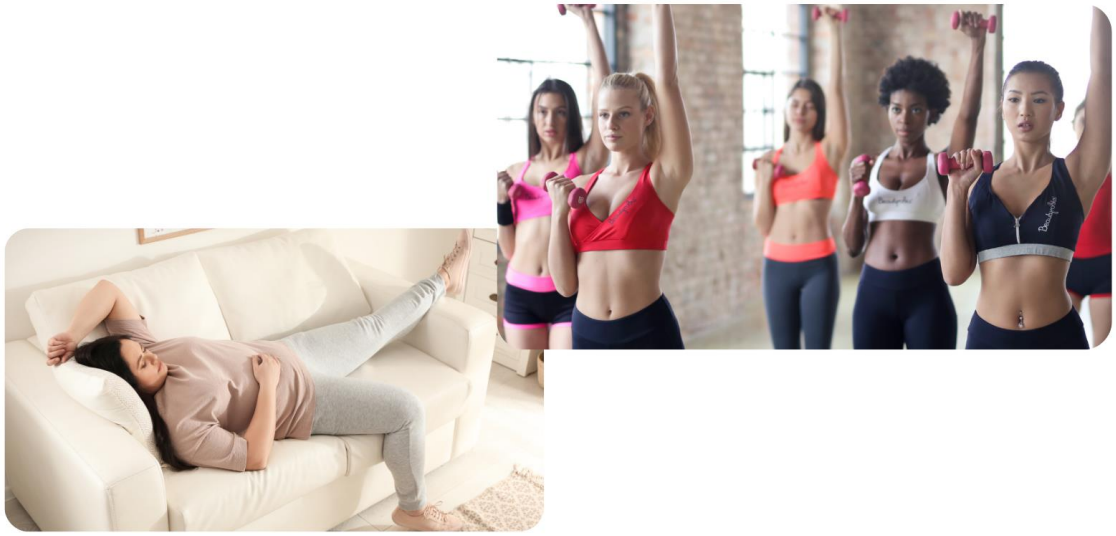
Health, Fitness, Well Being – Sedentary Lifestyle

Teacher Answer Booklet



Topic	Description from Specification	Pupil comments – How confident do you feel on this topic?
Linking participation in physical activity, exercise and sport to health, well-being and fitness, and how exercise can suit the varying needs of different people	Reasons for participation in physical activity, exercise and sport, and how performance in physical activity/sport can increase health, wellbeing and fitness. Physical health and well-being: Improves heart function, Improves efficiency of the body systems, Reduces the risk of some illness, Able to do everyday tasks, Avoid obesity. Mental health and well-being: Reduces stress/tension, Release of feel good hormones (serotonin), Able to control emotions. Social health and well-being: Opportunities to socialise/make friends, Cooperation, Teamwork, Have essential human needs (food, shelter,clothing). Fitness: Improves fitness, Reduces the chances of injury, Can aid in the physical ability to work, eg on your feet all day/manual labour.	
The consequences of a sedentary lifestyle	Definitions of sedentary and lifestyle. Possible consequences of a sedentary lifestyle: Weight gain/obesity, heart disease, hypertension, diabetes, poor sleep, poor self-esteem, lethargy.	
Obesity and how it may affect performance in physical activity and sport	Definition of obesity. Obesity and how it may affect performance in physical activity and sport: Limits stamina/cardiovascular endurance, limits flexibility, limits agility, limits speed/power. Causes ill health (physical): Cancer, heart disease/heart attacks, diabetes, high cholesterol. Causes ill health (mental): Depression, loss of confidence. Causes ill health (social): Inability to socialise, inability to leave home.	

This module relates closely to the work you did on health and fitness during component one. Think back and try to remember the definitions for the following terms. If you are struggling, use some of the words below as prompts.

Health:

A state of complete emotional, physical and social well-being, and not merely the absence of disease and infirmity.

Fitness:

The ability to meet the demands of the environment.

Key Words:					
Physical	Environment	Social	Demands	Emotional	Disease

We are going to look at the reasons why people should be encouraged to take part in sport. Before we begin, give 3 of your own reasons below:

1.E.g. to spend time with friends/family

2. E.g. to challenge myself to improve

3. E.g. to improve my cardiovascular fitness

Physical Health:

One of the reasons we exercise is to improve our physical, emotional and social health.

Put the statements below into the correct column within the table.

