |  |
| Pancreas |  |  |
| Small Intestine |  |  |
| Urinary Bladder |  |  |

VII. Overview of Body Cavity Arrangement and Membranes

|  |
| --- |
| **BODY CAVITIES (use diagram p. 17)** |
| DORSAL | a.  |  |
| b.  |  |
|  |
| VENTRAL | a. Facial | 1. (eye) |
| 2. (ear) |
| 3. (nose) |
| 4. (mouth) |
|  |
| b. Thoracic | 1.  |
| 2.  |
| Divided by the DIAPHRAGM |
| c. Abdominopelvic | 1.  |
| 2.  |

 True body cavities are “closed” cavities. Cavities with 1 end open to outside are “open” cavities.

**BODY MEMBRANES (p. 17-18)**

I. Mucous- lines both \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cavities.

 Thick, used as a lubricant in the body.

II. Serous- lines \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cavities ONLY.

 Thin, watery

 **2 Types of Serous Membranes:**

1. Parietal- lines \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of cavity.
2. Visceral- lines \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in cavity.

Named According to LOCATION:

1. Abdominal= peritoneum
2. Lungs= pleural (singular is pleura)
3. Heart= pericardium

EXAMPLES:

* Membrane on the surface of the lung = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Membrane on the surface of the heart= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Membrane on the wall of the abdominopelvic cavity= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Membrane on the surface of the stomach= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

VIII. Anatomical Position/Body Planes/ Directional Terms

Anatomical position is standing, with feet flat on the floor, and palms (anterior) surfaces facing forward.

The body can be divided into several planes (sections): (use diagrams p. 16)

|  |  |
| --- | --- |
| Plane | Divides Body Into: |
| 1. Sagittal |  |
|  a. Mid-sagittal  (median) |  |
|  b. Parasaggital |  |
| 2. Frontal (coronal) |  |
| 3. Transverse (cross-section) |  |
| 4. Oblique |  |

|  |
| --- |
| **Directional Terms (table p. 13)** |
| **Term** | **Definition** |
| Superior (Cranial) |  |
| Inferior (Caudal) |  |
|  |
| Anterior (Ventral) |  |
| Posterior (Dorsal) |  |
|  |
| Medial |  |
| Lateral |  |
| Intermediate |  |
|  |
| Proximal |  |
| Distal |  |
|  |
| Superficial (External) |  |
| Deep (Internal) |  |
|  |
| Supine |  |
| Prone |  |

Practice: Describe the anatomical relationship(s) that exist between each of the following parts. (There may be more than one answer for some of them). Always assume the body is in *anatomical position.*

1. elbow and wrist- 11. brain to spinal cord-

2. nose and chin- 12. wrist to hand-

3. skin and kidneys- 13. fingers to hand-

4. lungs and heart- 14. kneecap to knee joint-

5. toes to ankle- 15. eyes to nose-

6. scalp to skull- 16. ears to head-

7. diaphragm to lung- 17. thumb to hand-

8. heart to diaphragm- 18. little toe to big toe-

9. head to neck- 19. eyebrow to eye-

10. esophagus to spine- 20. inside corner of eye to

 outside corner of eye-

IX. Abdominopelvic Regions (p. 19) “tick-tack-toe” board on abdomen

|  |
| --- |
| **Identify Major Organs in Each Region** |
| R Hypochondriac | Epigastric | L Hypochondriac |
| R Lumbar | Umbilical | L Lumbar |
| R Iliac (Inguinal)  | Hypogastric (Pubic) | L Iliac (Inguinal) |

X. Body Regions (p. 12)- Will be covered in lab manual