



# HIGH SCHOOL HEALTH I

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# Overview

The book of Genesis provides the basis for our understanding of Creation, its origins, its goodness, and its purpose. As the “head and crown” of Creation, mankind was given dominion over all the earth. We were created to serve God and glorify Him by ruling over and caring for the Creation. The practice of good health habits is a fulfillment of God’s mandate to “subdue” the earth. This includes caring for our spiritual, physical, emotional, social, and environmental health.

Studying the anatomy and physiology of the human body will engender a greater appreciation for it. To understand its basic units, its systems, its functions and its growth development, is to comprehend the breadth and depth of God’s wisdom as revealed in Creation. An informed appreciation of the human body is essential to maintaining your health, and therefore, it is helpful in fulfilling your duty as a steward of God’s Creation.

## OBJECTIVES



When you have completed this LIFEPAK®, you should be able to:

- Explain why man is the “head and crown” of creation.
- Understand why the study of health is important.
- Identify the systems of the body and their basic functions.
- Differentiate between the stages of human growth and development.
- Understand the reason for life and health.

## VOCABULARY



**Artery** – a blood vessel that takes oxygen-rich blood away from the heart.

**Cell** – the basic structural unit of the body.

**Chamber** – a space or room within the heart.

**Conception** – the beginning of life, the beginning of pregnancy.

**Contract** – to draw together.

**Cytoplasm** – the fluid-like substance contained within the cell membrane.

**DNA** – acronym for deoxyribonucleic acid; the genetic “blueprint” that determines the cell’s purpose and function.

**Electrical impulse** – a sudden surge of energy in one direction.

**Fertilization** – the union of the male gamete (sperm cell) and the female gamete (egg cell).

**Gland** – an organ or group of cells that secretes a chemical substance of the body.

**Hormone** – a chemical substance produced by the glands of the endocrine system in order to control specific tissues and organs.

**Involuntary** – not controlled by will.

**Melanin** – the pigmentation in the skin that is brown to dark-brown in color.

**Nucleus** – the organelle within a cell that functions as its brain, regulating its production of protein.

**Organ** – a group of tissues that works together to perform a specified bodily function.

**Organelle** – a structure that performs a specific function within a cell; nucleus.

**Pulmonary** – having to do with the lungs.

**System** – organs working together to perform a specific bodily function.

**Systemic** – having to do with the entire body.

**Tissue** – a group of cells that have the same purpose.

**Voluntary** – controlled by will.

# I. THE HEAD AND CROWN OF CREATION

## The Creation of Man

The book of Genesis provides the basis for your understanding of Creation, its origins, its goodness, and its purpose. Chapters 1 and 2 explain God's creative activity. Genesis 1:1–2 reads, "In the beginning God created the heaven and the earth. And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters." God created the universe out of nothing. He alone formed the oceans, rivers, mountains, and plains, and filled them with plants, animals, and human beings. As the Creator of the universe, God proclaimed that it was "very good."

The creation of Adam and Eve marked the pinnacle of God's creative acts. God made mankind in His own image and deemed that they should have dominion over all the earth and care for God's creation. Mankind was created to be loved by God and to love and serve God in response to God's love; giving Him all glory, honor, and praise through every aspect of his life.

The practice of good health habits is a fulfillment of God's mandate to care for His Creation. Eating nutritious foods, exercising regularly, and caring for and preserving the environment is reflecting God's image as the Creator-King. To abuse or purposely neglect our bodies and the world we live in is to disobey God's will.

It can be said, therefore, that the Garden of Eden was a picture of perfect health. Spiritually, emotionally, physically, socially, and environmentally, Adam and Eve and the rest of creation were free of disease and pain. Their obedience to God resulted in life and peace. Consequently, Adam's disobedience resulted in death and fear.

Adam and Eve's spiritual corruption affected all of Creation. After they were expelled from the Garden of Eden, God revealed to them the ramifications of their sin. Genesis 3:17 reads, "...cursed is the ground for thy sake..." As a result of Adam's sin, the universe was subject to decay and corruption. Likewise, the human body was cursed. Verse 19 of the same chapter states, "For dust thou art, and unto dust shalt thou return." The existence of disease and pain in the world is a result of Adam's sin.

As the Second Adam, Christ came to save His people from death and fear. He lived a life of perfect obedience so that we could have life and peace (Romans 5:12–17). When Christ returns, our bodies and the rest of creation will be renewed. Our sinful, diseased state will be exchanged for a glorious state, a perfect state (1 Corinthians 15:35–57). As in the Garden of Eden, we will once again have a perfect body, living in the presence of God.



