

Unit 8 Health and Well-being

Learning objective: To develop your knowledge and understanding of health and lifestyle choices and the effects of exercise on health

Knowledge Checklist

	Revised	Understood	What you need to do
Be able to define 'health' and 'fitness'			
Describe the impacts of physical activity on physical, mental and social health, well-being and fitness			
Describe a healthy diet and identify the components of a nutritional, healthy diet			
Be able to define a sedentary lifestyle and name the consequences of leading a sedentary lifestyle			
Be able to describe the effects of obesity on a person's mental, social and physical health, and the effects that obesity has on physical activity			
Be able to describe the characteristics of different somatotypes, and identify which sports/positions are suited to particular somatotypes			
Describe and explain the factors that influence energy balance: sources of energy, the make-up of a balanced diet and dehydration, and the role of nutrients for sports performance			

Key Terms

- Energy balance** – the relationship between the amount of energy consumed and the amount of energy used (expended) by the body
- Energy expenditure** – the amount of energy (calories) used to maintain body functions, such as respiration, physical movement and circulation.
- Health** – having stable social, mental and physical well-being
- Fitness** – the ability of an individual to meet the demands of their surroundings
- Sedentary lifestyle** – a lifestyle which consists of little or no physical activity in day-to-day life
- Obesity** – being very overweight. An obese person has a body mass index of over 30.
- Somatotypes** – the body types and shapes of people. Can be split into endomorphs, ectomorphs and mesomorphs.
- Ectomorph** – a tall, slim muscular person with low body fat
- Mesomorph** – someone with broad shoulders, low body fat and well-developed muscles
- Endomorph** – someone with high body fat percentage and a pear-shaped body
- Food energy** – the chemical energy humans use to live
- Balanced diet** – a diet that consists of the correct food sources in the correct quantities
- Dehydration** – the loss of fluids from the body, which impairs the body's ability to function

Exercise and Its Effects on Health, Well-Being and Fitness

People participate in exercise and physical activity for many different reasons – whether it is for enjoyment, socialising, increasing health or making lifestyle changes. Participating in physical activity influences our health and fitness. The adaptations made to health and fitness are outlined below.

Health

Component of Health	Description/Definition	Effects Physical Activity Has on Health Component
Mental Well-being	The ability to cope with the stress of everyday life	• Reduced stress levels • Better control of emotions • Hormone (serotonin) released giving a feeling of happiness and reward
Physical Well-being	• Free from illness • Free from injury • Ability to carry out tasks	• Prevents obesity • Improved heart health and function • Reduced risk of illnesses • Efficiency of body systems increases
Social Well-being	Human needs are adhered to: • friendship • support • social activity	• Opportunities to socialise with others • Cooperating with others • Improved team-working skills

Fitness

Fitness is defined as the ability of an individual to meet the demands of their surroundings. In Exam Paper 1 of this course, you will have learnt about all of the components of fitness that are required at different times to complete tasks (e.g. agility, strength, speed). More broadly speaking, participating in physical activity will have the following effects with regard to fitness:

