



# Examiners' Report Lead Examiner Feedback

January 2022

Pearson BTEC Nationals  
In Sport and Exercise Science (31824H)  
Unit 13: Nutrition for Sport and Exercise  
Performance

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## Grade Boundaries

### What is a grade boundary?

A grade boundary is where we set the level of achievement required to obtain a certain grade for the externally assessed unit. We set grade boundaries for each grade, at Distinction, Merit and Pass.

### Setting grade boundaries

When we set grade boundaries, we look at the performance of every learner who took the external assessment. When we can see the full picture of performance, our experts are then able to decide where best to place the grade boundaries – this means that they decide what the lowest possible mark is for a particular grade.

When our experts set the grade boundaries, they make sure that learners receive grades which reflect their ability. Awarding grade boundaries is conducted to ensure learners achieve the grade they deserve to achieve, irrespective of variation in the external assessment.

### Variations in external assessments

Each external assessment we set asks different questions and may assess different parts of the unit content outlined in the specification. It would be unfair to learners if we set the same grade boundaries for each assessment, because then it would not take accessibility into account.

Grade boundaries for this, and all other papers, are on the website via this link:

<http://qualifications.pearson.com/en/support/support-topics/results-certification/grade-boundaries.html>

### Awarding BTEC qualifications in 2022

Ofqual has [set out their plans](#) for awarding qualifications in 2022 and intend to return to a normal, pre-pandemic, approach to grading standards over by 2023. They have confirmed that 2022 will be a transition year, to reflect that we are in a pandemic recovery period and students' education has been disrupted.

**Our guiding principle and approach to awarding BTEC qualification results in 2022 will be to ensure parity in relation to the approach being taken for GCSE and A level learners.** BTEC courses have a different structure and design to academic qualifications - BTECs are modular qualifications (with assessments taking place throughout the course) compared to GCSEs and A levels which are linear (assessed and awarded at the same time at the end of the year), and therefore our approach needs to be different.

In 2022 we will return to the usual method of calculating BTEC qualification results, however adaptations including, U-TAGs and reduced internal assessment, are in place to provide a comprehensive package of support for students.

The basis of our awarding approach to BTECs this year is to ensure it is as fair as possible for all learners. We will use a range of evidence to set grade boundaries for the external units. Part of this evidence will be to closely monitor learner performance in all assessments that contribute to learners' final qualification grade, to ensure parity with A level and GCSEs.

Further information can be found [on our website](#) and via our Social Media channels.

### Unit 13: Nutrition for Sport and Exercise Performance 31824H

Grade	Unclassified	Level 3			
		N	P	M	D
<b>Boundary Mark</b>	<b>0</b>	<b>15</b>	<b>24</b>	<b>33</b>	<b>43</b>

## Introduction

The question paper followed the same format in relation to the questions, client nutritional programme and client details. As the paper had no pre-release materials and research notes were not permitted in the summative assessment, a nutritional principles booklet was provided. This booklet provided information on the food group for some foods in the nutritional programme that learners may not be familiar with. In addition, the kcals for 1 g of each macronutrient were provided, the Harris Benedict equation for BMR And activity factor levels. Lastly, the BMI calculation was provided. This was to support learners so that they did not have to recall specific information to support them with mathematical related interpretations of the nutritional programme and client details. This also allows for foods included in the nutritional programme to have variety over each series without disadvantaging learners that are not familiar with all of the foods in the programme.

The standard of learner evidence was equitable to the January 2020 series which followed the same format as this paper.

Most learners were able to provide detailed interpretations of the nutritional programme and most were able to work out the percentage of calorie intake for each macronutrient which provides a more accurate analysis of nutritional intake as opposed to using grams of intake as a form of comparison. Very few learners now relied on quantities related to the eat well plate which does not provide sufficient evidence for a detailed interpretation of nutritional intake.

There was a wide spread of marks, learners were able to achieve marks across all grade bands with some learners achieving full marks in this series.

The scripts showed that learners could organise their time to complete the initial analysis of the nutritional programme and carry out further related calculations and then go on to answer each question.

## Individual Sub Tasks/Questions

### Activity 1

In this activity learners had to interpret the nutritional programme for Pete in relation to his health and well being.

Good responses provided nutritional analysis of the percentage of macro nutrients consumed on a daily basis and compare these to recommended amounts.

