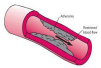
Q1

POSITIVE lifestyle factors and their effect on health and well-being

1 Benefits of physical exercise

Physical



- Strengthening bones
- Improves posture
- Improves body shape
- Reduces risk of CHD
- Boosts energy levels
- Improves flexibility/ balance

ENDORPHINS

Released in brain when exercising

Benefits:

- Boost self esteem
- Reduces stress
- Fights depression
- Promotes sleep

Social

- Encourages social interaction and social skills
- Increases confidence

Economics

- Reduces NHS costs
- Creates employment

Psychology

- Improves concentration
- Relieves stress
- Reduces depression
- Improves sleep

2 Benefits of a healthy balanced diet

- Improves immune system
- Maintain healthy weight
- Reduced risk of Chronic Disease
- Prevents disease
- Improves mood

Fluid intake

- Water is 60% of adults body weight .
- Regulates temperature
- Water main transport system around the body

3 Key info Government recommendation

EXERCISE RECOMMENDATION

Children (5-18 years old)

60 mins per day, 3 days should improve strength

Adult

150 mins of aerobic activity per week, 2 days improving strength

CALORIE INTAKE

Men = 2500

Women= 2000

FLUID INTAKE

- 2-2.5 litres of water per day
- 400mg of caffeine = 4-5 cups per day is recommended

Strategies for improving dietary intake

- Eatwell guide
- Timing of meals
- Portion sizes
- Eating certain food groups
- Number of meals
- Reducing salt intake
- Healthy alternatives

Q1

NEGATIVE lifestyle factors and their effect on health and well-being

1 Smoking

Health related risks:

- Cancer
- Lung disease
- Increases risk of heart attacks and strokes
- Infertility
- Chronic Obstructive Pulmonary Disease (COPD)

Every year, around 100,000 smokers in the UK die from smoking related causes.

2 Alcohol

Health related risks:

- Liver damage
- Weight gain
- Brain damage
- Hypertension (high blood pressure)
- Depression

*Men and women are advised not to regularly drink more than **14 units** in a week.*

3 Stress and sleep

Long term effects of stress::

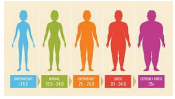
- Stomach ulcers
- Heart disease/ heart attack
- Angina
- Hypertension

Effects of poor sleep:

- Poor mental health
- Memory problems
- Poor immune system

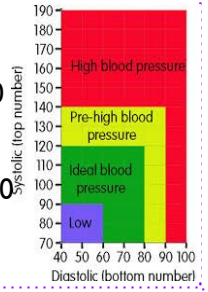
*The NHS recommend **8 hours** of good quality sleep a night for the body to function properly.*

Interpreting screening information



Blood pressure

- Ideal blood pressure is **120/80 mmHg**
- High blood pressure is **140/90 mmHg** or higher



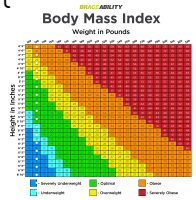
Resting heart rate

Heart beats per minute, average ranges:

Males is 68 bpm
Women is 72 bpm

Body Mass Index (BMI)

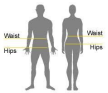
- <18.5- underweight
- 18.5-24.9- healthy
- 25-30- Above healthy recommendation
- >30- classed as being obese



Waist to hip ratio test

Can determine levels of obesity. Divide waist in cm by hips in cm. Average ranges:

Male- 1.0
Women- 0.85



Q2

Provide and justify lifestyle modifications techniques

1 Smoking

Quitting smoking strategies:

- Acupuncture
- NHS smoking helplines
- Nicotine Replacement Therapy (NRT)
- Quit Kit support packs
- NHS smoking services

2 Alcohol

Reducing alcohol consumptions:

- Self-help groups
- Counselling
- Meditation
- Drink with food
- Hypnotherapy
- Avoid stocking up
- Non alcohol alternatives

3 Stress

Managing stress:

- Goal setting
- Relaxation
- Physical activity
- Positive self talk
- Time management
- Change work-life balance
- Breathing techniques

4 Sleep

Improving sleep:

- Having a bedtime routine
- Avoid a heavy meal 2 hours before bed
- Have a warm bath
- Breathing techniques
- Listen to relaxing music
- Avoid drinking caffeine before bed

5 Barriers to exercise

Time barrier:

- Priorities daily routine
- Walk/run/cycle to work
- Exercise during lunch breaks/ take the stairs

Money barrier:

- Walking/jogging instead of the gym
- Exercise at home (gardening/house work/workout DVDs)

Transport barrier:

- When commuting, get off at a stop earlier and walk
- Parking your car further away
- Local to work, so can walk/ cycle

Energy/motivation barrier:

- Schedule when you have the most energy
- Invite a friend
- Set achievable goals

Q3

Macronutrients-
Required in large amounts on a daily basis.

