# Anatomy + Physiology:
# In Everyday Life

## Activities

These activities are designed to be done at home. There is no grade given for these and they do not have to be turned in. The answer key has been emailed to your grown up.

### Running Late

Imagine if your nervous system was damaged and could not carry messages from your brain to the rest of the body. It could still receive information and the brain can process it, but no information can be sent back to the muscles, tissues, and other parts of the body.

How would that change how your body responds in this situation? Think about it, make some notes and then talk this over with your grown up.

### Eating After Activity

Imagine if your digestive system was not functioning to break down and absorb nutrients. How would that change your experience of life in this situation? Think about it, make some notes and then talk this over with your grown up.

## Answer Key

**Anatomy & Physiology in Everyday Life – Home Activities**

### Running Late

**Scenario:** The nervous system can receive information and the brain can process it, but signals cannot be sent back to the body.

**Key ideas the student should recognize:**

- The brain would still *recognize* stress (being late) and understand the situation.
- Without outgoing nerve signals:
    - Muscles would not contract properly or at all → sprinting would be impossible.
    - Heart rate and breathing would not increase appropriately.
    - Reflexes (like quick movement or pulling away) would be impaired or absent.

- Hormones released by the endocrine system might still enter the bloodstream, but their effects would be limited because muscles and organs would not receive coordinated nerve signals.
- The body would feel “stuck” — awareness without action.

**Big takeaway:**
The nervous system is essential for *communication and coordination*. Even if the brain works, the body cannot respond without nerve signals traveling to muscles and organs.

### Eating After Activity

**Scenario:** The digestive system cannot break down food or absorb nutrients.

**Key ideas the student should recognize:**

- Food could still be eaten, but nutrients would not enter the bloodstream.
- Consequences would include:
    - Little or no energy available for muscle repair and recovery.
    - Ongoing fatigue, weakness, and poor athletic performance.
    - Difficulty maintaining healthy blood sugar levels.
    - Possible weight loss or malnutrition over time, even with regular eating.
- Other systems would be affected:
    - Muscular system would struggle to repair and grow.
    - Immune system would weaken without nutrients.
    - Endocrine system would have difficulty regulating energy balance.
- Hunger might persist because the body’s cells are still not being fed.

**Big takeaway:**
Eating alone is not enough — nutrients must be **digested, absorbed, and delivered** to cells for the body to function and recover.

## Pre-assessment Quiz: Anatomy & Physiology in Everyday Life

1. What is the main difference between **anatomy** and **physiology**?

    A. Anatomy studies diseases; physiology studies treatments
    **B. Anatomy studies body parts; physiology studies how those parts work**
    C. Anatomy studies cells; physiology studies organs
    D. Anatomy studies movement; physiology studies thinking

2. Which of the following shows the **correct order** of organization in the human body?

   A. Organs → cells → tissues → systems → organism
   B. Cells → organs → tissues → systems → organism
   **C. Cells → tissues → organs → systems → organism**
   D. Tissues → cells → organs → organism → systems

3. Which of the following is an **organ**?

   A. Muscle tissue
   B. Neuron
   **C. Heart**
   D. Blood

4. How many **major body systems** are taught in this course?

   A. 7
   B. 9
   C. 10
   **D. 11**

5. Which body system is primarily responsible for **sending messages** quickly throughout the body?

   A. Endocrine
   B. Cardiovascular
   **C. Nervous**
   D. Immune

6. When you suddenly sprint because you're late for class, which system **starts the response first**?

   A. Muscular
   B. Digestive
   **C. Nervous**
   D. Skeletal

7. Why does digestion slow down during a stressful situation?

   A. The stomach stops working
   **B. Blood and energy are redirected to muscles**
   C. The digestive system is damaged
   D. Food cannot be absorbed during stress

8. What is **homeostasis**?

   A. The body being completely still
   B. The body growing larger over time

**C. The body keeping internal balance despite changes**
D. The body responding only to emergencies

9. Which system is involved in **making immune cells** inside bone marrow?

A. Muscular
**B. Skeletal**
C. Endocrine
D. Respiratory

10. Which statement best describes how body systems work?

A. Each system works independently
B. Only the nervous system controls other systems
**C. Systems work together to keep the body functioning**
D. Systems only interact during illness

# Post-assessment Quiz: Anatomy & Physiology in Everyday Life

1. What does anatomy primarily study?

A. How body systems communicate

B. How the body heals itself

C. The chemical reactions in cells

**D. The structures and parts of the body**

2. What best describes physiology?

A. The study of body structures

B. The study of diseases

**C. How body parts function and work together**

D. How cells are classified

3. Which term describes the body's goal of maintaining internal balance?

A. Adaptation

**B. Homeostasis**

C. Metabolism

D. Stimulation

4. When you suddenly run because you are late, which system sends the fastest signals?

A. Endocrine system

B. Digestive system

**C. Nervous system**

D. Immune system

5. Why does digestion slow down during a stressful situation?

A. The stomach stops working

**B. Energy is redirected to muscles and the brain**

C. Hormones stop being released

D. Blood flow decreases everywhere

6. Which systems work together to stop bleeding after a cut?

A. Digestive and respiratory systems

**B. Cardiovascular and immune systems**

C. Endocrine and nervous systems

D. Muscular and skeletal systems

7. What is Vis Medicatrix Naturae?

A. A medical procedure

**B. The body's ability to heal itself**

C. A type of hormone

D. A nervous system reflex

8. After eating, why does the body enter a 'rest and digest' state?

A. To increase stress hormones

**B. To store energy and support recovery**

C. To prepare for exercise

D. To stop digestion

9. How does poor sleep affect the body over time?

A. It improves reaction time

B. It strengthens the immune system

**C. It disrupts hormones and slows recovery**

D. It increases energy levels

10. Which choice best supports optimal health according to this lesson?

A. Constant stimulation with little rest

B. Forcing the body to adapt

**C. Supporting the body's needs and removing stressors**

D. Ignoring daily habits