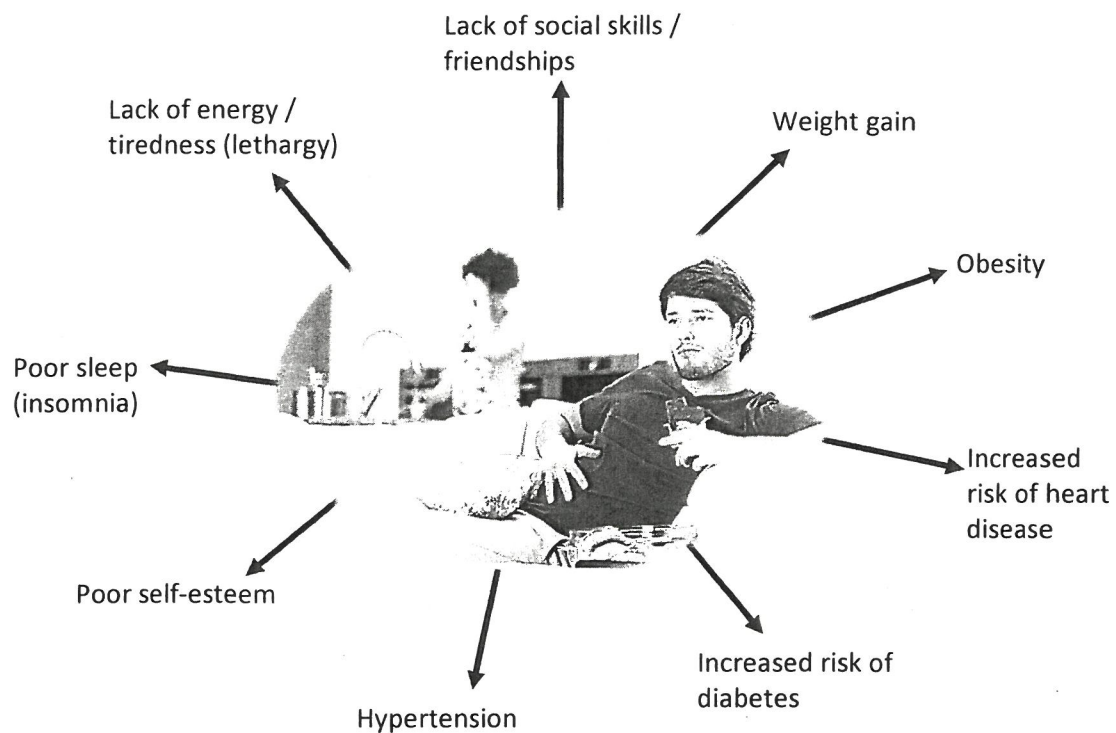
- A fitter person can handle everyday tasks better than an unfit person
- As fitness increases, adaptations to the body occur to meet the demands of everyday life (e.g. increased muscle mass)
- Better fitness reduces the risk of injury
- Increased fitness will make you feel more content (well-being)

Consequences of a Sedentary Lifestyle

Lifestyle Choices

Lifestyle choices of a person can influence their health and fitness levels; for example, whether a person decides to smoke, drink alcohol, exercise or eat a balanced diet. A major factor in health problems is whether a person engages in a **sedentary lifestyle**. A sedentary lifestyle is a lifestyle which consists of little or no physical activity in day-to-day life; for example, an office worker (sitting all day) goes home and watches TV all evening instead of going for a run.

Consequences of a Sedentary Lifestyle



Obesity

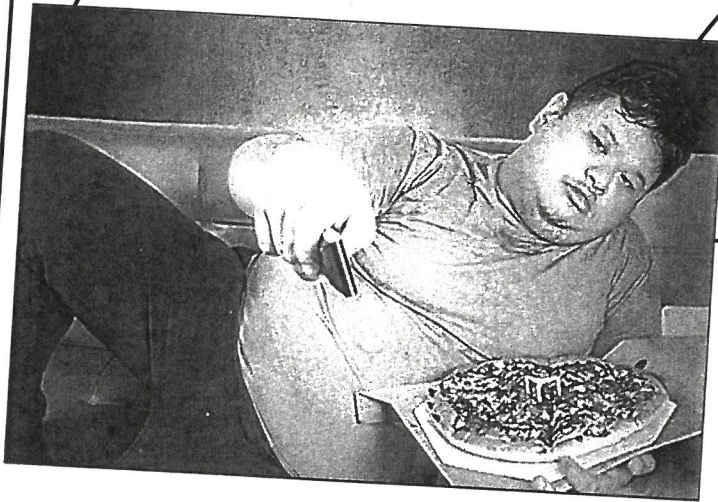
Obesity is defined as having a body mass index (BMI) of more than 30. People who are obese are very *overweight* and have large amounts of body fat. Obesity can affect a person's physical health, mental health and social health. It can also influence performance levels in sport and physical activity.

Social Health

- Lack of social skills
- Inability to leave your own house to socialise

Mental Health

- Increased risk and severity of depression
- Lack of confidence (body image, etc.)



Physical Health

- Increased risk of cancer
- Diabetes
- High cholesterol
- Increased risk of heart disease

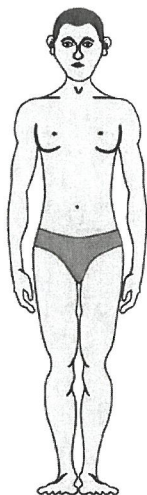
Effect of Obesity on Physical Activity:

- Limited cardiorespiratory endurance
- Decreased flexibility
- Reduced speed
- Reduced agility
- Increased risk of injury

