BTEC Sport Level 3

Unit 2 – Fitness Training and Programming for Health, Sport and Wellbeing

Unit 2 – Fitness Training and Programming for Health, Sport and Wellbeing

Exam Unit

- In this unit you will explore ways of screening a client and assessing their lifestyle and nutritional habits.
- This unit is externally assessed (examination based)
- Part A – you'll be supplied with a research task with a scenario about an individual who requires guidance on training, lifestyle and nutrition.
- Part B – a written exam where you can use research notes to complete a task that builds on part A

Unit 2 – Fitness Training and Programming for Health, Sport and Wellbeing

Exam Unit

Topics:

- Lifestyle factors and their effect on health and well-being.
- Recommendations to promote health and well-being.
- Screening processes for training programming.
- Programme-related nutritional needs.
- Training methods for different components of fitness.
- Appropriate training activities to meet the needs of a specific client.
- Principles of fitness training programming.

Unit 2 – Fitness Training and Programming for Health, Sport and Wellbeing

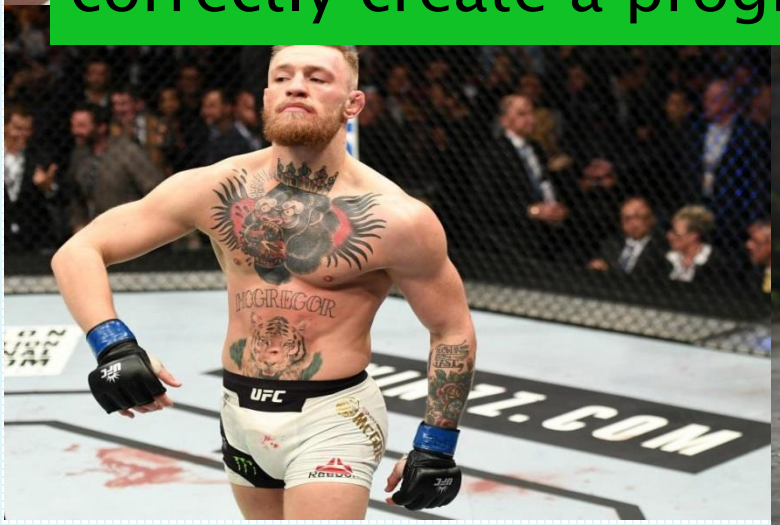
Exam Unit

Assessment outcomes:

- A01 – Demonstrate knowledge and understanding of the effects of lifestyle choices on an individual's health and well-being.
- **A02 – Apply knowledge and understanding of fitness principles and theory, lifestyle modification techniques, nutritional requirements and training methods to an individual's needs and goals.**
- A03 – Analyse and interpret screening information relating to an individual's lifestyle questionnaire and health monitoring tests.
- **A04 – Evaluate qualitative and quantitative evidence to make informed judgements about how an individual's health and wellbeing could be improved.**
- A05 – Be able to develop a fitness training programme with appropriate justification.

What similarities do these people all require in their sports?

a knowledge of fitness training and how to correctly create a programme for this.



Key Words:

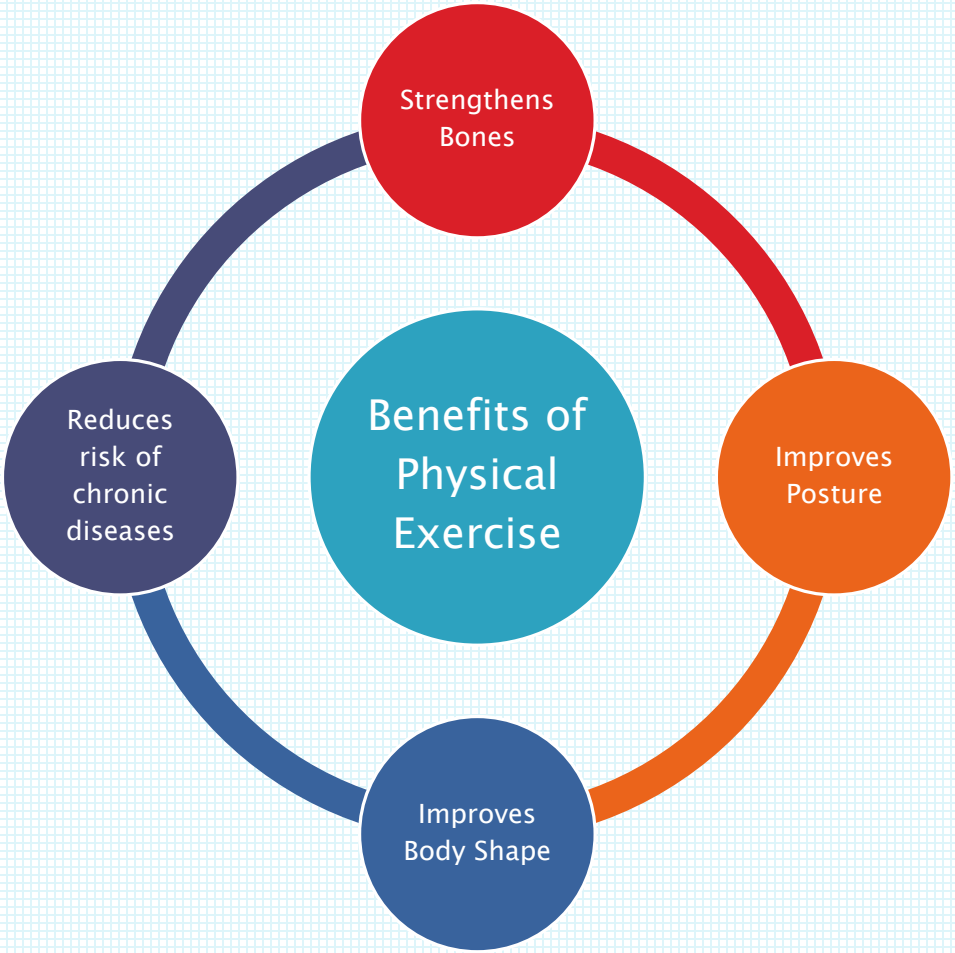
- Distance
- Teenager
- Contact
- Obese

- Health is a complete state of physical, mental and social wellbeing not merely the absence of illness or injury.

- Lifestyle is the physical, psychological, social and economical behaviours of and individual

What are the disadvantages of a sedentary lifestyle? (8 Marks)

Exercise and physical activity



Department of Health recommendations

- 30 Minutes
- 5 times a week
- Moderate exercise
- Enough to expend 200 calories
- Brisk walking, swimming, cycling, jogging or even gardening

Wider benefits of physical activity and exercise (PES)

Psychological

- Relieves stress
- Reduces depression
- Improves mood
- Improves concentration

Economic

- Reduces NHS costs
- Creates employment
- Supports local businesses
- Reduces absenteeism from work

Social

- Encourages social interaction
- Improves social skills
- Reduces isolation
- Enhances self-esteem & confidence

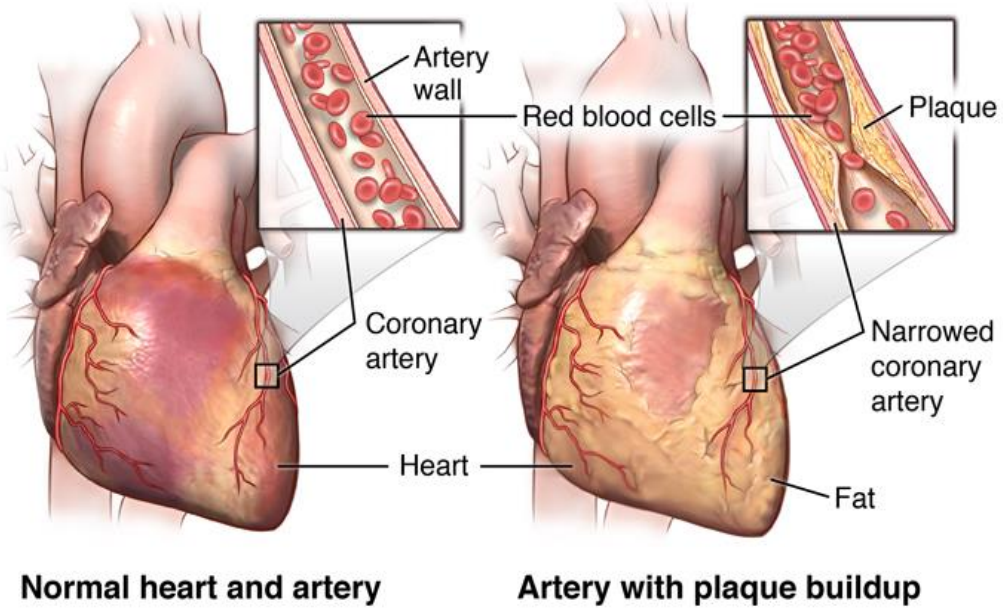
Lack of active lifestyles = higher risk of chronic diseases

Cancer	Type 2 Diabetes
Coronary Heart Disease (CHD)	

A disorder characterised by an increase in blood glucose levels that usually develops in adulthood.

When your coronary arteries (which supply oxygen rich blood) become narrowed by a gradual build up of fatty materials within their walls.

A group of diseases characterised by uncontrolled growth of abnormal cells that can spread throughout the body.



Memory Game – Balanced Diet

Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

Check the label on packaged foods

Each serving (150g) contains

Energy	Fat	Saturates	Sugars	Salt
1046kJ 250kcal	3.0g	1.3g	34g	0.9g
	LOW	LOW	HIGH	MED
13%	4%	7%	38%	15%

of an adult's reference intake
Typical values (as sold) per 100g: 697kJ/ 167kcal

Choose foods lower in fat, salt and sugars

Eat at least 5 portions of a variety of fruit and vegetables every day

Fruit and vegetables

Raisins, Chopped tomatoes, Frozen peas

Choose wholegrain or higher fibre versions with less added fat, salt and sugar

Potatoes, bread, rice, pasta and other starchy carbohydrates

Potatoes, Whole grain cereal, Cous Cous, Porridge, Whole wheat pasta, Bagels, Rice, Spaghetti

Beans, pulses, fish, eggs, meat and other proteins

Lentils, Beans lower salt and sugar, Tuna, Lean mince, Plain nuts, Chick peas

Eat more beans and pulses, 2 portions of sustainably sourced fish per week, one of which is oily. Eat less red and processed meat

Dairy and alternatives

Low fat soft cheese, Semi skimmed milk, Soya drink, Plain Low fat Yoghurt

Choose lower fat and lower sugar options

Oil & spreads

Veg Oil, Lower fat spread

Choose unsaturated oils and use in small amounts

6-8 a day

Water, lower fat milk, sugar-free drinks including tea and coffee all count.

Limit fruit juice and/or smoothies to a total of 150ml a day.

Sauce, Crisps

Eat less often and in small amounts

Per day 2000kcal 2500kcal = ALL FOOD + ALL DRINKS

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

Benefits of a healthy diet

Improved immune function

⇒ A poor diet can force the immune system (the body's natural defence system) to work without nutritional support reducing its ability to protect the body.

⇒ This leads to higher risk of illness which can cause loss of appetite too.

⇒ This weakens the immune system further creating a cycle that must be broken to allow recovery.

✓ **A healthy diet boosts the immune system and prevents this cycle that leads to ill-health.**

Benefits of a healthy diet (task)

M

In 2012 around 28% of children aged 2-15 years of age were classes as either overweight or obese. Similar figures from 2007 had the % at 24%.

Create a presentation that considers to what extent individuals are responsible for there own health with regards to excess bodyweight as opposed to how much responsibility the government and society should be held accountable:

- Food and Drink companies (be specific)
- Exercise opportunities

lp

✓ Th ve portion and vegetables which are low in calorie igh in nutrients into your diet.

Current data

- https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/england-2020

Benefits of a healthy diet

Reduced risk of chronic disease

- ⇒ A healthy diet can reduce the risk of chronic diseases such as Coronary Heart Disease (CHD), stroke, and hypertension.

- ⇒ It does this by increasing the levels of High-Density lipoprotein (HDL) (also known as good cholesterol) and decreasing levels of Low-Density Lipoprotein (LDL) known as bad cholesterol.

- ⇒ These HDL's keep your blood flowing smoothly, reducing the risk of heart disease and hypertension (high blood pressure)

- ✓ A healthy diet can also help prevent or manage a range of other chronic health problems, including diabetes, depression, cancer and osteoporosis.

