

Nutritional information

ENERGY AND NUTRIENTS

In addition to product information, labels include a host of nutritional information, in particular the product's energy values and nutrients. There are several levels of indication, meaning that all labels do not refer to the same nutrients. The values are generally shown in amounts of 100 g, 100 ml or per portion.

NUTRITIONAL VALUES	FOR 100 G	FOR 1 PORTION (45 G)
Energy	1770 kJ (423 kcal)	191 kcal (10%)
Proteins	8 g	3.6 g (7%)
Carbohydrates	66 g	29.7 g (11%)
of which sugars	22 g	9.9 g (11%)
Fats	12 g	5.4 g (8%)
of which saturated fats	2.5 g	1.1 g (6%)
Dietary fibre	9 g	4,1 g (16%)
Vitamins		
B1	1.2 mg (85%)	0.54 mg (30%)
B2	1.3 mg (80%)	0.59 mg (40%)
B6	1.7 mg (85%)	0.77 mg (25%)
Minerals		
Salt	0.20 g	0.09 g (4%)
Iron	7.9 mg (55%)	3.56 mg (15%)

ENERGY VALUE

The energy value is expressed in kilojoules and kilocalories. It corresponds to the total energy value of the nutrients. If you try to calculate this value based on the nutrients, you need to be aware that fat contains the most calories. One gram of protein or of carbohydrates is equal to 4 kcal, while a gram of fat is equal to 9 kcal.

Keywords > 1 g of protein = 4 kcal

Keywords > 1 g of carbohydrates = 4 kcal

Key words > 1 g of fat = 9 kcal

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Sometimes the label shows the percentage represented by the portion in terms of daily recommendations. In this example, a 45 g portion represents around 10% of the average recommended calorie intake for an adult.

PROTEINS, CARBOHYDRATES, FATS

As you will have noticed, the amounts provided for proteins, carbohydrates and fats are all expressed in grams. Sometimes labels differentiate between complex carbohydrates and simple carbohydrates. **Complex carbohydrates**, such as **starch**, are macronutrients found in some foodstuffs such as bread, rice or pulses. **Simple carbohydrates** are also known as **sugars** and they can be found in honey and fruit, for example.

In the case of fats, labels may show how much saturated fat there is. These **saturated fats** are a type of fat mostly found in animal-derived food and they should be limited. They can also be found in certain vegetable-based food, such as palm and coconut oils.

DIETARY FIBRE

Dietary fibre is made up of complex carbohydrates. The body does not digest dietary fibre and so it has a low energy value, but it plays a role in intestinal transit.

SODIUM (SALT)

Sodium is a mineral element, as are potassium and calcium. It is vital, but eating too much sodium is a risk factor for high blood pressure. Sodium is an important component of salt.

VITAMINS AND MINERALS

Labels show vitamins and minerals in milligrams or micrograms. They are essential for the body to work properly but are only required in small quantities.

CLAIMS

Nutritional labelling is mandatory if advertising a product makes any particular claims about it. Claims are indications that the product possesses special nutritional properties. They are **strictly regulated** and the European Union demands to have scientific proof before allowing them to be circulated. An example of a claim would be that a product is a source of calcium, which makes a contribution to bone strength or growth. Scientific proof is required if a food label is to make such claims.

Nutritional information

Which of the following is not part of the nutritional information on food labels?

- The list of ingredients
- The nutrient composition
- The energy value

Which nutrients provide the most energy?

- Proteins
- Carbohydrates
- Lipids

Starch is a...

- complex carbohydrate
- simple carbohydrate
- complicated carbohydrate

Complex carbohydrates do not have the same energy value as simple carbohydrates.

- False
- True

Saturated fatty acids are mainly found in food of...

- plant origin
- animal origin
- mineral origin

Dietary fibre consists of...

- complex carbohydrates
- simple carbohydrates
- complicated carbohydrates

Sodium is a main component of...

- sand
- salt
- sweet drinks

Food contains large quantities of vitamins and minerals.

- False
- True

Energy value is expressed in...

- kilograms and kilometres
- kilowatts and kilojoules
- kilocalories and kilojoules

Labels on food products never mention the nutritional intake as a proportion of the daily recommendations.

- False
- True

Answers

Which of the following is not part of the nutritional information on food labels?

- The list of ingredients**
Well done! This information is compulsory, but it is not included in the nutritional information.
- The nutrient composition**
Wrong! This information is included in the nutritional information.
- The energy value**
Wrong! This information is included in the nutritional information.

Which nutrients provide the most energy?

- Proteins**
Wrong! A gram of protein provides 4 kcal, but another nutrient provides more.
- Carbohydrates**
Wrong! A gram of carbohydrates provides 4 kcal, but another nutrient provides more.
- Lipids**
Well done! Lipids provide 9 kcal per gram. These nutrients provide the most energy.

Starch is a...

- complex carbohydrate**
Well done! You're right, starch is a complex carbohydrate.
- simple carbohydrate**
Wrong! That's not correct.
- complicated carbohydrate**
Wrong! Try again!

Complex carbohydrates do not have the same energy value as simple carbohydrates.

- False**
Well done! Complex and simple carbohydrates do in fact have the same energy value. They each provide 4 kcal per gram.
- True**
Wrong! That's not the correct answer.

Saturated fatty acids are mainly found in food of...

- plant origin**
Wrong! Although saturated fatty acids are found in food such as palm oil and coconut oil, they are more frequently found elsewhere.
- animal origin**
Well done! We find them mainly in food of animal origin. Saturated fatty acids should be consumed in moderation.
- mineral origin**
Wrong! Try again!

Dietary fibre consists of...

- complex carbohydrates**
Well done! Fibre is made up of sequences of carbohydrates.
- simple carbohydrates**
Wrong! Try again!
- complicated carbohydrates**
Wrong! You're nearly there.

Sodium is a main component of...

- sand**
Wrong! Try again!
- salt**
Well done! Salt comprises sodium and chloride.
- sweet drinks**
Wrong! Sugar is a main ingredient of sweet drinks, but salt is not.

Food contains large quantities of vitamins and minerals.

- False**
Well done! Vitamins and minerals are essential for your body to function, but food only contains small quantities of them.
- True**
Wrong! Try again!

Energy value is expressed in...

- kilograms and kilometres**
Wrong! That's not exactly right.
- kilowatts and kilojoules**
Wrong! Try again!
- kilocalories and kilojoules**
Well done! That's right!

Labels on food products never mention the nutritional intake as a proportion of the daily recommendations.

- False**
Well done! This information is occasionally specified, though not always.
- True**
Wrong! That's not the right answer.

Food colourings

[11-13 years old and 14-16 years old]

Authorised food colourings include:

- **natural** food colourings, available as concentrates from plants or from their juices and that have not undergone any chemical extraction process;
- **artificial** food colourings with no natural equivalents;
- industrially-**synthesised** products, even where natural equivalents exist.

Objective:

Highlighting the natural colourings in some plants

Instructions:

Put some finely chopped red cabbage in a 250 ml beaker.

Add some water, stir and leave to stand for 10 minutes.

Filter and stir again.

Divide the red cabbage filtrate between three (Erlenmeyer) titration flasks:

- Add nothing to the first flask.
- Add lemon juice to the second flask.
- Add some egg white to the third flask.

Explanation:

How can obtain three different colours from a single plant?

You can get several different colours from the same colouring substance depending on its concentration, the environment in which it is used and the presence of other colouring agents.

Red cabbage contains colourings that change colour depending on the ambient pH:

- Red cabbage juice turns pink in an acidic environment (with lemon juice).
- Red cabbage juice turns green in an alkaline environment (with egg white).