Provide and justify nutritional guidance

Micronutrients-
Required in a smaller amount but essential for disease prevention and well-being.

1 Carbohydrates

50-60% of diet

Carbohydrates are your bodies most ***available source of energy.*** They can be stored in the muscles later for energy but excess carbs not required will be converted into fat.

Simple
These are sugars and a ***quick energy source.***
- Sugar
- Jam
- Sweets
- Fizzy drinks

Complex
Broken down ***slowly to release energy*** *over long periods.*
- Bread
- Pasta
- Rice
- Potatoes

2 Protein

12-20% of diet

The main role of protein is to **build and repair tissue.** Can also be a secondary source of energy when carbs and fats are limited.
On average:
- Men should consume no more than **55g a day**
- Women should consume no more than **45g a day**

Complete proteins
- Meat
- Milk
- Fish

Incomplete proteins
- Cereals
- Bread
- Beans

3 Fats

20-35% of diet

Fats are important for **normal growth and development**. They can also be important for energy as it has the most concentrated source of energy. Too much saturated fat in a diet can cause significant health problems. Gov recommendation: Men should consume no more than **30g a day** and women **20g a day.**

Saturated (animal products)
- Meat
- Dairy
- Butter
- Cream

Unsaturated (plant products)
- Avocado
- Nuts
- Olives
- Soybean

4 Vitamins and minerals

- Vitamin A- Needed for the normal functioning of the eyes and the respiratory tract and keeps immune system healthy. **Found in green vegetables and carrots.**
- Vitamin B- Essential for the support of the breakdown and release of energy from food. **Found in eggs and lean meat.**
- Vitamin C- Helps protect cells and keeps them healthy and maintain healthy connective tissue. **Found in vegetables and citrus fruit.**
- Vitamin D- Needed for the absorption of calcium and keeping bones healthy. **Found in fish, eggs and sunlight UV.**
- Calcium- Helps to build strong bones and teeth and ensures blood clots normally. **Found in milk and green leafy vegetables.**
- Iron-Needed for the formation of haemoglobin in red blood cells to help the transport of oxygen. **Found in liver, meat and nuts.**

Q3

Provide nutritional strategies

1 Hydration

Effects on fluid amounts

- **Climate-** Hot/humid climate will require an increase in fluid intake as bodies reduced ability to keep cool.

- **Levels of exercise-** athletes need to ensure they are fully hydrated before,during and after exercise.

Dehydration

- Dehydration can reduce **strength, power** and **aerobic capacity.**
- Only 2% os loss of water can affect ability

Hypertension

- Hypertension is when you have you have then the normal body weight
- It can improve exercise performance but can mimic those of dehydration

2 Ergogenic aids

Ergogenic aids are used to improve performance during high-intensity exercise.

Energy gels/bars

- Helps replenish carbohydrates
- Helps replenish glycogen/calories
- Deliver a quick supply of energy to your muscles when needed.

Protein drinks

- Can reduce muscle soreness post-training
- Increase muscle size and strength
- Reduces hunger
- But can be expensive

Carbohydrate loading

- Used to maximise storage of glycogen in the muscles 48hrs before performance
- Involves less training and more carbohydrates before an event

3 Sports drinks

Sport drinks aim to provide three nutrients:

- **Carbohydrates-** to replace energy
- **Water-** replace fluid
- **Electrolytes-** replace minerals lost by sweating

3 types of sport drinks:

Hypotonic

- 1-3% carbs
- Quickly replaces fluid lost

Isotonic

- 6-8% carbs
- Quickly replaces fluid lost and boost carbs

Hypertonic

- 10%+ carbs
- To supplement carbs

How to lose weight

- Eat plenty of fruit and veg
- Get more active
- Plan meals
- Eat high-fibre foods
- Drink plenty of water
- Don't stock junk food
- Read food labels
- Don't skip breakfast

How to gain weight

- Snack healthy
- Eat nutritious foods
- Eat regularly
- Gradually increase calorie intake
- Complete strength training
- Add nutritious drinks to your diet

Q4

Examine training methods for different components of fitness

Components of fitness

1 Physical fitness

Physical fitness is related to overall fitness. The more physically fit an individual is, the less chance of developing health issues.