How can exercise improve physical health?	How can exercise improve emotional health?	How can exercise improve social health?
Improves Heart Function	Reduces Stress/Tension	Opportunities to socialise/make friends
Improves efficiency of the body systems	Release of feel good hormones (serotonin)	Cooperation
Reduces the risk of some illness	Able to control emotions	Teamwork
Able to complete everyday tasks	[redacted]	Have essential human needs (food, shelter, clothing)
Helps to avoid obesity	[redacted]	[redacted]

Fitness:

As stated previously **fitness** can be defined as:

The ability to meet the demands of the environment.

Improving fitness can:

- Reduce the chance of injury
- Can aid in the physical ability to work

A Tennis player has recently been working on their muscular endurance. How will this help to reduce the chance of injury?

Improving muscular endurance will make the muscles stronger meaning that injuries such as strains are less likely to occur. The muscles will also become more resistant to fatigue, therefore cramps are less likely to occur – which often lead to more serious injuries.

A builder has been taking part in Spinning sessions outside of work. How might an increase in fitness help with their ability to work?

An increase in cardiovascular fitness and muscular endurance will mean that the builder will find it easier to be on their feet and active during long periods throughout each day. They will become less tired and fatigued and will likely perform tasks quicker, therefore becoming more efficient within their job.

<u>Sedentary Lifestyle:</u> A lifestyle where there is **little, irregular or no physical activity.**

In order to maintain health and fitness you should aim to exercise at a moderate intensity for at least 30mins five days a week.

Which of the following could be included in 30minutes of moderate exercise…….

<u>Key Terms:</u>

Sedentary – Spending too much time seated and inactive

Lifestyle – A way in

Walking the dog Heavy weights session Go-karting

9 holes of golf (if walking)

Lawn Bowls Darts Ice-skating Sumo-Wrestling

1. Not enough time
2. Not enough money
3. Not enough energy (e.g. eating the wrong foods/not sleeping)
4. Not inspired e.g. no role models
5. Nobody to exercise with e.g. no team to join

A sedentary lifestyle leads to many long-term health risks. Some of these risks are highlighted below. Give an explanation as to why they are a result of a sedentary lifestyle? You may need to do some of your own research before answering.

Weight gain:

A sedentary lifestyle will lead an individual to putting on weight as they will be likely to take in lots of calories, whilst burning off very few.

Heart Disease:

Heart disease is often a result of narrowed or blocked blood vessels and can lead to a heart attack. Exercise helps to reduce the cholesterol which can lead to these vessels becoming blocked.

Hypertension:

This refers to having high blood pressure. Although this can be the result of a genetic condition, it can also be caused by a lack of exercise and poor lifestyle decisions (e.g. drinking/smoking).

Diabetes:

Diabetes is a disease whereby blood sugar levels become too high. Maintaining a healthy weight can prevent diabetes from occurring. Leading a sedentary lifestyle is likely to result in weight gain, making diabetes more likely to occur.

Poor Sleep:

Not taking part in exercise, eating poorly and spending too much time looking at screens are all known to contribute to disturbed sleep. Poor sleep will in turn demotivate an individual, leading to even more of a sedentary lifestyle.

Poor Self-Esteem:

Putting on weight and not taking part in exercise can result in emotional issues such as depression and low confidence/self-esteem.

Lethargy:

Taking part in no exercise will result in a lethargic and tired individual who has very little motivation to take part in an active life.

Obesity:

Obesity can be defined as 'The state of being grossly fat or overweight'.

Think carefully about a sport that you take part in. Why would obesity decrease your performance levels in this sport?

Example for High Jump – Obesity will cause a decrease on running rhythm, balance and speed. This will effect momentum going into the jump and a decrease in power will also make it difficult to for the legs to project the whole body over the bar.

Obesity effects performance levels as it has a negative impact on some of the components of fitness. It also effects physical, mental and social health. Use the descriptions given in order to fill in the table below:

Limits Flexibility. Depression. High Cholesterol. Limits Cardiovascular Fitness. Inability to Socialise. Limits Agility. Cancer. Heart Disease. Loss of Confidence. Inability to Leave Home. Diabetes. Limits Speed/Power

The impact of obesity on….			
Fitness	Physical Health	Mental Health	Social Health
Limits Cardiovascular Fitness	Cancer	Depression	Inability to Socialise
Limits Flexibility	Heart Disease		
Limits Agility	Diabetes	Loss of Confidence	Inability to Leave Home
Limits Speed/Power	High Cholesterol		

Sample Exam Question

A golfer has been injured for several months. During their time off from the sport they have begun to put on weight. Analyse the negative effects that obesity can have on the golfer's fitness, performance and well-being. **(6 marks)**

A01 = 1, A02 = 2, A03 = 3

A01 – Knowledge of Obesity

- Obesity is 'The state of being grossly fat or overweight'.

