

Nutritional needs and health

Below are two practice questions; the first question shows students responses and examiner feedback; the second question is for you to try yourself.

Chapter 2: Practice question 1 (with student responses and examiner feedback)

Case study



Matt is 15 years old. He is studying for his GCSE exams at school and in his spare time he plays a lot of computer games. He often goes to bed late and is regularly in a rush to get ready for school in the morning, which means he usually does not eat any breakfast.

Matt often eats snack foods during the day – his favourites are crisps, roasted and salted peanuts and chocolate bars. He drinks sweet, fizzy drinks and occasionally tea. He rarely drinks plain water. He has a school lunch every day and usually chooses pizza and chips, or a jacket potato with baked beans and cheese. Matt only likes to eat peas as a vegetable and occasionally eats apples and bananas.

Questions

With reference to the dietary guidelines, explain, with reasons, the effects that Matt's lifestyle and food choices may have on his short- and long-term health.

Discuss, with reasons, what changes to his eating habits and lifestyle Matt could make to meet the dietary guidelines.

(Total 10 marks)

Responses

The following responses were provided by students. The level and detail within the responses increases. More examples, with reasons, have been provided that allow students to achieve higher marks. The use of subject-specific language shows more informed understanding of the subject content.

Basic level response

Matt doesn't seem to eat proper meals and has a lot of snacks. He doesn't eat breakfast and sits at his computer a lot. The foods he likes a lot are bad for him, like crisps and chocolates. If he eats a lot of these foods he will get fat and he may get a heart attack because they have lots of fat and sugar in them.

He should eat breakfast because it helps him start the day well. He should probably have more water to drink. He should have 5 a day fruit and vegetables. (3 marks)

Examiner feedback (3 marks)

The student has understood that the question relates to dietary guidelines and has attempted to include some of these in his answer, with his reference to breakfast, five-a-day and drinking water. He has identified that the foods Matt prefers to eat are high in fat and sugar and has made the connection between these and the likelihood of weight gain or risking heart disease in the future. There should be greater reasoning and reference to Matt's lifestyle choices, eating habits, and the nutritional profile of the foods he eats in relation to the other dietary guidelines, in order to gain more marks.

Medium level response

Matt is at an age where he is growing fast and needs lots of nutrients every day.

The dietary guidelines tell you to eat lots of fruit and vegetables - at least 5 a day. Matt does not eat enough of these so he will be missing out on vitamins such as vitamin C and he won't get enough fibre. He often misses breakfast and the guidelines tell you not to miss it because it starts your day well and you will be ready for working at school and will be able to concentrate.

The guidelines say to eat less fat and sugar, but Matt chooses fatty foods such as chocolate and crisps. He also has a lot of sweet fizzy drinks so he is also getting a lot of sugar. The guidelines say eat less salt because it can cause high blood pressure, but Matt is eating a lot of salt in the peanuts and crisps. Cheese has salt in it too.

Matt does not drink water very much and you are supposed to.

If he carries on eating like this, he will probably become obese and may get high blood pressure, which may affect his heart.

Matt needs to eat a balanced diet. He needs breakfast every day and he needs to choose other foods as snacks, e.g. he could eat more fruit. He should try to drink more water and he could have sugar-free fizzy drinks instead. He should try to eat other vegetables. (6 marks)

Examiner feedback (6 marks)

The student has identified the need for a teenager to follow dietary guidelines and has referred to six of these in his answer. The student has identified where Matt is failing to meet the guidelines and has given some details and reasons as to why they should be followed.

The student has appropriately identified what the long-term health implications of Matt's eating habits might be and given relevant suggestions as to how Matt can improve his diet and eating habits, but more detail and justification for these suggestions is needed. There is little reference to Matt's lifestyle in relation to the dietary guidelines and his short- and long-term health. The student needs to demonstrate their knowledge and understanding of the implications of Matt's diet and lifestyle in order to gain more marks.