Aerobic endurance - The ability of the cardiovascular system (heart) and the respiratory system (lungs) to supply exercising muscles with oxygen to maintain exercise over long periods of time.

Muscular strength- The ability of a specific muscle or muscle group to exert a force in a single contraction against resistance.

Muscular endurance- The ability for a specific muscle or muscle group to repeat contractions over a period of time.

Flexibility- The ability of a joint or muscle to move through its full range of movement.

Speed- The ability to move over a distance in the shortest time.

Body composition- The amount of body fat and lean tissue an athlete has.

2 Skill- related fitness

Skill- related fitness involves skills that enhance and allows an individual to perform an activity, skill or sport.

Agility- The ability of an athlete to change direction quickly and precisely with maintaining control of the movement.

Balance- Being able to maintain stability or equilibrium while performing. Static balance is when the athlete is stationary (handstand). Dynamic balance is when the athlete is moving (cartwheel).

Coordination- The ability to be able to control movement of two or more body parts under control, smoothly and efficiently to perform a task.

Reaction time- Time taken for an athlete to respond to a stimulus.

Power- The ability to produce maximal force in the shortest period of time.

Q4

Examine training methods for different components of fitness

Aerobic endurance training methods

Training zones: Fat burning 60-70% MHR, Aerobic zone 70-80% MHR, Peak performance zone- 80-90% MHR and Anaerobic zone 90-100% MHR.

Continuous training:
- Training at a steady pace over a long distance
- Intensity should be moderate

Positive- Good for beginners and effective for weight loss
Negative- Can be boring and risk of injury running on harder surfaces.

Fartlek training:
- Intensity is varied throughout (10 secs sprint, 30 secs walk and 1 min jog)
- Uses both aerobic/ anaerobic systems to help improve aerobic fitness

Positive-Can adapt to different fitness levels
Negative- Easy to skip hard sections

Interval training:
- Improves both aerobic and anaerobic fitness
- Involves both work and rest periods
- Can easily have progression and overload.

Positive- Can replicate team sports
Negative- Hard to keep on going if suffering fatigue

Circuit training:
- Different stations/exercises
- Time limit for each station/exercise
- Can develop aerobic/muscular endurance and strength

Positive- Easily adapted and can change every session
Negative- Takes time to set up and needs equipment.

Muscular strength training methods

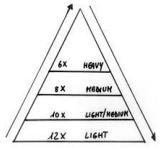
- Strength training can increase **muscle size and tone, bones density, metabolic rate** and **connective tissue strength.**
- Workload is measured by intensity and the 3 main components are: Weight, number of repetitions (reps) and number of sets.

Strength training:
Reps and sets- HIGH WEIGHT LOW REPS
Rest- High intensity= more rest, lower intensity= less rest

Free weights-
Positive- can be used at home
Negative- Requires good prior knowledge

Resistance machines-
Positive- safer than free weights
Negative- Expensive,gym- based

Pyramid sets - Uses an upwards and downwards sequence in weight, reps and sets. Starting with light weights to allow joints and muscles to warm up. It involves an intense routine as the muscles become overloaded.



Muscular endurance training methods

- Muscular endurance can increase **muscle tone,**. It also increases the size and number of **mitochondria (important for aerobic energy).** It should come AFTER strength training and is progressive over time.
- You train the muscles to overcome fatigue and increase number of reps over weight.

Muscular endurance training:
Reps and sets- LOW WEIGHT- HIGH REPS
Rest- work-rest ratio 1:1 (same rest time as it took to complete the previous set)
Methods- Fixed- resistance machines, Free weights, Resistance bands and circuit training.
Relevant to sport- This is beneficial to any person who participates in activity which requires repetitive repeated muscle movements for a long period on time.