A02 – Application to a performer in the sport of golf

- Obesity would limit the flexibility of the golfer. A decrease in range of movement would result in the swing of the golfer diminishing, resulting in less effective shots.
- Obesity would limit the speed/power of the golfer's arms. This would not allow them to drive the ball as far off the tee.

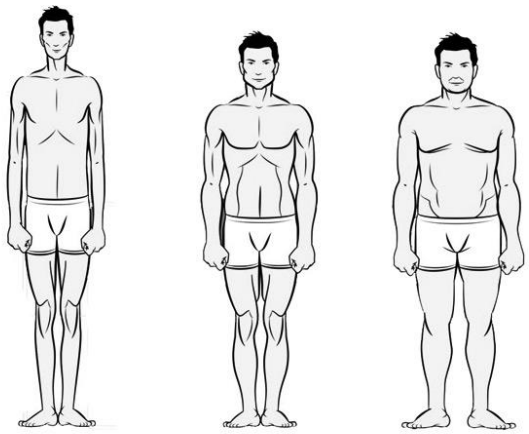
A03 – Analysis/evaluation of the negative effects of obesity on a performer's well-being

- Obesity and weight gain can lead to a higher chance of suffering from diabetes. This will effect both the golfer's ability to take part in golf, and their general well-being.
- Obesity can lead to a loss of confidence. Golf is a sport that requires vast amounts of confidence and a positive state of mind, so performance will be affected.
- Obesity can result in the inability to socialise. This will affect the golfer as playing golf requires interaction with team mates, other club members and opponents.

Accept other appropriate answers

Somatotypes:

'Somatotype' refers to the body shape of an individual and may influence the sport (or position within a sport) that a person takes part in. There are three different somatotypes which can be seen in the diagram below:



Use the phrases given below to fill in the 'features' column of the table below.

Thick and dense muscles. Tends to gain weight and keep it on. Narrow hips.

Lean and long. Often have large amounts of body fat

Wide shoulders and a flat stomach. Very small amount of body fat.

Wide hips and shorter limbs. Difficulty building muscle. Builds muscle easily.

Thick ribcage. Naturally strong and powerful.

Somatotype	Features	Sports/Position within sports
Endomorph	Tends to gain weight and keep it on Often have large amounts of body fat Wide hips and shorter limbs Thick ribcage	Rugby - Prop Forward Sumo Wrestling
Mesomorph	Wide shoulders and a flat stomach Naturally strong and powerful Builds muscle easily Thick and dense muscles	Sprinter Weight Lifter
Ectomorph	Narrow hips Very small amount of body fat Difficulty building muscle Lean and long	High Jump Long Distance Running

Sample Exam Question

Rugby is a sport played by people of many different shapes and sizes. Why would the following body shapes be suited to playing rugby?

Endomorph **(2 marks)**

Mark One – Endomorphs have a large amount of body fat/they tend to gain weight and keep it on.

Mark Two – This would suit a prop forward in rugby who needs a large amount of weight so that they don't get pushed off the ball in the scrum.

Mesomorph **(2 marks)**

Mark One – Mesomorphs have a large amount of muscle/are naturally strong and powerful.

Mark Two – This would suit a winger in rugby as power will help them to beat defenders and prevent tackles.

Ectomorph **(2 marks)**

Mark One – Ectomorphs have a very small amount of body fat

Mark Two – This may suit a scrum half who needs to be light and agile in order to avoid tackles/get the ball away quickly

Accept other appropriate answers

Energy Use:

In order to maintain your weight you must take in (through eating) and use up (through exercise) an equal number of calories.

If you take in more calories than you burn off, what will happen?

You will put on weight

If you burn off more calories than you take in, what will happen?

You will lose weight

Task

Think about the last snack that you ate. Do some research to find out how many calories it contains. Using a piece of cardiovascular equipment in the gym, see how quickly you can burn these calories off.

Energy is measured in Kcal and is obtained from the food we eat. On **average** the calories required for an individual **per day** are as follows:

Male – 2500 Kcal

Female – 2000 Kcal

Why do you think gender has an effect on the amount of calories required per day?