Benefits of a healthy diet

Fluid Intake Requirements

- The water of the body fluids makes up 55-60% of an adults body.
- All of the body's chemical reactions occur there, and water is the main transport mechanism in your body, carrying nutrients, waste products and internal secretions.
- Water helps to regulate your temperature during exercise
- Aids the passage of food through the digestive system.

Benefits of a healthy diet

Moderation of Caffeine intake

- Caffeine provides **no** nutritional value.
- Although as it is an addictive mild **stimulant** it can affect your mood and cause physical side effects.
- Caffeine is found in coffee, tea, energy drinks and some fizzy drinks.
- Moderate consumption of around 400mg (100mg for teenagers) of caffeine or 4-5 cups of coffee can be considered part of a healthy balanced diet.
- Caffeine has shown an improvement in physical performances requiring speed and strength.
- However, larger caffeine consumption can lead to a negative physiological side effects such as hypertension and digestive problems.

Caffeine – a mildy addictive central nervous system (CNS) stimulant.

Stimulant – a substance that raises levels of physiological or nervous activity in the body.

Task: **WADA investigation**

- You currently are on an apprenticeship for the World Anti Doping Agency (WADA) and they have asked you to decide whether or not Caffeine should be added back to their banned substance list?

- http://news.bbc.co.uk/1/hi/health/7525275.stm

- http://www.menshealth.com/health/caffeine-and-olympics

- http://road.cc/content/news/218871-could-caffeine-be-headed-back-wadas-banned-list

WADA – Caffeine

For

- ✓ Everyday substance, so to ban caffeine a whole section of foods will have to be banned.
- ✓ Doctors have recommended caffeine for endurance events.
- ✓ To change the rules may change athlete's routines or diet
- ✓ Doctor's recommend caffeine for athletes with narcolepsy
- ✓ It increases speed and stamina

Against

- Increases reaction time (unfair advantage)
- Banned once so shouldn't of been unbanned.
- Increases health risks
- Violates spirit of sport
- An overdose of caffeine can cause stress on your body
- Stimulants can be used to enhance performance of athletes
- The substance meets 2 of WADA's anti-doping guidelines.

Strategies for improving dietary intake

Timing of Meals

What you eat is important but also when you eat it. You should aim to eat every 3-4 hours. Timing your meals in this way will improve fat burning, control appetite and balance stress hormones. Eating too close to bedtime raises your body temperature and increases blood sugar levels. These factors interfere with the quality of your sleep.

Eating less/more of certain food groups

As we saw with the EatWell guide you should try to eat a good balance of different foods. Two thirds of your diet should consist of fruit/vegetables and carbohydrates. Some athletes eat more protein or carbohydrates depending on their sports. It's important not to eat too much of food groups such as fat, sugar and salt.

Five a Day

Including fruit and veg in your diet is important because they are good sources of vitamins and minerals. An excellent source of dietary fibre which is important for the digestive system. They can also help to maintain a healthy weight whilst reducing the risk of heart disease, stroke and cancer.

Reducing salt intake

Salt is a key component of high blood pressure and hypertension. 75% of our daily salt comes from bread and breakfast cereals. It's important to understand that it's not just added salt that is a problem. An adult should have <6g a day.

Healthy Alternatives

Alternatives may simply need small changes to what you eat. Substitute items for fruit and vegetables. Use the red, amber and green nutrition labels. Some alternatives are also new foods such as Soya or vegetarian based foods.

Mini Post-it Tests (#2)

- Points will be added up **all year** and the winner will get a love to shop voucher £10 or chocolate of their choice!

1. How many areas are there in the EatWell diet guide?
2. What are the different food groups included?
3. What are the daily calorie allowances for men/women (in kcal)
4. Name 3 of the 5 benefits of a healthy diet?
5. Name the strategies for improving dietary intake? (5)
6. What is the maximum amount of salt an adult should have?
7. Identify 2 of the healthy alternatives that can be added to peoples diets?
8. What is caffeine?
9. Identify the two types of Lipoprotein's and suggest which is the 'good' one.
10. Suggest why this is the good type of Lipoprotein (what does it help with?)

Case Study

Sports Scientist: Jack Donnelly and the nutrition dilemma

Jack is a qualified sports scientist at a professional football club. He works with the club's academy, where boys and girls from 9 to 16 years old are developed into football players. Jack is responsible for a range of duties, including monitoring all the players' height and weight throughout the training season, and working with coaches to set training programmes, improve fitness and give nutritional advice.

A balanced diet is vital for the players' health, well-being and sports performance, so Jack must make sure the advice he gives is up-to-date and correct so the players, regardless of their age or ability, get the best out of their sessions with him. He gets to work with all ages as part of his job and having the opportunity to improve their dietary habits is rewarding.

Recently, Jack was approached by the parents of an under-9 player who were worried that their son would not eat much in the way of fruit or vegetables. They were concerned it might be affecting his performance as he was tired after training and matches.

Check your knowledge

1. Discuss as a group what advice you would give the parents if you were in Jack's position.
2. Come up with a five-point plan that deals with the gaps in the player's diet and explains to the parents what they need to consider when addressing their son's eating habits.
3. Present this plan as a verbal discussion, in an email to the parents or by producing a leaflet that could be used as guidelines for similar occasions.

Risk Taking & Outdoor Adventurous Activities

- Is it good or bad?
  - **What makes risk acceptable?**
  - Risk taking is linked to developmental changes in the brain that help you to become a healthy adult.
  - Positive risk-taking is necessary for children and young adults so they can test their boundaries and develop.

- ❑ Outdoor Adventurous Activities (OAA) is becoming increasingly popular with adults as team building or as part of development courses.
  - ❑ It's about learning how to win and lose, succeed and fail and meet challenges that you may be uncomfortable in!

✓ Endorphin Release (neurotransmitters which = positivity and energy) = reduced stress, fight anxiety, boost self-esteem, more restful sleep

✓ Improved Confidence
feel better physically and mentally, + self confidence, accomplishment

Government Recommendation/Guidelines

- To promote a healthy population, the government publish guidelines.
  - In the hope that people follow their suggestions
    - This reduces the amount of money the NHS would spend on combating obesity and smoking-related disease.
- 19-64 year olds are advised to do two types of exercise each week: aerobic and strength
- Children – 60mins per day involving vigorous activity. Three of these days should involve strength activities.

Government Alcohol Recommendation/Guidelines

- Alcohol is a drug that affects every organ in your body.
- It is a depressant that is absorbed by your stomach and small intestine into the blood.
- Binge drinking is a major health concern (excessive alcohol consumption in a single day or night).
- Guidelines = 14 units for men
  - This should be spread across the week and include 2-3 alcohol free days per week.

Government Healthy Eating Initiatives

Table 2.5: Government healthy eating initiatives

Initiative	Details
Love your labels	The best way of checking what you are eating is to look at food labels, as they can tell you what is inside the food. Once you know how to use them, you will soon be able to make healthier choices when shopping.
Eatwell Guide	The Eatwell Guide helps you eat a balanced diet by showing you how much of each type of food to eat at each meal.
Eat a little slower	It takes time for the brain to register you are full, so try to pace yourself and eat more slowly.
Aim to feel satisfied, not stuffed	Try eating just one plate of food and do not go back for seconds.

Mini Post-it Tests (#3)

- Points will be added up **all year** and the winner will get a love to shop voucher £10 or chocolate of their choice!

1. What makes risk acceptable?
2. Why is risk taking useful for children?
3. What does OAA stand for?
4. What are the uses of OAA?
5. OAA is linked to the release of endorphins, what are 3 of the 5 things can they help with?
6. How many **types** of exercise are 19-64 year olds supposed to do each week?
7. How often should children be completing 60mins of exercise?
8. What type of drug is alcohol?
9. What is the major concern for the UK?
10. Name the four initiatives that the government have put in place to promote healthy eating?

Negative lifestyle factors and their effects on health and well-being

Smoking

contains nicotine and tar which are both damaging to health. Whilst smoking 7000+ chemicals pass throughout your body and organs. Nicotine is a powerful drug that causes addiction it stimulates the CNS and increases heart rate and blood pressure.

- **CHD** – caused by the interrupted/reduced flow of blood through the arteries. The build up of fatty deposits is known as atherosclerosis and this risk is increased with smoking. Add smoking to high BP, cholesterol and an inactive lifestyle it could lead to a heart attack.
- **Cancer** – lung cancer is the most common form of cancer worldwide and is linked with smoking. Cell mutations are often caused by smoking and other cancers that are linked are mouth, oesophagus, bladder, breast, cervix, colon, liver and kidneys!

- **Lung Disease** – smokers are more likely to suffer respiratory infections than others. It is highly linked to colds, flu, Pneumonia due to the effects on the lungs. Smoking is the biggest cause of emphysema which is a chronic disease that causes damage to the tissues and making lungs inefficient in their job (CO_2/O_2).
- **Bronchitis** – An inflamed lining of the bronchial tubes caused by infections. Smoking damages the cilia which makes the lungs more susceptible to infections.
- **Infertility** – Female smokers = ovulation problems and male smokers = lower sperm count and erectile dysfunction

Alcohol

Extend

Find out, from government statistics, how many people were affected by each of these four health conditions in the last calendar year.

- Stroke – this occurs when brain tissue dies as a result of sudden and severe disruption of blood flow to the brain. Heavy alcohol use is linked to an increased risk.
- Cirrhosis – chronic abuse of alcohol over a long period can lead to this whereby healthy tissue is replaced by scar tissue. This can cause liver failure and death.

- Hypertension – the relationship between alcohol use and blood pressure is important as hypertension is a key risk of heart disease and stroke. It is systolic blood pressure above 140 mm.hg and a diastolic blood pressure above 90mm.hg
- Depression – can be caused by alcohol consumption. It can cause dependence and this links with depression and the studies that have been completed on people that are alcohol dependent.

Stress

a physiological and mental response to your environment.

- Hypertension – created by surges of hormones (adrenaline and cortisol) when stressed. They cause a sharp increase in BP
- Angina – associated with chest pain and a symptom of CHD. Angina is linked with the narrowing and hardening of arteries.
- Stroke – stress causes an increase in BP and high BP weakens the arteries in the brain making them split or rupture which causes a bleed on/around the brain.

- Heart attack – stress and high blood pressure are attributed to these.
- Stomach ulcers – stress, alcohol and lifestyle attribute to these ulcers and can create problems for the digestive system.
- Depression – short term stress can be positive but chronic stress can lead to depression. If stress responses don't work then it will mean a decreased level of serotonin the hormone which makes you feel good.

Lack of sleep

Sleep allows your body to rest and restore itself and is vital in being healthy both mentally and physically. Lack of sleep is linked with an increased risk of heart disease.

- Research by the National Sleep Foundation (NSF) suggests that a healthy adult requires between 7-9 hours of sleep per night.

- Athletes can require more sleep due to added recovery and repair requirements linked to training.

- Depression – one symptom of depression is insomnia or an inability to sleep properly. This can have a negative effect on general health and create a cycle of mental/physical health problems.

- Overeating – How much sleep we have helps to regulate how much we eat. This includes the number of calories we take in and when we eat. Eating when we should be sleeping may increase weight gain.

Sedentary Lifestyle

- Physical inactivity counts as doing less than 30mins PA per week!
- Sedentary behaviour refers to activities that use little energy for example: watching TV or sitting.
- These factors are major risk factors in the increase in diseases such as CHD, stroke, type 2 diabetes, cancer and hypertension.
- Lack of PA can add to feelings of depression.

Strategies to increase PA levels

Short walks

Housework

Standing up instead of sitting

Gardening

Dog walks

Using the stairs

Gym @ lunch

Use a pedometer

Standing desk

Plan a new sport

Join a club that promotes PA

Listen to music whilst exercising

Enjoyment

Lifestyle modification techniques

Common barriers to change

- **Time** – finding time to exercise or take part in PA is difficult due to working hours.
- ✓ Overcome this by cycling to work, standing at work or making more of an effort in life (fitbits etc.)
- **Cost** – If people don't have money to join the gym they have PA that is free too.
- ✓ Walk to work, increasing PA at home, walking/jogging
- **Transport** – most gyms or health clubs require a car to get there.
- ✓ Walk or cycle there instead and also save money
- **Location** – Where you live can affect lifestyle, availability and cost of leisure activities etc.
- ✓ If you live in a flat do stair walking etc

1. What is the main effect of nicotine to the body?
2. Name the dangers smoking can cause?
3. What is Bronchitis caused by?
4. How does Alcohol link to a Stroke?
5. What is Cirrhosis?
6. What is stress?
7. Name 3 things caused by stress?
8. How much sleep should we have?
9. What counts as physical inactivity?
10. What common barriers can you change to modify your lifestyle?