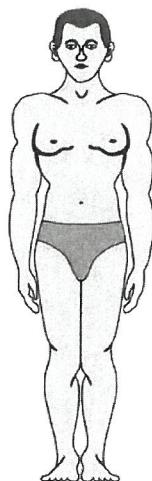


Somatotypes

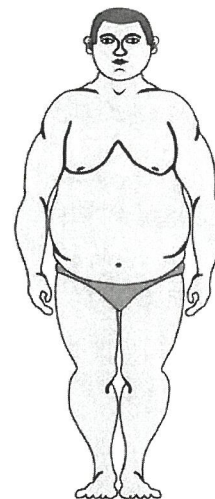
Somatotypes are the body types and shapes of different people. A person can be categorised as one of three types of somatotype: **ectomorph**, **mesomorph** or **endomorph**.



Ectomorph



Mesomorph



Endomorph

- Low body fat
- Not very muscly
- Normally tall and skinny
- Narrow hips and shoulders

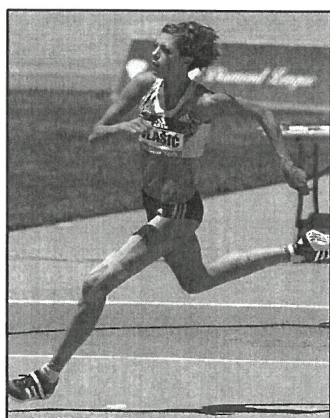
Suited to sports that require flexible movements, lower body weights and where being tall and lean is advantageous.

- Low body fat
- Large and well-developed muscles
- Broad shoulders, thin waist

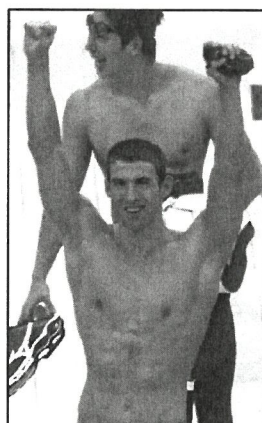
Suited to sports that require speed and power, especially from the upper body.

- High percentage of body fat
- Round stomach, thighs and arms
- 'Pear-shaped'

Suited to sports that require good balance or large amounts of force to be produced.



High jumper



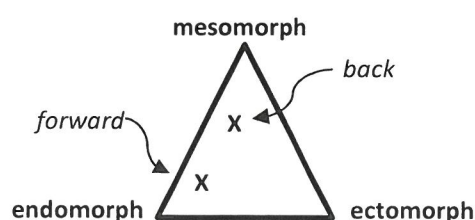
Swimmer



Rugby prop

REVISION TIP!

All athletes in one sport may not be categorised against one body type. They are usually put on a scale, in which they will more likely be closer to one type than to another. E.g. a rugby forward will differ to a rugby back.

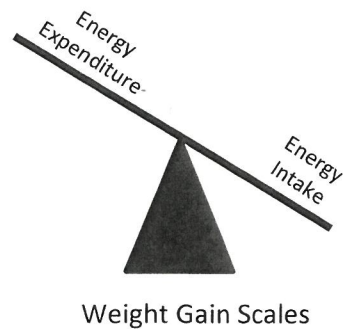
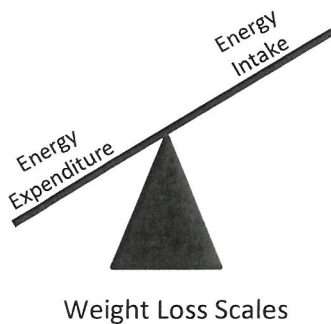


Energy Use

Energy is a product of food and cellular respiration that allows the human body to function. In humans, our energy comes from food sources. Food energy is measured in **calories (kcal)**.

Men and women generally need different amounts of energy day-to-day. As a guide, men should consume 2,500 kcal per day and women should consume 2,000 kcal per day. However, the exact amount of energy people need to consume can vary depending on other factors:

