



## NUTRITION

### 1. Use all of these words to produce a meaningful text.

malnutrition                      deficiency                      protein                      vital organs  
adequate diet                      undernourished                      mental retardation                      calories

### 2. Read the text and underline the expressions that indicate the cause-effect relationship.

Many diseases may result if a person is not fed an adequate diet. Protein deficiency diseases such as *kwashiorkor* are particularly damaging: they lead to mental retardation particularly when they occur in young children. Vitamin and mineral deficiencies can lead to weak bones, loss of teeth, blindness, or failure of any of a number of vital organs. Children who do not receive either sufficient protein or calories develop characteristic bloated bellies, thin arms and legs, wide eyes and shrivelled skin. Perhaps even more sinister is the fact that severe malnutrition in young people leads to early and irreversible brain damage. This results in a negative feedback cycle, for if undernourished and irreversible brain damage. This results in a negative feedback cycle, for if undernourished and retarded children do survive to become adults, they have decreased learning ability. Therefore, when they grow up, they will be likely to have a

hard time finding work, and if work is found it is often of the kind that pays the least money. When these impoverished adults in turn have children, their young are likely to be undernourished as well, thereby perpetuating the tragic cycle.

Other diseases caused by nutritional deficiency are common throughout the world. By one estimate, a quarter of a million children become permanently blind every year because their diets are deficient in Vitamin A. Another 200,000 people per year become deaf owing to a lack of iodine. An additional uncounted number of individuals die of infectious disease because their bodies and immune systems have been weakened by hunger and lack of proper nutrients. All told, some 15 million people starve to death or die indirectly from malnutrition every year.

*Source: Turk, J., Turk, A. (1984) Environmental Science, CBS College Publishing, New York*

**3. Now complete the white boxes of the table.**

Causes	Results
protein deficiency	mental retardation
vitamin and mineral deficiency	
	bloated bellies, thin arms and legs, wide eyes and shrivelled skin
severe malnutrition	
lack of vitamin A	
	deafness
lack of zinc	
lack of iron	
lack of vitamin A	
folic acid deficiency	

**4. Listen to the recording and try to note down some key words.**

[http://www.bbc.co.uk/worldservice/learningenglish/newsenglish/witn/040324\\_witn.shtml](http://www.bbc.co.uk/worldservice/learningenglish/newsenglish/witn/040324_witn.shtml)

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Tento projekt je spolufinancován Evropským sociálním fondem a státním rozpočtem České republiky.



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

**5. Match the halves of the sentences. The left-hand column is in correct order.**

1. Ten years ago <b>a lack of</b> vitamins and minerals was only seen as a relatively minor problem,	A. which the report estimates could prevent a million deaths each year alone.
2. Data from eighty countries shows the huge impact that these <b>micronutrients</b> have - at least a thousand women die during childbirth every week because of severe anaemia caused by a lack of iron,	B. while iodine deficiency during pregnancy is leading to twenty million babies a year being born mentally impaired.
3. But the authors of the report say that these problems can be <b>overcome</b> very easily. <b>Food fortification</b> that's already <b>widespread</b> in the developed world is cheap -	C. but this new report claims that vitamin and mineral <b>deficiency</b> is having a severe effect on two billion people worldwide.
4. Giving a child enough vitamin A for a whole year costs only 5 cents, this will not only prevent blindness but <b>boost</b> the immune system,	D. - it costs just a few cents per tonne to add iron to flour - and <b>supplements</b> are also very <b>inexpensive</b> .

**6. Listen to the recording again and check your order.**

([http://www.bbc.co.uk/worldservice/learningenglish/newsenglish/witn/040324\\_witn.shtml](http://www.bbc.co.uk/worldservice/learningenglish/newsenglish/witn/040324_witn.shtml))

**7. Focus on the expressions from the previous listening exercise and sum up what you have learnt.**

to be a minor/major problem  
vitamins, minerals deficiency  
to have a severe effect  
lack of micronutrients

to overcome problems  
food fortification  
supplements

## 8. Study the information on micronutrients and complete the table from Task 3.

### Vitamin A deficiency

Vitamin A is vital to healthy growth, especially for infants and young children. It regulates a number of biological processes, including growth, vision, reproduction and cellular differentiation. A person cannot survive without vitamin A. Vitamin A must be provided from the diet in adequate amounts to meet the body's physiological needs.

