

# Introduction to Anatomy & Physiology

Packet #1

# Introduction

## Anatomy

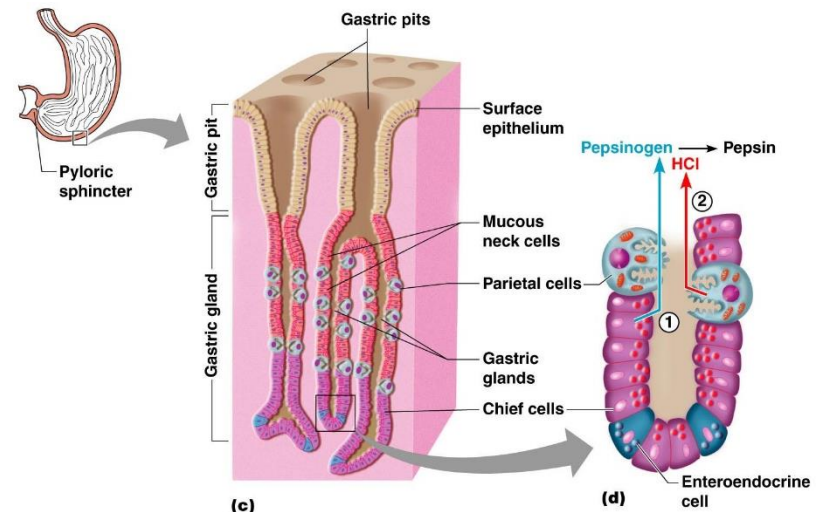
- \* Study of the structure and shape of the body and its parts.

## Physiology

- \* Study of how the body and its parts work or function.

# Anatomy – Levels of Study

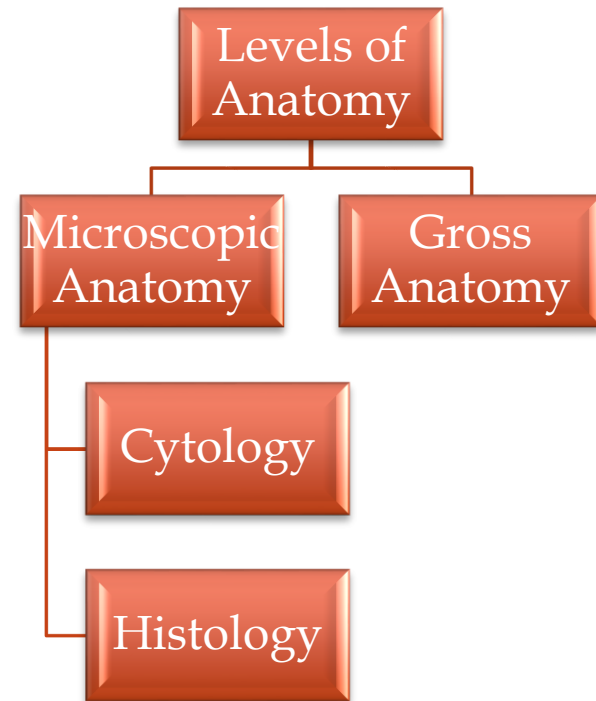
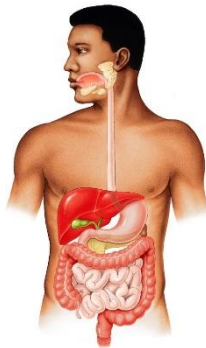
- \* Microscopic Anatomy
  - \* Very small structures
  - \* Can only be viewed with a microscope
  - \* Cytology
    - \* Study of cells
  - \* Histology
    - \* Study of tissues (groups of specialized cells that work together to perform functions)



# Anatomy – Levels of Study

- \* Gross anatomy

- \* The study of large structures that are easily observable



# Physiology

- \* Physiology
- \* The study of how an organism performs/functions.
- \* The study of body function.



