

2020 Section B Q1

Question 1

Consumer surveys confirm that large portion sizes are associated with overeating in both adults and children. The following table from a study carried out by *safefood* reveals participants' opinions on situations where it is difficult to manage food portion sizes.

| Situations/Settings | Sometimes Difficult (%) | Always Difficult (%) | Never Difficult (%) |
|-------------------------------|-------------------------|----------------------|---------------------|
| Eating in | 45 | 7.5 | 47.5 |
| Eating out | 57.5 | 10 | 32.5 |
| Eating at work | 20 | 0 | 80 |
| Eating with friends | 62.5 | 2.5 | 35 |
| Stressful situations | 35 | 10 | 55 |
| Lack of time | 40 | 2.5 | 57.5 |
| Special occasions | 40 | 37.5 | 22.5 |
| Eating late/after a night out | 35 | 7.5 | 57.5 |
| Eating while watching TV | 50 | 2.5 | 47.5 |
| Preparing a meal | 20 | 5 | 75 |

(www.safefood.eu/media/safefoodlibrary)

(a) With reference to five of the above situations/settings, suggest reasons why participants may/may not find it difficult to manage portion size

Special occasions: these can be a difficult time to control portion sizes. 40% of people surveyed found it difficult sometimes and 37.5% of people found it difficult all the time. Special occasions are usually associated with unhealthy foods such as fried foods and cakes. During special occasions, it can be difficult to control portion sizes when food is being served by other people which means you have less control of the portion size.

Preparing a Meal: 75% of participants say that it is never difficult to manage a meal when you are preparing it. In my opinion, this is because people making their own meals usually use recipes and measure ingredients. This leads to suitable portion sizes.

Eating Out: 57.5% of participants say that it's sometimes difficult to control portion sizes when going out. This is usually because when eating out in restaurants, there is a wide variety of food to choose from as well as the temptation of starters and desserts. When people eat out, they are not aware of the portion sizes in a specific restaurant. This can sometimes lead to overeating.

Eating While Watching TV: 35% of people say that it is difficult to control their eating while watching TV. Overeating in this scenario can occur when people are eating out of a packet e.g. bag of crisps. They are distracted by the TV and do not realise how much they are eating. This makes it very difficult to control portion sizes.

Eating At Work: 0% of people say that it is always difficult to control their eating at work and only 20% say that it is sometimes difficult. The majority of people bring their own lunches to work and they have more than likely prepared them themselves. This is because the majority of people work Monday-Friday so it would be expensive to buy lunch every day. By preparing their own snacks and lunches for work, it is easier for people to control portion sizes as they know exactly what is going into the lunches.

(b) Give a detailed account of protein and refer to:

How a peptide bond is formed:

Peptide bonds are formed when two amino acids join together. This results in the loss of water which is called the condensation reaction. The COOH of one amino acid reacts with the NH₂ of another amino acid. COOH loses an OH group and NH₂ loses a

hydrogen. They join together to form water. This new molecule is called a dipeptide. When 25 dipeptides join together, a protein is formed.

Essential and non-essential amino acids

Essential amino acids are amino acids that cannot be made by the body so they must be obtained from food. Examples include valine, lysine and leucine

Non-essential amino acids are amino acids that can be made by the body. Examples include aspartic acid and cysteine.

Supplementary value/ complementary role

When two low biological value (LBV) proteins are eaten together, they can provide all the essential amino acids needed by the body. This can be seen in beans and toast. Beans are low in methionine and high in lysine. Bread is high in methionine and low in lysine. When these two foods are eaten together, you get a complete protein.

(c) Proteins have many functions in food production. Explain the following in relation to protein and make reference to the culinary application of each:

• gel formation • foam formation

Gel Formation: when collagen is heated, it is converted to gelatine. Gelatine can absorb large amounts of water when heated. This forms a sol and on cooling it forms a gel. Culinary applications include jelly sweets.

Foam formation: when an egg white is whisked, protein chains unfold and air bubbles form. This creates a foam. Whisking also creates heat that sets the albumin. Culinary applications include meringues.

(d) Devise a set of strategies for controlling food portion sizes when shopping for food, eating at home and eating out.

When shopping for food:

Only buy as much food as needed. For example, if a recipe says 200g of pasta is required for a meal, don't buy a 400g bag. This prevents waste of food as the amount cooked will be the amount required. This also prevents the urge of cooking too much food and it keeps portion sizes under control.

Eating at home:

When cooking for the family, it is important to differentiate portion sizes. A 5 year old should not have the same amount of food as a 25 year old. By using different sized plates, it makes it easier to judge how much food should be given to a person. An adult should have a larger plate than a child. An active adult should have more food than a sedentary adult. It is up to each individual family to decide what size plates should be used for each family member. By monitoring plate sizes, overfilling of plates can be prevented.

When snacking at home: it is crucial to pay attention to the serving sizes on the packaging. By studying this information we can keep portion sizes under control. For example, on a packet of biscuits it says how many biscuits is equal to a serving size. This information is found on the packaging of all food and it assists the consumer in making informed decisions about food.

Eating Out:

When eating out it is important to be aware of the portion sizes of a particular restaurant. This can help prevent overeating. If you are unsure about a portion size, it is always a good idea to ask the staff about the size of their portions. The staff could show you what their portion sizes look like and then you could make an informed decision. You could either share the portion with someone else or have it alone.

When eating out with children it is important not to allow overeating. By allowing the children to choose a meal off of the children's menu you can ensure that they will get the correct portion size. This allows the children to be treated with respect whilst also learning about the importance of portion sizes.