The table below shows the type of analysis learners could have carried out to inform their analysis of the nutritional intake.

Day	Total Cals	CHO %	CHO g	Fat %	Fat g	Protein %	Protein g
Monday	3550	45	400g 1600	38	150g 1350	17	150g 600
Tuesday	2260	44	250g 1000	40	100g 900	16	90g 360
Wednesday	2960	47	350g 1400	36	120g 1080	16	120g 480
Thursday	2780	39	270g 1080	45	140g 1260	16	110g 440
Friday	3260	48	390g 1560	35	140g 1260	13	110g 440
Saturday	2460	49	300g 1200	37	100g 900	15	90g 360
Sunday	2760	46	320g 1280	39	120g 1080	14	100g 400

This analysis shows that carbohydrate intake is too low, fat intake is too high and protein intake varies across the week.

In most learners responses, there were some links to health and wellbeing which is the focus for the first question. Where learners did relate this to health and wellbeing it was usually related to eating excess fat and a link to Coronary heart disease.

Some learners were able to comment on the limited fruit and vegetable intake in relation to reduced fibre intake and the links to health and wellbeing such as reduce the potential for suffering from constipation or

the long term impact of helping to prevent bowel cancer. There was very limited reference to the low fruit and vegetable intake and the impact on low levels of vitamin and minerals.

It is expected that further interpretation of the client information should be included in the interpretation of the food intake including:

- Body Mass index which was 23.88 rounded up to 24 and therefore classed as in the normal category .
- BIA was at 24% which is classed as the higher end of acceptable body fat for a male.

Basal metabolic rate could then be worked out using the Harris Benedict equation to work out the calorie intake for the person based on their specific details:

**BMR** -  $66.5 + 893.75 + 825.495 - 162.12 = 1623.625 \text{ kcal}$

**BMR with activity levels** -  $1623.625 \times 1.55 = 2516.62 \text{ kcal}$

Responses that were rounded up or down were credited.

From this information, learners should have been able to interpret that energy intake is above BMR plus activity levels so the person would gain excess body weight if they continued to follow this nutritional programme.

Fluid intake was referred to by many learners in relation to recommended daily amounts and types of fluids consumed, many learners stated that the client was drinking just enough water and could relate this to the RDA for water intake.

Lastly, the factors affecting digestion and absorption of nutrients and fluids should have been commented on in relation to the nutritional programme for the individual with some reference to the types of foods consumed such as simple carbohydrates and complex carbohydrates and timings of food intake.

Activity 1 - This response was awarded 20 marks out of 20.

**Task and answer booklet**

**Please do not write answers outside the spaces provided.**

**You must complete ALL activities in this task and answer booklet.**

**1** Interpret Pete's current nutritional programme in relation to nutritional intake for health and wellbeing.

Use the nutritional principles information booklet to support your answer.

Your answer will focus on the following points:

- (a) food intake
- (b) fluid intake
- (c) factors affecting digestion and absorption of nutrients and fluids.

(20)

$$66.5 + (13.75 \times 65 \text{ kg}) + (5003 \times 165 \text{ cm}) - (6.755 \times 24) = \text{BMR}$$

$$= 1623.625$$

$$\text{BMR} = 1624$$

$$\text{BMR} = 1623.625 \times 1.55$$

$$= 2516.6 \text{ kcal} \quad \text{BMI} = 24 \quad \text{Aim} = 2517 \text{ kcal}$$

	Carbs	C%	fats	F%	protein	P%	total kcal
mon	400g	48	150g	40	150g	18	3350
Tue	350	44	140	40	90	16	2260
wed	350	47	120	36	120	16	2960
Thur	270	39	140	45	110	16	2780
fri	390	48	140	39	110	13	3260
Sat	300	49	100	37	90	15	2460
Sun	320	46	120	39	100	14	2760

RDA

Carbs 50-60%

Fats 30-35%

Protein 15-20%

On average Pete's calorie intake is too high. He should be consuming 2517kcal ~~when~~ to maintain a healthy body mass. More often than not he is overeating which can lead to obesity and weight gain. Pete is not eating enough carbohydrates which can cause a ~~depe~~ reduction in his energy. He needs to be getting 50-60% of his food from carbohydrates, according to the recommended daily allowance. At the moment only 46-49% are roughly carbs. He has a high concentrate of simple carbohydrates which are fast release of energy but when not used are stored as fat. This fluctuation in blood glucose levels can cause health problems such as diabetes. The lack of wholegrain and complex carbs means there is a lack of fibre in the diet which can cause constipation and bowel cancer in the future. Lack of slow absorbing / complex carbs means Pete will fatigue quicker.