# Anatomy & Physiology

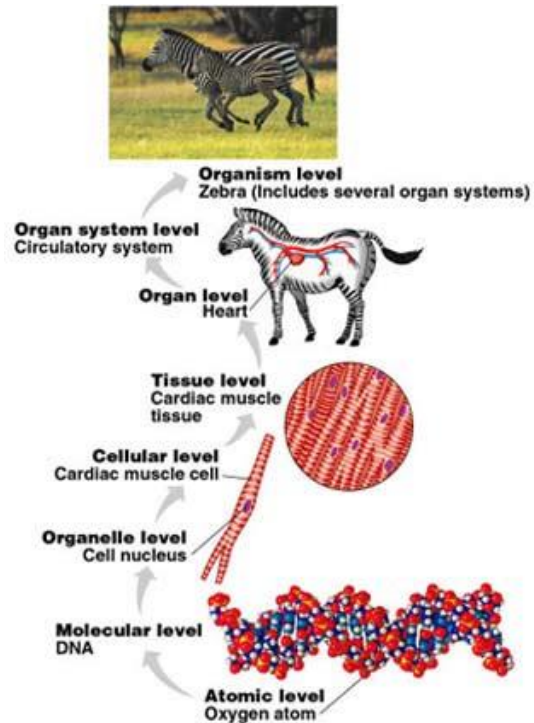
- \* Human Anatomy and Physiology
- \* The study of the form and function of a human body



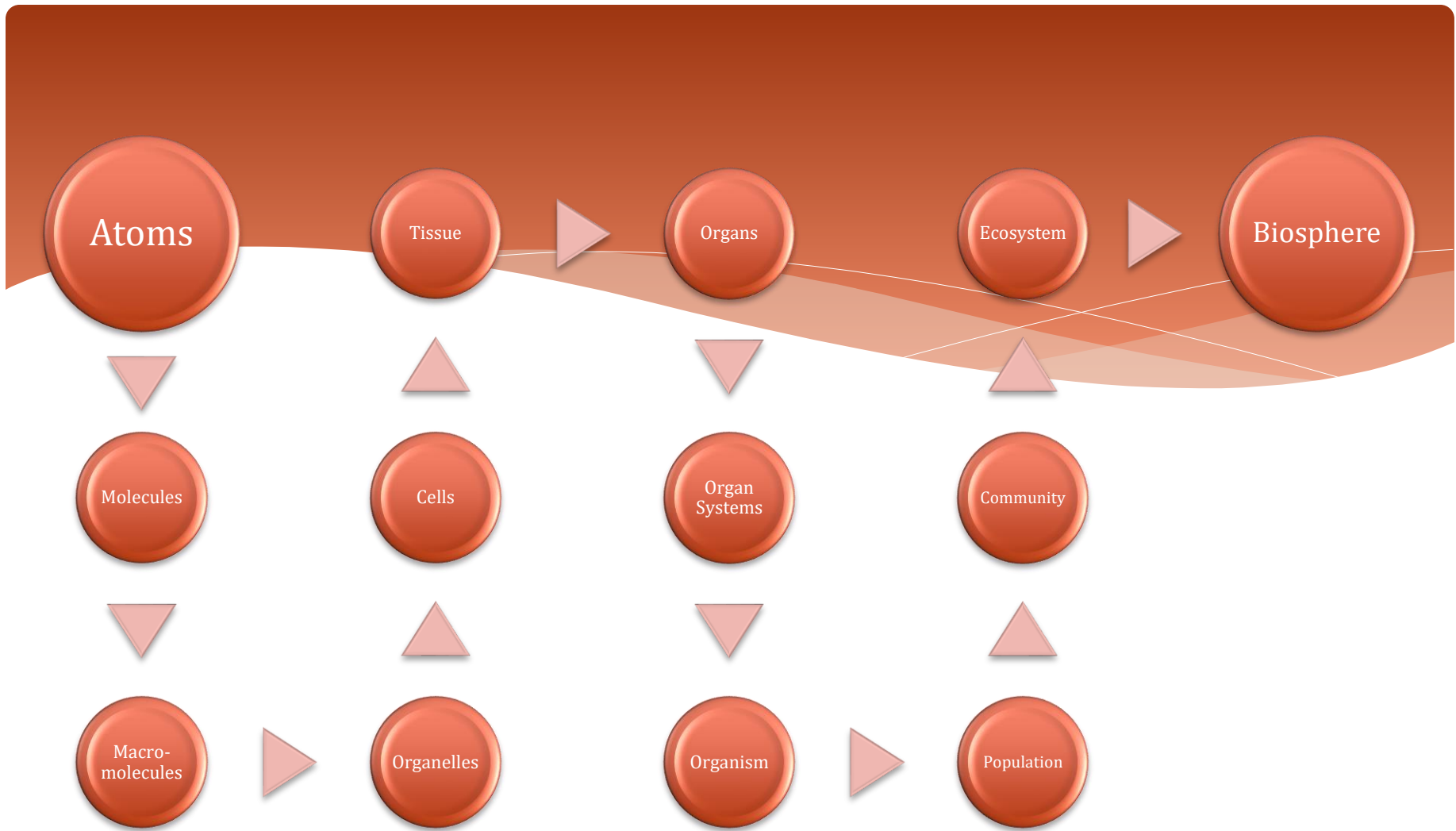
Anatomy & Physiology & The  
Link to the Hierarchy of  
Biological Order

# Hierarchy

- \* The living world is a hierarchy where each level of biological structure, builds on the level below it.





