

Human Anatomy and Body Systems

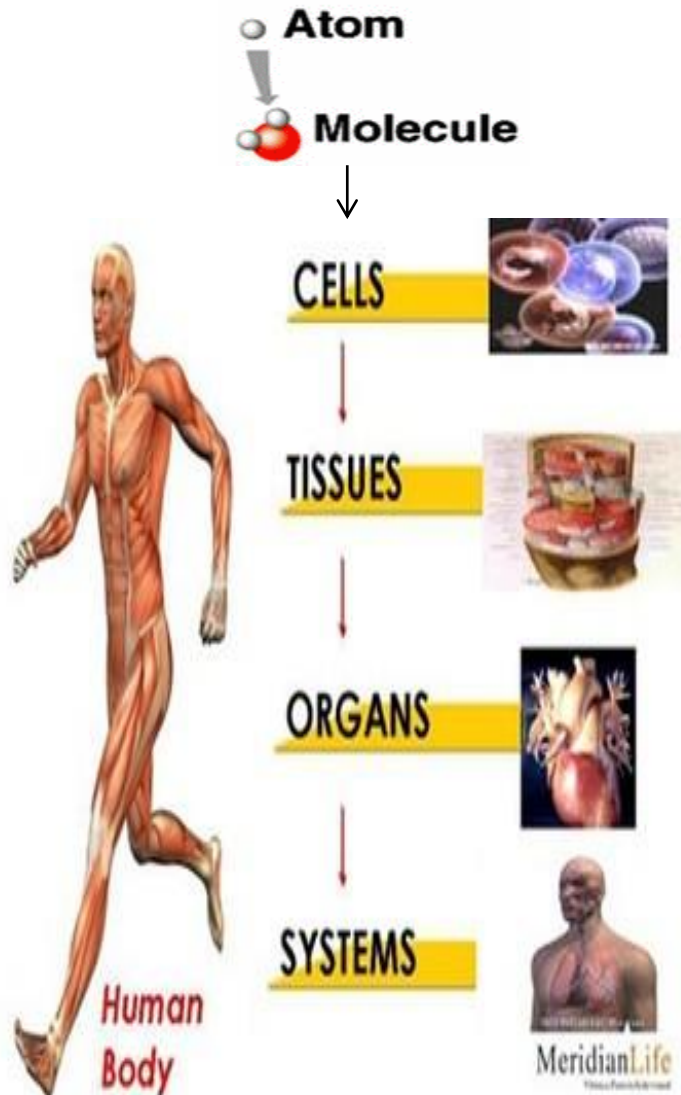


<https://www.youtube.com/watch?v=BVIIgHyNRdl>

- **Anatomy-** study of the **structure** and shape of the body and its parts
 - **Gross anatomy**
 - = **Large** structures, easily observable
 - **Microanatomy**
 - = Very **small** structures
 - = Can **only** be viewed with a microscope
 - Humans vary slightly in both external and internal anatomy
 - = Nerves or blood vessels may be somewhat out of place
 - = Small muscles may be missing
- **Physiology-** study of the **function** of the body's structural machinery
 - Function always reflects structure
 - = What a structure can do depends on its **specific form** & **location**

Levels of Organization

- The human body is organized in several levels, from the simplest to the most complex. . .



