2.1.1: Physiological factors affecting performance in sport

Components of health and fitness

Definitions of the ten components of health and fitness have been listed in the Knowledge Organiser covering 1.2.1 for Unit 1.

Some examples of sporting activities that rely on each of the components of health and fitness are listed below.

Cardiovascular endurance: 10,000 metre running or cross country skiing.

Muscular endurance: Long distance swimming or long distance cycling.

Flexibility: Lunging forward in fencing or high jumping.

Muscular strength: Rings routine in gymnastics or scrummaging in rugby.

Agility: Completing a jump shot in basketball or evading a defender in netball.

Balance: Downhill skiing or surfing.

Co-ordination: Playing a shot in tennis or ribbon routine in rhythmic gymnastics.

Reaction time: The start of the 100m race or hockey goalkeeper saving a penalty.

Power: Driving a golf ball or a football goalkeeper taking a goal kick.

Speed: Winger running with the ball in 7s rugby or speed skating.

Body composition

This is the percentage of body weight made up of fat, muscle and bone. This is important in the performance of athletes involved in sporting activities that have different weight categories, such as judo or amateur boxing, as the ratio of muscle, fat and bone will affect body weight.

Body type

Human beings can be classified into three body shapes known as somatotypes. All human beings are made up of a combination of these three body types, with the ratio of each determining how effective they are at different sports.

i. Ectomorph: the most suitable body type for athletes competing in marathons or other endurance events as these require light musculature and little fat.

ii. Endomorph: the most suitable body type for athletes competing in sports requiring strength such as power lifting where bulk is useful.

iii. Mesomorph: the most suitable body type for athletes competing in basketball, boxing, martial arts, swimming, track and field athletics and volleyball.

Lifestyle

An athlete's sporting performance can be affected by a wide range of lifestyle factors. These lifestyle factors include the following:

i. The age of the athlete.

ii. The level of health of the athlete.

iii. The level of fitness of the athlete.

iv. The diet and nutrition the athlete is undertaking.

v. The level of hydration of the athlete.

vi. The level of preparation that the athlete is undertaking before training or competing.

vii. The level of recovery the athlete is undertaking after training or competing.

viii. The athlete's sleep pattern.

ix. Whether the athlete smokes.

x. Whether the athlete drinks alcohol.

xi. Whether the athlete takes illegal drugs.