Q4

Examine training methods for different components of fitness

Core stability training

The main function of the core is to stabilise and provide support. Core stability is an important role in **postural balance** and **injury prevention.**

Methods:

Pilates- Focuses on core strength to improve general fitness and well-being. It is appropriate for all ages and abilities

Yoga- Focuses on core stability , strength, flexibility and breathing for both physical and mental well- being.

Both can be completed at home or in the gym. To increase intensity you can add equipment (kettlebells/ use various machines)

Flexibility training

Various types of stretching can improve flexibility. But you should not exceed tolerance level and the best time to stretch is when the muscles are warm.

Static stretching- is controlled and slow. Can be **Active** (done individual) or **Passive** (assisted stretches).
Dynamic stretching- Involves taking the muscles through its full range of movement. It can replicate movements which are common in sports.

Types of stretches:

- **Maintain stretch-** Performed to maintain general flexibility after exercising to return muscles back to its normal length, to reduce injury.
- **Developmental stretch-** Performed to increase muscle length and flexibility. Normally performed at the end of a session.
- **Pre-activity stretch-** Performed to get muscles ready for exercise to improve performance and reduce injury risk.

Proprioceptive Neuromuscular Facilitation (PNF) increases flexibility as it alternates between contractions and relaxation. It usually involves a 10 sec push phase followed a 10 sec relaxation phase, repeated several times.

Speed training

Speed training should always take place after the warm up and should be conducted after rest or light training to reduce injury/overtraining.

Training threshold/ % MHR:
Sprinting is anaerobic, which means to work at an anaerobic zone you need to reach 80-100% MHR.
Peak speed should be 80-100% MHR and this would make up a small amount of training time as working anaerobically creates oxygen debt so can only keep going for a sport time.

Recovery:
Is an essential part of speed training. It is required to replenish energy stores and maintain technique to reduce injury.
There should be 72+ hours between sessions.

Methods:

- Hollow sprints
- Acceleration sprints
- Interval training
- Resistant drills

Factors influencing speed:

- Flexibility
- Strength
- Endurance
- Technique

Q4

Examine training methods for different components of fitness

Agility training

Agility is influenced by body balance, speed, coordination and skill.
To improve agility you need to develop **SAQ (Speed, Agility, Quickness).** This can be short distances usually 5ms.
Includes, running as quickly as possible around cones, to force a change in direction.

Balance training

Balance is used throughout all sports.
To improve balance it is important to work and engage core muscles.
Static training can involve single leg balances, but to progress you can add equipment and move on to dynamic
Dynamic training can include a wobble cushion/ balance board to progress.

Reaction training

Reaction training is important for many sport which have to react to a stimulus eg football goalkeeper and a 100m starting gun. The equipment you can use are: whistles, visual stimulus, reaction ball and auditory stimulus.

Coordination training

There are 3 different types of coordination:

- Hand- eye coordination- Needed for racquet sports
- Foot-eye coordination- Needed to keep ball under control
- Hand-to-hand coordination- Needed to be able to switch the ball between both hands when dribbling

Improving coordination can include:
Ball catching exercises- can be against a wall or with a partner, to progress use only 1 hand.
Juggling skills- can help with coordination and ball control

Power training

Plyometric exercises is one of the most effective ways to enhance explosive power and performance. However, it relies on maximal effort and the high speed of movement for each rep. Athletes should stop before fatigue breaks down technique.

- **Lower body plyometric** exercises can include: squat jumps.bounding and box drills.
- **Upper body plyometric exercises** can include: medicine ball throwing and catching and clap push ups.
- **Equipment**- benches, hurdles, boxes and medicine balls.

Q5

Understanding and design a fitness training programme

*When designing a fitness programme, you need to ensure you include **all** the major components to make it personalised to your client .*

Goal setting:

Aim- the details of what they would like to achieve (link to client)

Objectives- how they intend to meet their aims

S <u>Specific</u>- make sure the goals are precise

M <u>Measurable-</u> goals must be quantifiable to track progress

A <u>Achievable-</u> to ensure goals are set which will be met.

R <u>Realistic-</u> goals have to be within their reach

T <u>Time-</u> a set period of time to reach the goal

E <u>Exciting-</u> the goal has to be motivational

R <u>Recorded-</u> The process has to be recorded to be accountable of process

Principles of training:

FITT is used to guide and develop unique fitness plans for individuals and to ensure suitable progression over time.

