Your notes

GCSE Food Preparation and Nutrition: revision notes

Energy requirements

Contents

1. Energy from food
2. How much energy we need
3. Energy balance
4. Worked example
5. Key terms
6. Quick questions
7. What to do next

Energy from food

- Energy is measured in **kilocalories** (kcal) or **kilojoules** (kJ). 1 kcal = 4.2 kJ.
- 1 g of carbohydrate gives about 4 kcal (3.75), 1 g of protein gives 4 kcal, and 1 g of fat gives 9 kcal.
- Recommended share of energy: about 50% from carbohydrate, no more than 35% from fat, and about 15% from protein.

How much energy we need

- **Basal metabolic rate** (BMR) is the energy needed to keep the body alive at rest: breathing, heartbeat and keeping warm.
- **Physical activity level** (PAL) is the extra energy used through movement. Energy needs = BMR × PAL.
- Needs depend on age, sex, body size, activity level, and life stage (such as growing children and pregnancy).
- As a guide, adult women need about 2,000 kcal and adult men about 2,500 kcal a day.

Energy balance

- If energy in equals energy out, weight stays the same.
- If energy in is more than energy out, the extra is stored as fat and weight goes up.
- If energy in is less than energy out, stored energy is used and weight goes down.

Worked example

- A snack contains 20 g of carbohydrate, 5 g of protein and 10 g of fat. Energy = (20 × 4) + (5 × 4) + (10 × 9) = 80 + 20 + 90 = 190 kcal.

© LycoLearn · lycolearn.co.uk · Free GCSE and KS3 revision

Key terms

Kilocalorie	A unit of energy in food (kcal).
Basal metabolic rate	The energy needed to keep the body alive at rest.
Physical activity level	A measure of how active a person is, multiplied by BMR to find energy needs.
Energy balance	When energy taken in equals energy used.
Kilojoule	A unit of energy: 1 kcal is 4.2 kJ.

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. How many kcal are in 1 g of fat?
2. What is basal metabolic rate?
3. How are energy needs calculated?
4. What happens to weight if energy in is less than energy out?
5. What percentage of energy should come from protein?
6. A food contains 10 g of fat. How much energy does the fat provide?
7. A food contains 25 g of carbohydrate. How much energy does it provide, using 4 kcal per gram?
8. About how many kcal a day does an adult woman need?

Answers

1. 9 kcal
2. The energy needed to keep the body alive at rest
3. BMR multiplied by PAL
4. It goes down
5. About 15%
6. 90 kcal
7. 100 kcal
8. 2,000 kcal

What to do next

Practise 10 questions on this topic

Try 4 exam questions, with mark schemes

Read the lesson, one step at a time

Free revision for GCSE and KS3 at lycolearn.co.uk. Some notes are for one exam board only, and say so in brackets.

Your notes