Height and weight affect calorie intake. On average men are taller and heavier than women so they will naturally require more calories to maintain their body shape.

Further to **gender,** calorie intake is also dependent on:

- Age
- Height
- Energy Expenditure

Do some research in order to fill in the table below on calorie intake:

Category	**Daily Calorie Intake**
60 year old Male	2000
60 year old Female	1600
18 year old male	2600 approx.
18 year old female	2200 approx.
Elite Marathon Runner	3500 + (during a training programme)
Premier League Football Player	3100 approx.

Body Mass Index:

One way to look at whether an individual is a healthy is by looking at **BMI.**

A **BMI chart** can be found below.

WEIGHT	lbs	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215
	kgs	45.5	47.7	50.0	52.3	54.5	56.8	59.1	61.4	63.6	65.9	68.2	70.5	72.7	75.0	77.3	79.5	81.8	84.1	86.4	88.6	90.9	93.2	95.5	97.7
HEIGHT	in/cm	Underweight					Healthy						Overweight					Obese						Extremely Obese	
5'0"	152.4	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
5'1"	154.9	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	37	38	39	40
5'2"	157.4	18	19	20	21	22	22	23	24	25	26	27	28	29	30	31	32	33	33	34	35	36	37	38	39
5'3"	160.0	17	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	32	32	33	34	35	36	37	38
5'4"	162.5	17	18	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	31	32	33	34	35	36	37
5'5"	165.1	16	17	18	19	20	20	21	22	23	24	25	25	26	27	28	29	30	30	31	32	33	34	35	35
5'6"	167.6	16	17	17	18	19	20	21	21	22	23	24	25	25	26	27	28	29	29	30	31	32	33	34	34
5'7"	170.1	15	16	17	18	18	19	20	21	22	22	23	24	25	25	26	27	28	29	29	30	31	32	33	33
5'8"	172.7	15	16	16	17	18	19	19	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	32	32
5'9"	175.2	14	15	16	17	17	18	19	20	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	31
5'10"	177.8	14	15	15	16	17	18	18	19	20	20	21	22	23	23	24	25	25	26	27	28	28	29	30	30
5'11"	180.3	14	14	15	16	16	17	18	18	19	20	21	21	22	23	23	24	25	25	26	27	28	28	29	30
6'0"	182.8	13	14	14	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28	29
6'1"	185.4	13	13	14	15	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28
6'2"	187.9	12	13	14	14	15	16	16	17	18	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27
6'3"	190.5	12	13	13	14	15	15	16	16	17	18	18	19	20	20	21	21	22	23	23	24	25	25	26	26
6'4"	193.0	12	12	13	14	14	15	15	16	17	17	18	18	19	20	20	21	22	22	23	23	24	25	25	26

What is your BMI and what does this tell you about your current weight? Is this a good weight to be for your sport?

e.g. My current BMI is '20' and this shows me to come in as 'healthy'. This is good for my sport of cricket, although I would like to gain a little bit of muscle to increase the power of my shots.

Can you see any problems with using BMI as an assessment of weight?

BMI can be problematic as it doesn't take into account muscle mass. For example sprinters often have large amounts of muscle and would score as 'obese' on the BMI table. This clearly isn't the case for these powerful athletes.

A Balanced Diet:

A balanced diet can vary between individuals depending on their sport and to optimise performance. However a balanced diet should always include:

Carbohydrates – Bread, pasta, rice

Fats – Nuts, avocado, cheese

Proteins – Meat, fish

Vitamins – Fruits, vegetables

Minerals – Milk (calcium), red meat (iron), bananas (potassium)

Next to each of the above, give an example of a food type which falls into this category.

Carbohydrates are important because they give you energy. There are two types:

Complex Carbohydrates (starch):

These are found in natural foods such as pasta, rice and brown bread.

Simple Carbohydrates (sugars):

These are found in their natural form in fruit and vegetables. They are found in their refined form in chocolate/sweets.

Carbohydrates are stored in the muscles and liver as glycogen. This can be converted into glucose to provide energy quickly. Energy produced by complex carbohydrates will last for longer than energy produced by simple carbohydrates. Examples of sports performers who require lots of carbohydrates are footballers/800m runners.