High level response

There are 8 dietary guidelines:

1. Base meals on starchy foods.
2. Eat lots of fruit and vegetables - at least five a day.
3. Eat more fish - including one portion of oily fish each week.
4. Eat less saturated fat and less sugar.
5. Eat less salt - no more than 6g a day.
6. Get active and try to be a healthy weight.
7. Don't get thirsty - drink plenty of water.
8. Don't skip breakfast.

Matt does not eat enough starchy foods - the only ones he seems to eat are potatoes, pizza and bananas. He is at an age where he needs lots of energy to grow and be active, and starchy foods should provide this. He does not eat many types or numbers of fruit and vegetables. This means he is not getting enough vitamins such as A (beta carotene), B (folic acid) and C; not enough fibre, and not enough antioxidants (vitamins A, C and E) that help to prevent substances doing damage in the body, which could lead to developing cancer. Matt does not appear to eat any fish. Fish, especially oily fish, provide the body with fat soluble vitamins A, D, E, and K, essential fatty acids (omega 3 for brain development), protein and minerals such as calcium and iodine.

Examiner feedback (10 marks)

The student has thoroughly understood the subject of dietary guidelines and has correctly identified where Matt is failing to meet these. The student has provided detailed reasoning for this information. This is an excellent answer. Each point has been clearly explained with good examples given. Excellent use of subject-specific terminology.

Matt eats foods that contain quite a lot of fat e.g. crisps, peanuts, chocolate, chips and cheese. The body needs some fat, but a lot of these foods contain saturated fat, which the guidelines tell us to reduce because they can raise blood cholesterol and lead to heart disease. It also tells us to reduce the amount of sugar we eat, but Matt eats and drinks a lot of sugar in chocolate and fizzy drinks. Baked beans also often have sugar added to them. Too much sugar can cause weight gain and may lead to type 2 diabetes. Matt eats a lot of salt in the roasted nuts, pizza, cheese and probably the baked beans. The guidelines tell us to reduce the amount of salt we eat because it can raise blood pressure.

The guidelines also talk about being active and maintaining a healthy weight. Matt does not seem to be very active and so he may put on weight because of the energy-dense foods he eats and sitting playing computer games a lot. He does not have much water to drink, and the guidelines say we should drink more to prevent dehydration. Finally, the guidelines advise us not to skip breakfast, which Matt often does. Breakfast helps to kick-start our metabolism and helps us to concentrate well during the day and not be tempted to eat snacks in between meals. Matt is in an important year at school, so he needs to concentrate and should eat breakfast each day.

If Matt continues to eat like he does and does not get enough sleep or exercise, in the short term he will become very tired, will not be able to concentrate on his school work, and will put a strain on his kidneys (not enough water), his pancreas and teeth (too much sugar), he may become constipated (not enough water or fibre), and will miss out on vital nutrients, such as calcium, which he needs to strengthen his bones so they reach peak bone mass. In the long term, he could become obese, develop type 2 diabetes, osteoporosis, develop heart problems because of the saturated fat he eats and the weight he has gained and have high blood pressure. He may become anaemic because he doesn't have enough iron in his diet or vitamin C to absorb it.

Matt needs to eat more fruit and vegetables every day – he could have some instead of the salty, fatty snacks he eats. He needs to make sure he eats a good breakfast each day that includes starchy foods and water to drink. He needs to try other foods, especially vegetables, to increase the variety of what he eats. He needs to be more active, drink more water and get more sleep. He needs to reduce the amount of fizzy drinks he has and perhaps have some milk instead so he gets more calcium and other minerals. (10 marks)

Mark scheme

For 8–10 marks: The response shows **thorough** knowledge and understanding of dietary guidelines. The answer gives several detailed reasons that relate to at least five of the points below. Clear examples have been given.