Research Task (smoking)

- Smoking increases the risk of lung cancer and heart disease. As with most behaviours, if someone wants to change/give up then they must want to stop.

Research the following methods and give a bullet point description of what each includes.

- Acupuncture
- NHS Smoking Helpline
- NHS Smoking Services
- Nicotine Replacement Therapy
- Quit Kit Support Packs

Strategies to reduce alcohol consumption

- When alcohol consumption becomes excessive and frequent it has a severe and negative impact on health.
- This is called **alcoholism.**
- Alcoholics have an intense craving for alcohol and become physically dependent on it.
- Recovery is possible but requires strong motivation.

The following treatments can support patients in stopping:

- **Self-Help Groups** – Alcoholics Anonymous who help sufferers through a step-by-step recovery programme.
- **Counselling** – both individual and group, this is delivered by therapists and could involve members of your family.

Alternative Therapies

- Acupuncture
- Hypnosis

Key Words: **Detoxification** **Relapse** **Habits** **Triggers** **Awareness**

Stress Management Techniques

- **Assertiveness T**
  - There are tw
  - Try to reduce the
  - Develop appropri
  - To reduce s
  - the factors i

  the ability to ex
  feelings and ri
  respecting tho
  others. It is a s
  can be learned
  help people de
  conflict situatio
  can cause stres
- **Goal Setting** – p
  setting goals c
  motivating and
  This can build
  confidence and
  stress.
- **Time Managem**
  is critical in str
  management a
  minimise time
  unproductive a

- **Physical Activ**
  can have a p
  effect on anx
  depression, s
  esteem and r
  can also be a
  for frustratio
  releasing end
- **Positive Self-**
  Inner dialogu
  yourself. It ir
  your thought
  and actions.
  self talk is lo
  optimistically
  support your

- **Relaxation** – A mentally active process that ensures the body is relaxed and calm. When you relax your body sends responses that reduce your HR, lower your breathing rate and decrease your blood pressure. Meditation *(eliminating stress through calm)* and breathing *(inhalation/Exhalation)* techniques are the most common methods of relaxation.
- **Alternative Therapies** – these therapies work best alongside traditional treatments such as counselling and medication. Herbal remedies are a popular form of alternative therapies although still being researched due to reactions etc.
- **Changes to work-life balance** – Modern culture is a pressurised situation. This can cause stress so people should consider:
  - **Taking proper breaks at work**
  - **Trying to keep work/leisure separate**
  - **Tell your employers if stressed**
  - **Use relaxation techniques after work**
  - **Engage in leisure and spent time with family and friends**

Assessment practice 2.1

You have secured a position as an assistant community coach at a local tennis club as part of your course's work experience requirement. In addition to assisting the full-time coach with fitness coaching and fitness programming for boys and girls aged from 9 to 16, you have been asked to design a presentation on general health and well-being as part of an induction evening at the tennis club.

The club is expecting about 30–40 sets of parents and their children, the players. You are on first and you have a 30-minute slot (20 minutes for the presentation and 10 minutes for questions and answers). The general manager of the club has asked you to prepare a presentation in a format of your choice (PowerPoint, posters, slideshow, etc.) but it must address the following key points:

- positive lifestyle factors
- negative lifestyle factors
- lifestyle modification techniques.

You will need to carry out some research on these three points and demonstrate you understand what each of the three points mean and how they may be applicable to your audience (players and parents). Make sure your presentation is relevant and informative. You will need to outline the importance of the positive lifestyle factors and how they might benefit performance, how the negative factors can contribute to an unhealthy lifestyle and a likely decrease in performance, and how lifestyle modification techniques may help reduce unhealthy practices.

Plan

- What is the task? What is my presentation being asked to address?
- How confident do I feel in my own abilities to complete this task? Are there any areas I think I may struggle with?

Do

- I know how to examine lifestyle factors and their effect on health and well-being.
- I can identify when my presentation may have gone wrong and adjust my thinking/approach to get myself back on course.

Review

- I can explain what the task was and how I approached the construction of my presentation.
- I can explain how I would approach the more difficult elements differently next time (i.e. what I would do differently).

External Assessment Practice

- You are allowed 4 A4 sides of notes
- Printed or handwritten
  - Must be font 10 or above

Part A assessment practice

Task 1

- Interpret lifestyle factors and screening information
  - *Positives & Negatives*

Task 2

- Provide Lifestyle Modification Techniques
- *Justify these modification techniques in relation to meeting Mr.Mann's lifestyle & goal.*

Task 3

- Provide and justify your nutritional guidance for Mr.Mann to meet his specific requirements.
  - *Macro/Micronutrients and their sources and quantities.*
  - *Hydration and guidelines*
  - *Calorie intake suggestions*
  - *Strategies to improve diet to gain or lost weight.*

Task 4 & 5

- Propose and justify different training methods
- Create 6 week training plan

Lifestyle questionnaire

Section 1: Personal details

Name: Mr A Mann
Address: 5 The High Street
Anytown

Home telephone: 01234 567890 Mobile telephone: 07123 456789

Email: amann1@email.com

Date of birth: 01/01/1975

Please answer the following questions to the b

Occupation

1. What is your occupation?

   Office worker

2. How many hours do you work daily?

   9am-6pm with a 1 hour lunch break

3. How far do you live from your workplace?

   3 miles

4. How do you travel to work?

   Bus

Section 2: Current activity levels

1. How many times a week do you currently tak activity?

   Not at all

1. Lifestyle Factors/ Screening Information *+/-'s (12 marks)*

2. Lifestyle Modification Techniques for lifestyle and goal
Link to red and blue
(12 marks)

Section 3: Nutritional status

1. How many meals and snacks do you have each day?
2. Do you take any supplements? If yes, which ones?

Day 1	Breakfast	Lunch	Dinner	Snacks
Y/N	N	Y	Y	Y
Time of day		12.30pm	7pm (ish)	Different times in day - normally - morning - afternoon - evening
Food intake		Ham and Cheese Baguette Packet of crisps Cake	Takeaway - fish and chips	A banana Chocolate bar Crisps
Fluid intake	Coffee x3 cups, Can of fizzy drink x2, Small bottle of water, 3 pints of beer			

Day 2	Breakfast	Lunch	Dinner	Snacks
Y/N	N	Y	Y	Y
Time of day		12.30pm	7pm (ish)	Different times in day - normally - morning - afternoon - evening
Food intake		Chicken Caesar Baguette Packet of crisps Chocolate bar	Takeaway - 12" Pepperoni Pizza and Garlic bread	An apple Chocolate bar Popcorn
Fluid intake	Coffee x3 cups, Can of fizzy drink x1, Small bottle of water x2, 3 pints of lager			

Section 4: Your lifestyle

Please answer the following questions to the best of your knowledge.

1. How many units of alcohol do you drink in a typical week? 29
2. Do you smoke? No If yes, how many a day? _____
3. Do you experience stress on a daily basis? Yes

   If yes, what causes you stress (if you know)?

   Tight deadlines at work
4. On average, how many hours sleep do you get per night? 6

Section 5: Health monitoring tests

- Test results

Test	Result
Blood Pressure	135/88 mmHg
Resting Heart Rate	85 bpm
Body Mass Index	32
Waist-to-Hip Ratio	1.3

What are the guide lines?

Section 6: Physical activity/sporting goals

1. What are your physical activity/sporting goals?

   To run a 5K road race in 6 weeks

   To improve lower body flexibility

CLIENT DECLARATION

I have understood and answered all of the above questions honestly.

Signed Client: A Mann Print Name: Andrew Mann

Date: 01/09/16

3. Provide and Justify Nutritional Guidance
   - *Suggest negatives and link to guidelines (calorie intake/RDAs)*
   - *Explain alternatives*
   - *Any positives?*
   (8 marks)

4. Propose and Justify Training methods (8 marks)

5. Create a training Plan (6 marks)

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   Bus

Section 2: Current activity levels

1. How many times a week do you currently tak activity?

   Not at all

Section 3: Nutritional status

1. How many meals and snacks do you have each day?
2. Do you take any supplements? If yes, which ones?

Day 1	Breakfast	Lunch	Dinner	Snacks
Y/N	N	Y	Y	Y
Time of day		12.30pm	7pm (ish)	Different times in day - normally - morning - afternoon - evening
Food intake		Ham and Cheese Baguette Packet of crisps Cake	Takeaway - fish and chips	A banana Chocolate bar Crisps
Fluid intake	Coffee x3 cups, Can of fizzy drink x2, Small bottle of water, 3 pints of beer			

Day 2	Breakfast	Lunch	Dinner	Snacks
Y/N	N	Y	Y	Y
Time of day		12.30pm	7pm (ish)	Different times in day - normally - morning - afternoon - evening
Food intake		Chicken Caesar Baguette Packet of crisps Chocolate bar	Takeaway - 12" Pepperoni Pizza and Garlic bread	An apple Chocolate bar Popcorn
Fluid intake	Coffee x3 cups, Can of fizzy drink x1, Small bottle of water x2, 3 pints of lager			

Section 4: Your lifestyle

Please answer the following questions to the best of your knowledge.

1. How many units of alcohol do you drink in a typical week? 29
2. Do you smoke? No If yes, how many a day? _____
3. Do you experience stress on a daily basis? Yes

   If yes, what causes you stress (if you know)?

   Tight deadlines at work

4. On average, how many hours sleep do you get per night? 6

Section 5: Health monitoring tests

- Test results

Test	Result
Blood Pressure	135/88 mmHg
Resting Heart Rate	85 bpm
Body Mass Index	32
Waist-to-Hip Ratio	1.3

Section 6: Physical activity/sporting goals

1. What are your physical activity/sporting goals?

   To run a 5K road race in 6 weeks

   To improve lower body flexibility

CLIENT DECLARATION

I have understood and answered all of the above questions honestly.

Signed Client: A Mann Print Name: Andrew Mann

Date: 01/09/16

Unit 2 – Learning Aim B

BTEC Sport Level 3

Understanding the screening processes for training programming

- Screening processes links to the collection of appropriate information about your client.

- Key information relates to:
  - Goals
  - Lifestyle Information
  - Medical History
  - Physical Activity History

- This should lead to a more effective programme being created for your client

Lifestyle Questionnaires

- These allow you to investigate information such as:
  - Alcohol Intake
  - Diet
  - Time Availability
  - Occupation
  - Family and Financial Situation

❖ Legal considerations – your programme needs to be effective for health & safety reasons and also for your insurance.

❖ The information you gain is privileged and is subject to the Data Protection Act in relation to client confidentiality (you have to keep their personal information secure and inaccessible to other people).

Complete the sample questionnaire as truthfully as possible (DO NOT PUT YOUR NAME ON IT)

PAR -Q

Physical Activity Readiness Questionnaire

- Provides key information relating to:
  - Physical health
  - Illness
  - Blood Pressure
  - Historical Illness
  - Pregnancy
  - Doctor's advice

Complete the sample PAR- Q questionnaire as truthfully and in as much detail as possible
(DO NOT PUT YOUR NAME ON IT)

Health Monitoring Tests & Results

- Important health monitoring tests include:
  - Blood Pressure
  - Heart Rate
  - Body Mass Index (BMI)
  - Waist-to-hip ratio

  - These tests should be completed both before and after testing to help measure progress.