Pete is consuming ~~too much~~ many fats. Where his recommend daily allowance ~~is~~ <sup>should be</sup> at 30-35%, with less than 11% coming from saturated fats he is consuming 36-45% fats. This can lead to many health problems, like heart disease. He is consuming a high concentration of saturated fats which will increase LDL levels - ~~and~~ lead cholesterol, leading to blocked arteries or coronary heart disease. There are little in the way of unsaturated

fats, which reduce LDL levels by increasing HDL levels. This boosts brain function and productivity levels. A lot of these are (man-made) trans fats, coming from the cooking method of frying <sup>He should be</sup> and reducing full fat foods. Protein intake is okay but as a strength athlete this could be increased to the higher end of the RDA. This would promote more protein synthesis, allowing Pete's punches to be stronger. Majority of Pete's meat are complex so contains all amino acids required however there are ~~some~~ red meats (in bolognese or lasagne), which will increase ~~into~~ LDL cholesterol levels. He also consumes a lot of processed meat, which ~~have~~ <sup>have</sup> high trans fat, high salt and can cause blocked arteries. Therefore, he should swap them for lean meats or fish. ~~He should~~ The cooking method of the meats / protein tends to be fried which adds fats and unnecessary calories. Being part of a weight category Pete needs to be in a deficit to fit into this by losing 5kg. Pete's fluid intake should be increased by having more water, which will also aid digestion and absorption. The recommended water intake should be 2.25L a day and additional when ~~exercise~~ exercising: 150ml - 200ml every 15-20mins of exercise. ~~Reduce~~ <sup>Remove</sup> the lemonade and apple juice, since it adds more sugar to the diet causing more fluctuation in blood

glucose levels, causing type 2 diabetes.  
 Pete lacks vitamins and minerals in his diet due to a lack of fruit and vegetables, which can give him deficiencies in calcium, iron, magnesium, as well as problems with hair, eyes, teeth, bone ect. This can cause weakness to his immune system and brittle bones making him more susceptible to illness and injury.  
 When digesting food it take 6-8hrs to pass ~~from~~ the stomach and small intestine. Carbohydrates are broken down by amylase. Proteins are broken down by protease. fats are broken down by lipase. The speed of which is important so Pete's food is fully digested before exercise.

The learner was able to provide a full analysis of each macronutrient in terms of percentage intake, RDA figures for each macronutrient and then give an analysis on how the clients intake was not in line with these percentages and the potential effects on health and wellbeing were also discussed. Sources, functions and different types of macronutrient selected from the dietary plan provided were also covered showing an in-depth understanding of the macronutrients in this clients nutritional programme.

An overview of calorie intake was provided in line with the BMR plus activity levels and the health related concerns of eating too many calories. Knowledge of simple carbohydrates and the health related concerns with consuming high levels linked to diabetes also gained credit. Fluid intake was also analysed and gained credit. Links to any modifications or sporting performance are not credited in this activity as this is all assessed in activity 2.

Activity 1 - This response was awarded 5 marks out of 20.

**Task and answer booklet**

**Please do not write answers outside the spaces provided.**

**You must complete ALL activities in this task and answer booklet.**

1 Interpret Pete's current nutritional programme in relation to nutritional intake for health and wellbeing.

Use the nutritional principles information booklet to support your answer.

Your answer will focus on the following points:

- (a) food intake
- (b) fluid intake
- (c) factors affecting digestion and absorption of nutrients and fluids.

(20)

from looking at Pete's nutritional programme, we can see that he is consuming a lot of fatty foods such as chips, burgers and full fat cheeses. <sup>Especially</sup> As he is in the post-competition phase, Pete needs to limit how much fatty foods he is consuming as he is likely to not be burning as many calories as he was during the competition phase.

A diet consisting of many fatty foods can also increase the risk of getting heart disease due to the blockage of the arteries.

