

# Component 2 Energy Use, Diet, Nutrition and Hydration

## Diet and Energy Balance

**Balanced diet** - Eating the right foods in the right amounts. This will allow us to exercise and work properly

**Varied diet** - If we don't eat a variety of foods in the correct proportions, we won't get all the nutrients we need to make up a balanced diet



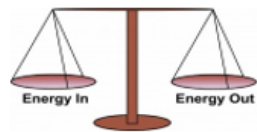
The Eatwell guide shows us what foods we should be eating and in what quantities. E.g. the largest parts of the diet should come from:

- Fruit & Vegetables
- Starchy carbohydrates

Variety is important to get all the necessary nutrients. There are seven nutrients.

- Carbohydrates
- Fats
- Proteins
- Vitamins
- Minerals
- Fibre
- Water

## Energy Balance



The energy balance makes sure the calories we take in is equal to the number of calories we expend.

- If we take in more calories, we will gain weight
- If we take in too little calories, we will lose weight
- We need to have a balance so we have the correct nutrients for energy

### Bone Structure

Some people have longer and wider bones which will make them heavier, this is important for contact sports such as: rugby and football

### Height

How tall you are will affect your weight, height is important for activities and sports such as: basketball and high jump

### Sex

Male tend to be heavier than females. This provides men with an advantage in activities that require speed and power. Females and males compete separately such as athletics and rugby

### Optimum Weight

### Muscle Girth

People with bigger muscles weigh more. Bigger muscles are an advantage in events that require speed and power such as: sprinters and power lifters

### Dietary Manipulation

#### Protein intake:

Protein should be consumed as soon as possible after exercise; this increases protein synthesis and therefore muscle growth. This is used by performers such as sprinters, shot putters and power lifters

#### Carbohydrate loading:

This strategy involves eating foods high in carbohydrates 1 to 4 days before an event. These increases glycogen stores in the muscle. This is used by endurance athletes such as marathon runners

#### Hydration:

Water prevents dehydration, dehydration causes: dizziness, fatigue, heat stroke, muscle cramps, nausea and the thickening of blood. Water should be consumed before during and after exercise

## Macronutrients

### Carbohydrates

#### Function:

- Provide us with energy in both aerobic and anaerobic activities
- Eaten in large quantities compared to other macronutrients

#### Found in:

- Bread, rice, pasta, potatoes



### Fats

#### Function:

- Provide us with energy, is stored in the body and can lead to weight gain
- Should be the smallest percentage of macronutrients in the diet

#### Found in:

- Butter, oil, fatty meats, fried food



### Proteins

#### Function:

- Used for growth and repair, it can provide us with energy
- May be used by athlete for growth and repair of muscles

#### Found in:

- Cheese, milk, eggs, lean meat, fish



## Micronutrients

### Vitamins & Minerals

- Vitamins and minerals keep our body healthy and can improve your immune system,
- Vitamins are found in fresh fruit and vegetables
- Minerals are found in vegetables and meat

**Vitamin D:** Found in dairy products and helps the body absorb calcium

**Calcium:** Found in milk and other dairy products and helps keep our bones strong



### Water

- Water prevents dehydration and is found in most liquids and many foods



### Fibre

- Fibre aids the digestive system and is found in foods such as cereals, vegetables and nuts



# Component 2 Physical, Emotional and Social Health, Fitness and Well-Being

## Health is defined as:

A state of complete emotional, physical and social wellbeing and not merely the absence of disease.