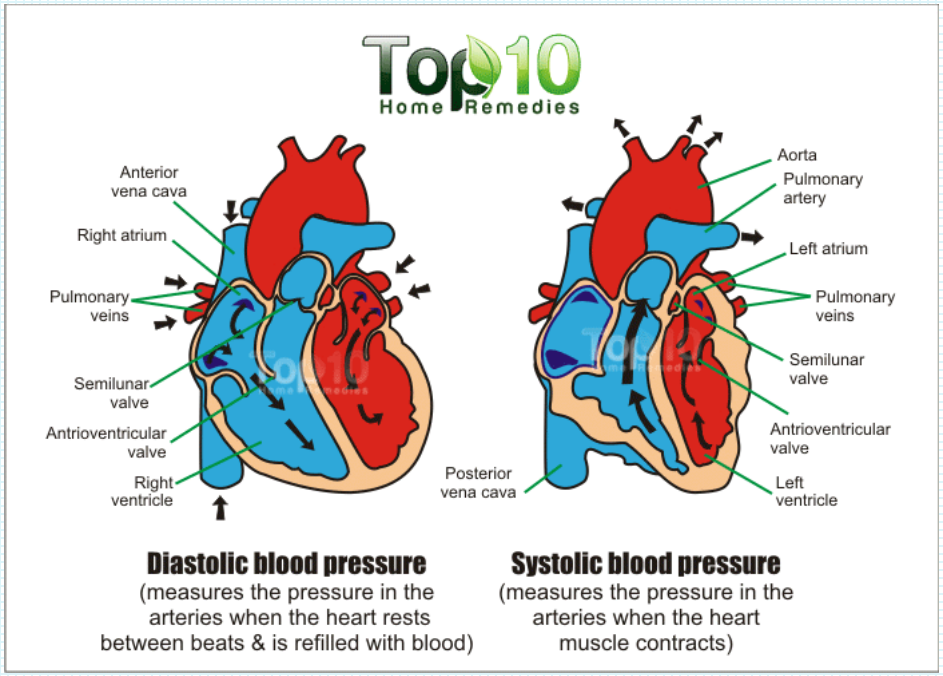
  - Think about validity of the tests you conduct, if you do a test one-way and differently the second time the results are invalid and you can't compare vs normative data.

- Normative data and choosing the appropriate data to interpret against is important. You need to be selective about the data you compare your clients results against to make sure it is appropriate and worthwhile.

  - Population Norms
  - Norms for sports performance
  - Norms for elite athletes

Blood Pressure Test

Provides a reading of blood pressure as: systolic blood pressure/diastolic blood pressure (in mm Hg)



Resting Heart Rate

- Resting Heart Rate (RHR) is measured in beats per minute (bpm)
- **The average for a male is 68bpm**
- **The average for a female is 72bpm**
- The difference is because males generally have larger hearts than females, which can pump a greater volume of oxygenated blood around the body per beat.
- A high resting heart rate (tachycardia) is above 100bpm.

Resting Heart Rate (normative data)

Accepted health ranges

Tables 2.7 and 2.8 show the accepted health ranges for men and women.

Table 2.7: Resting heart rate data for men (bpm)

Age	18–25	26–35	36–45	46–55	56–65	65+
Athlete	49–55	49–54	50–56	50–57	51–56	50–55
Excellent	56–61	55–61	57–62	58–63	57–61	56–61
Good	62–65	62–65	63–66	64–67	62–67	62–65
Above average	66–69	66–70	67–70	68–71	68–71	66–69
Average	70–73	71–74	71–75	72–76	72–75	70–73
Below average	74–81	75–81	76–82	77–83	76–81	74–79
Poor	82+	82+	83+	84+	82+	80+

Table 2.8: Resting heart rate data for women (bpm)

Age	18–25	26–35	36–45	46–55	56–65	65+
Athlete	54–60	54–59	54–59	54–60	54–59	54–59
Excellent	61–65	60–64	60–64	61–65	60–64	60–64
Good	66–69	65–68	65–69	66–69	65–68	65–68
Above average	70–73	69–72	70–73	70–73	69–73	69–72
Average	74–78	73–76	74–78	74–77	74–77	73–76
Below average	79–84	77–82	79–84	78–83	78–83	77–84
Poor	85+	83+	85+	84+	84+	84+

Body mass index (BMI) test

- BMI is a measure of body composition (kg/m^2) and is used to determine whether a person is a healthy weight.
- It's an estimate and doesn't take into account muscle mass or frame size.

1. Measure the individual's body weight (kg) and height (m).
2. Divide their weight by their height.
3. Divide the answer by their height again to find a value for their BMI (kg/m^2)

Research shows a direct correlation between high BMI and the occurrence of CV disease and also a high BMI + diabetes.

The increases are at the points below
27.8 for men 27.3 for women

Weight ÷ Height

Answer ÷ Height = BMI

Body mass index (BMI) test normative data

Accepted health ranges

Table 2.9 shows the accepted health ranges for the BMI of both men and women.

Table 2.9: BMI data for men and women

BMI	Comments
<18.5	You are underweight; consult your GP to discuss a plan to achieve a more healthy weight
18.5–24.9	Healthy range
25–30	Above the healthy range – you may be overweight and likely to be heavier than is healthy for someone of your height
>30	Classed as obese; being obese puts you at an increased risk of health problems (e.g. CHD, stroke and type 2 diabetes)

Research shows a direct correlation between high BMI and the occurrence of CV disease and also a high BMI + diabetes.

Weight ÷ Height

Answer ÷ Height = BMI

Waist-to-hip ratio test

- This test can determine levels of obesity and help to identify those at risk of heart disease.

1. Use a tape measure placed firmly against the individuals skin to measure waist circumference in cm (at the narrowest level of the torso).
2. Measure the hips by placing the measuring tape at the widest part of the buttocks.
3. Waist measurement (cm) ÷ Hip measurement (cm)

Accepted ranges:

A ratio of 1.0 or more in men or 0.85 or more in women indicates the individual is carrying too much weight.

Task/Half Term Homework

Assessment practice 2.2

Your role at a local tennis club is going well and you are in the final week of your work experience requirement. Following your presentation on health and well-being, the tennis club is now offering general health checks for all members. The general manager has asked you to design a new health monitoring booklet to be used by the full-time fitness coach and given to club members. The booklet will have three sections:

1. A description of each test and why it is carried out.
2. A blank template for each test into which the results can be inserted.
3. An exemplar test with mock results filled in and analysed.

The design of the booklet is up to you, but it must be in these three parts and should include the following key features:

- PAR-Q
- written confirmation of a commitment to client confidentiality
- blood pressure test and interpretation of results
- resting heart rate test and interpretation of results
- body mass index (BMI) test and interpretation of results
- waist-to-hip ratio test and interpretation of results.

You will need to carry out research to complete this task. You should be able to show you understand each of the three sections and how the key features fit into the format of the booklet. Make sure your booklet is relevant and informative. You will need to highlight healthy results and flag up potential areas for concern (maybe using a traffic light system).

Plan

- What is the task? What is my booklet being asked to address?
- Are there any areas of the test analysis that I think I may struggle with?

Do

- I know how to design my own booklet, put a PAR-Q into practice, carry out the health monitoring tests and interpret the results of these tests correctly.
- I can identify where my booklet may have gone wrong and adjust my thinking to get back on course.

Review

- I can explain what the task was and how I approached the construction of my booklet.
- I can explain how I would approach the more difficult parts differently next time.

Mini Test

Question

1. What are the four things that the key information of screening processes links to?
2. Give 2 key points that a good lifestyle questionnaire should as about?
3. What does PAR-Q stand for?
4. What is missing from the information found in a PAR-Q Physical Health, Blood Pressure, Historical Illness, Pregnancy, Doctor's Advice
5. What are the 4th tests linked to health monitoring?
6. Other than norms for sports performers and elite athletes what else can tests be compared against?
7. Blood pressure is measured in?
8. What are the average resting HRs for men and women?
9. How do you calculate BMI (what is the formula?)
10. What ratio is classed as carrying too much weight in men/women in waist to hip ratio?

Answer

1. Goals, Lifestyle Info, Medical History, Physical Activity History
2. 2 from : Alcohol Intake, Diet, Time availability, Occupation, Family and Finances
3. Physical Activity Readiness QUestionnaire?
4. Illness
5. Blood Pressure, Heart Rate, BMI, Waist to Hip
6. Population Norms
7. Systolic/Diastolic blood pressure?
8. Male: 68bpm, Female: 72bpm
9. Weight/HeightxHeight or Weight / Height = ANS ANS / Height
10. Men ratio of 1.0 or more. Women of 085 or more.

Unit 2 – Learning Aim C

BTEC Sport Level 3

Common Terminology

- Components of a balanced diet
  - Macronutrients
  - Micronutrients
  - Hydration
  - Dehydration/Hyperhydration
  - Ergogenic Aids
  - Sports Drinks

- Key Terminology

Understanding programme related nutritional needs

Section C

Common Terminology

- The health and fitness industry use standard terms to talk about nutrition.
- You need to understand these terms so you can communicate in a professional manner in relation to the industry.

Macronutrients – nutrients required in large amounts (carbs, fats, proteins) to maintain health and well-being.

Micronutrients – nutrients required in small amounts (vitamins and minerals) to maintain health and well-being.

Calories – One calorie is the energy needed to raise the temperature of 1 gram of water by 1°C

Joules – 1 joule of energy moves a mass of 1 gram at a velocity of 1 metre per second. Approximately 4.2 joules = 1 calorie.

Kilocalories – It is equal to 1000 calories and used to state the energy value of food.

Kilojoules – a unit of energy, equivalent to 1000 joules.

Memory Test

Question

1. What is 1 calorie equivalent to in joules?
2. What is capable of raising 1g of water temperature by 1°C
3. Nutrients required in small amounts are known as?
4. Nutrients required in large amounts are known as?
5. This can move a mass of 1g at 1 metre per second?

Answer

1. 4.2 joules
2. A Calorie
3. Micronutrients
4. Macronutrients
5. A joule

Common Terminology

- Dietary Reference Values (DRVs)

Dietary standards have been used in the UK since the 1940s.

The first set of standards focused on Recommended Daily Allowances (RDAs).

These have been outdated now with DRVs being used. The term dietary reference value covers all of the following measures of nutrient intake

- **Reference Nutrient Intake (RNI) –** the best estimate of the amount of nutrient considered to be sufficient for 97% of people in the group.
- **Estimated Average Requirements (EAR) –** the nutrient intake needed to meet the average requirements of the group. About half of these people will usually need more than the EAR with half usually less.
- **Lower Reference Nutrient Intake (LRNI) –** the amount of a nutrient that is sufficient for only a few members of the group with exceptionally low requirements. Intakes below the LRNI for most people will be inadequate.
- **Safe Intake (SI) –** the range of intakes of a nutrient for which there is not enough information to establish the other values.

Memory Test

Question

1. What does DRVs stand for?
2. What were the standards before DRVs known as?
3. What is the best estimate for the amount of nutrient needed for 97% of people?
4. What is the range of intake where information is lacking but is focused on not allowing too much or too little.
5. This is the amount of nutrient that is sufficient for a few members of the group
6. What is the Estimated Average Requirements (EAR)?

Answer

1. Dietary Reference Values
2. Recommended Daily Allowances (RDAs)
3. Reference Nutrient Intake (RNI)
4. Safe Intake (SI)
5. Lower Reference Nutrient Intake (LRNI)
6. The nutrient intake needed to meet the average requirements of the group.

Common Terminology

Basal Metabolic Rate – is the minimum rate of metabolism in an individual who is not digesting or absorbing food. BMR is the lowest rate of energy that can sustain life.

- **Energy** – comes from the foods we eat, it supports your basal metabolic rate and all additional activity carried out at work and leisure. Energy is measured in calories or joules. As both of these units are small they are multiplied by 1000 and referred to as kilocalories (kcal) or kilojoules.

- **Energy Balance** – You are in energy balance when the amount of energy you take in as food and drink *(energy input)* is the same as the amount of energy you expend *(energy output).*

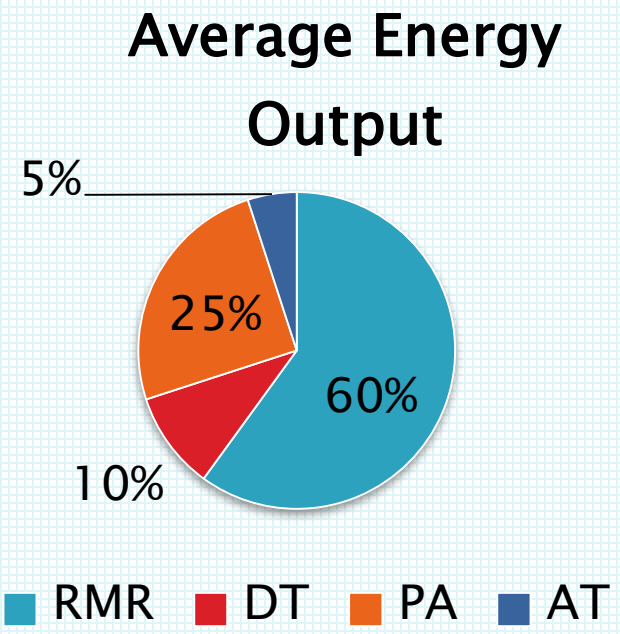
Components of energy output

- **Resting Metabolic Rate (RMR) –** the metabolic rate of a person at rest and accounts for 60-75% of total energy output. It represents the largest component of daily energy expenditure. RMR is influenced by your age, gender and genetic background.