Recent trends indicate that there is a general decline in the prevalence of severe vitamin A deficiency; however, numerous studies have shown that mild vitamin A deficiency is pervasive

in most of the developing world. It is the leading cause of preventable childhood blindness in developing countries. It is also an increasingly recognized problem among

rural women in many countries and suspected to be a major underlying cause of maternal mortality. Newborns and women with vitamin A deficiency are at greater risk of illness. Immediate postnatal vitamin A supplementation in mothers leads to increased vitamin A passed on to the infant during breastfeeding (Basu et al., 2003).

### VITAMIN A DEFICIENCY

Life cycle stage Hunger/health risk  
Pregnancy Implicated in maternal mortality.  
Infants and increased risk of dying from diarrhoea, measles and young children other diseases.

Increased risk of blindness, chronic ear infection and respiratory diseases.

<http://www.earthscan.co.uk/Portals/0/Files/Sample%20Chapters/9781844075461.pdf>

Accessed Feb 28, 2010

### Iron deficiency

Iron helps to produce energy by carrying oxygen to red blood cells. Iron deficiency is one of the most common nutritional disorders worldwide, stealing vitality from the young and the old and impairing the cognitive development of the

undernourished. The highest risk groups for iron deficiency are pre-term and low-birthweight babies, infants and children during periods of rapid growth, women of reproductive

age, pre-menopausal women and pregnant women. It is important for women to enter into pregnancy with sufficient iron levels and maintain these throughout pregnancy; chronic iron

deficiency can also lead to anaemia among lactating women (Dugdale, 2001). Newborns and pre-school children face cognitive and cerebral damage with life-long negative effects caused by anaemia. Anaemia is also associated with hookworm infestation.

<http://www.earthscan.co.uk/Portals/0/Files/Sample%20Chapters/9781844075461.pdf>

Accessed Feb 28, 2010

**Folic acid deficiency**

Folic acid is critical for pregnant mothers and newborn babies: it works with vitamin B12 to form

healthy red blood cells. Folic acid helps to reduce the risk of neurological defects in foetuses and is essential for the development of an infant's neurological system (Green, 2002). If a mother

remains underweight during pregnancy with a serious deficiency of folate concentration, the

foetus faces an increased risk of pre-term delivery, low birthweight and growth retardation (Johnson et al., 2005).

<http://www.earthscan.co.uk/Portals/0/Files/Sample%20Chapters/9781844075461.pdf>

Accessed Feb 28, 2010

**Zinc deficiency**

Most children in developing countries consume very small amounts of animal proteins – the dietary source of zinc with the highest bioavailability – which explains why zinc deficiency may be one of the most prevalent nutritional disorders in children in developing countries.

Zinc deficiency is largely related to inadequate intake or absorption of zinc from the diet, although excessive loss of zinc during diarrhoeal episodes is common. It is

associated with difficulties during pregnancy and childbirth, compromised immune responses and increased risk of infectious diseases – zinc is a major factor in diarrhoeal disease, pneumonia and malaria, low birthweight and stunted child growth. Therefore, adequate intake of zinc becomes crucial for all children, as they generally suffer from a higher risk of infectious disease (WHO, 2002).

<http://www.earthscan.co.uk/Portals/0/Files/Sample%20Chapters/9781844075461.pdf>

Accessed Feb 28, 2010

## **Iodine deficiency**

Iodine deficiency is the primary cause of preventable mental retardation and brain damage, having the most devastating impact on the brain of the developing foetus and young children in the first few years of life. Iodine deficiency also increases the chance of infant mortality, miscarriage and stillbirth.

