

# Physiology and Benefits of Exercise

## Preparing to read

### BRAINSTORMING

Talk to the people sitting near you and brainstorm your knowledge of physiology and benefits of exercise. What have you already studied on the topic?

### SYNONYMS AND ANTONYMS

Learning a large number of words relating to a specific topic makes reading on that topic much easier. Knowing synonyms and antonyms is one way to build a topic-based vocabulary.

#### TASK:

The following words occur in the text. Find five pairs of near synonyms in the first line and four pairs of antonyms in the second one.

1. improve – maintain – enhance – aid – stretch – help – keep – affect - extend - influence
2. increase – lengthen – reduce – stretch – anaerobic - contract – shorten - aerobic

### SCANNING

Scanning involves looking quickly through a text to find a specific word or piece of information. There are often times when it is necessary to do this, such as when studying for a test, so it is a useful skill to practise.

TASK:

Scan the text below quickly to match paragraphs with suitable headings:

**Basic Physiology of Exercise**

**Aerobic Exercise**

**Benefits of Exercise**

**What is exercise?**

**Anaerobic Exercise**

1. Exercise is an activity that results in contraction of skeletal muscle. The term is usually used in reference to any activity that improves physical fitness. Although muscle contraction is the common element of all forms of exercise, many other organs and systems are affected, for example, the heart and lungs.

2. Contraction of skeletal muscles, the muscles under conscious control, is the primary physiological event during exercise. Because skeletal muscles can actively contract, but are not designed to actively lengthen, they are arranged as opposing pairs. As one muscle shortens, another is stretched. An example of such a pair of muscles can be observed in the upper arm, where the biceps and triceps have opposite actions.

3. This type of exercise involves heavy work by a limited number of muscles, for example during weight lifting. These types of activities are maintained only for short intervals, and the supply of oxygen is insufficient for aerobic metabolism, resulting in a substantial oxygen debt. This exercise increases strength and muscle mass, but is of limited benefit to cardiovascular health.

4. This type of exercise uses oxygen to keep large muscle groups moving continuously at an intensity that can be maintained for at least 20 minutes. This form of exercise uses several major muscle groups throughout the body, resulting in greater demands on the cardiovascular and respiratory systems to supply oxygen to the working muscles.

5. Regular exercise reduces the risk of death due to heart disease and stroke, aids in reducing weight, strengthens bones, and enhances immune function. The psychological benefits are also broad. One area of controversy has been how much exercise is enough to improve general health, reduce the risk of heart disease, and increase longevity. Meaningful studies on this topic are very difficult to perform because they require large populations of subjects and many years of data collection, and because poor health sometimes negatively influences physical activity. Despite these difficulties, it is clear that regular exercise, along with a generally healthy lifestyle, is beneficial.

**After you read**

1. Have you learned anything new?
2. Look back at the paragraph headings and summarise the main ideas in your own words.

(adapted from: Seal, B. *Academic Encounters*. Cambridge University Press, 1997.)