Chemical – atoms combine to form molecules

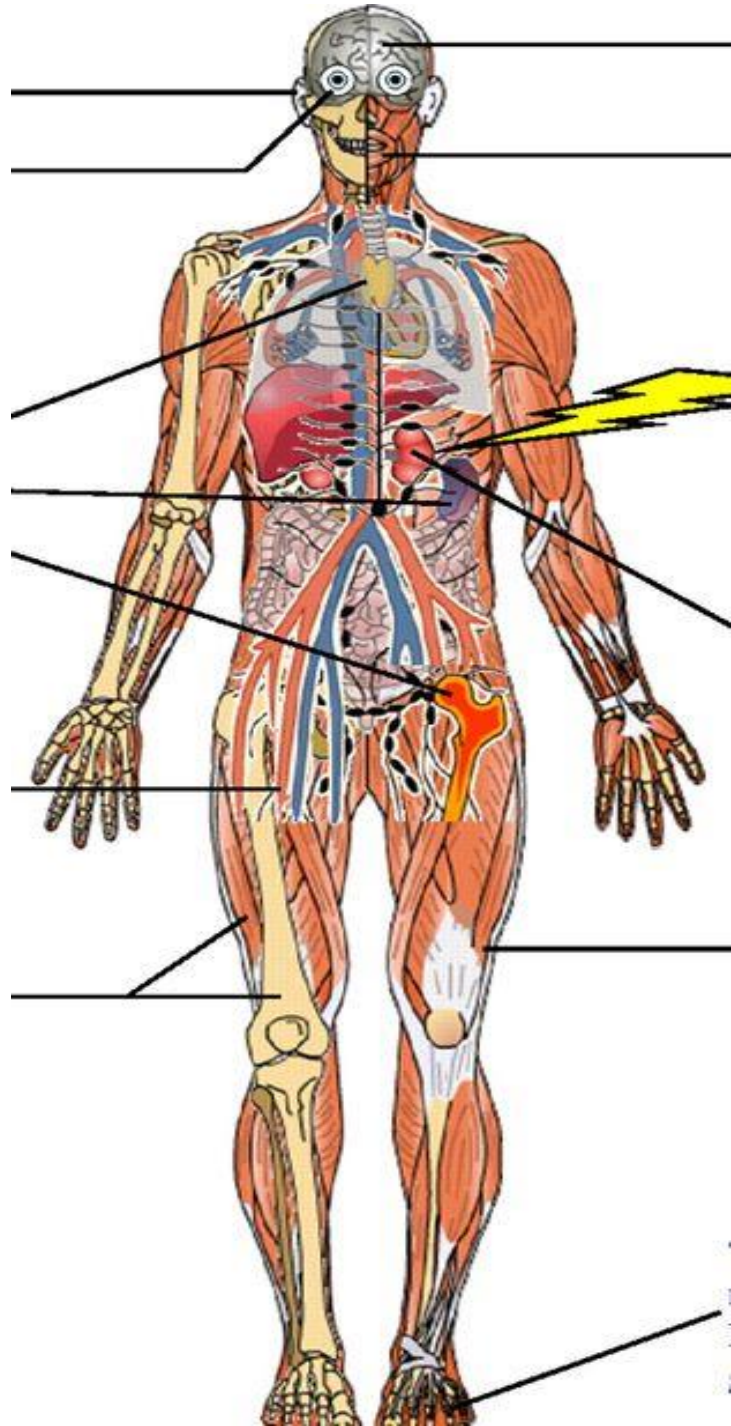
Cells – are composed of molecules & form the basic units of life

Tissues – clusters of cells that perform a similar function

Organs – made of tissues performing one specific job

Organ Systems – groups of organs that perform a specific purpose in the human body

What are some parts of the human body?

