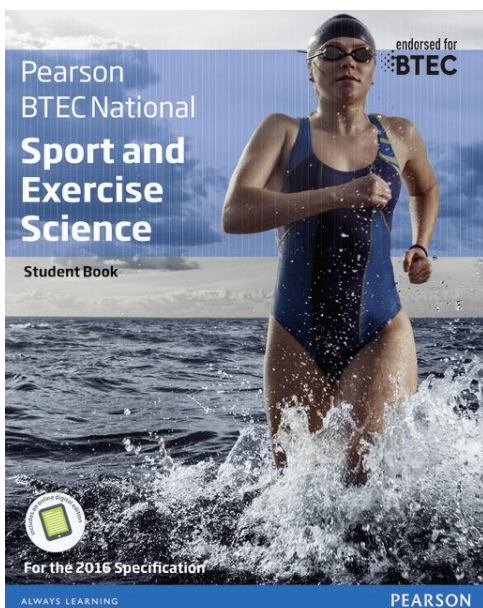


BTEC Level 3 Nationals in Sport and Exercise Science: Unit 13

Your free sample of the student
book: preparation for
assessment

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Getting ready for assessment

This section has been written to help you do your best when you take the assessment test. Read through it carefully and ask your tutor if there is anything you are still not sure about.

Sample answers

For your set task you will be provided with some background information on a client which requires you to interpret current nutritional intake, demands of the athlete's sport and phase of training and recommend strategies to optimise health and performance.

Look at the sample scenarios which follow and our tips on how to answer them well.

Example 1

Billy is a junior national squad cross country athlete. He is a student and prefers to follow a vegetarian diet. Recently he has been feeling increasingly fatigued after finishing his training sessions and wonders if this is linked to his eating habits.

From chatting with Billy you establish he has a very irregular meal pattern with frequent long gaps between his meals. He knows he should try to manage his hydration better but often forgets to think about his fluid needs around his training programme. He is concerned as he has a big race coming up in five days' time where he would like to achieve selection for an international race in Berlin the following weekend.

Based on what you know about Billy, recommend nutritional guidance based on his phase of training and upcoming event.

Answer: There are three likely nutritional causes for Billy's increased fatigue: (1) inadequate carbohydrate intake and poor refuelling strategies following training, (2) dehydration as a result of a poor fluid intake or (3) iron deficiency as a result of being vegetarian. The iron deficiency is the least likely and can only be medically determined and so it would be more appropriate to concentrate on his carbohydrate and fluid intakes.

Billy's most important concern is his upcoming race. Billy should try to eat regular carbohydrate-rich meals and snacks throughout the day. He can use the Eatwell Guide principles to plan his meals. He should aim to eat sufficient carbohydrate and start refuelling as soon as possible after training, when his muscle capacity to refuel is at its greatest. A sample day's meal plan might include:

Before considering recommendations and modifications, try to interpret the impact of current dietary habits to show you understand their implications for health and performance. This shows you have considered the athlete's profile carefully.

- *breakfast: a bowl of porridge made with semi-skimmed milk topped with some dried or fresh fruit with a slice of toast and jam and a small glass of fruit juice*
- *lunch: a jacket potato with baked beans, a yoghurt and an apple*
- *evening: bean and pasta bake with a green salad and a rice pudding pot*
- *bedtime: a bowl of cereal with semi-skimmed milk.*

He should ensure that he does not leave long gaps between his meals. To help with this, Billy should develop a kit bag snack pack of durable snack items (such as cereal bars, dried fruit, milkshakes and Jaffa cakes) to carry around with him, so he can start to refuel as soon as possible after training. Billy should also make sure he carries fluids at all times, or at least a water bottle that he can fill up when necessary. He should try to just stay ahead of thirst, as thirst is a sign that he is already dehydrated. He can also monitor his urine colour and volume as a sign of his daily hydration status. The following guide to fluid management before, during and after exercise might help him to manage his hydration status.