Most children born to iodine-deficient mothers appear normal but have also suffered brain damage and loss in IQ points, affecting their ability to develop to their full potential. These seemingly normal children will later have difficulty learning in school and staying in school.

Some children born to iodine-deficient mothers can suffer from extreme physical and mental retardation manifesting in goiter (an enlarged thyroid gland), speech defects, deafness and cretinism. These children, however, represent only the tip of the iceberg; in addition, in many cases it is too late to reverse these effects.

[http://www.unicef.org/nutrition/index\\_iodine.html](http://www.unicef.org/nutrition/index_iodine.html)

Accessed Feb 28, 2010

9. There are seven different nutrients. Complete the table. Then listen to the recording and check your answers. <http://www.bbc.co.uk/schools/gcsebitesize/audio/science/> Diet Part I (timing →2:40)

<b>Nutrient</b>	<b>Use in the body</b>	<b>Good sources</b>
<b>Carbohydrate</b>		Cereals, bread, pasta, rice and potatoes
<b>Protein</b>		Fish, meat, eggs, beans, pulses and dairy products
<b>Fat</b>		Butter, oil and nuts
<b>Minerals</b>	Needed in small amounts to maintain health	Salt, milk (for calcium) and liver (for iron)
<b>Vitamins</b>	Needed in small amounts to maintain health	Dairy foods, fruit, vegetables
<b>Fibre</b>		Vegetables, bran
<b>Water</b>	Needed for cells and body fluids	Fruit juice, milk, water

Adapted from:  
[http://www.bbc.co.uk/schools/ks3bitesize/science/organisms\\_behaviour\\_health/diet\\_drugs/revise2.shtml](http://www.bbc.co.uk/schools/ks3bitesize/science/organisms_behaviour_health/diet_drugs/revise2.shtml)  
 Accessed Feb.28, 2010

## 10. Test your knowledge.

What is the main reason why we need protein in our diet?

- for energy
- to provide roughage
- for growth and repair

What are the nutrients needed for energy?

- carbohydrate and fat
- carbohydrate and fibre
- fat and minerals

Which nutrient cannot be digested?

- fibre
- fat
- protein

Which nutrients do not need to be digested?

- protein, minerals and vitamins
- minerals, vitamins and water
- fat, minerals and vitamins

What is produced when proteins are digested?

- sugars
- fatty acids and glycerol
- amino acids

Adapted from:  
<http://www.bbc.co.uk/apps/ipl/schools/ks3bitesize/science/quizengine?quiz=diet&templateStyle=science>  
 Accessed Feb.28, 2010

## HOMEWORK

Cause - effect Malnutrition (Section Nutrition)

[https://is.muni.cz/auth/el/1431/jaro2010/JAB02/odp/Cause\\_effect\\_Malnutrition.gref](https://is.muni.cz/auth/el/1431/jaro2010/JAB02/odp/Cause_effect_Malnutrition.gref)

Cause-effect practice (Section Basic concepts)

[https://is.muni.cz/auth/el/1431/jaro2010/JAB02/odp/Cause\\_effect\\_practice.gref](https://is.muni.cz/auth/el/1431/jaro2010/JAB02/odp/Cause_effect_practice.gref)

Drill – Describing pictures

[https://is.muni.cz/auth/dril/manage.pl?filter\\_oblast\\_id=1;akce=show\\_lekce;oblast\\_id=1;ucebnice\\_id=5582](https://is.muni.cz/auth/dril/manage.pl?filter_oblast_id=1;akce=show_lekce;oblast_id=1;ucebnice_id=5582)

Drill – Making questions

[https://is.muni.cz/auth/dril/manage.pl?filter\\_oblast\\_id=1;akce=show\\_lekce;oblast\\_id=1;ucebnice\\_id=5582](https://is.muni.cz/auth/dril/manage.pl?filter_oblast_id=1;akce=show_lekce;oblast_id=1;ucebnice_id=5582)



