

Unit 7 Diet and Growth

7.1 Nutrients

In this topic you will:

- learn about the six types of nutrient that everyone needs to eat
- find out why we need these nutrients
- learn about some good sources of these nutrients.

Getting started

Everyone needs energy to stay alive and to do things. They get their energy from the food that they eat.

Think about the answers to these two questions on your own.

Then turn to your partner and discuss your answers.

Be ready to share your ideas with the rest of the class.

- Which kinds of food are best for giving you energy?
- What happens to your food after you have swallowed it, before it gives you energy?

Key words

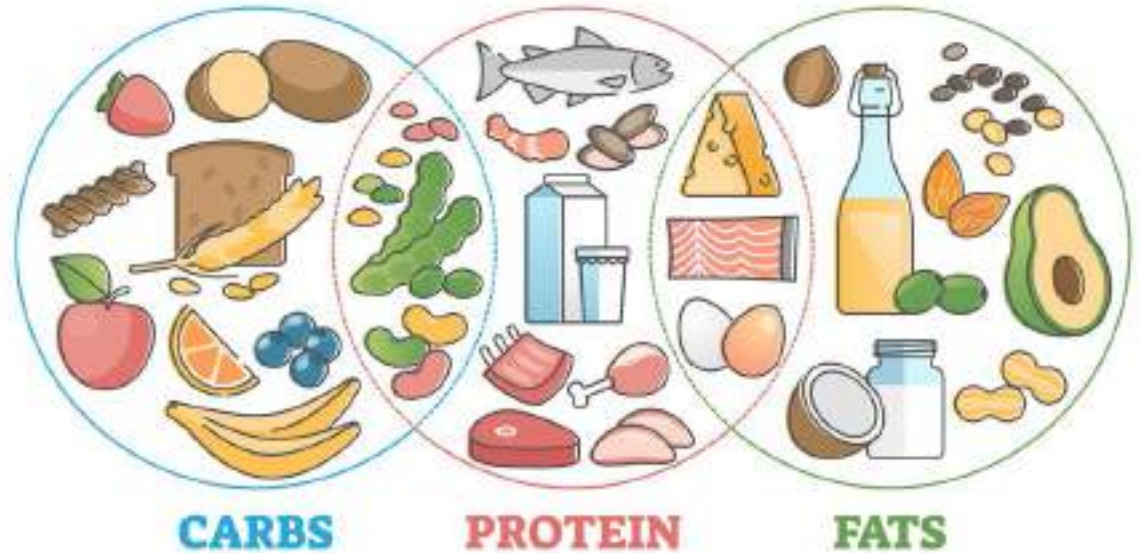
anaemia
carbohydrate
fat
minerals
nutrients
oil
protein
starch
vitamin A
vitamin C
vitamin D
vitamins

Nutrients

Substances found in food

Need to stay healthy

- Protein
- Carbohydrates
- Fats



Nutrients

Carbohydrates

Glucose - acts as fuel

Used for respiration, to release energy

Found in rice (as starch), sugar (glucose),
potato, pasta, bread



Nutrients

Proteins

Used for making new cells in body

Help the body to grow or to repair itself if damaged

Needed to make haemoglobin, antibodies

Found in eggs, meat, chicken, fish



Nutrients

Fats and oils

Give energy

Needed to make cell membranes

Found in butter, cream, cheese



Energy stores

Energy needed at all times to do work

Carbohydrates - instant energy source; small amount stored in liver and muscles, short-term energy stores

Fats - long term energy stores, provide energy when needed

- Stored in cells underneath the skin; act as heat insulation; adaptation in animals living in cold places

If body runs out of carbs and fats, proteins provide energy

Vitamins

Essential nutrients but needed in small amounts





Vitamin A

Beneficial in treating eye disorders,
skin infections

Vitamin B9

Reduces risk of neural tube defects
during pregnancy

Vitamin B12

Provides relief from symptoms of
anemia, kidney and liver disorders

Vitamin C

Helps treat scurvy, cancer and
common cold

Vitamin D

Aids in treating arthritis, tooth decay,
diabetes and rickets

Vitamin E

Improves blood circulation and slows
down aging process

Vitamin K

Reduces risk of menstrual pain and
internal bleeding



NUTRIENTS IN FOOD

MINERALS



CALCIUM

It is needed for the growth of healthy teeth and bones.



IRON

It is needed for the formation of red blood cells.



POTASSIUM,
SODIUM,
MAGNESIUM AND
ZINC.

