

2017 Section B Q1

(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

Obesity rises up to the age of 55 to 64 and then tends to fall at 64+. At 15 to 24 you tend to play sports and are more active due to not having work or family commitments. From then on you generally have less time to exercise but remain eating the same portion size/diets. As you grow older your metabolism/metabolic rate also decreases and therefore it is harder to lose weight.

Overweight is lowest at the 15 to 24 group again because they have more time for exercise and their metabolic rate tends to be faster. For the five other age groups overweight stays between 40 to 50% and has the largest percentage in each of the 5 groups. This could be caused from sedentary jobs, reliance on convenience foods, diets high in sugar and saturated fats with little exercise.

In the age group of 55 to 64, normal weight is at 18%, this is the lowest percentage for normal weight resulting from increased consumption of food and alcohol, with the basal metabolic rate decreasing. 64% of the 15 to 24 age group are normal weight, this is a good result, due to their participation in sports and exercise. There is a significant drop of about half in the next group that decreases until 55 to 64, because of work and less time to exercise with family. At 64+ it begins to increase. People retire at this age and have more time to exercise and don't rely on convenience foods.

For each group underweight is less than 5%. It decreases from youngest to oldest as a result of energy intake being greater than energy output. Dieting and psychological conditions affect people's weight which can cause underweight. Young people are also growing and have more free time to exercise.

(b) Classify Carbohydrates. With reference to each class give: chemical formula, examples and food source.

Monosaccharides are simple sugars with the chemical formula of $C_6H_{12}O_6$. Examples include glucose and fructose which can be sourced from fruit, honey and digested milk.

Disaccharides have 2 simple sugars joined together. The chemical formula is $C_{12}H_{22}O_{11}$. Examples include maltose from barley, sucrose from table sugar and lactose from milk.

Polysaccharides have 3 or more sugar units and its formula is $(C_6H_{10}O_5)_n$. Polysaccharides include starch from cereals, glycogen from meat and cellulose from the skins of fruit.

(c) Explain 3 properties of sugar and the related culinary use of each

Maillard Reaction: A chemical reaction that involves sugar, amino acid and dry heat. The result is browning of food. Culinary uses: roasting potatoes or toast.

Crystallization: This occurs when excess sugar is added to a liquid already saturated with sugar and crystals forming when it cools. Culinary use: making confectionery.

Solubility: Sugar is soluble in water. Solubility increases if water is heated. Culinary uses: making icing and sweetening drinks.

(d) Asses the effects of high sugar consumption on the body

High sugar consumption can result in obesity, especially when there is a lack of exercise as energy intake is greater than energy output. Dental disease can also occur as sugar causes tooth decay. Finally, high blood pressure can be caused because foods high in fructose increases blood pressure. In order to prevent obesity when purchasing foods, compare food labels and choose foods that are lower in sugar. Reduce the sugar in recipes by planning meals and snacks and using honey to sweeten foods if necessary. Also, choose sugar free or no added sugar drinks.