F <u>Frequency-</u> is how often you train a week, ensuring there are rest days. Beginners should have 3 sessions per week and build up to more.

I <u>Intensity-</u> is how hard you train. Factors- weight, distance,HR and time. Need to make sure you have a balance of overload but not overtraining.

T <u>Type-</u> is what type of exercise you have chosen. Ensuring it is appropriate to the needs and ability of your client. Making sure it is varied to reduce bordorm.

T <u>Time-</u> is how long you are training for. Beginners should work for 20-30 mins when training aerobic fitness then increase to 45-60 mins when fitness levels increase.

Additional principles of training:

<u>Specificity-</u> The training must be matched to the needs and demands of the individual.

<u>Overload-</u> Training above what they normally do. You need to work harder to allow the body to develop.

<u>Progression-</u> Gradually increasing training to improve fitness but avoid injury and overtraining.

<u>Reversibility-</u> If you stop training, due to injury/holiday, any progressions made will start deteriorating within a short time.

<u>Adaptation-</u> The process of the body getting use to a particular exercise or training program through repeated exposure. It allows the body to adapt and it becomes easier to perform.

<u>Variation-</u> To vary training to keep it fun and give the body different challenges.

<u>Individual needs-</u> Successful training programmes suit the individual needs.

<u>Rest and Recovery-</u> Ensuring there is enough rest time for muscles to repair.

Periodisation:

Are structured training cycles.

Macrocycles:

The main part of a training programme, they are 1-year to 4-year training cycle. Macrocycle are divided into a number of mesocycles.

Mesocycle:

These are monthly training cycles (unusually 4-24 weeks), used to help control work-to-rest ratios. Each mesocycles is divided into a number of microcycle.

Microcycle:

These are weekly training plans. Specific adaptations to demonstrate the FITT principles.

EXAM TIPS

Exam help for each question

1.Interpret lifestyle factors and screening information for the individual (12 marks)

Interpret – explain, describe and analyse. **Do not provide any modifications** in this question as they won't be marked.

Include:

- **Lifestyle factors** (positive & negative) . All of these points need to link back to client .
- **Screening information** (positive & negative). Link to government recommendations/ averages and how it affects their well-being and their goals.

2.Provide lifestyle modification techniques for … (12 marks)

Provide – give examples of, recommend.

Include:

- Provide modifications for the negative lifestyle factors: **Alcohol, Smoking, Current PA level and Stress.**
- Link to government recommendations, are they over/average/under?
- Link back to health monitoring test- could any modifications help the test results?
- Any barriers- Time, cost, location, transport?

3. Provide and justify your nutritional guidance for … to meet their specific requirements (8 marks)

Provide – give examples of, and recommend.

Justify – Why have you recommended that? What help/improvement will it have?

Include nutritional points:

- Macronutrients- Carbohydrates 50-60%, Protein 12-20% and Fats 20-35%.
- Micronutrients- Vitamins, minerals, calcium and iron. Fruit and Vegetables 5 a day?
- Nutritional strategies- To lose weight/to gain weight. Link back to their goals.

4. Propose and justify different training methods that meet …. training needs (8 marks)

Propose – give examples of, recommend.

Justify – Why have you recommended that? What help/improvement will it have?

Include:

- Components of fitness that are the **most relevant** to your client.
- Training methods which would improve **specific** components of fitness
- Link back how the different methods **would help achieve their goals.**

5. Design weeks 1,3 and 6 of a 6 week training programme for … (6 marks).

- **Week 1-** Easy, be specific and include MHR%
- **Week 3-** Medium, be specific and include MHR%. Show gradual progressions (FITT).
- **Week 6-** Hard, be specific and include MHR%. Show gradual progressions (FITT).

Include:

FITT, Specificity, Progression. Overload, Reversibility, include MHR% and timing of exercises

Q6. Provide a justification for the training programme that has been produced (14 marks)

Justify - give reasons and evidence to support an opinion or decision. **LINK TO CLIENT THROUGHOUT**

Include:

- Link to SMARTER targets for your training programme and how it links to the clients needs.
- What training methods did you use and why? Justify why and how it works.
- FITT for week 1, 3 and 6. What did you do and why?
- How did you use the additional principles of training? For example: Specificity, how is it specific to your client. Rest, why is it important?. Variation, why is it important? Individual needs, link to questionnaire and goals.,