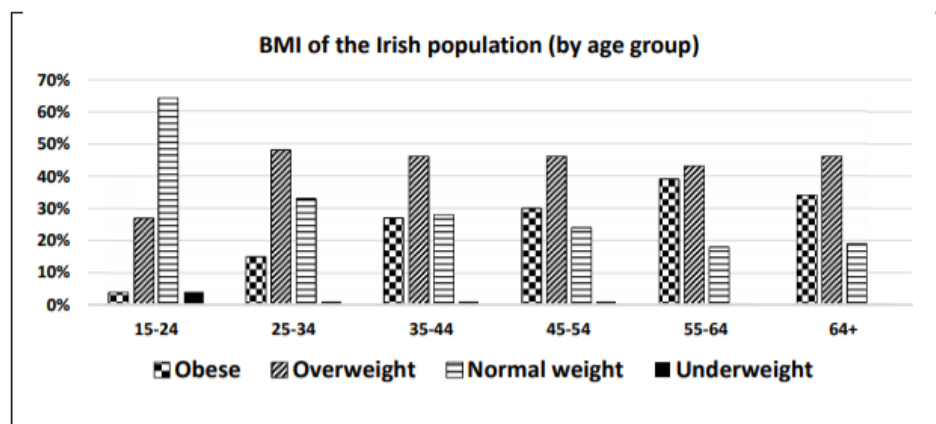


2017 Section B Q1

1. **Rising levels of overweight and obesity are placing an increasing burden on individuals and society. Currently, six in ten adults and one in four children are overweight or obese.**

(A Healthy Weight for Ireland: Obesity Policy and Action Plan 2016 – 2025)

Body Mass Index (BMI) is a standardised measure used to estimate whether or not someone is underweight, normal weight, overweight or obese.



(a) Using the information provided in the chart, comment and elaborate on the variations in Body Mass Index among the different age groups of the Irish population.

Obese: the 55-64 years age group have the highest levels of obesity. I believe that this is due to a sedentary lifestyle. At this age, people are finding it more difficult to take part in strenuous activity such as high intensity sports. People at this age may also have sedentary jobs e.g. working in an office. This may increase obesity levels due to a lack of movement.

Overweight: the 15-24 years age group has the lowest amount of people overweight. I think that this is due to the very active lifestyle young people have. PE is a mandatory subject in all

schools in Ireland which promotes healthy BMI levels. Just under half of 25-34 years olds are overweight. This is a big number for people so young. I think that this is a result of stress that comes with moving into adulthood and the workforce. This would result in a lack of exercise and unhealthy eating.

Normal Weight: over 60% of the 15-24 year age group are of normal weight. I think that this is because of the large numbers of children that are involved in sport and physical activities. The number of people that are of “normal weight” decreases as they get older. I think that many factors such as increased alcohol consumption, sedentary lifestyle and lack movement influence this.

Underweight: the 15-24 year age group have the highest number of people underweight. I think the influence of social media and diet culture has a major impact on this. Young people are suffering from low self-esteem and poor body image as a result of social media. We are seeing around 4% of people in this age group underweight.

(b) Classify carbohydrates. With reference to each class give:

- the chemical formula
- examples
- food source.

Monosaccharides

$C_6H_{12}O_6$

Examples: glucose in fruit, fructose in fruit and honey

Disaccharides

$C_{12}H_{22}O_{11}$

Examples: sucrose in table sugar, lactose in milk

Polysaccharides

$(C_6H_{10}O_5)_n$

Examples: starch in cereals, glycogen in meat

(c) Explain three properties of sugar and the related culinary use of each.

Caramelisation: on heating, sugar melts and caramelises at around 160 degrees Celsius. This results in a sweet taste and an attractive brown colour. If overheated (past 177 degrees Celsius) caramel will carbonise and burn. A culinary application is caramel squares.

Crystallisation: if more sugar is added to a liquid than it can dissolve, crystals form which can solidify when set e.g. Jam

Hydrolysis: this is the reverse of the condensation reaction. It occurs during digestion. Water and enzymes split disaccharides into two monosaccharides e.g. Lactose is split into glucose and galactose.

(d) Assess the effects of high sugar consumption on the body.

Dental Disease: when too much sugar is consumed, it can lead to a buildup of plaque on the teeth. This plaque can cause dental disease if not removed. Symptoms include inflamed gums and cavities.

Obesity: foods that are high in sugar are empty kilocalorie foods. They provide the body with no nutrients just extra kilocalories. When these foods are consumed too regularly, they can cause a person to gain weight.

Type 2 diabetes: consuming too many high sugar foods can lead to this type of diabetes.

(e) The rate of obesity in Ireland has been increasing despite the fact that it is preventable. Outline five strategies to be considered when purchasing and preparing food in order to reduce sugar consumption

Purchasing

Avoid buying sugary breakfast cereals. These cereals appear to be relatively healthy but they are often very high in sugar.

Read nutrition labelling and be aware of hidden sugars. These can be in the form of honey, sucrose and sweeteners such as aspartame.

Choose snacks that provide a steady release of energy e.g. granola bars. They provide energy without a slump afterwards.

Preparing

Avoid adding any extra sugar to recipes. Do not put sugar in cereals and try to limit the amount of sugar put in tea.

Use fruit puree to sweeten dishes rather than extra sugar e.g. raspberry puree