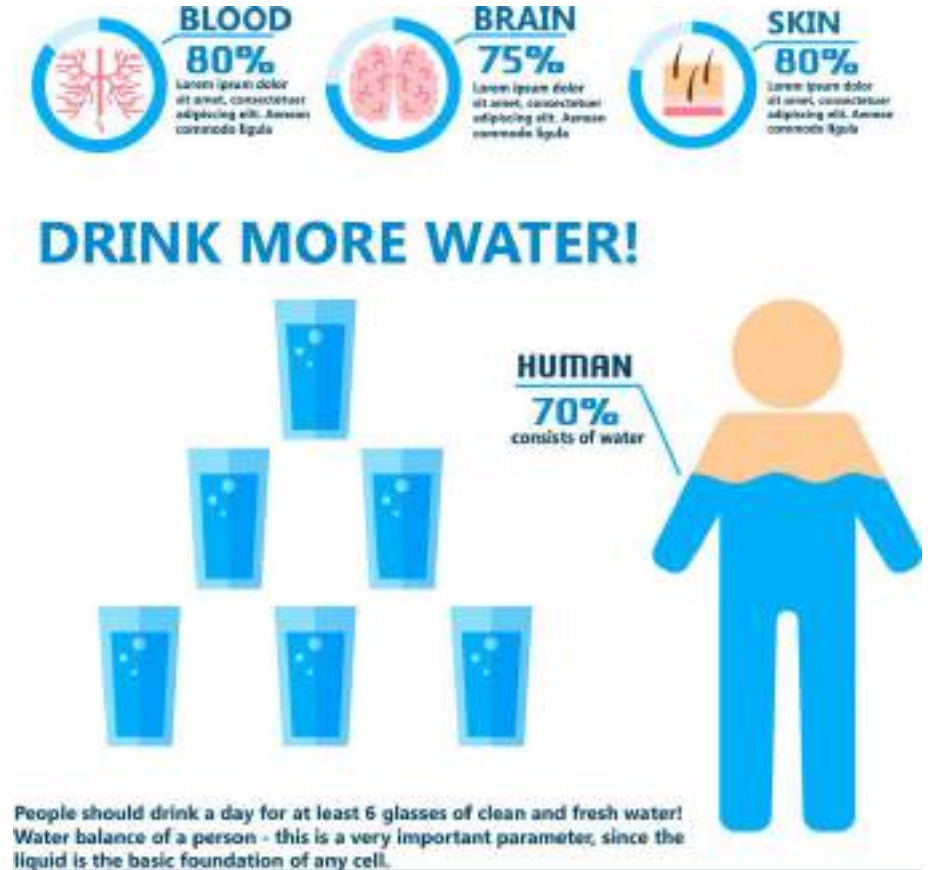
Water

Almost 60% of body weight is water

Water in cells allow all the different chemicals inside them to dissolve, so they can react together

These reactions keep us alive

Water in blood allows it to flow easily, transporting substances all around the body



Unit 7 Diet and Growth

7.2 A balanced diet

In this topic you will:

- find out what is meant by a balanced diet
- think about the nutrients you should try to eat each day
- learn why you should try not to eat too much of some nutrients.

Getting started

Try to answer these questions on your own.

- Can you name the six nutrients that you need to eat?
- Which three nutrients can give you energy?
- Which two groups of nutrients are needed in only small amounts?

Key words

balanced diet
constipation
fibre

What is a Diet?