- **Dietary thermogenesis (DT) –** refers to any energy expended over RMR for digestion, absorption, transport and storage of food. High energy intakes and a regular eating pattern keep the percentage of DT high. Skipping meals or other restrictive diets reduce this number.

- **Physical Activity (PA) –** represents the most variable component of your total energy expenditure. This is additional energy expended above your RMR and DT and in active individuals can be the highest total of energy output.

- **Adaptive Thermogenesis (AT) –** This is energy expenditure that comes from environmental or physiological stresses that may require you to respond by shivering or stress that causes anxiety or fidgeting.



Basal Metabolism

- To estimate energy requirements you need to calculate basal metabolic rate (BMR) in kcal per day.
- The way of doing this for men and women of different ages is shown in below:

	Age (years)	Basal metabolic rates in kcal per day (W = weight in kg)
Males	10–17	BMR = 17.7W + 657
	18–29	BMR = 15.1W + 692
	30–59	BMR = 11.5W + 873
	60–74	BMR = 11.9W + 700
Females	10–17	BMR = 13.4W + 691
	18–29	BMR = 14.8W + 487
	30–59	BMR = 8.3W + 846
	60–74	BMR = 9.2W + 687

- BMR is affected by a number of different factors
  - **Age** – basal metabolism decreases with age, after 30 it falls by 2% per decade (approximately)
  - **Gender** – males generally have greater muscle mass than females, so generally have a higher BMR.
  - **Climate** – exposure to hot or cold climates causes an increase in BMR to maintain the body's internal temperature.
  - **Physical Activity** – to estimate energy requirements you need to consider your level of PA. This involves taking account of the calories used in different Pas and the intensity and length of time.

Mini Test

Question

1. Where does energy come from and how is it measured?
2. What key words is energy balance linked to?
3. What is the BMR (use it's full name)?
4. What were the percentages included in the example energy output pie chart?
5. What are the two types of thermogenesis?
6. List the key components of energy output (inc example %)
7. What are the four factors that affect Basal Metabolic Rate?

Answer

1. Food & Drink and Joules and Calories
2. Energy Input/Output
3. Basal Metabolic rate can be known as the lowest rate of energy that can sustain life or the minimum rate of metabolism for someone not digesting or absorbing food.
4. 60%, 25%, 10%, 5%
5. Dietary & Adaptive
6. Resting Metabolic Rate (60%), Dietary Thermogenesis (10%, Physical Activity (25%), Adaptive Thermogenesis (5%)
7. Age, Gender, Climate, Physical Activity

Understanding programme related nutritional needs

Section C

- Common Terminology
- Components of a balanced diet
  - Macronutrients (carbohydrates)
  - Micronutrients
  - Hydration
  - Dehydration/Hyperhydration
  - Ergogenic Aids
  - Sports Drinks
- Key Terminology

Components of a Balanced Diet

- This section is vital for you to know the nutrients that your body requires and their different functions.
- Nutrients in food are categorised according to the relative amounts required by your body.

  - Macronutrients
  - Micronutrients
  - Hydration
  - Dehydration/Hyperhydration
  - Ergogenic Aids
  - Sports Drinks

Macronutrients – Required in a large amount on a daily basis. They are the energy providing nutrients of your diet (Carbohydrates, Protein and Fat)

Carbohydrates

- Your body's most readily available source of energy and can be accessed rapidly.

- Carbohydrates are divided into two types: *simple/complex*

Simple Carbohydrates

- Sugars
- They are easily digested and absorbed to provide a quick energy source.
- The simplest carbohydrate unit is monosaccharide
- Found in most sweet tasting foods (fruit, fruit juices & honey)

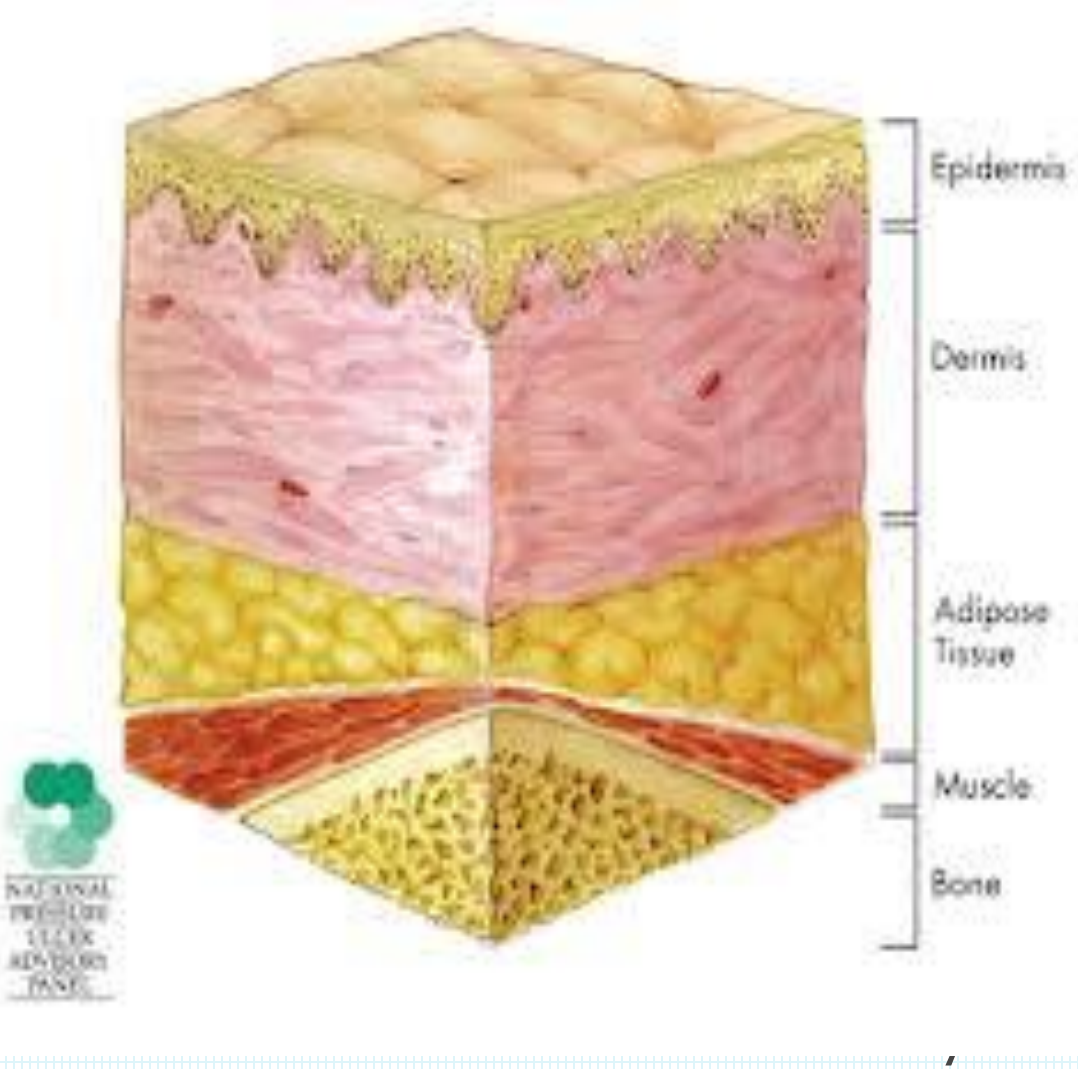
Carbohydrates

Complex Carbohydrates

- Longer chains of simple carbohydrates (aka polysaccharides)
- Complex Carbohydrates are an important source of energy as they are broken down slowly in your body to release energy over a longer period.
- They should form the largest % of your total carbohydrate intake.
- Raw sources such as wholemeal bread, pasta and wholegrain rice are the best as they contain a higher nutritional value from macronutrients and provide a source of fibre too.
- Found in bread, rice, pasta, potatoes, beans and lentils

Carbohydrates

After eating:



Key Words:

Saccharide – a compound containing sugar or sugars

Glucose – a monosaccharide that is converted to glycogen by the body

Glycogen – type of blood sugar and major fuel source that the body converts from dietary carbohydrates

Carbohydrates

- Carbohydrate can only be stored as glycogen in limited amounts (375-475g in an average adult), equivalent to approx. 1500-2000kcal
- Stores are influenced by levels of PA or training
- Regular exercise can encourage muscles to adapt to store more glycogen.
- This is an important training adaptation for elite athletes particularly endurance type sports.
- A general recommendation is that carbohydrates should make up 45-70% of your total calories.

Table 2.11: Sources of carbohydrate

Simple carbohydrates 'Quick release' energy	**Complex carbohydrates** 'Slow release' energy
Sugar, syrup, jam, honey, marmalade, sugary fizzy drinks, boiled sweets, fudge, fruit juice, sports drinks, energy gels.	Bread, bagels, crispbread, crackers, rice, pasta, noodles, couscous, potatoes, breakfast cereals, pulses, root vegetables.

Mini Test

Question

1. List the suggested components of a balanced diet
2. Why are carbohydrates used so much by your body?
3. What are the two types or carbohydrates?
4. What is the simplest carbohydrate unit?
5. Give an example of where it is found?
6. What are also known as polysaccharides?
7. Where are the best types of these found?
8. What does insulin help to transport?
9. Where is glycogen stored?
10. How can glycogen stores be affected?

Answer

1. Macronutrients, Micronutrients, Hydration, Dehydration/Hyperhydration , Ergogenic Aids, Sports Drinks
2. Most readily available source of energy and can be accessed rapidly
3. Simple/Complex
4. Monosaccharide
5. Fruits, Fruit Juices, Honey
6. Complex Carbohydrates
7. Wholegrain rice/pasta and Wholemeal bread
8. Glucose
9. Liver and Muscles
10. With physical activity ortraining

Understanding programme related nutritional needs

Section C

- Common Terminology
- Components of a balanced diet
  - Macronutrients (Fats)
  - Micronutrients
  - Hydration
  - Dehydration/Hyperhydration
  - Ergogenic Aids
  - Sports Drinks
- Key Terminology

Fats

Fat is an essential nutrient and is the body's most concentrated source of energy.

Each g of fat gives approx. 9kcal of energy.

Fats also provide the body with heat insulation, mechanical cushioning and buoyancy.

Fats come from animal and vegetable sources

Tryglycerides

Most basic component of fats, each tryglyceride is made from a *glycerol molecule* with three fatty acids attached. When tryglycerides are digested and absorbed by your body they break down into one of the following substances (saturated/unsaturated fats).

Fats

Saturated Fats – Fatty acids, mainly from animal sources; along with cholesterol they are linked to the build up of fatty deposits on artery walls. Saturated fats are usually solid at room temperatures.

Unsaturated fats – fatty acids usually liquid at room temperature and considered less likely to build up fatty acids on artery walls.

Most dietary experts recommend cutting back on fat intake, with many people in the UK eating too much saturated fat.

The government recommends no more than 30g (male) or 20g (female).

Fats

Cutting back on fat intake is good advice for athletes as it allows them to gain a greater proportion of their energy intake from carbohydrates which allow glycogen stores to be maintained.

The primary function of fats is to provide a concentrated energy source. Even the leanest people have energy stored as fat.

Fats protect and cushion your vital organs, provide structural material for cells and act as an insulator.

Fats add flavour and texture to foods which can be the reason for over-consumption.

Fats

All fats in your diet are a mixture of three fatty acid types.

Table 2.12: Sources of fat

Saturated	Monounsaturated	Polyunsaturated
Full-fat dairy products, butter, hard margarine, lard, dripping, suet, fatty meat, meat pies, pâté, cream, cakes, biscuits, chocolate, coconut, coconut oil	Olive oil, olive oil spreads, rapeseed oil, corn oil, peanuts, peanut butter, peanut oil	Soft margarine, low-fat spreads labelled as high in polyunsaturated fats, sunflower oil, safflower oil, soya oil, oily fish, nuts

Fats that contain mostly saturated fatty acids (butter/margerine) are generally solid at room temperature and found in meat, eggs and dairy.