Another factor that may be detrimental to Pete's health is his <sup>sugar</sup> fluid intake. Everyday, Pete's fluid intake consists of sugary

drinks such as juice and lemonade, and he also consumes sugary snacks such as chocolate, cakes and sweets. whilst having a controlled amount of these simple carbs may be beneficial prior to a ~~protein~~ match ~~for~~ as the body can absorb them quickly, they are not necessary during the post event phase in such high volumes. Constantly eating foods high in sugar will increase Pete's risk of diabetes.

Pete's diet consists of a lot of ~~the~~ foods ~~in~~ which are high in protein ~~riches~~ and has meat in his meals at least once a day. This is very beneficial for him during the post-competition phase as protein will help to quickly repair any muscle tears and therefore alleviate pain,

meaning Pete will be able to be more active ~~sooner~~ ~~after a match~~ during his weight training and running sessions.

Pete's diet plan also doesn't consist of any vitamin intake. He should ensure he is consuming these in order to keep his body healthy, especially as he does a high contact sport so his body needs to be able to repair adequately and swiftly.

This response provides a more generic knowledge of the client's nutritional programme. The learner has picked out content in the nutritional programme such as full fat cheese, chips and stated that they are fatty foods rather than any analysis of the overall percentage of fat or indeed other macronutrient intake.

Knowledge of simple carbohydrates and sources from the nutritional programme have been discussed with basic links to their effect on health and wellbeing. The evidence also shows that the learner has an understanding of the functions of protein as well as being able to pick out sources of protein in the client's diet.

The last paragraph is very vague, just stating that the plan does not consist of any vitamins is incorrect – instead, the learner should try to identify key vitamins that would be missing from the client's diet based on the foods and fluids they consume, for example, the client is not consuming foods with vitamin C as they have no fruit or vegetables in their dietary intake which are the main sources of this vitamin.

## Activity 2

Nutritional strategies are provided in the unit content in learning Aim D. It is therefore expected that learners will select appropriate strategies for the client based on their event and their current nutritional intake.

Many learners did not perform as well in this activity as they did in activity one. This is due to the fact greater application is required for this activity in relation to addressing the concerns identified in activity one, where, how and why this diet can be modified and how this will be beneficial to improve sporting performance for the clients specific sport.

For this activity, learners needed to focus on three main strategies:

- Decrease calorie intake
- Decrease fat intake
- Increase carbohydrate intake

The client had to lose at least 5kg to make a weight category for their event. The nutritional programme also confirmed that the client was consuming more calories than expending. Therefore, one of the main nutritional strategies was to decrease calorie intake.

In addition, fat percentage intake was high in relation to macronutrient intake, so strategies to decrease fat intake would also gain credit.

As the sport that the client takes part in does contain an endurance element, reference to strategies to increase carbohydrate content were also given credit.

Supplements could have also been discussed to support these nutritional strategies as well as to improve sporting performance for the clients given sport such as

- Isotonic sports drinks
- Creatine
- BCAA
- Beetroot juice
- Vitamin/mineral supplements – due to limited fruit and vegetable intake. To gain credit learners were expected to identify key micro nutrients that were missing or low in the diet and how they may have affected sports performance eg low iron intake effect on performance, B vitamins for energy release from foods, Vitamins (A, C, E and zinc and selenium) to reduce damage caused by free radicals from taking in more oxygen when taking part in aerobic exercise.

Any justification of the modifications related to health and wellbeing were not credit worthy unless there were additional links to the effect on sporting performance. Reference to carbohydrate loading was also not given credit as this is only required for endurance events lasting longer than 2 hours in order to maximise the body's glycogen stores.

Good responses provided appropriate modifications which were supported with reasoning for each modification related to the clients sporting event.

Activity 2 This response was awarded 20 out of 20 marks

- 2 Modify the nutritional programme, based on nutritional strategies, in relation to Pete's sports event. <sup>boxing endurance (ME) agility Coordination</sup>  
<sub>Strength Power reaction</sub>
- Use the nutritional principles information booklet to support your answer.

Your answer will focus on the following points:

- (a) modifications that are relevant to the sporting event
- (b) justifying the modifications
- (c) the impact of factors affecting digestion and absorption of nutrients and fluids.