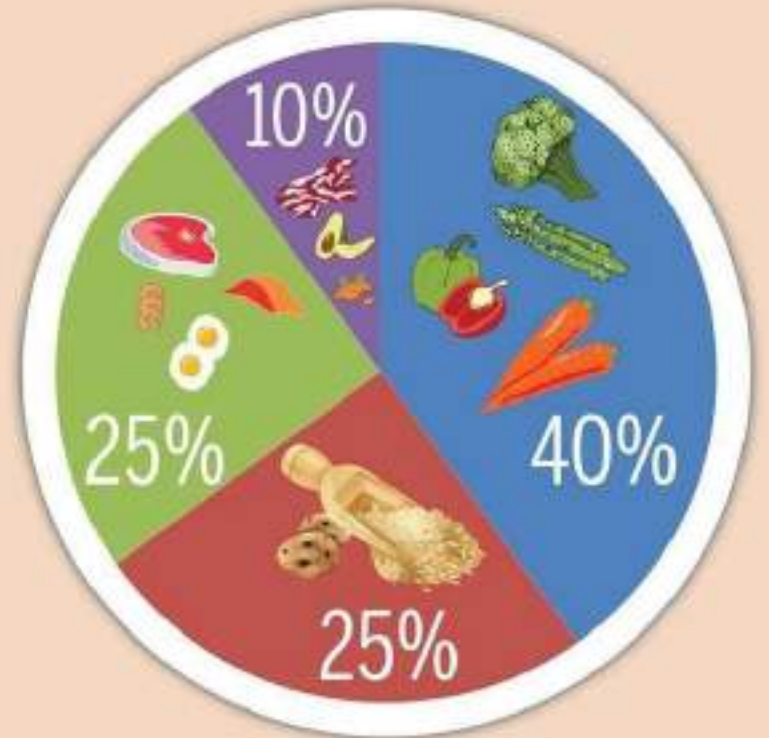
Diet

Food that you eat each day

Provides us with different kinds of nutrients

Gives you right amount of energy

Balanced diet



● Fruits and vegetables

● Protein

● Fibre-rich carbohydrates

● Fats

How much energy needed

Energy coming from food should be equal to energy used up

Most energy come from _____ and _____

Energy needs are different

Different people need different amounts of energy.

The amount of energy they need depends on their age, job, how active they are and their health.

baby girl



2,160 kJ/day

9 year old boy



8,240 kJ/day

36 year old man



10,600 kJ/day

65 year old woman



7,960 kJ/day

HOW YOU USE CALORIES

10% other factors



- Thermic effect of food
- Energy required to digest food
- NEAT (non exercise activity thermogenesis)
- Moving around your house
- Daily tasks
- Doing homework or chores

20% other factors



- Sedentary folks = 10-12% of calories used
- Active people = 30% or more



70% basal metabolic rate

- Minimum level of energy we need to use to maintain vital functions
- Varies by age, gender, weight, height, genes, etc. ...

Different people need different diets

Young people in growing stage

- need more protein to make new cells and enough carbohydrate and little bit of fat to get energy

People with prolonged sitting

- Not much energy needed

Pregnant women

- Plenty of protein to build growing baby's new cells
- Iron to make baby's haemoglobin
- Calcium to build baby's bones

Recommended Daily Nutritional Requirements for Different Age Groups

Category	Age (years)	Protein (g)	Fat (g)	Calories (kcal)	Calcium (mg)	Iron (mg)
Children	2-3	16.7	27	1060	600	9
Children	4-6	20.1	25	1350	600	13
Children	7-9	29.5	30	1690	600	16
Boys	10-12	39.9	35	2190	800	21
Boys	13-15	54.3	45	2750	800	32
Boys	16-17	61.5	50	3020	800	28
Adult (males)	Above 18	25	60	2320	600	17

