

## Unit 1: Anatomy and Physiology

### **Chapter 7: Energy Systems and Physical Activity**

#### Section 7.1: Three Key Energy Nutrients:

- Know the three types of key energy nutrients and their relative energy levels.
- Know the role of carbohydrates in the body

#### Section 7.2: ATP – The Common Energy Molecule

- Know the structure of ATP and its importance
- Know the 2 different systems in the body that utilize ATP: Anaerobic and aerobic
- Know the three metabolic pathways

#### Section 7.3: Pathway 1: ATP-PC (Anaerobic Alactic)

- Understand the ATP-PC system and how/when it works
- Know some examples of activities that would utilize this system

#### Section 7.4: Pathway 2: Glycolysis (Anaerobic Lactic)

- Know the process of glycolysis.
- Know how pyruvate gets converted to lactic acid
- Know some examples of activities that would rely on this system

#### Section 7.5: Pathway 3: Cellular Respiration (Aerobic)

- Understand the process of cellular respiration and its components; Glycolysis, Krebs's Cycle and Electron Transport Chain.
- Know some examples of activities that would rely on this system

#### Section 7.6: Fat and Proteins as Energy Sources

- Know how fats and proteins are used as energy sources.
- Understand protein supplementation and its risks

Table 7.1 on page is a good resource for the comparison between the 3 metabolic pathways.

#### Section 7.7: Muscle Fibre Types and Energy Systems

- Know the difference between slow twitch and fast twitch muscles
- Know the importance of myoglobin
- Know how the 3 different muscle types utilize energy and the processes each use

Table 7.2 on page is a good reference for the characteristics of the different muscle types

#### Section 7.8: Muscle Fibre Types and Athletic Performance

- Understand how the different muscle groups affect training for specific activities and be able to give examples.