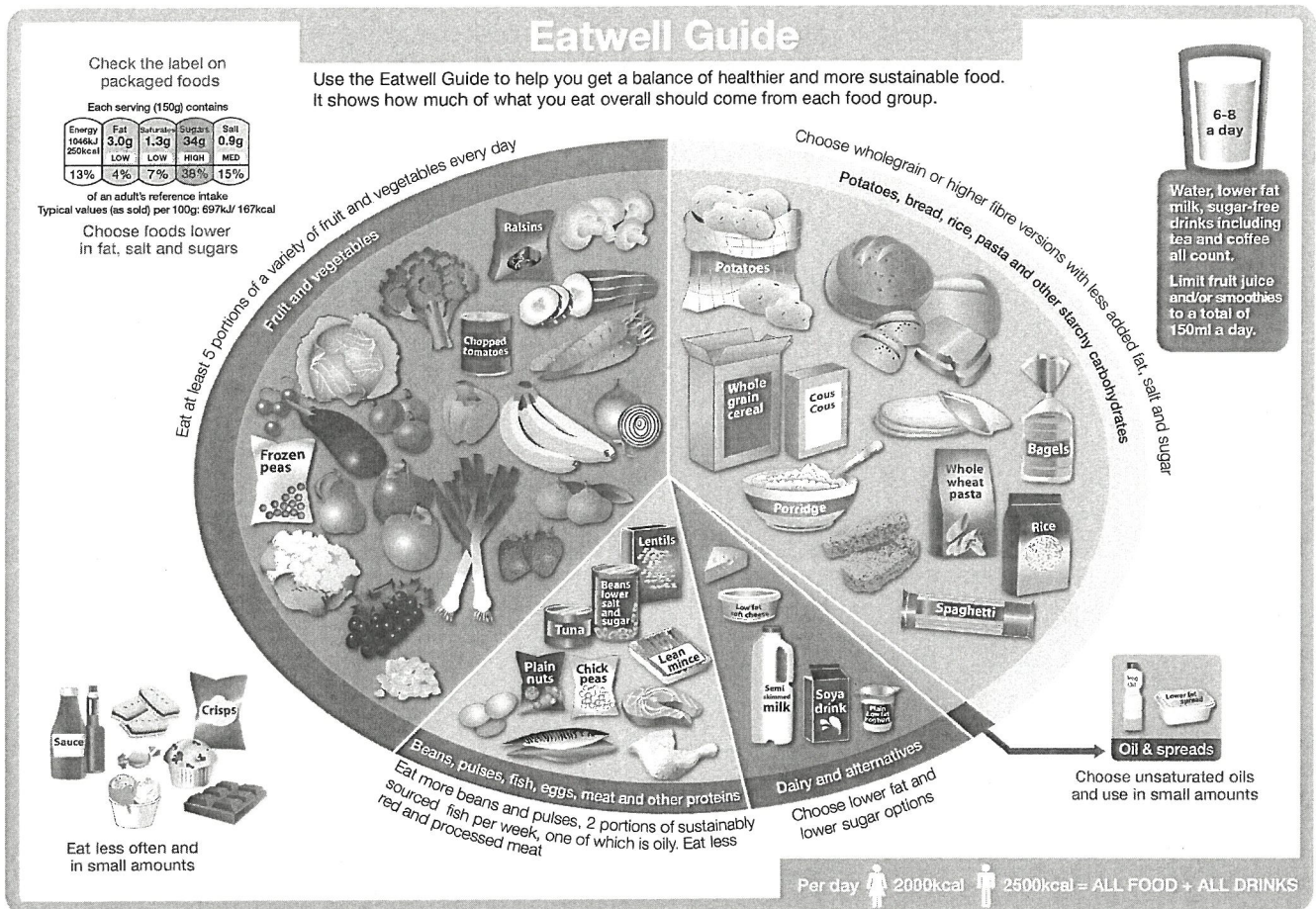
- **Age** – children (especially young adults) require higher than average calorie consumption to allow for growth of the body. From your early twenties, the number of calories you require per day will drop.
- **Gender** – generally, men need more energy per day than women.
- **Height** – taller people generally need more energy than shorter people.
- **Exercise levels** – energy consumption should be appropriate for your daily levels of exercise.



Nutrition and Balanced Diets

As we know, there is no magic pill or food that contains all the dietary components humans need to be healthy. Therefore, a **balanced diet** needs to be consumed. A balanced diet consists of a variety of different food types that provide adequate proportions of macronutrients (carbohydrates, proteins and fats) and micronutrients (vitamins and minerals) to support good health.

If a diet is not balanced, a person can put on weight. This is because excess energy is stored as fat in the body. A balanced diet is also vital for keeping the immune system working at optimal levels, keeping a person free from illness. Having all of the key components in the correct quantities ensures that the other body systems keep working properly and efficiently.



