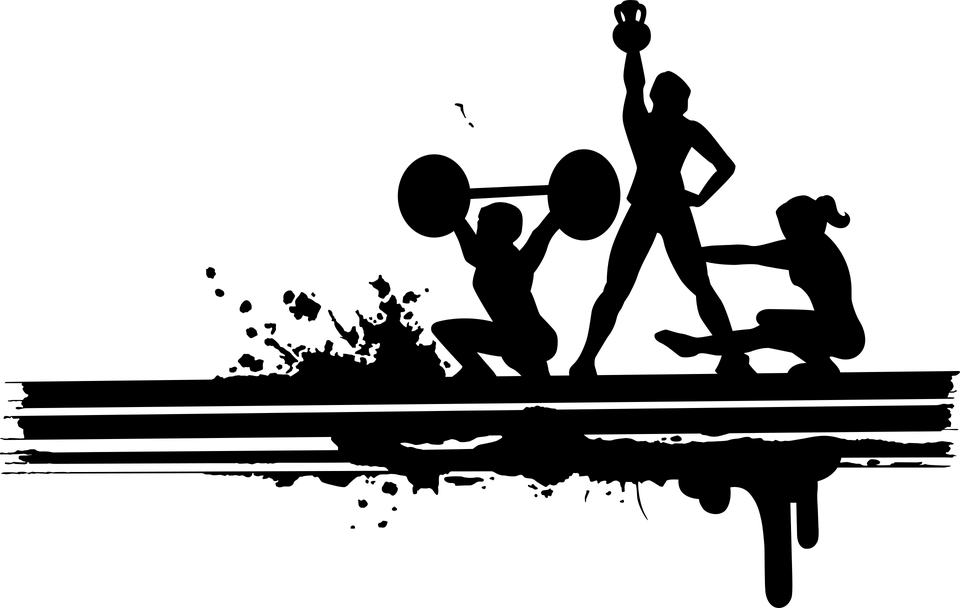
EXERCISE FUNDAMENTALS AND ANATOMY BASICS

Specialists in Fitness Education



1. Introduction

In the module Exercise Fundamentals and Anatomy Basics my first task will be to guide you through exercise physiology which is specialization within the field of kinesiology, science of movement. Exercise physiology study’s the body’s response to physical activity as well as how the body adapts to physical activity over time. We will explore human body and that is everything that makes up, well, you.

Human body is made up of all the living components that create the entire structure of the human organisms, including every living cell, tissue, and organ. On the outside human anatomy consists of the five basic parts, the head, the neck, torso, arms, and legs. However, beneath the skin there are countless biological and chemical interactions that keep human body machine working.

In the section called biomechanics, we are going to explore how that extraordinary human machine works by connecting all the parts of human body in one large component that produces human movement.

Sometimes you will have to deal with musculoskeletal injuries also known as musculoskeletal disorders and that part we will cover in our last section of the module Exercise Fundamentals and Anatomy Basics.

1. Objective

The objective of the module Exercise Fundamentals and Anatomy Basics is to provide students with the basic information about the function of body systems, the way they coordinate their function and how is that connected to exercise. After this module student will be able to communicate in which way our body operates to achieve its basic needs and to maintain homeostasis.

1. Content
2. CHAPTER

INTRODUCTION TO EXCERCISE PHYSIOLOGY

HISTORY OF EXCERCISE PHYSIOLOGY

TODAY SITUATION IN THE FIELDS OF EXCERCISE AND EDUCATION

1. CHAPTER

BASIC TERMINOLOGY

1. CHAPTER

RESPIRATORY SYSTEM

1. CHAPTER

CARDIOVASCULAR SYSTEM

1. CHAPTER

CARDIORESPIRATORY RESPONSE TO EXCERCISE

1. CHAPTER

STRUCTURE AND FUNCTION OF MUSCLE AND NERVOUS SYSTEM

1. CHAPTER

ACUTE AND CHRONIC NEUROMUSCULAR RESPONSE TO EXERCISE

1. CHAPTER

ENDOCRINE SYSTEM AND HORMONAL SYSTEM

1. CHAPTER

BASIC BIOMECHANICS OF HUMAN MOVEMENT

1. CHAPTER

COMMON MUSCULOSKELETAL INJURIES

1. Useful links

Websites

[www.visiblebody.com](http://www.visiblebody.com)

[www.heart.org](http://www.heart.org)

[www.livestrong.com](http://www.livestrong.com)

[www.acefitness.org](http://www.acefitness.org)

Books:

Anderson MK, Hall SJ, Martin M. Foundations of Athletic Training: Prevention, Assessment, and Management. 5th ed. Baltimore, MD: Lippincott Williams & Wilkins; 2012.

Kisner C, Colby L. Therapeutic Exercise: Foundations and Techniques. 5th ed. Philadelphia, PA: F.A. Davis Company; 2002.

Wilber RL. Altitude Training and Athletic Performance. Champaign, IL: Human Kinetics; 2005.

West JB. Respiratory Physiology: The Essentials. 8th ed. Baltimore, MD: Lippincott Williams & Wilkins; 2008.

West JB. Respiratory system under stress. In: Respiratory Physiology: The Essentials. 8th ed. Baltimore, MD: Lippincott Williams & Wilkins; 2008.

Bird S, Tarpenning K, Marino F. Designing resistance training program to enhance muscular fitness: a review of the acute program variables. Sports Med. 2005; 35:841–851.

McCartney N. Acute responses to resistance training and safety. Med. Sci. Sports Exerc. 1999; 31:31.

1. Appendix – figures and tables
2. Tables: 1-5

Source:Porcari, J., Bryant C., Comana F.: *Exercise Physiology* (2015), Quincy McDonald.

1. Figures: 11, 13-15, 17-21, 24-26, 27, 29-30, 33-37, 39, 43, 45, 48, 50-53, 56

Source:Porcari, J., Bryant C., Comana F.: *Exercise Physiology* (2015), Quincy McDonald.

1. Figures: 1-10, 12, 16, 22-23, 28, 31-32, 38, 40, 42, 44, 46-47, 49

Source: https://www.canva.com/

1. Figure 41

Source: https://emedicinehealth.com/anatomy\_of\_the\_endocrine\_system/article\_em.htm.

1. Figure 54-55

Source: https://orthoinfo.aaos.org/en/diseases-conditions/meniscus-tears/