<i>Before</i>	<i>During</i>	<i>After</i>
<i>300–500 ml 10–15 minutes before activity</i>	<i>150–200 ml every 15–20 minutes</i>	<i>Based on body mass lost; replace losses 150%</i>

On race day, Billy should ensure that his pre-race meal contains fluid to support hydration and is low in fat and fibre to facilitate gastric emptying and prevent gastrointestinal distress. It should also be high in carbohydrate to maximise control of blood glucose and moderate in protein content so it does not take too long to digest but helps him feel satiated. Most importantly, it should be made up of familiar foods he tolerates well. He should carbohydrate-load the night before with a pasta- or rice-based meal and make sure he is well hydrated before going to bed.

This answer does recommend nutritional guidance based on his phase of training and upcoming event. To achieve a higher mark it would have been useful to have considered the role of sports foods and supplements in helping Billy to meet his needs.

Example 2

Rhianna is a journalist; she weighs 52 kg and is 1.60 m tall. She trains 3–4 times a week with varying methods including circuits, runs, track and plyometrics sessions. She is training for her first 10 km run and aiming to improve her running, overall fitness and strength.

Rhianna’s diet and activity record is detailed below:

Day 1:

- Breakfast: two slices of white toast with butter
- Lunch: jacket potato with cheese and beans
- Mid-afternoon snack: banana
- Evening circuit session
- Dinner: pasta with tuna and pasta sauce, medium size portion
- Drinks: four teas with semi-skimmed milk, litre of water, large glass of orange juice

Day 2:

- Breakfast: raisin Danish
- Mid-morning: 3-mile run on the treadmill
- Lunch: salmon and cream cheese sandwich, apple
- Dinner: jacket potato, salad, tuna burger
- Drinks: one cappuccino, three teas with semi-skimmed milk, litre of water, large glass of orange juice

Day 3:

- Breakfast: small bowl of frosted flakes, semi-skimmed milk, one slice of toast with butter and marmalade
- Lunch: toasted ciabatta with mozzarella, sun-dried tomato and pesto
- Mid-afternoon snack: flapjack
- Evening track session (15 × 60-metre sprints)
- Dinner: baked beans on two slices of white toast
- Drinks: three teas with semi-skimmed milk, litre of water, large glass of orange juice

Interpret Rhianna's current nutritional intake in relation to health and well-being. Then suggest modifications in relation to her sport-specific demands.

Answer: Looking at Rhianna's current intake she tries to follow a high carbohydrate diet with most of her meals based around carbohydrate-rich foods, such as bread, cereals, potatoes and pasta, but she could swap the raisin Danish for a bowl of cereal. In this way, she will have less fat and include a better source of vitamins and minerals, particularly calcium, with the addition of milk. Calcium intakes could be enhanced with the inclusion of nutritious desserts such as yoghurt or rice pudding, which would also provide useful carbohydrate. The glass of orange juice each day will be helping Rhianna to meet her vitamin C requirements, but overall she should aim to include a greater variety of fruits and vegetables in her diet. She has a reasonably high fluid intake and does try to include a litre of water each day. Higher intakes may be required to cover her training sessions. An increased frequency and duration of training will result in greater fluid requirements, so to minimise the effects of fluid losses while training she should always aim to start sessions fully hydrated and drink during and after.

To ensure that her energy stores are maintained it is best to increase the percentage of her daily calories consumed from carbohydrate to around 60 per cent and drop fat to 25 per cent. She should aim for a carbohydrate intake equivalent to 5–6 g for every kilogram of body weight providing around 250–300 g per day. A protein intake in the region of 1.2–1.4 g per kilogram of body weight should be adequate to meet her requirements giving 59–69 g per day, with a fat intake of no more than 70 g per day. To achieve her carbohydrate requirements she should aim to base all her meals around starchy carbohydrate foods, with at least two good quality protein portions around 75–100 g and at least three servings from the dairy food group each day.

While higher intakes are likely to be required to cover her training, it would be helpful in interpreting Rhianna's current intake to calculate actual requirements using one of the equations provided and then give more prescriptive advice on what to drink and how much, and when.

The answer does suggest modifications to Rhianna's diet in relation to the demands of her sport but for a higher mark it could go into more detail about her current nutritional intake for health and well-being and provide detail on factors affecting digestion and absorption of nutrients