Source: Public Health England in association with the Welsh government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

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Carbohydrates (55–60%):

- Main source of energy for humans
- Can be used to provide energy for all types of exercise at all intensities (e.g. sprinters and marathon runners)

Protein (15–20%):

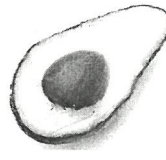
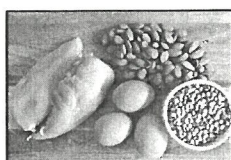
- Used for growth and repair of muscle cells following exercise

Fats (25–30%):

- Second largest energy source. Fats can be a source of high energy, but can only be used during low-intensity exercise; for example, slow jogging.

Vitamins and minerals:

- Vitamins and minerals help the immune system and other bodily functions to continue to work properly.



Dehydration

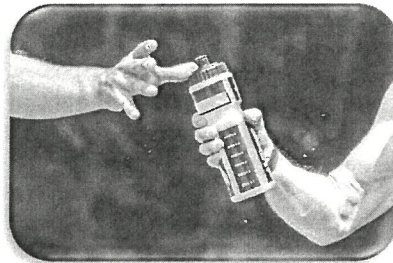
Dehydration is the loss of fluids from the body, which impairs the body's ability to function. To prevent dehydration, hydration must take place. **Hydration** is maintaining a water balance by replenishing lost fluids by drinking.

The Causes and Effects of Dehydration

Dehydration can cause a variety of problems for individuals – some more serious than others.

Causes of Dehydration

- Humidity of environment
- Temperature of environment
- Intensity and duration of exercise being completed



Effects of Dehydration

- Increased viscosity (thickness) of blood – reduces the flow of blood
- Increased body temperature
- Confusion – slower reaction times and impaired thought
- Increased (overworking) heart rate
- Can cause cramping in muscles

Revision Activities – Unit 8

1. Define a 'sedentary lifestyle' and give three consequences of leading a sedentary lifestyle.

Definition:

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Consequences:

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2. What BMI would an obese person have?

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3. All sports athletes need to consume a balanced diet in order to be able to compete in their sport. Identify the role of the following nutrients for a sport of your choice.

Nutrient	How chosen athlete will use this nutrient
Carbohydrates	
Protein	
Fats	
Vitamins and minerals	



4. Draw a pie chart to represent the make-up of a balanced diet. The pie chart should show percentages for carbohydrates, fats and protein.



1. Define 'health'.

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(1 mark)

2. State three influences that obesity can have on physical health.

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(3 marks)

3. Describe how having an endomorphic body type can benefit performance. Use an example in your answer.

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(2 marks)

4. Jack has kept a diary of his diet for analysis. He wrote down the percentages of different dietary components making up his diet. These are shown in the figure below.

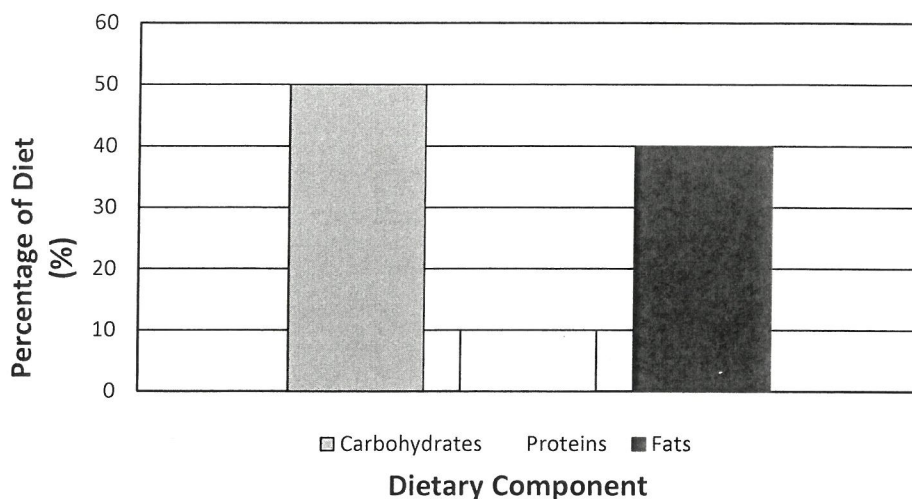


Figure 1: Dietary make-up of Jack's diet.

Analyse the information in Figure 1. Identify which components of Jack's diet are in the correct range and which are not. Justify your answers.

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(2 marks)

5. A long-distance cyclist must ensure they are hydrated throughout the race.

Identify two consequences of dehydration to the cyclist's performance.

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(2 marks)