Carbohydrates are the **main and preferred** energy source for all types of exercise, of all intensities. If carbohydrates are not burnt off as energy, **they will turn into fat and be stored in the body**. This can lead to **obesity.**

Fats are important because they provide energy slowly. They are also important for insulation. Fats are found in foods such as cheese, nuts, avocados.

Examples of sports performers who require lots of fats are marathon runners.

Fats provide **more energy** than carbohydrates but only at **low intensity.**

Proteins are important for growing muscle and repairing damaged tissue. If all carbohydrate and fat resources have been used up, protein can also be used as energy.

Examples of sports performers who require a lot of protein include weight lifters/rugby players.

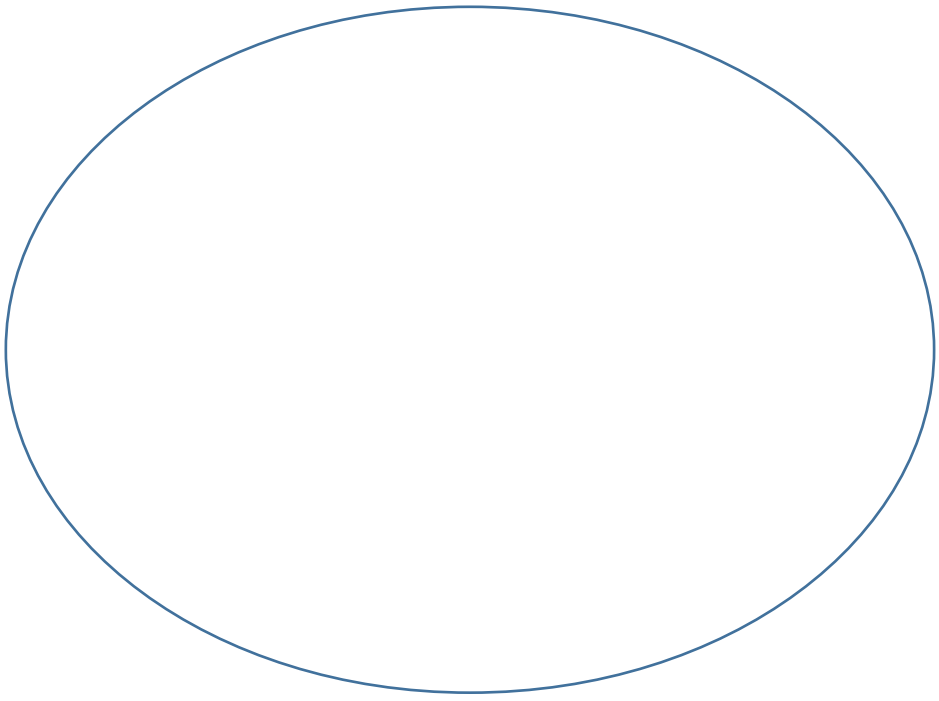
Vitamins and minerals help the body to function properly. They maintain the **efficient working of the body systems** and help to ensure good **general health.**

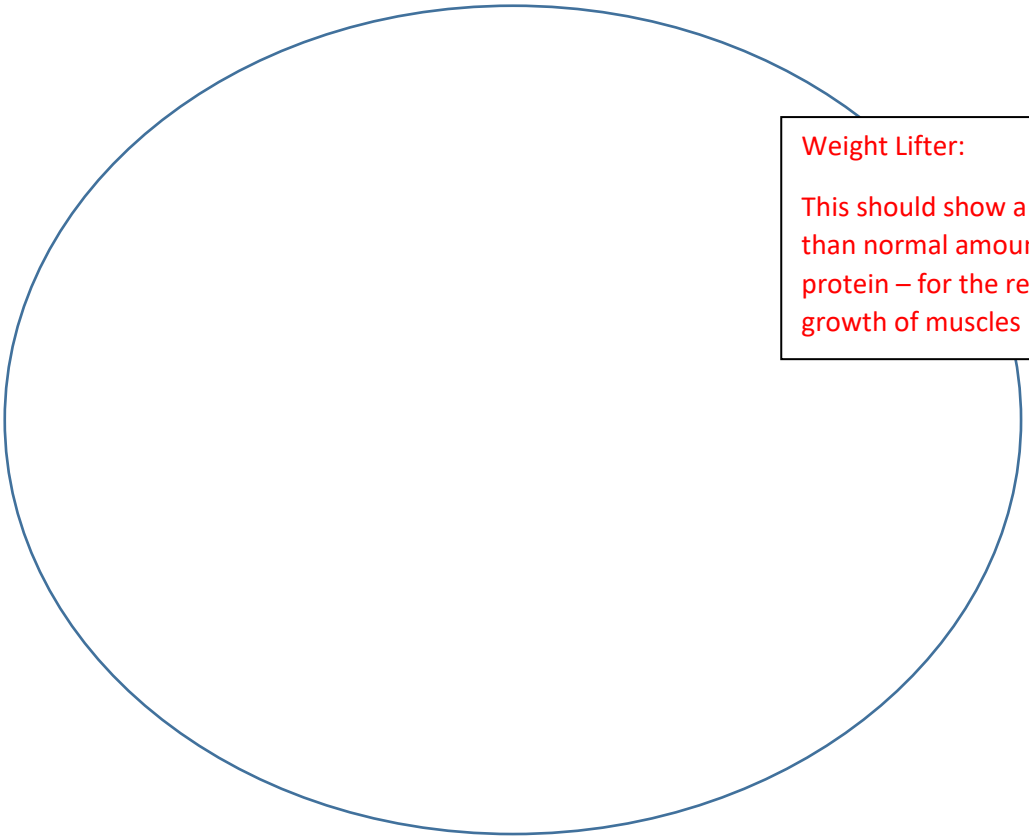
A balanced diet should include:

- 55 – 60% of Carbohydrates
- 25-30% of Fat
- 15-20% Protein
- A very small amount of Vitamins & Minerals

Using the below shapes, create 3 pie charts to show the above food types displayed in the following diets:

1. Your diet
2. The diet of a weight lifter
3. The diet of a premier league football player



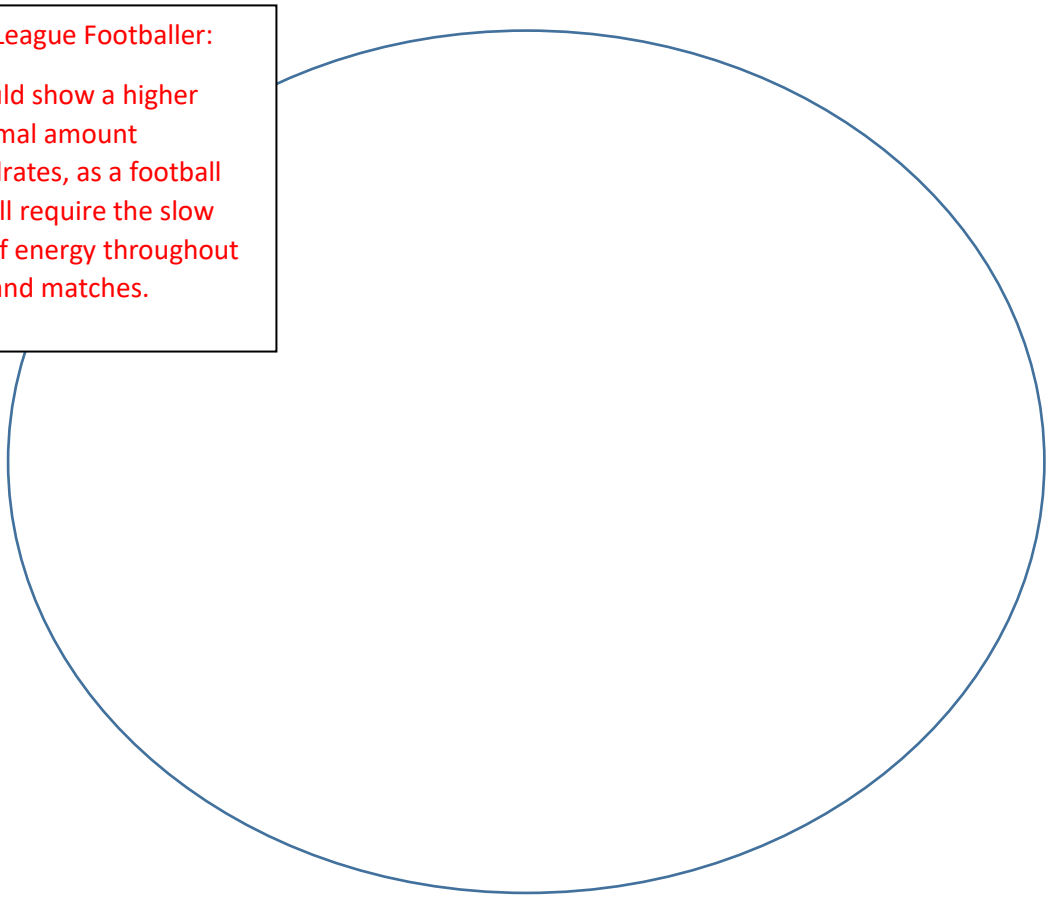


Weight Lifter:

This should show a higher than normal amount of protein – for the repairing and growth of muscles

Premier League Footballer:

This should show a higher than normal amount carbohydrates, as a football player will require the slow release of energy throughout training and matches.