Fats composed mainly of unsaturated acids are usually liquid at room temperature (olive/sunflower oil)

Mini Test

Question

1. How much kcal of energy does 1g fat produce?
2. List 3 of fats uses?
3. What are the main sources fats come from?
4. What are the two types of fats?
5. How is a tryglyceride formed?
6. What are the government recommendations for fat?
7. What is the primary function of fats?
8. Why is it suggested that fat intake is cut down on?
9. Which fat is usually a liquid at room temperature?
10. Which fat is usually a solid at room temperature?

Answer

1. 9kcal
2. Buoyancy, insulation and mechanical cushioning
3. Animal/Vegetable sources
4. Saturated/Unsaturated Fats
5. Glycerol molecule with three fatty acids attached.
6. 30g for men & 20g for women
7. To provide a concentrated energy source
8. To allow them to gain a greater proportion of their energy intake from carbohydrates which allow glycogen stores to be maintained.
9. Unsaturated Fat
10. Saturated Fat

Day 1	Breakfast	Lunch	Dinner	Snacks
Yes/No	Yes	Yes	Yes	Yes
Time of Day	8am	1:30pm	6:30pm	multiple
Food Intake	slice of toast with butter	Chicken pasta bake with cheese, chocolate bar, crisps	Chicken Korma with White Rice	1 pack of Jaffa Cakes, Crisps, Chocolate
Fluid Intake	2 litres of water, 1 lucozade sport, 1 Coffee			
Day 2	**Breakfast**	**Lunch**	**Dinner**	**Snacks**
Yes/No	No	Yes	Yes	Yes
Time of Day		1:30pm	6:30pm	multiple
Food Intake		Lasagne	Hoisin Duck Wrap, Crisps, Chocolate bar	Chocolate cereal bar, Jacket Potato (cheese & beans) at 10pm
Fluid Intake	2 litres of water, 2 x lucozade sport, 3 x Coffee			
2. Do you take any supplements? If yes, which ones?				**No**
Yes, glucose tablets before football match.				

<u>Analyse my nutritional information thinking about these key points of my lifestyle and goals</u>

I work as a PE teacher and regularly take part in lessons to increase student motivation and involvement.

I regularly play football and my aim is to be able to train more regularly to build upper body strength but also have enough energy to play matches regularly on a tuesday (day 2).

Understanding programme related nutritional needs

Section C

- Common Terminology
- Components of a balanced diet
  - Macronutrients (Fats)
  - Micronutrients
  - Hydration
  - Dehydration/Hyperhydration
  - Ergogenic Aids
  - Sports Drinks
- Key Terminology

Group Presentation

Vitamins A, B, C & D

Minerals – (macrominerals & trace elements)

Hydration, Dehyrdration & Hyperhydration

Ergogenic Aids (sports drinks)

Gels, bars, carbo loading,
energy drinks (isotonic, hypertonic, hypotonic

Nutritional strategies

Adapting diet to + or – weight

Optimal body weight

Examples of diet plans

Must include:

- Content
- Examples
- Speaker notes
- Link to dietary advice
- Create 3 quiz questions on your content

Mini Test

Question

1. How much kcal of energy does 1g fat produce?
2. List 3 of fats uses?
3. What are the main sources fats come from?
4. What are the two types of fats?
5. How is a tryglyceride formed?
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Understanding programme related nutritional needs

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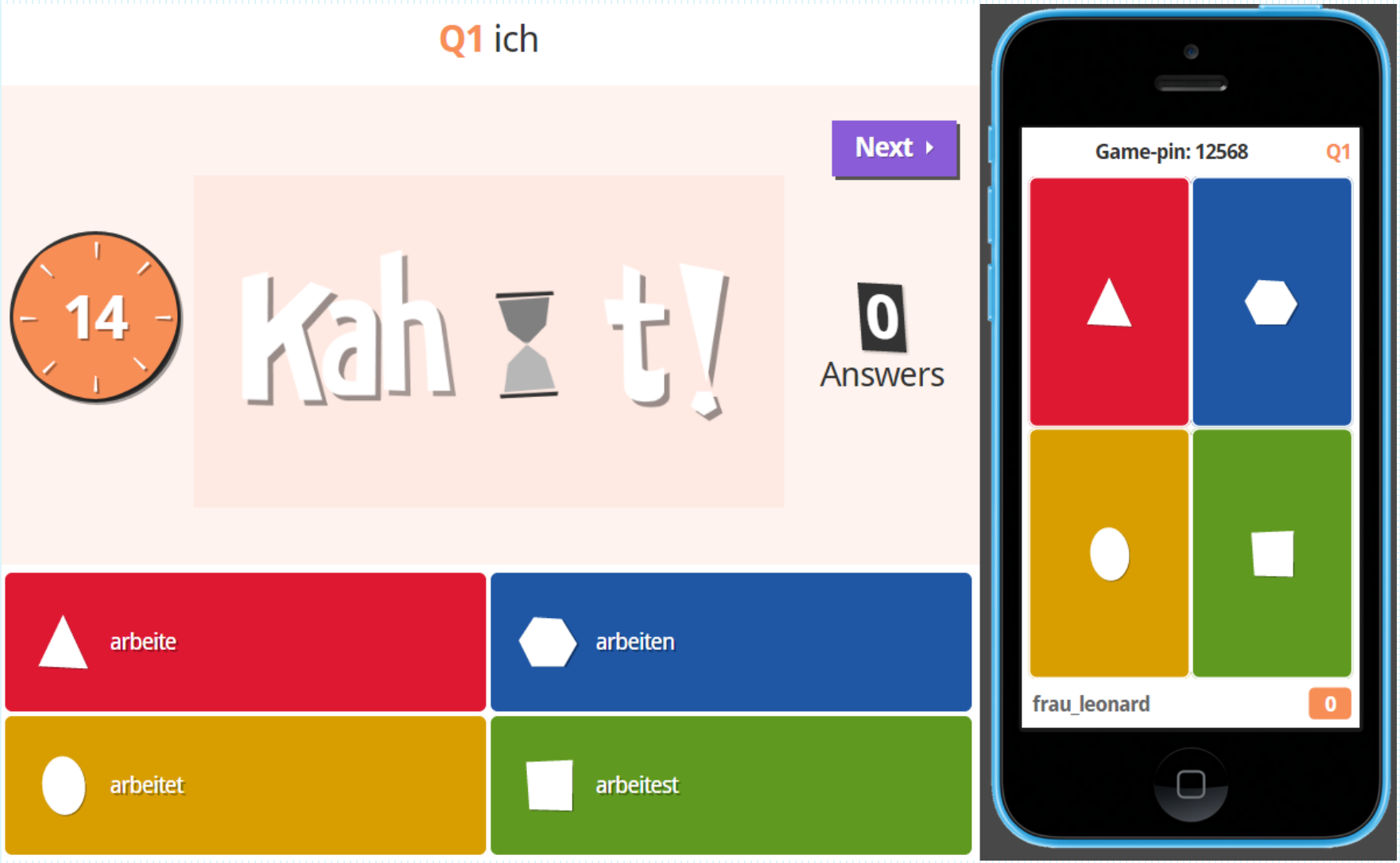
Go to www.Kahoot.it or download Kahoot



Give your answer whether you agree or disagree? (6 marks) (2+6 minutes)

Theory into practice

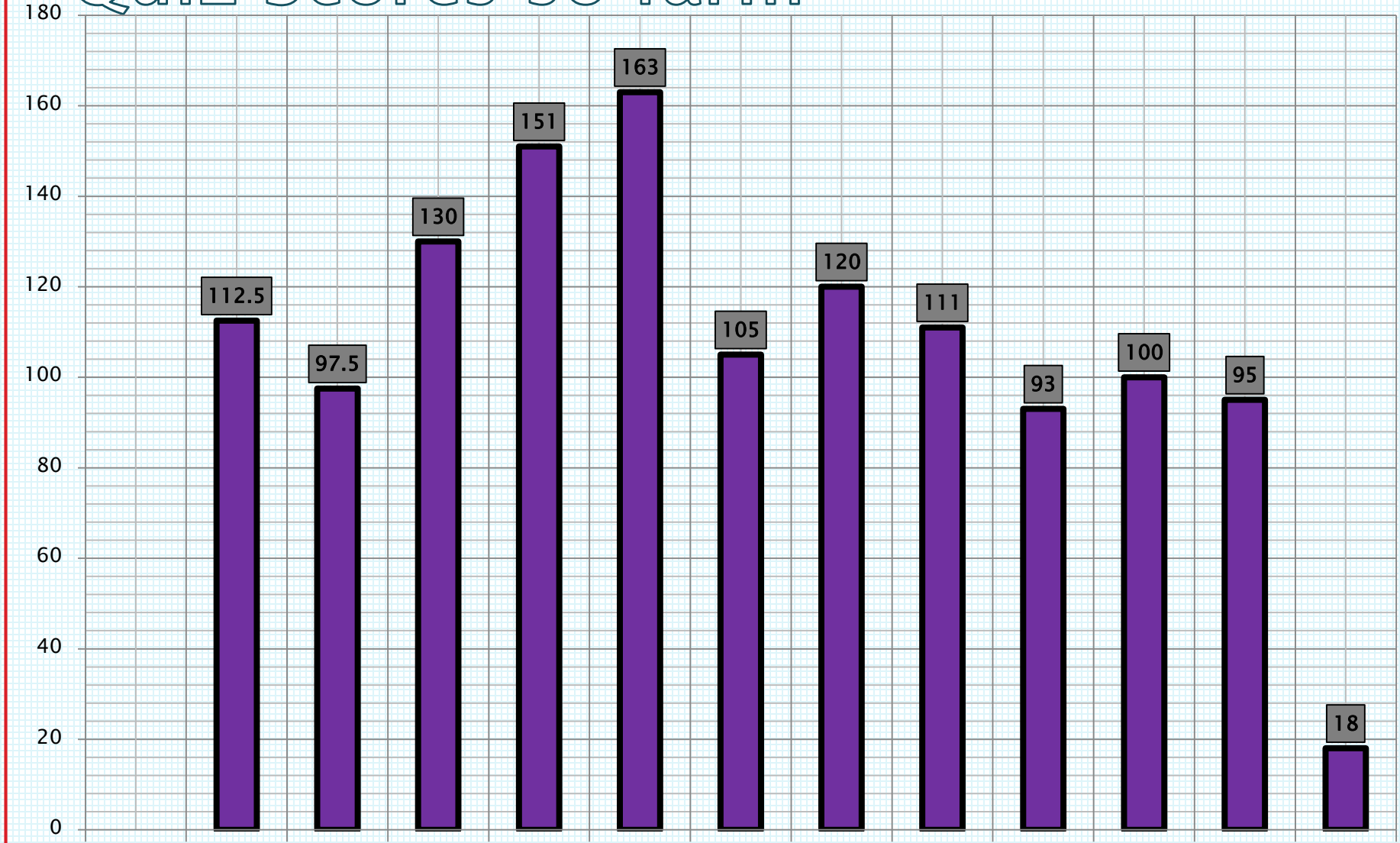
Chris Hoy and Nairo Quintana are both professional cyclists, but their sizes are very different. Hoy is a track cyclist who specialised in sprint events; he is 1.85 m tall and weighs 92 kg. Nairo Quintana is a road cyclist who specialises in long-distance events such as the Tour de France; he is 1.66 m tall and weighs 58 kg.

Hoy's event requires muscular power to achieve high speeds over short distances on the indoor track. This power is provided by large muscles that add to Hoy's overall bodyweight. Quintana's event requires considerable endurance, allowing him to cycle up to 200 km per day, sometimes up steep mountains. This requires excellent muscular endurance, cardiorespiratory fitness and much lighter overall bodyweight.

Quintana's smaller bodyweight is ideal for long-distance cycling. Any additional weight will affect his performance over long distances, as more energy will be required to move just one additional kilogram of bodyweight over 200 km. Hoy does not have to worry too much about this; his event is over in minutes.

Do you think Chris Hoy would be able to compete effectively on a 200 km mountain stage of the Tour de France?

Quiz Scores so far...



Nutrition for Football

https://www.youtube.com/watch?v=W0fvhHlFqZU

Hungry for success: Matchday menu

9am: Breakfast

Eat: Carb-based, usually cereal, porridge or toast.