(20)

Pete is overweight at 65kg for his sport as the weight category is 57-60kg. Therefore Pete needs to decrease body fat by decreasing his calories and fat intake. His BMR with activity levels (TER) is 2771 2517 kcal and ~~he is~~ <sup>he is</sup> eating an average of 2861 kcal, his worst day being Monday at 3550 kcal, and his best day being Saturday at 2460 kcal. To decrease his total amount of calories Pete needs to decrease the amount of snacks he eats throughout the day and the types of snacks he eats. He mainly eats high calorie snacks like cake, sweets and biscuits. He should substitute these with fruits and vegetable sticks, and can even make chicken strips. Also Pete should focus on food preparation as he mainly fries his food which adds unnecessary fats and calories to his foods. Instead he should grill his meat and steam his veg so they don't lose nutrients and vitamins. Making ~~for~~ sure he isn't overweight will benefit his performance as he needs to be able to move quickly ~~to~~ around the ring, also he won't be allowed in his class ~~to~~ if he weighs too much. Another thing he can do to lower calories is to eat homemade foods, ~~and~~ and substitute full fat milk and cheese to low fat. As a boxer Pete should decrease in fat. ~~to,~~ ~~to~~ ~~also~~ also help with weight

loss. He can do this along with reducing calories as I recommend the same modifications. He should also eat more unsaturated fats like nuts and avocados, which will also increase vitamin C and D. Too much body fat will increase his weight and prevent him playing in the lightweight group. This could mean he'd have to go in the upper class which would decrease his performance as he'd be up against stronger and bigger men. Fat does help with agility though which is needed in boxing so he can quickly change directions. In boxing muscular endurance (ME) is needed which is mainly carb and protein based. Pete needs to increase both carbs and protein for his sport. He should be eating nearer 65% of carbohydrates and 25-30% of protein. At the moment Pete's main carb intake is white bread, potatoes and ~~potatoes~~ <sup>pasta</sup>. White bread should be substituted for brown bread as this contains more fibre, and he should increase the amount of rice (brown rice), pasta, and potatoes he eats throughout the day. Complex carbs like these can take 2-4 hours to digest so I recommend Pete eat them before his training within this timeframe. Complex carbs have a low GI which means they ~~give~~ provide sustained energy for longer, compared with simple carbs like jam, which he eats on the weekends, which has a high GI and only provides a quick burst of energy but will then drop drastically. Complex carbs are better for his sport as the game lasts 40 minutes. Carbohydrates also help with reaction time and coordination so good amounts of complex carbs will help improve Pete's performance in this aspect. ME also needs protein as his

muscles will be contracting a lot during the 40 minute game. Protein can take up to 3-4 hours to digest so I recommend eating sources of protein like fish, steak and chicken before his training within this timeframe. Most of the meals he does to eat are ~~processed~~ processed which would hold a lot of calories and fat but not a lot of protein. He should stick to eating fresh meat. Also, he can drink a protein shake using protein powder after his training as they provide a lot of protein quickly as they're easily digestible, taking 30-60 mins to digest. This sport requires power <sup>and</sup> strength which you can receive from protein. This is because protein causes hypertrophy of the muscle which increases the muscle fibres in the area, meaning he can contract his muscles for longer before feeling fatigued (ME) and can produce more force (power and strength) in his punches. He should boil or poach his eggs instead of frying them, and replace pepperoni, ~~and~~ ham, and sausages with squid, turkey, prawns, and steak. On Wednesday and Thursday he trains at 6PM so he hasn't eaten for 5 hours <sup>before</sup> ~~before~~, but he does eat within the golden hour after training. I suggest eating something at ~~2PM~~ 5PM, ~~and~~ and mainly carb based, as this will give it time to digest and provide him with ~~for~~ sustained energy throughout the 40 mins. The post meal should be protein based, and I recommend having a protein shake <sup>30 min - 1 hour</sup> ~~30 min~~ after, followed by a meal like grilled steak and boiled potatoes with vegetables, as this will help restore energy levels and the protein will repair microtears in his muscles. His fluid consumption is 2.6L daily which is too little for his activity levels, he should be

Drinking water 3-4L daily, 3L of which should be water. I recommend the other 1L <sup>be</sup> from isotonic drinks and juices like beetroot juice and ~~and~~ cranberry juice. Isotonic drinks like Luozade Sport provide salt back to the body that was lost through sweat. Beetroot juice helps provide energy to the body, and Cranberry juice helps restore muscles by aiding in microtear repair. Staying hydrated will make sure Pete isn't fatigued or dizzy, and can perform his best by not being disorientated. I suggest Pete drink an isotonic drink 1 hour before his training and 1 hour after, to restore his energy systems within the golden window.

