



THE DIGESTIVE SYSTEM
Nutrients (types of food)
and energy value of foods

GUIDE	LES 2
STUDENT BOOK	Ch. 6, pp. 160–166

1. Foods we eat are made up of different nutrients.
 a) Associate each category of nutrient to its function in the organism.

Nutrients:	A. Proteins	C. Fats	E. Minerals
	B. Carbohydrates	D. Vitamins	F. Water

Function in the organism		Example of foods
1. Provide most of the energy	<u> <i>B</i> </u>	<u> <i>Bread</i> </u>
2. Build tissue	<u> <i>A</i> </u>	<u> <i>Cheese or meat</i> </u>
3. Fight infection	<u> <i>D</i> </u>	<u> <i>Vegetables or fruits</i> </u>
4. Transport food and waste	<u> <i>F</i> </u>	<u> <i>Soup or water</i> </u>
5. Transport oxygen in the blood	<u> <i>E</i> </u>	<u> <i>Legumes</i> </u>
6. Make up cell membranes	<u> <i>C</i> </u>	<u> <i>Butter or oil</i> </u>

- b) In the right column of exercise a), add an example of foods from the category that are a significant source of nutrients.

2. True or false?

- | | |
|---|-----------------------------|
| a) The average energy value is the same for all nutrients. | <u> <i>False</i> </u> |
| b) The human body consumes energy even at rest. | <u> <i>True</i> </u> |
| c) Adults and adolescents have the same energy needs. | <u> <i>False</i> </u> |
| d) A diet regimen of 9 000 kJ is suitable for an adolescent. | <u> <i>True</i> </u> |
| e) Proteins are also known as <i>protidaemia</i> . | <u> <i>True</i> </u> |
| f) One g of carbohydrates supplies more energy than 1 g of proteins. | <u> <i>False</i> </u> |
| g) Vitamins and minerals provide no energy to the body. | <u> <i>True</i> </u> |
| h) Labels on nutritional value give information about the nutrients in foods. | <u> <i>False</i> </u> |



Nutrients (types of food) and energy value of foods (continued)

3. The following foods are part of a restaurant’s daily special. Refer to the table “The nutritional value of certain foods” in Appendix 2 of the textbook to answer the questions below.

- A. Grilled trout filet 593 kJ
- B. Serving of couscous 342 kJ
- C. Serving of green beans 97 kJ
- D. Glass of 2% milk 536 kJ
- E. Medium apple 341 kJ
- F. Two chocolate-chip cookies 402 kJ or 2 × 201 kJ
- G. Black tea 10 kJ

a) Indicate the energy value of each food item and place the foods in ascending order according to energy value.

G < C < E < B < F < D < A

b) Indicate the energy value of each food item and place the foods in ascending order according to energy value.

Minerals/Vitamins/ Nutrients	Menu item containing highest quantity	Quantity
Minerals		
Iron	<u>A (trout)</u>	<u>1.4</u> mg
Calcium	<u>D (2% milk)</u>	<u>314</u> mg
Vitamins		
Vitamin B9	<u>C (green beans)</u>	<u>22</u> µg
Vitamin C	<u>E (apple)</u>	<u>8</u> mg
Nutrients		
Carbohydrates	<u>B (couscous)</u>	<u>17</u> g
Proteins	<u>A (trout)</u>	<u>20</u> g

THE DIGESTIVE SYSTEM (continued)

Digestive tube, digestive glands, transformation of food

GUIDE	LES 8
STUDENT BOOK	Ch. 6, pp. 167–172

1. The following terms are the names of different digestive tract structures and digestive glands.

Stomach	Pharynx	Mouth	Pancreas
Large intestine	Esophagus	Rectum	Liver
Salivary glands	Intestinal glands	Gastric glands	Small intestine

Use these terms to:

- Place the structures of the digestive tract in the order they receive food during digestion.
- Name the digestive gland next to the part of the digestive system for which it provides secretions.

Part of digestive tract	Digestive gland
<i>Mouth</i>	<i>Salivary glands</i>
↓	—
<i>Pharynx</i>	—
↓	—
<i>Esophagus</i>	—
↓	—
<i>Stomach</i>	<i>Gastric glands</i>
↓	—
<i>Small intestine</i>	<i>Liver, pancreas, intestinal glands</i>
↓	—
<i>Large intestine</i>	—
↓	—
<i>Rectum</i>	—

2. During digestion, food can undergo two types of transformations. Identify which of the following types of transformation occurs for each activity below.

A. Mechanical transformation	B. Chemical transformation
------------------------------	----------------------------

Activity	Type of transformation
a) Action of saliva in the mouth	<i>B</i>
b) Churning of food in the stomach	<i>A</i>
c) Breakdown of proteins by intestinal juices	<i>B</i>
d) Chewing of foods in the mouth	<i>A</i>
e) Breakdown of proteins by pancreatic juices	<i>B</i>