Drink: 500-1,000ml of fluid, which include electrolytes to help absorb and retain fluids

1.45pm: Warm-up

Eat: An energy gel

Drink: 500ml sports drink.

3.45pm: Half-time

Eat: An energy gel, preferably one containing caffeine

5.15pm: Post-match

Drink: 500-1,000ml of water and a tablet to boost the immunity system

6pm: Post-match meal

Eat: Should be eaten within an hour of the game, with a nutritional format of 60% carbohydrate, 20% protein, 20% fat.

https://www.fourfourtwo.com/performance/nutrition/sebastien-bassongs-premier-league-diet

Case study

Sports Scientist: Jack Donnelly and the new menu

Jack is progressing well as the football club's new sports scientist. Now the academy manager has asked him to help the club's chef ensure the academy players get the correct nutrition during their daily meals with the club. He has been asked to make sure all components of a balanced diet are present in the correct amounts. Failure to do so may result in impaired performance and the players leading a less-than-healthy lifestyle.

Jack is due to sit down with the chef and compose a dietary plan for a five-day week, including breakfast, lunch, dinner and all hydration.

Check your knowledge

Draw up a five-day (Monday to Friday) dietary plan for the players.

- Research the recommend amounts for an athlete of each macronutrient (carbohydrates, fats, proteins).
- Ensure all macronutrients are included and in the correct amounts.
- Use ergogenic aids (energy gels and bars, protein or carbohydrate drinks) if you deem them appropriate.
- Make sure you include hydration times and amounts.
- Think about the most appropriate times for each meal.

Draw up a table

Draw up a five-day (Mon-Fri) dietary plan for the players.

Justify your dietary plan with a conclusion.

8 Marks

Written justification and conclusion of the key aspects

Footballer's Week

- **Saturday**
  After the match, recovery consists of ice baths and compression tights. The latter are specially made leggings moulded to an individual's physique which promote blood circulation, increase oxygen flow to muscles and wick away sweat.
  Sunday
  An active recovery session. This might be, cycling for 15-20 minutes at 60% of maximum heart rate.
  Monday
  Extended Recovery Work: "Sometimes we'll do a light football session or it might be some technical work, but physiologically the focus is still on making sure the players are fully recovered 48 hours after the game, which is often when tiredness and delayed onset muscle soreness (DOMS) sets in," says Harvey. "It's a light day focusing on recovery before the higher intensity stuff on Tuesday and Wednesday."
  Tuesday
  AM: High intensity football work, such as conditioned small sided games focusing on keeping possession with no goals, or a man-to-man game where you have to stick with one opponent wherever he goes.
  PM: Strength and power work. For example, squats, deadlifts, bench-presses and pull-ups (volume and loads are tailored to each player).
  Wednesday
  AM: Moderate/high intensity football work. Possession drills and 11-versus-11 tactical play.
  PM: Power development and complex training. This is a mixture of strength and plyometric work designed to develop explosiveness. The focus is typically on low reps at high speed, such as power cleans (3x4 sets) and hurdle jumps.
  Thursday
  Rest day.
  Friday
  Low Intensity football work (focus on tactical preparation) with speed and reaction time training in warm up. For example, short shuttle runs setting off when a man breaks the line or at the blow of a whistle.

Mark Scheme

Assessment focus	Band 0	Band 1	Band 2	Band 3	Band 4
Nutritional guidance	0	1–2	3–4	5–6	7–8
	No rewardable material	Proposed nutritional guidance is generic, with limited relevance to the individual's dietary requirements. Justification for proposed nutritional guidance has been attempted, however shows limited relevance to individual's dietary requirements.	Proposed nutritional guidance demonstrates general relevance to the individual's requirements. Justification for proposed nutritional guidance is generally relevant to the individual's dietary requirements.	Proposed nutritional guidance demonstrates relevance to the individual's requirements. Justification for proposed nutritional guidance is relevant to the individual's dietary requirements.	Proposed nutritional guidance demonstrates specific relevance to the individual's requirements. Justification for proposed nutritional guidance is specifically relevant to the individual's dietary requirements.




Create a mind map for section C

- an explanation of common nutritional terminology (e.g. RNI and energy balance)
- components of a balanced diet (e.g. macronutrients, micronutrients and hydration)
- different strategies used by tennis players taking part in training programmes.

RNI – Reference Nutrient Intake
EAR – Estimated Average Requirements
LRNI – Lower Reference Nutrient Intake
SI – Safe Intake
RDAs – Recommended Daily Allowances
RMR – Resting Metabolic Rate
DT – Dietary Thermogenesis
PA – Physical Activity
AT – Adaptive Thermogenesis
Basal Metabolism
Energy Balance

Components of a balanced diet (with key terms for each area)

What strategies could you advise for someone in relation to their nutrition?

- ❑ Gain/lose weight
- ❑ Weight controlled sports
- ❑ Optimal body weight

Mock Exam Section A

Case study

John is a 32-year-old male who works approximately 7-8 hours a day as a full-time builder.

He takes part in regular exercise and has a passion for weightlifting. John has recently participated in numerous competitions to challenge himself further within his sport. John trains twice every day, once before and once after work, and tries to follow a diet plan that will maximise his potential and performance.

John has recently hired a strength and conditioning coach, as he wants to improve his weightlifting technique, as well as different components of fitness that can take him to a higher level within the sport.

John's coach has decided to put him through a health screening procedure to see what his general health is like, as well as design a new diet plan and a fitness training programme. The aim of this is to improve his components of fitness, with the main objective being to win the next competition in 3 months' time.

Examine training methods for different components of fitness

Section D

- Components of fitness to be trained
- Training methods for physical fitness-related components
- Training methods for skill-related fitness components
- Key Terminology

Physical Fitness:

focusing on the health-related aspects of fitness.

Good scores in components in this area mean you have only a small chance in developing health problems

- **B**ody Composition
- **M**uscular Endurance
- **M**uscular Strength
- **F**lexibility
- © **A**erobic Endurance
- **S**peed

BMMFC(S)

BMMFA(S)

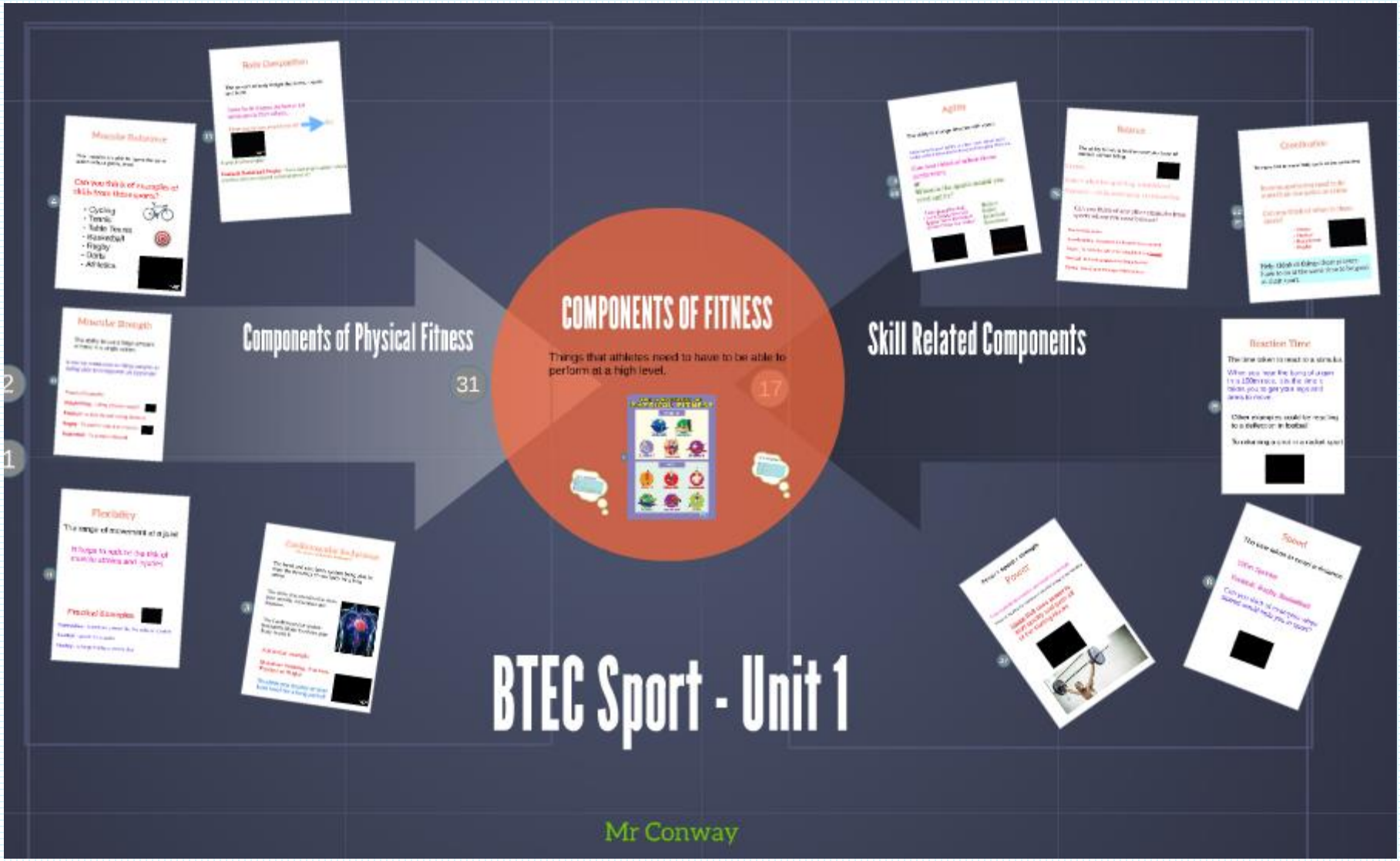
Skill-Related Fitness:

fitness that allows the individual to perform an activity, task or sport

- **C**oordination
- **R**eaction Time
- **A**gility
- **B**alance

- **P**ower

CRAB P


Components of Physical Fitness
COMPONENTS OF FITNESS
Things that athletes need to have to be able to perform at a high level.
Skill Related Components
BTEC Sport - Unit 1
Mr Conway

Components of Fitness

- Physical Fitness
  - **B** amount of body fat and fat-free lean body tissue.
  - **M** ability of a specific muscle or muscle group to exert a force in a single contraction.
  - **M** ability of a specific muscle or muscle group to make repeated contractions.
  - **F** adequate range of motion in all joints and move fluidly through full range.
  - **A** ability of the C & R sustem to work efficiently and supply the muscles with nutrients and oxygen to maintain exercise.
  - **S** ability to move over a distance in the quickest possible time.
- Skill-Related Fitness
  - **C** ability to control movement of two or more body parts smoothly/efficiently.
  - **R** time taken to respond to a stimulus and initiate the response.
  - **A** ability to quickly and precisely change direction with control.
  - **B** being able to maintain stability or equilibrium while performing.
  - **P** ability to produce a maximal force in the shortest possible period of time or to generate MS quickly!

Key Terminology

- **Fitness:** the ability to meet the demands of your environment
- **Physical Fitness:**
- **BMMFAS**
- **Skill Related Fitness:**
- **CRAB-P**

Training methods for Aerobic Endurance

- Aerobic endurance training methods
  - **Continuous training**
  - **Fartlek training**
  - **Interval training**

Training thresholds:

To use training thresholds you need to understand MHR %.

(220-age)

Key Points

- **VO_2 max** – maximum amount of O2 that can be taken in and used by the body. It measures endurance capacity of the CV and R systems.
- **Epinephrine** – a chemical used for communication between cells in the NS and other cells in the body. It works with *Norepinephrine* to prepare the body for the 'fight or flight response'.
- **Norepinephrine** – a chemical that works alongside *Epinephrine* to prepare the body for fight or flight responses.
- **Cardiac Output (l)** – the volume of blood pumped out (by the LV) in one minute.
  - this can be increased x5/x7 in order to accelerate delivery of blood to exercising muscles and to meet aerobic demands. This is resulted by increases in HR, SV or both.

Aerobic Endurance – Training Zones

Useful for recovery and a step up for beginners

Table 2.15: Training zones

Training zone	% MHR
Warm-up or cool-down zone	50%
Active recovery zone	60%
Fat burning (or weight management) zone	60–70%
'Target heart rate' zone	60–75%
Aerobic fitness zone	70–80%
Peak performance zone	80–90%
Anaerobic threshold	80–100%

Training at high %'s helps to increase this threshold. This threshold stresses the CV system so isn't suitable for beginners. Training at 100% is only recommended for experienced and elite athletes.