In this response, the learner has identified decreasing calorie intake and fat intake. They have justified the decrease in calorie intake related to BMR with activity levels and average calorie intake. The strategies provided are realistic and specific to the clients diet such as reducing snack intake and substituting high calorie snacks for lower calorie alternatives. Direct links to reasons why decreasing fat intake are provided to the clients sport and the issues associated with being in a higher weight category are discussed. An increase in carbohydrate intake is also provided as a strategy, again with realistic methods to increase carbohydrate intake together with justification for the type of carbohydrate to help to improve sports performance. Justification for protein intake and types of protein are also discussed and as the sport is a strength related sport then this is given credit as protein is important for the clients diet.

Reference to increasing fluid intake is provided, however, no links to the reasons related to sports performance are given. Beetroot juice is also stated, however, not as a supplement but as an isotonic drink which is not

accurate. However, sufficient knowledge and understanding is demonstrated in relation to depth and breadth of nutritional strategies and direct links to sports performance for this response to gain maximum marks.

**Activity 2 This response was awarded 6 out of 20 marks**

- 2** Modify the nutritional programme, based on nutritional strategies, in relation to Pete's sports event.

Use the nutritional principles information booklet to support your answer.

Your answer will focus on the following points:

- (a) modifications that are relevant to the sporting event
- (b) justifying the modifications
- (c) the impact of factors affecting digestion and absorption of nutrients and fluids.

(20)

One thing that Pete may need to do is increase his carbohydrate intake slightly. In particular Thursday, where he also needs to lower his fat intake. To decrease his fat intake, he could try substituting certain things. For example, on Thursday morning Pete has full fat milk for breakfast with a small bowl of muesli. Instead, he could try substituting that full fat milk for a healthier option, such as skimmed milk. However, he may want to ease into the change and first go for semi-skimmed milk, until eventually he goes to having skimmed milk. It is important that the changes are eased in and don't just happen suddenly, so that the athlete doesn't rebel to the changes. For lunch on Thursday, he has full fat cheese which can also play a part into such a low-sided diet on Thursday. Instead he could try reduced fat cheese, as it will help him reach his dietary requirements and lower the amount of fat that he is eating. In the evening he was also having fried sausage, fried bacon and white toast with butter. Sausage and bacon can be cooked in other ways that can make them more healthy,

however the original contents of the foods are very difficult to make healthy at all. Bacon is a processed meat that has lots of salt added to it, and is therefore very rich in fat content, and should really be avoided to keep the fat intake as low as possible. Sausage is also processed meat, however doesn't have that added salt that makes bacon so unhealthy. So while it still isn't the greatest thing to eat, ~~it~~ if cooked in other ways it can be a lot healthier. The white ~~bread~~<sup>toast</sup> in the meal can also be swapped for brown ~~bread~~<sup>toast</sup>, a much healthier alternative. He could also eat the toast with no butter, as butter is extremely fatty. He could also go for an alternative such as light, or extra light butter. On Monday he has spaghetti bolognese, which is a very healthy meal, containing spaghetti which contains a lot of carbohydrates, as well as red meat in bolognese which contains protein, as well as using ~~tomato~~ tomato sauce, which is a fruit/veg based sauce.

In this response the learner has identified the client should decrease their fat intake and increase their carbohydrate intake but no reference values of how much they should change these up or down to have been provided. An appropriate method of decreasing fat intake has been provided. However, for both of these strategies, no links to how this would affect the clients sporting performance have been provided and instead, reference is mainly to health and wellbeing which gains no credit in this part of the paper as the activity is focused on how the modifications are relevant to the clients sporting event.

