

med.
2013

HUMAN BIOLOGY 2A NUTRITION ASSESSMENT

Name: Answers.

Mark: /20

Read the information you have been given and complete the following questions on the paper provided.

1. One of the ten "Dietary Guidelines for Australians" states:
'Eat a diet low in fat – in particular low in saturated fat.'

a) What would be an effect on a person eating a high proportion of fats compared to carbohydrates and proteins? Explain why. (2)

p39 They would put on weight (1)
Fats yield more / 37 kJ twice as much energy
as carbs or proteins. (1)

b) Saturated fats are mentioned in particular. Why are saturated fats different to unsaturated fats? What is one effect they would have on the body? (2)

p48 Saturated fats have all the carbons joined to hydrogens (1)
Unsaturated can hold more hydrogens (1)
High blood cholesterol which leads to
cardiovascular disease. (1)

c) Why should you not exclude fats entirely from your diet? (1)

p38 They contain essential fatty acids that
cells must have. have fat-soluble vitamins.

2. Take-away foods are obviously high in fats, particularly saturated fats, but can cause other problems as well. Describe other symptoms (apart from excess fat intake) that they could produce with long term consumption. (4)

p49 High in salt: causes high blood pressure. (1)
Low Fibre: high blood cholesterol + blood
sugars in diabetes / OR / disorders of the
alimentary canal such as bowel cancer } (1)
Low Vitamin A: reduced resistance to
disease, poor night vision (1)
Low Vitamin C: Scurvy (1)

p49
38
39
51
Mucositis
diverticulitis
hiatal hernia
haemorrhoids

3a) The energy requirements of a girl will change over her lifetime. What is the kilojoule difference between her requirements at 16 years of age compared to when she is 65? (1)

p40 16 yrs 8700 - 10,200
64 yrs 6900 - 7,900

* Could also describe in terms of proportion of saturated fatty acids.

b) What factors could cause this difference?

142 p39 Less physical activity at 65 ^{and lower MR} (1)
p40 Rapid growth of 16yr old (1)

c) If energy in excess of her requirements is consumed she will put on weight. How much excess energy would cause her to put on 3 kg of weight? (Show your calculation) (1)

p39 $32,000 \text{ kJ} \times 3 \text{ kg} = 96,000 \text{ kJ}$

d) Explain why this increase in weight would affect her overall energy requirements? (1)

p40 Larger body size require more energy to move their mass.

4. Scurvy is one of the oldest diseases known to humankind. The symptoms are described in Egyptian writings dating to 1500BC and are also mentioned in the Old Testament of the Bible. In the days of sailing ships sailors were very commonly afflicted with scurvy. In 1600 a British report estimated that about 10,000 sailors had died from the disease in the previous 20 years.

a) What is the cause of scurvy? (1)

table
- p51 Lack of Vit C

b) What are the symptoms of scurvy? (1)

p51 Sore gums, bleeding around bones, delayed healing

c) Why were the sailors more likely to be affected by scurvy than others in the populations? (1)

Fresh fruit + veg not available on long sea voyages.

d) Scurvy now occurs in situations where people depend on food aid. Why would this be so? (1)

Food aid does not contain fresh food, just preserved or dry food.

e) Suggest what providers of aid could do to reduce the risk of people developing scurvy. (2)

Supply citrus fruits / fresh food (1)
Supply vitamin C additives / tablets (1)
Juice.

↑
own judgement
- not discussed in detail in article.