### Physical Health

Benefits of regular exercise	Achieved health benefits
Burns calories	Reduce chance of obesity
Strengthens bones	Reduced chance of osteoporosis
Reduces blood pressure and cholesterol	Reduces chance of stroke & CHD

#### Negative effects of training on physical health

Over exertion can cause an increase in blood pressure which can lead to a heart attack or stroke  
 Overuse injuries such as tennis elbow may prevent you from taking part in physical activity for several weeks

### Emotional Health

Benefits of regular exercise	Achieved health benefits
Takes your mind off your problems	Relieve stress
Increases serotonin levels	Feel better and prevent depression
Can be enjoyable and fun	Reduce boredom
Can provide a challenge	Provide competition
Can make you feel part of something	Can improve confidence & self esteem
Can involve watching skilful performances	Aesthetic appreciation

#### Negative effects of training on emotional health

An injury can lead to depression as they may not be able to train  
 Sport can lead to frustration, anxiety and anger if emotions are not controlled

### Social Health

Regular exercise allows us to meet new people and make new friends  
 Regular exercise allows us to meet and socialise with our current friends  
 Regular exercise can improve our cooperation skills  
 Regular exercise can increase our social activities

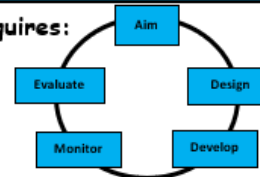
Social benefits may differ between age groups. A child may develop their social skills and an elderly person may prevent loneliness from regular exercise

#### Negative effects of training on social health

Some performers may spend too much time training and less time with their families. This could be due to an elite performer needing to train or someone obsessed with training

## A training programme requires:

- Planning (aims and design)
- Developing
- Monitoring
- Evaluating



<b>Aim</b>	A clear aim is needed to ensure you know what you want to improve and you create a personal exercise programme (PEP)
<b>Design</b>	Once you have an aim you can plan your PEP using the various principles of training. E.g. Improve speed using interval training
<b>Develop</b>	Once you have started your PEP it can be developed as long as the aim is still the same. E.g. increase training by 10 minutes
<b>Monitor</b>	The PEP should be monitored so necessary adjustments can be made. E.g. if sessions are getting too easy increase the intensity
<b>Evaluate</b>	It is important the PEP is evaluated regularly. E.g. you may have met the initial aim in the first couple of weeks so you may set another aim

## Diet:



### Anorexia

Eating disorder where a person keeps their weight as low as possible.

#### Effect on performance:

Little energy, tired easily, very weak, poor fitness



### Obesity

Describes a person that is very overfat. Can lead to many health problems.

#### Effect on performance

May prevent strenuous activity, tired easily, lack of mobility, joint problems



### Diseases caused by a lack of nutrients

Rickets - Vitamin D

Scurvy - Vitamin C

Osteoporosis - calcium

## Government guidelines state daily calorie intake should be:

Men 2500 calories

Women 2000 calories

## Work/Rest/Sleep Balance Level

Lack of sleep can lead to tiredness.

The Government recommends teenagers get 8 to 10 hours sleep per night.

Does your lifestyle prevent you from getting the right balance between work, rest and sleep?

## Activity level

The Government recommends that 5 - 18-year olds get one hour of exercise every day, four days doing cardiovascular, three days improving muscle and bone growth.

Recap benefits of physical exercise on the: Cardiovascular, respiratory, muscular & skeletal System

## Alcohol

### Negative effects on health

- Heart failure
- Increase in blood pressure
- Increased weight
- Liver disease & cancer

### Negative effects on performance

- Slower reaction times
- Less mobile due to excess weight
- Loss of coordination
- Loss of concentration

## Smoking

### Negative effects on health

- Stroke
- Bronchitis
- Heart disease
- Blood clots
- Emphysema
- Lung cancer

### Negative effects on performance

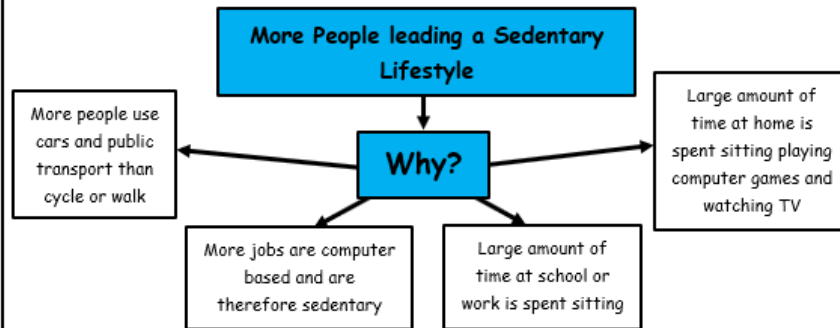
- Causes breathlessness
  - Reduces oxygen carrying capacity
- Smoking reduces the elasticity of the alveoli. This means there is less oxygen can get to the working muscles. this will affect performance in aerobic activities