### Activity 3

The phase of the event is 'after the event'. The learners response should focus on the following key areas:

- replace depleted glycogen stores used in competition/restore blood glucose levels
- replace fluids lost through sweating in the competition
- protein to help with muscle repair from damage in competition

Factors affecting digestion and absorption of foods and fluids are also important in the different phases of the event and as such the learners response could have covered areas such as:

#### Glycogen resynthesis

- First two hours post event body is able to convert carbohydrate into glycogen at a very fast rate – (golden window).
- high or moderate GI carbohydrates (50-75g) in first 15 mins
- 50-75 g of carbohydrate every 2 hours

#### Protein

- Golden hour – first hour after exercise to maximise muscle repair (up to 6 hours)
- BCAA – increase rate of protein synthesis compared to other proteins

#### Fluid replacement

- Isotonic drinks contain electrolytes to increase rate of rehydration, sodium to replace sodium/Potassium lost through sweat
- Cold drinks and carbonated drinks take longer to absorb fluid into the blood stream

**Activity 3 This response was awarded 10 out of 10 marks**

3 Recommend nutritional guidance for Pete based on his phase of event.

The phase of event is 'post-event'.

Your answer will focus on the following points:

- (a) links to the phase of event
- (b) impact of factors affecting digestion and absorption of nutrients and fluids.

(10)

Pete is in the post event phase. This means the aims are to replace depleted glycogen stores, consume protein for muscle repair, and <sup>replace the</sup> ~~that~~ ~~protein~~ & fluids that would have been lost through sweat.

It is important to do all this in the golden window which is done within 2 hours. This is because it turns protein into muscle fibres the quickest <sup>and</sup> ~~fast~~ CHO into glycogen the quickest for energy. This can be done by having 20-25g protein ~~and~~ so could be done by having lean meats like turkey and chicken as a meal or by snacking nuts ~~and~~ seeds, protein bars throughout the day. Pete will also need to have 50g of carbs in these 2 hours so could include ~~adding~~ preferably complex carbs like wholemeal pasta to a meal and snacking on healthier options like flapjacks to <sup>meet</sup> ~~reach~~ this goal. Another good point would be that immediately after, Pete may benefit from some quick high glycemic index foods like sweets or white bread to get

Some quick energy straight after being tired from his sport.

Another thing to take into consideration would be the amount of fluids that he needs to intake as he needs to have 1.5 times the amount of weight lost. He can do this by either just drinking water or by having isotonic drinks which will also help to hit the 50g of carbs needed. It will also be good to make sure that the drinks have low fat flavouring as he will be more likely to consume.

Lastly, Pele could have things like protein bars to act as a way to be a stimulant for muscle growth/repair and could also have gels to get some more carbs into the diet for energy after being tired.

This response covers the key areas of focus for the post event phase of a strength and endurance based sports event.

The time frame of the gold window is provided with referenced to why this is important in terms of nutritional intake and recovery from the event.

**Activity 3 This response was awarded 3 out of 10 marks**

3 Recommend nutritional guidance for Pete based on his phase of event.

The phase of event is 'post-event'.

Your answer will focus on the following points:

- (a) links to the phase of event
- (b) impact of factors affecting digestion and absorption of nutrients and fluids.

(10)

Post-event Pete's body will need aid in recovery. His muscles will feel sore due to the extreme lengths they went through during the fight. Pete may have micro-tears in his muscles from the pressure they were put under during the event. To aid these micro tears Pete will need to eat protein this could be chicken or nuts. Protein is good for muscles and can help them <sup>repair</sup> ~~during~~ recovery.

Also after an event Pete will need to replenish ~~his~~ his energy stores, such as his glycogen stores. To do this he can drink <sup>isotonic</sup> ~~hypertonic~~ energy drinks or eat simple carbohydrates such as sweets. By giving him a small amount of energy\*, he will be able to participate in more active recovery exercises.

\* and restoring his sugar levels within the glycogen stores.

This response does include knowledge of micro tears and nutrition to support repair and knowledge of replenishment of glycogen stores through isotonic drinks and carbohydrates. No quantities or timings are provided nor reference to digestion and absorption which are required in order to gain higher marks in this activity .

## Summary

Learners are encouraged to:

- Read and analyse the nutritional programme in relation to macro nutrient content. Percentage intake for each macronutrient should be assessed in relation to RDAs.
- Expect to carry out calculations in relation to BMI and BMR of the client and use this information in the activities to justify the interpretation of nutritional programme and modifications.
- When answering questions refer to the nutritional programme and individual as much as possible and make sure that the content you refer to is actually in the case study.
- Ensure only the correct phase of the event is discussed in question 3, any other phases that are covered that are not asked about in the question will not gain credit.
- Use the assessment criteria in the mark scheme for each activity to guide them and ensure they cover all the content needed for each activity.



Llywodraeth Cynulliad Cymru  
Welsh Assembly Government

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