Fibre

Not a nutrient

Cannot digest it, doesn't go in your blood or cells

Travels all the way through digestive system and leaves the body as faeces

Helps prevent constipation

Made of cellulose found in cell walls of plants

Contains minerals and vitamins, too

Sources - cereal grains, seeds, fruits, vegetables

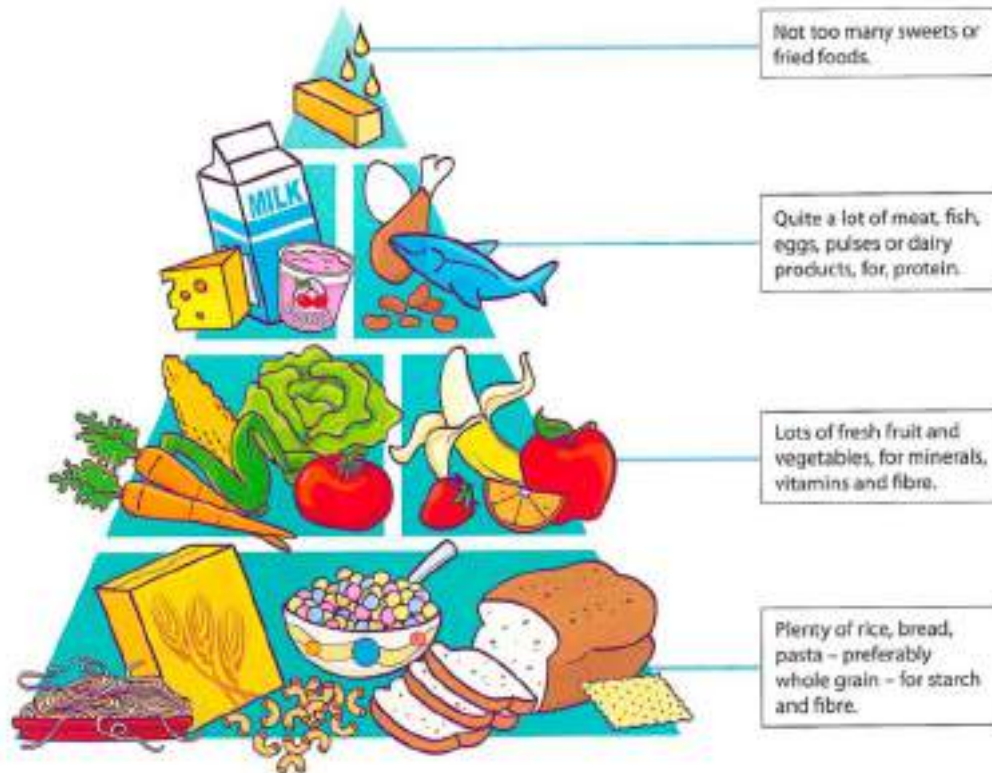


Question

- 6** Copy and complete each of these sentences.
Choose the correct words.
- a** I need protein for growth / energy.
 - b** There is a lot of protein in sugar / fish.
 - c** Starch and sugar / fat are carbohydrates.
 - d** I get energy from carbohydrate and calcium / fat.

Food groups

Show the proportion of different kinds of foods to be taken in

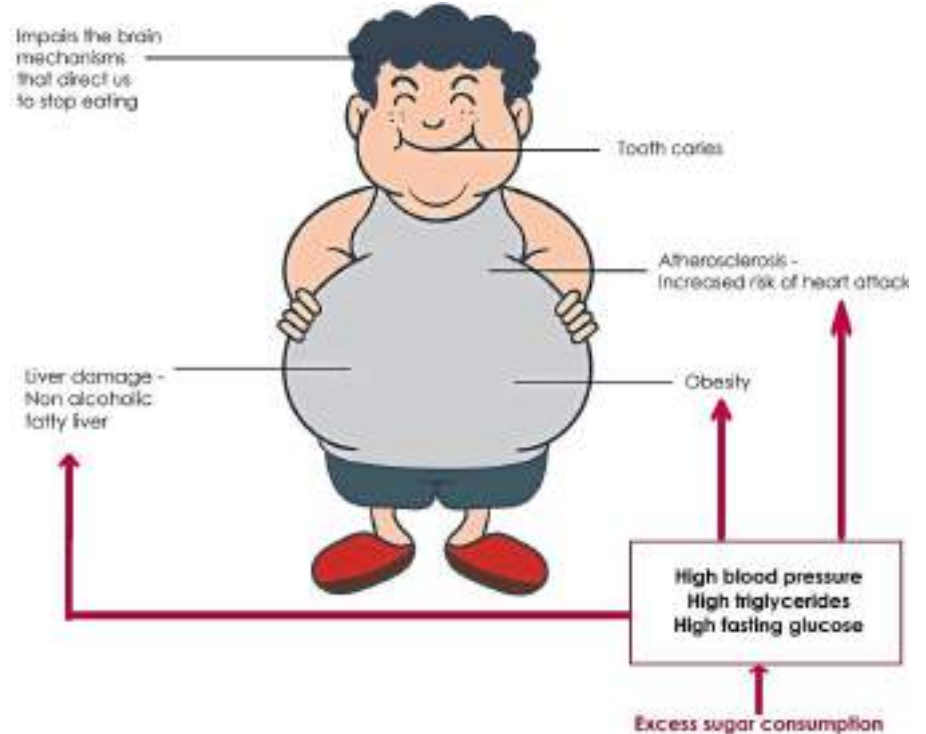


Excess of some nutrients can cause health problems

Too much sugar - teeth decay, diabetes

Too much fat/oil or carbs - weight gain, strain on joints, heart problems

Too much fat from animals - heart diseases



Questions

- 7 Look at the picture of the food triangle.
- a Explain why sweets and fried foods are at the top of the triangle.
 - b Explain why it is better to eat whole-grain bread or brown rice rather than white bread or white rice.
 - c Suggest how you can make sure you get enough protein in your diet, if you don't like eating meat or fish.
- 8 Your little brother's favourite meal is a lamb burger and fries, with a sweet milky drink.
- a What nutrients does he get from this meal?
 - b What else should he include in his diet?
 - c Explain to him why he should not eat his favourite meal too often.