Until that time comes, however, we must serve God faithfully. As Adam’s children, we are called to “tend and keep” the creation. This mandate includes caring for our spiritual, emotional, physical, social, and environmental health. Therefore, the study of health and its various components is of great importance to the Christian.

As you read this section of the course, carefully consider this Christian view of health. It is quite different from that of the world. It does not seek to glorify the self and encourage the misuse of God’s creation, but rather, it compels us to be faithful and obedient stewards, seeking not our own glory, but His.



**Answer the following questions with short answers.**

I.1 Why is the study of health important to the Christian? \_\_\_\_\_

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

I.2 After God created the universe, what did He say about it? \_\_\_\_\_

\_\_\_\_\_

I.3 In what way was the Garden of Eden a picture of perfect health? \_\_\_\_\_

\_\_\_\_\_

I.4 Why should we practice good health habits? \_\_\_\_\_

\_\_\_\_\_

I.5 What were two of the results of Adam’s disobedience to God?

a. \_\_\_\_\_

b. \_\_\_\_\_



# ACTIVITY

## What's the Difference?

The culture in which we live has many ideas about health. Thousands of books and magazine articles have been written on the subject. Chances are, you have read or heard about several health-related articles. Some of the authors of these articles might even claim to base their principles on Scripture. However, have you ever searched the Scriptures to see if there is a difference between God's view of health and what you've read or heard?

**What principles of good health are given to us in the following verses?**

1.6 • Genesis 1:28 \_\_\_\_\_

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1.7 • Deuteronomy 21:20–21 \_\_\_\_\_

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1.8 • I Corinthians 10:31 \_\_\_\_\_

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1.9 • I Timothy 4:1–5 \_\_\_\_\_

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**Adult Check**

\_\_\_\_\_ **Initial**

\_\_\_\_\_ **Date**

## Anatomy and Physiology

*The entire world is a revelation of God, a mirror of his virtues and perfections; every creature is in his own way and according to his own measure an embodiment of a divine thought. But among all creatures only man is the image of God, the highest and richest revelation of God, and therefore head and crown of the entire creation.*

—Herman Bavinck

**The Cell.** The human body is composed of trillions of structural units called cells. Each **cell** contains a fluid-like substance called **cytoplasm** in which **organelles** function, and each cell is surrounded by a cell membrane. Organelles are structures that perform special functions within the cell. Most cells contain a nucleus, a notable exception being the red blood cell. A nucleus is an organelle that functions as the cell's brain, regulating its production of proteins and genetic material. The nucleus governs the cell's production of these substances by means of its deoxyribonucleic acid or **DNA**. DNA functions as a "blueprint." It contains information that determines the cell's purpose and function. Considering the microscopic size of most cells, it is mind-boggling to consider the amount of complex information that each cell contains and the intricate functions that they are able to perform.

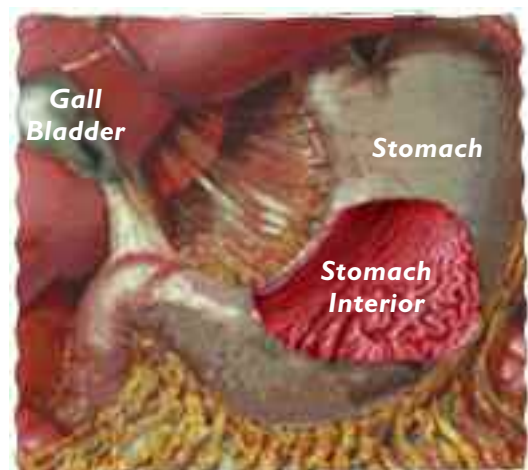
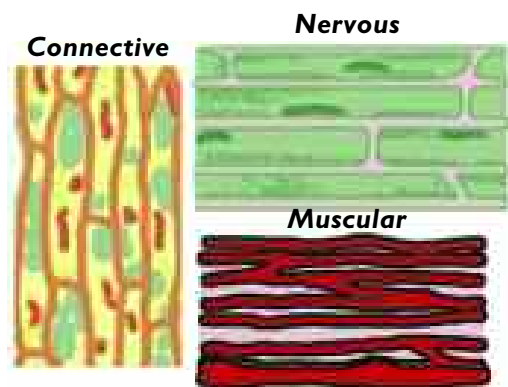
## Tissue

When a cell divides, it passes on a copy of its DNA. Cells that work together to perform similar functions are collectively known as **tissue**. Cells can be grouped into four different types: epithelial, muscular, connective, and nerve cells.