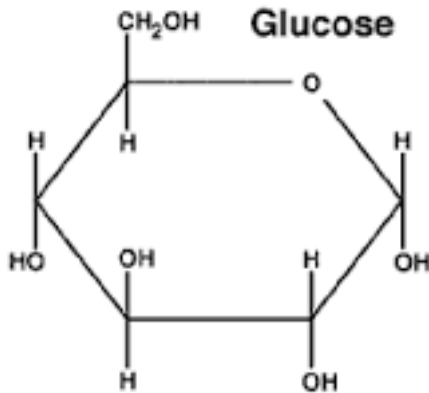
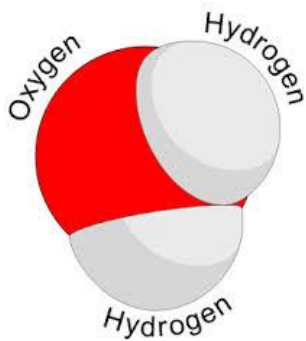


# The Connection – Anatomy & the Hierarchy

- \* Anatomy can be studied in relation to several levels of the hierarchy.
  - \* Molecular
  - \* Macromolecular
  - \* Cellular
  - \* Tissue
  - \* Organs
  - \* Organ Systems
  - \* Organism



# A&P & The Hierarchy



## Atoms, Molecules & Macromolecules

- \* Atoms
  - \* C (Carbon), N (Nitrogen), H (Hydrogen)
- \* Molecules
  - \* Inorganic
    - \* NaCl (salt), H<sub>2</sub>O, O<sub>2</sub>, NH<sub>4</sub>
  - \* Organic
    - \* CH<sub>4</sub> (methane), C<sub>2</sub>H<sub>5</sub>OH (ethanol)
- \* Macromolecules
  - \* Carbohydrates, Proteins, Lipids & Nucleic Acids

# A&P & The Hierarchy

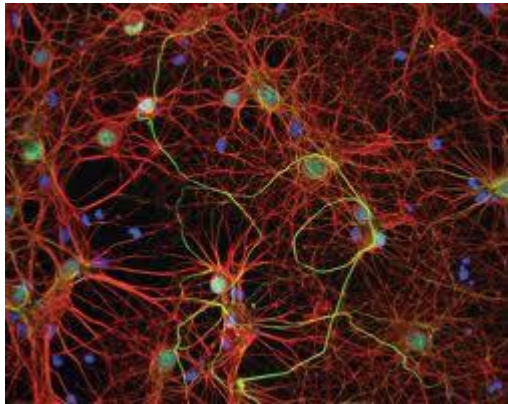


- \* Organelles & Cells
  - \* Cells are the smallest unit of matter that carries on life's processes.
  - \* Cells contain organelles

# A&P & The Hierarchy

- \* Tissue

- \* A group of cells that has a specialized structural and functional role



# A&P & The Hierarchy

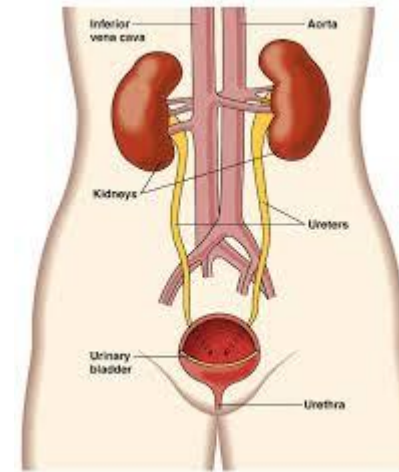
- \* Organ

- \* A specialized structure formed from a group of tissues



# A&P & The Hierarchy

- \* Organ system
  - \* A set of interrelated organs that work together to provide specialized functions



# A&P & The Hierarchy

- \* Organism
  - \* An individual living thing





# Review