For 5–7 marks: The response shows **good** knowledge and understanding of dietary guidelines. The answer gives several reasons that relate to 3–4 examples of the points below. Examples have been stated but detailed reasons are not given.

For 0–4 marks: The response shows **some** knowledge and understanding of dietary guidelines. The answer gives some reasons that relate to 2–3 examples of the points below.

Points to include in the answer

- **Dietary guidelines:** knowledge of these and why they are given
- **Dietary needs of teenagers:** in relation to energy, protein, fat, vitamins and minerals, fibre, water intake, balanced diet
- **Other needs of teenagers:** sleep, exercise, food to be able to concentrate, develop peak bone mass, variety of foods
- **Development of diet-related diseases:** CVD, skeletal disease, obesity, type 2 diabetes, constipation, anaemia, tooth decay
- **Healthy eating:** understanding of nutrition and healthy eating, such as balanced meals that meet the dietary guidelines, for example, DRV or the Eatwell Guide
- **Physical activity level (PAL):** the importance of physical activity and the dangers of sedentary lifestyles
- **Eating habits:** the importance of regular meal times and eating a variety of foods. The problems associated with snacking or grazing

Nutritional needs and health**Chapter 2: Practice question 2****Case study**

Jo is 16 years old and a keen footballer. Jo takes part in many matches and tournaments throughout the year, with regular practice three times a week. Jo also likes to run and swim regularly to keep fit.

What are Jo's specific dietary needs and why is it important that Jo follows the dietary guidelines?

Questions

Plan a breakfast, packed lunch and evening meal that would be suitable for Jo to eat. Give reasons for your food choices in the meal in relation to Jo's needs.

(Total 10 marks)

Chapter 2: Mark scheme for practice question 2

Case study



Jo is 16 years old and a keen footballer. Jo takes part in many matches and tournaments throughout the year, with regular practice three times a week. Jo also likes to run and swim regularly to keep fit.

What are Jo's specific dietary needs and why is it important that Jo follows the dietary guidelines?

Questions

Plan a breakfast, packed lunch and evening meal that would be suitable for Jo to eat. Give reasons for your food choices in the meal in relation to Jo's needs.

(Total 10 marks)

Mark scheme

For 8–10 marks: The response shows **thorough** knowledge and understanding of dietary guidelines. The answer gives several detailed explanations that relate to at least five of the points below. Clear reasons for the food choices made for each meal have been given.

For 5–7 marks: The response shows **good** knowledge and understanding of dietary guidelines. The answer gives several explanations that relate to 3–4 examples of the points below. Some relevant reasons for the food choices made for each meal have been given.

For 0–4 marks: The response shows **some** knowledge and understanding of dietary guidelines. Answer gives some explanations that relate to 2–3 examples of the points below. Few or no reasons for the food choices made for each meal have been given.

Nutritional needs and health

Points to include in the answer

- **Dietary guidelines:** knowledge of these and why they are given
- **Dietary needs of teenagers:** in relation to energy, protein, fat, vitamins and minerals, fibre, water intake, balanced diet
- **Other needs of teenagers:** sleep, exercise, food to be able to concentrate, develop peak bone mass, variety of foods
- **Healthy eating:** understanding of nutrition and healthy eating, such as balanced meals which meet the dietary guidelines, for example, Dietary Reference Values or Eatwell Guide
- **Physical activity level (PAL):** the extra nutritional and energy requirements of this teenager due to their high levels of physical activity should be highlighted.
- **Eating habits:** the importance of regular meal times and eating a variety of foods, especially in the build up to a football match. The problems associated with snacking/grazing
- **The importance of good hydration**
- **Breakfast and evening meal:** food and drink choices should demonstrate knowledge of the dietary guidelines and Eatwell Guide
- **Packed lunch:** suitable foods and drinks should be included and the items chosen should be easy to transport and eat and not pose a food hygiene risk if the lunchbox is unable to be refrigerated
- For all the meals chosen, **appropriate and relevant reasons** should be given