Epithelial cells group together to form the tissues that cover and protect the body inside and out. The skin on your arm as well as the lining of your stomach is made up of the same type of tissue. Epithelial tissues are designed to regulate temperature, secrete lubricants, and protect the body from harmful substances. Muscular cells work together to form your body's muscles. They enable you to lift a book or sit down in a chair. Connective cells form the tissues and fluids that connect the parts of the body. Tendons, blood, and fat are all made up of connective cells. Nerve cells form nervous tissue which sends messages from the brain to the rest of the body.

**Organs.** As the cells work together to perform various functions as tissues, so tissues work together to perform various functions as organs. For example, your stomach is an organ. It is made up of several types of tissues that work together to continue the process of digestion. When food enters your stomach, the epithelial tissue lining the stomach secretes powerful acids that are essential to digestion. Muscular tissues surrounding the stomach then **contract** approximately every 20 seconds, causing the food and the acids (or gastric juices) to mix. Nerve cells relay messages back and forth to the brain, regulating the digestive process. Connective tissues such as blood and lymph vessels supply and support the other tissues of the stomach.

**Body Systems.** Like other organs, the stomach does not work alone. It is dependent upon other organs to complete the digestive process. Digestion begins in the mouth and ends in the large intestine. The group of organs that makes up this process is called the digestive system.





There are eleven **systems** that make up the human body. Each system consists of organs that work together to perform a specific bodily function. Although we don't fully understand the functions of the organs that make up the various systems, we can trust that God's purposes in their creation are for our good and His glory.



**Answer true or false.**

- I.10 \_\_\_\_\_ The heart is the basic structural unit of the body.
- I.11 \_\_\_\_\_ Cytoplasm contains information that determines a cell's purpose and function.
- I.12 \_\_\_\_\_ Epithelial tissue is designed to regulate temperature, secrete lubricants, and protect the body from harmful substances.
- I.13 \_\_\_\_\_ Muscular tissue sends messages from the brain to the rest of the body.
- I.14 \_\_\_\_\_ Organs are tissues that work together to perform a specific bodily function.
- I.15 \_\_\_\_\_ The animals are the "head and crown" of creation.
- I.16 \_\_\_\_\_ The nucleus is the organelle within a cell that functions as its brain.
- I.17 \_\_\_\_\_ Muscular tissues work together to form muscles.
- I.18 \_\_\_\_\_ Connective tissues connect the parts of the body.



Review the material in this section in preparation for the Self Test. The Self Test will check your mastery of this particular section. The items missed on this Self Test will indicate specific areas where restudy is needed for mastery.

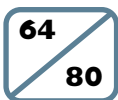
# SELF TEST I

Complete the following using short answers (each answer, 5 points).

- I.01 What was the pinnacle of God's creative acts? \_\_\_\_\_  
\_\_\_\_\_
- I.02 In what way was the Garden of Eden a picture of perfect health? \_\_\_\_\_  
\_\_\_\_\_
- I.03 Why should we practice good health habits? \_\_\_\_\_  
\_\_\_\_\_
- I.04 List two of the results of Adam and Eve's disobedience.  
a. \_\_\_\_\_  
b. \_\_\_\_\_
- I.05 Why is the study of health important to the Christian? \_\_\_\_\_  
\_\_\_\_\_

Match the following items (each answer, 5 points).

- |       |  |                       |
|-------|--|-----------------------|
| I.06  | _____ the basic structural unit of the body  | a. organelles         |
| I.07  | _____ organs working together to perform a specific bodily function                                      | b. cells              |
| I.08  | _____ structures that perform special functions within a cell  | c. epithelial cells   |
| I.09  | _____ tissues that work together to perform a specific bodily function                                   | d. cytoplasm          |
| I.010 | _____ acts as the "brain" of a cell  | e. epithelial tissues |
| I.011 | _____ designed to regulate temperature, secrete lubricants, and protect the body from harmful substances | f. nucleus            |
| I.012 | _____ fluid-like substance inside a cell   | g. organs             |
| I.013 | _____ the genetic blueprint for all cells  | h. DNA                |
| I.014 | _____ tendons, blood, and fat are examples of these  | i. connective cells   |
| I.015 | _____ they group together to form tissues that cover and protect the body inside and out                 | j. system             |



Score \_\_\_\_\_

Adult Check \_\_\_\_\_

Initial \_\_\_\_\_

Date \_\_\_\_\_