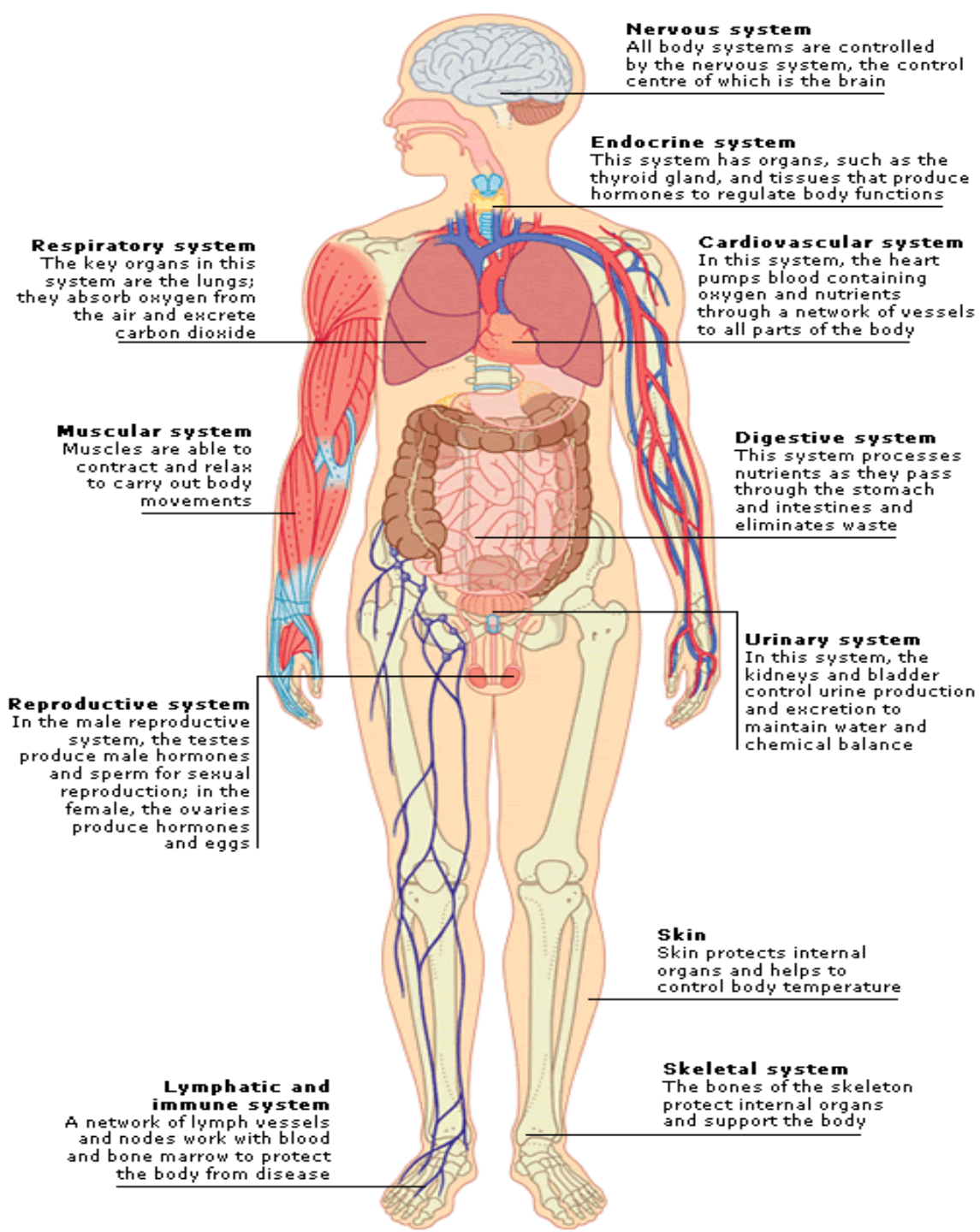


The 11 Human Body Systems

- The 11 human body systems are as follows:
 - nervous system
 - integumentary system
 - respiratory system
 - digestive system
 - excretory system
 - skeletal system
 - muscular system
 - endocrine system
 - circulatory (cardiovascular) system
 - reproductive system
 - lymphatic (immune) system

****see figure 1.5 p. 12**

- These 11 organ systems work together to allow the body to remain in **homeostasis**.
 - = a state of physiological balance



Nervous system

All body systems are controlled by the nervous system, the control centre of which is the brain

Endocrine system

This system has organs, such as the thyroid gland, and tissues that produce hormones to regulate body functions

Respiratory system

The key organs in this system are the lungs; they absorb oxygen from the air and excrete carbon dioxide

Cardiovascular system

In this system, the heart pumps blood containing oxygen and nutrients through a network of vessels to all parts of the body

Muscular system

Muscles are able to contract and relax to carry out body movements

Digestive system

This system processes nutrients as they pass through the stomach and intestines and eliminates waste

Reproductive system

In the male reproductive system, the testes produce male hormones and sperm for sexual reproduction; in the female, the ovaries produce hormones and eggs

Urinary system

In this system, the kidneys and bladder control urine production and excretion to maintain water and chemical balance

Skin

Skin protects internal organs and helps to control body temperature

Lymphatic and immune system

A network of lymph vessels and nodes work with blood and bone marrow to protect the body from disease

Skeletal system

The bones of the skeleton protect internal organs and support the body

The Amazing Human Body