Can extend to 85% and is useful for CV health and ability of the body to use fats as energy

Useful for long-distance events (continuous training would be used)

Geared towards competitive sport and helps with anaerobic threshold (fartlek & interval training)

Mainly for beginners/sedentary lifestyle

Suitable for active athletes for aerobic endurance

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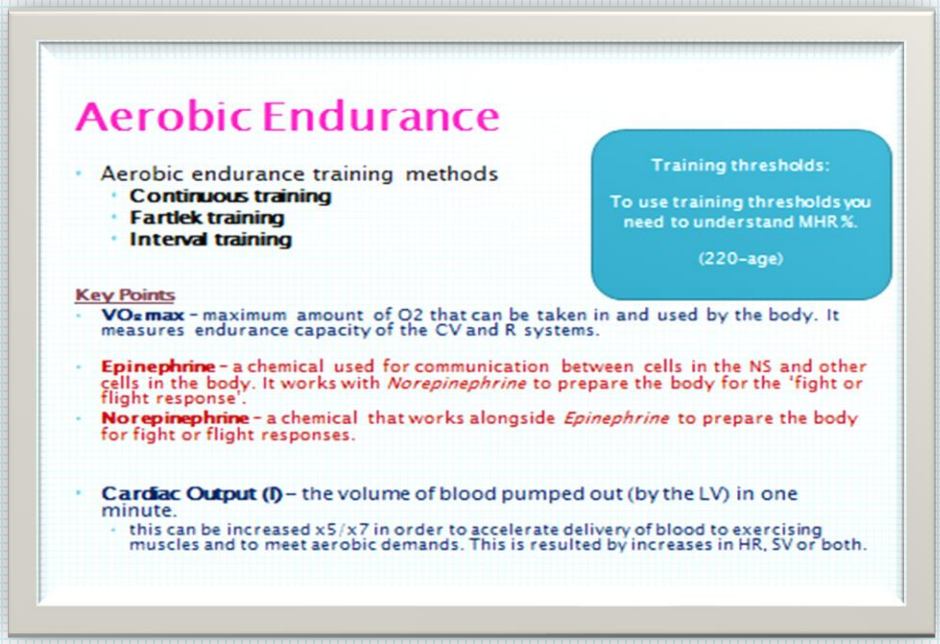
Independent Research



Each member of the class needs to create a short presentation relating to the training methods for a specific component of fitness.

Information required is in the textbook which will be given out.

Required:

- ❑ Component of Fitness
- ❑ Explanation of training methods used
- ❑ Key words
- ❑ Images/Tables
- ❑ Mini Quiz (Kahoot/Socrative)

Examine training methods for different components of fitness

Section D

- Components of fitness to be trained
- Training methods for physical fitness-related components
- Training methods for skill-related fitness components
- Key Terminology

Physical Fitness Training Methods

Component of Fitness	Training Method
Body Composition	Yoga, Pilates, Gym based exercises Core Stability Exercises + Aerobic Endurance workouts.
Muscular Strength	Resistance Machines (increased safety and good for novices) , Free Weights (constant resistance and need to be confident in their use as they can cause injury if incorrectly used) Medicine Ball, Circuit Training, Core Stability Training (yoga/pilates) Positives - appearance change due to hypertrophy (muscle mass) Strength training = High Weight (75%+ of 1RM) ///Low Reps(6-8) /// High Sets (4-8) Chest, Back, Legs, Shoulders, Arms, Core
Muscular Endurance	Equipment as above Positives - training helps the body deal with fatigue and increase aerobic performance High Reps (15-30)/// Low Weight (50%) /// Medium Sets (4-6) ***Progression is shown here through reduced rest periods***
Flexibility	Static Stretching = Active (individually) + Passive (assisted by person or object) Dynamic Stretching = Sport specific movements, important for high speed movements. PNF Stretching - Stretch to upper limit, isometrically contract against partner, relax and increase upper limit. 3 types= Maintenance S (10-15), Developmental S (20-30secs) , Pre Activity (8-10secs)
Aerobic Endurance	Continuous (useful for beginners, injury rehab and children/elderly) Fartlek (can be sport specific) Interval (allows for overload), Circuit Training (varied focus) % of Maximum Heart Rate: fat burn = 60-70%, Target zone = 60-75%, Aerobic endurance = 70-80% Peak performance (athletes) = 80-90%
Speed	MHR = working at 90-100%, recovery at 60% Work ratio of 1:5 (so 10secs of sprinting = 50secs rest) Hollow Sprints (sprint, slow, sprint), Acceleration Sprints - gradual increase 50m each phase Interval Training - work/rest/work/rest - progression = smaller rest periods.

Skill Related Training Methods

Component of Fitness	Training Method
Coordination	Sport specific drills to aid coordination and practice (e.g. forehand shot in tennis) Tennis ball toss vs wall, Juggling , Batak Wall
Reaction time	Use resources such as: stopwatch, whistle, visual stimuli (coloured flags or signals), Auditory stimulus (commands, shouts, information), Reaction Ball
Agility	SAQ Drills over short distances (5m) – Ladders, Cones, Zig Zags + Sprints Perform each drill as quickly as possible with correct technique Sport Specific Movements
Balance	Static Balance (Standing on one leg 20secs) Dynamic – plank with change of positions Train with controlled wobble to engage core muscles and joints Wobble cushion + balance boards Stork Stand Balance (with eyes open/closed)
Power	Plyometric Training Lower body = hurdle jumps, single leg bounds, alternate leg bounds, box/depth jumps Upper Body = plyometric press ups and medicine ball slams

Understand training programme design

Section E

- Principles of fitness training programmes
- Principles of training
- Additional principles of training
- Periodisation

Principles of Training

- With your training programmes you are designing you need to consider:
  - What am I trying to improve?
  - How am I going to improve it?

Short Term Goal?

Medium Term Goal?

Long Term Goal?

Specific – say what you mean!
Measurable – can you prove it?
Achievable – can you achieve it?
Realistic – are they challenging?
Timed – do they have deadlines?
Exciting – will you get bored?
Recordable – keep records of everything!

Use SMARTER targets to have an effective goal

Principles of Training

Specific – say what you mean!
Measurable – can you prove it?
Achievable – can you achieve it?
Realistic – are they challenging?
Timed – do they have deadlines?
Exciting – will you get bored?
Recordable – keep records of everything!

Frequency – training sessions per week
Intensity – HR%, 1RM%, overload?
Time – length of sessions
Type – of training (e.g. free weights or continuous

Periodisation

Macrocycle = 1 – 4 year cycle (football season or olympic cycle)
Mesocycle = helps to divide a macrocycle into 4-24 weeks. Example work-rest ratio is 3:1.
Microcycle = typically last for 1 week and has a focus (e.g. upper body)

Specificity – Plan the training programme around the goal
Progression – Gradually increase resistance and difficulty
Overload – Stretch the body by overloading FITT principles
Reversibility – loss of training benefits with no training or injury
Rest & Recovery – adequate time is needed to recover from training
Variation – Regular changes in training intensity, duration and types = improvement
Adaptation – Your body adapts and shows muscle memory trace to become more effective at what you are asking it to do. Visual adaption is increase in muscle mass.
Individual Needs – Programme must be based around the individual!

Examiner Report – January 2018

Question 1

- Question 1 responses performed consistently well across the board due to the amount of information that was available for the learners to discuss. Again, the scenario allowed for all of the lifestyle factors from the specification to be discussed and their implications on the health and wellbeing of the individual. All four health monitoring tests were also accessible from the scenario. Majority of the responses performed consistently well as learners had a lot of information that they could use within their answer.

Question 2

- Question 2 did not respond as well as expected as a considerable number of learners did not give specific lifestyle modification techniques taken from the specification. This paper only allowed for 2 major lifestyle factors that needed to be improved (Alcohol and Stress). There are many lifestyle modification techniques within the specification but learners seemed to only give one for each and some of these were not from the specification, making their answer very generic.

- Question 2, Trait 3 of the mark scheme again did not answer particularly well as many learners did not give a prioritisation of the lifestyle factors and lifestyle modification techniques taking into account which ones were the most important and why.

Question 3

- Question 3 performed better this series as a considerable number of learners gave more specific nutritional guidance taken from the specification. Recommended Daily Allowance values for males, macronutrients and quantities, micronutrients and quantities and hydration were generally covered across the board allowing the responses to be of a higher quality.

Question 4

Question 5

- Question 5 did not answer particularly well across the board as learners this series had to design a 6-week training programme for an athlete. Learners struggled with this concept and designing a training programme that demonstrated a thorough understanding of the principles of fitness training was very rare. There were a considerable number of learners that didn't state intensity values for the individual to work at.

Question 6

- Question 6, trait 2 performed better than the previous series with more learners giving responses around the design of the training programme and taking into account aims and objectives and the term periodisation.

Overall Feedback

Unit 2: Fitness Training and Programming for Health, Sport and Well-being

Grade	Unclassified	Pass	Merit	Distinction
Boundary Mark	0	19	32	45

Identify Positive/Negative factors are comprehensively described.

QUESTION 1

Interpret the lifestyle factors and screening information

Interpret the impact of lifestyle factors.

It is linked to health & wellbeing of the individual

Positive Factors

- Exercise and PA levels
- Healthy Diet (not too much detail)
- Positive Risk Taking
- Government RDAs

Negative Factors

- Smoking
- Alcohol
- Stress
- Sleep
- Sedentary Lifestyle

Analysing the health test results, interpreting them with relation to the individual.

- Health Test Results
  - The interpretation should be made specifically relevant to the individual and their health and lifestyle.

Modifications are specifically relevant to individual's lifestyle and requirements

QUESTION 2

Provide lifestyle modification techniques

Justifying modifications and link to the previous questions lifestyle factors

Common Barriers to change

- Time
- Cost
- Transport
- Location

Prioritise suggestions and ensure that they link to analysis of lifestyle factors.

-Why were they prioritised?

Strategies to increase PA:

- At home
- At work
- Leisure Time
- Method of transport

- Quitting smoking techniques
- Reducing alcohol
- Stress management
- Changes to work/life balance

Nutritional guidance is relevant to the individuals needs

QUESTION 3

Provide and justify your nutritional guidance for your client to meet her specific requirements

Justifying proposed nutritional guidance is relevant to the clients dietary requirements

- Necessary components of a balanced diet
- **Recommended Daily Allowances?**
  - **Adjust for individual where needed.**
- Components of a balanced diet (inc. macro/micro, vitamins/minerals %)
- Hydration
- Nutritional Strategies
- Specific to the individual and their requirements (goals)
- Can you link dietary advice to the test results?
- Justify any suggestions you have made!

Provide information about the necessary components of fitness and training methods required!

QUESTION 4

Propose and justify different training methods that meet _____'s training needs.

Justifying proposed training methods and explain why they need to be used for the goals to be met.

- ❑Describe components of fitness in relation to their individual goals.
- ❑Provide training methods and justify in relation to the individual's goals & requirements
- ❑Make sure you link them to the lifestyle of the individual too!
- ❑Link the training methods to the health results
- ❑Explain how they will help overall fitness as well as helping to meet goals/requirements

Design the programme around the individual's training requirements

QUESTION 5

Design weeks 1, 3 and 6 of a 6 week fitness training programme for Mr Mann.

Make sure that you have shown an understanding of the principles of training and FITT principle!

- Think about transport to and from work.
- Include training type & % HRM
- Include evening gym sessions where possible around the persons' training requirements
- If possible suggest training at lunch?
- Include specific exercises, repetitions, sets, weight and types of stretching etc.
- Apply the FITT principle & principles of training!
- Include progression each week but also recognise where your individual would be starting from

Justify the design of your fitness training programme – FITT & Principles of training

QUESTION 6

Justify the fitness training programme that you have designed for your client

Make sure your justification has links to the individual training required for the person's goals!

- Identify sections of your training programme and link to FITT & principles of training
- Explain & Justify the types of training used in your plan
- Suggest why you have included ways to support with transport etc.
- Could you show of an understanding of **periodisation** if a focus is on a certain event?
- Why did you use different weights, reps, sets & types of training in your plan?
- Justify your principles of training included in your plan, why are they needed!