## Component 2 The Consequences of a Sedentary Lifestyle

### The consequences of a sedentary lifestyle

**Sedentary lifestyle** = A lifestyle is a lifestyle where there is little or no exercise

A sedentary lifestyle is doing less than 30 minutes physical activity per week. Sedentary behaviour refers to activities that use little energy such as watching Tv, playing computer games or sitting down. It is reported that British people on average sit for nearly 9 hours per day.



### Health risks associated with a sedentary lifestyle

Health risk	Explanation
Obesity	Due to inactivity and a reduction in metabolic rate
Depression	Being overweight or obese can lead to poor self-esteem and lack of confidence
Osteoporosis	Due to lack of weight bearing exercise
Poor muscle tone & posture	Due to inactivity muscles are weak
Type 2 diabetes	Being overweight can increase the risk of developing type 2 diabetes
Heart disease and stroke	High blood pressure and cholesterol increase the risk of a heart attack and a stroke



### Impact on sedentary Lifestyle on weight

#### Overweight

- The term overweight means you weigh more than the expected weight for your height and sex
- You can be overweight but not over fat. Elite athletes may be overweight due to muscle girth and bone density
- Being overweight it not harmful unless it is accompanied with being overfat



#### Overfat

- The term overfat means you have more body fat than you should have
- It is possible to be overfat but not overweight, Inactive people may have little muscle girth and a low bone density
- Being overfat can lead to health problems such as: high blood pressure and high cholesterol levels



#### Obese

- The term obesity is used to describe people who are very overfat
- Body fat has increased to a level that is seriously unhealthy
- High levels of body fat can lead to: mobility issues, lack of flexibility, stress on bones and joints, heart disease, type 2 diabetes, depression and a low self-esteem



### The Impact on sustained involvement in physical activity

- Health problems such as heart disease will prevent you from taking part in strenuous exercise
- If you become too tired, immobile, or have difficulty walking or running, this will affect your ability to take part in physical activity





# Year 10 PE Autumn Knowledge Organiser

Head



## Leadership

### Qualities of a good sports leader

1. Set an example
2. Awareness
3. Passion
4. Enthusiasm
5. Ability
6. Communication
7. Motivational skills
8. Visionary



Head



## Key Rules

Use the QR codes to look at the rules for the activities you are taking part in this term.

Badminton



Football



Rugby



Netball



Gymnastics



Basketball



Heart



## Respect

It is important to be respectful to others at all times but can be even more important when working with others in PE. To be respectful to others you must;

- Treat others as you wish to be treated
- Follow instructions
- Use equipment properly
- Play fairly
- Accept that everyone is different

## Self Motivation

- Stay positive
- Set small targets
- Reward yourself for your achievements
- Remember the why

Hands



## Consistent skills

Skills are physical movements that are performed during physical activity.

When you participate in physical activity it is important to perform skills **consistently** even when under pressure during competition.

A skill will be consistent when you can;

- Repeat the skill over and over again.
- Perform the skill with confidence.
- Perform the skill under control.



Can you name 6 skills for the activity your are completing?

Here are some examples to start you off;

Badminton – serve                      Football – short passing

Netball – shooting                      Rugby – receiving

Gymnastics – forward roll              Basketball – dribbling

Can you describe how skills would change during competition?

For example serving in badminton can be short and low or long and high so you can outwit your opponent.