A balanced diet is important so that:

- Suitable energy can be available for activity
- The body has the nutrients for energy, growth and repair

Some performers will adapt their diet to suit their sport.

Why would a weightlifter choose to take in excess protein throughout an intense training programme?

During this training programme the weight lifter will be constantly damaging their muscles through weight training. Therefore a large amount of protein will be required in order to repair the muscles and help them to grow bigger and stronger.

Why would a marathon runner choose to take in excess carbohydrates the night before a race?

Carbohydrates are the main and preferred energy source of the body. Eating large amounts the night before a race will result in large amounts of glycogen stored in the muscles and the liver, ready to be used by the muscles as energy throughout the race.

Maintaining Water Balance/Hydration:

Water balance/hydration must be regular in order to prevent **dehydration.**

Dehydration is a condition that can occur when the loss of body fluids, mostly water, exceeds the amount that is taken in.

Dehydration is dangerous and has a negative effect on performance in sport. Pick a sport that you take part in and complete the table below to explain the effects of dehydration.

Effects of Dehydration	**How this effects performance in Hockey**
Blood Thickening (Increased viscosity), which slows blood flow	Slower blood flow will mean less oxygen getting to the working muscles, resulting in a lack of energy and fatigue
Irregular heart rate	This can result in tiredness and dizziness. If a player can't concentrate fully they will be unable to make good decisions
Increase in body temperature	Overheating will cause the body systems to become less efficient, resulting in decreased energy and possibility of fainting
Slowing of reactions	A goalkeeper will find it more difficult to react to a the ball if they are dehydrated
Muscle Fatigue/Cramps	Strong muscles are required in order to make powerful shot. Cramp and muscle fatigue will result in a decrease in power

On rare occasions, some sportspeople actively look to lose water.

Why might boxers and jockeys sometimes take part in heavy exercise which causes sweating, but then choose not to take on water?

This is because it can sometimes be advantageous to lose weight in these sports. For example boxers may need to lose weight just before a 'weigh in' in order to get into a certain weight category. Jockeys who lose weight shortly before a race carry may find that they are more likely to win a race.

What are the dangers of doing this?

Dehydration leading to irregular heart rate, blood thickening etc. This could damage both performance and overall health.

Sample Exam Questions

Which one of the following is an example of a sedentary lifestyle?

A) Not maintaining a balanced diet
B) Not exercising on a regular basis
C) Not sleeping for 10 hours every night
D) Exercising for 30mins every day

Complete the following statements **(2 marks)**:

Participation in physical activity can provide emotional health benefits, for example

reducing stress.

Improving heart function, however, is an example of a physical health benefit.

Regular participation in physical activity can reduce the risk of obesity, which in turn can lead to heart attacks. Describe 3 other ways that obesity can lead to poor **physical** health. **(3 marks)**

- It can lead to cancer
- It can lead to a higher chance of suffering from diabetes
- It can lead to a higher level of cholesterol

How does leading a sedentary lifestyle effect the daily amount of calories required for an individual? **(2 marks)**

Mark One – A sedentary lifestyle refers to a lifestyle which involves little or no exercise

Mark Two – Leading a sedentary lifestyle should mean that a person is required to intake less calories. This is because they will not burn off as many calories.

Key Terms:

Health – A state of complete emotional, physical and social well-being and not merely the absence of disease and infirmity

Fitness – The ability to meet the demands of the environment

Serotonin – A natural chemical released during exercise

Sedentary Lifestyle – a lifestyle where there is little, irregular or no physical activity.

Obesity - The state of being grossly fat or overweight

Somatotype – The body shape of an individual

Endomorph –A person with a soft round build of body and a high proportion of fat tissue.

Ectomorph – A person with a lean and delicate build of body.

Mesomorph – A person whose build is compact and muscular