



CHAPTER 5: HEALTHY LIVING

WHAT DOES OUR FOOD CONTAIN?

- In science, the word diet means ‘what you eat’.
- Your food provides the raw materials for your body, which are needed for:
 - Energy
 - Growth and repair
 - Health
- Packaged food have nutrition labels, which allow you to see the names of the things in the food.

Nutrition information

Typical values	Per 100g	Per 1/4 pot	% based on GDA for women
Energy	256 kJ 61 kcal	320 kJ 76 kcal	3.8%
Protein	4.9g	6.1g	13.6%
Carbohydrate	6.9g	8.6g	3.7%
of which sugars	6.9g	8.6g	9.6%
of which starch	nil	nil	-
Fat	1.5g	1.9g	2.7%
of which saturates	0.9g	1.1g	5.5%
mono-unsaturates	0.4g	0.5g	-
polyunsaturates	nil	nil	-
Fibre	nil	nil	nil
Salt	0.2g	0.3g	5.0%
of which sodium	trace	0.1g	4.2%

Vitamins & minerals

% of RDA
Recommended daily amount

Calcium	168mg	210mg	26%
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What are the main food substances shown on a nutrition label?

- 1) Protein
- 2) Carbohydrates
- 3) Fat
- 4) Fibre
- 5) Salt



Ingredients: Whole Corn, Vegetable Oil (Corn, Canola, Soybean and/or Sunflower Oil), Maltodextrin (Made From Corn), Salt, Tomato Powder, Corn Starch, Lactose, Whey, Skim Milk, Corn Syrup Solids, Onion Powder, Sugar, Garlic Powder, Monosodium Glutamate, Cheddar Cheese (Milk, Cheese Cultures, Salt, Enzymes), Dextrose, Malic Acid, Buttermilk, Natural and Artificial Flavors, Sodium Acetate, Artificial Color (Including Red 40, Blue 1, Yellow 5), Sodium Caseinate, Spice, Citric Acid, Disodium Inosinate, and Disodium Guanylate.

CONTAINS MILK INGREDIENTS.

Nutrition Facts

Serving Size 1 oz (28g/About 12 chips)

Amount Per Serving

Calories 150 **Calories from Fat** 70

% Daily Value*

Total Fat 8g **12%**

Saturated Fat 1g **5%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 180mg **8%**

Total Carbohydrate 18g **6%**

Dietary Fiber 2g **6%**

Sugars less than 1g

Protein 2g

Vitamin A 0% • Vitamin C 0%

Calcium 2% • Iron 0%

Vitamin E 6% • Thiamin 4%

Riboflavin 2% • Vitamin B₆ 4%

Phosphorus 4% • Magnesium 4%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

- If you had to add up all the amounts found on a nutrition label, you would realise that they do not add up to 100g.

- The rest of the mass will be water.

NUTRIENTS



- **Carbohydrates, fats, proteins, minerals and vitamins are all nutrients.**
- **Nutrients are food substances that provide raw materials for our body.**
- **We also need water and fibre in our diet.**
- **Fibre is made out of plant cell walls. Our bodies cannot use it, but eating it helps to keep our intestines clean and healthy.**
 - **It also stops our intestines getting blocked up (constipation).**
 - **A good source of fibre is wholemeal bread.**

WATER

- **About 65% of a person is water!**
- **Water dissolves things so that they can be carried around the body.**
- **It also fills up cells so that they hold their shapes and cools you down when you sweat.**
- **You must drink lots of water every day in order to stay healthy.**

WATER

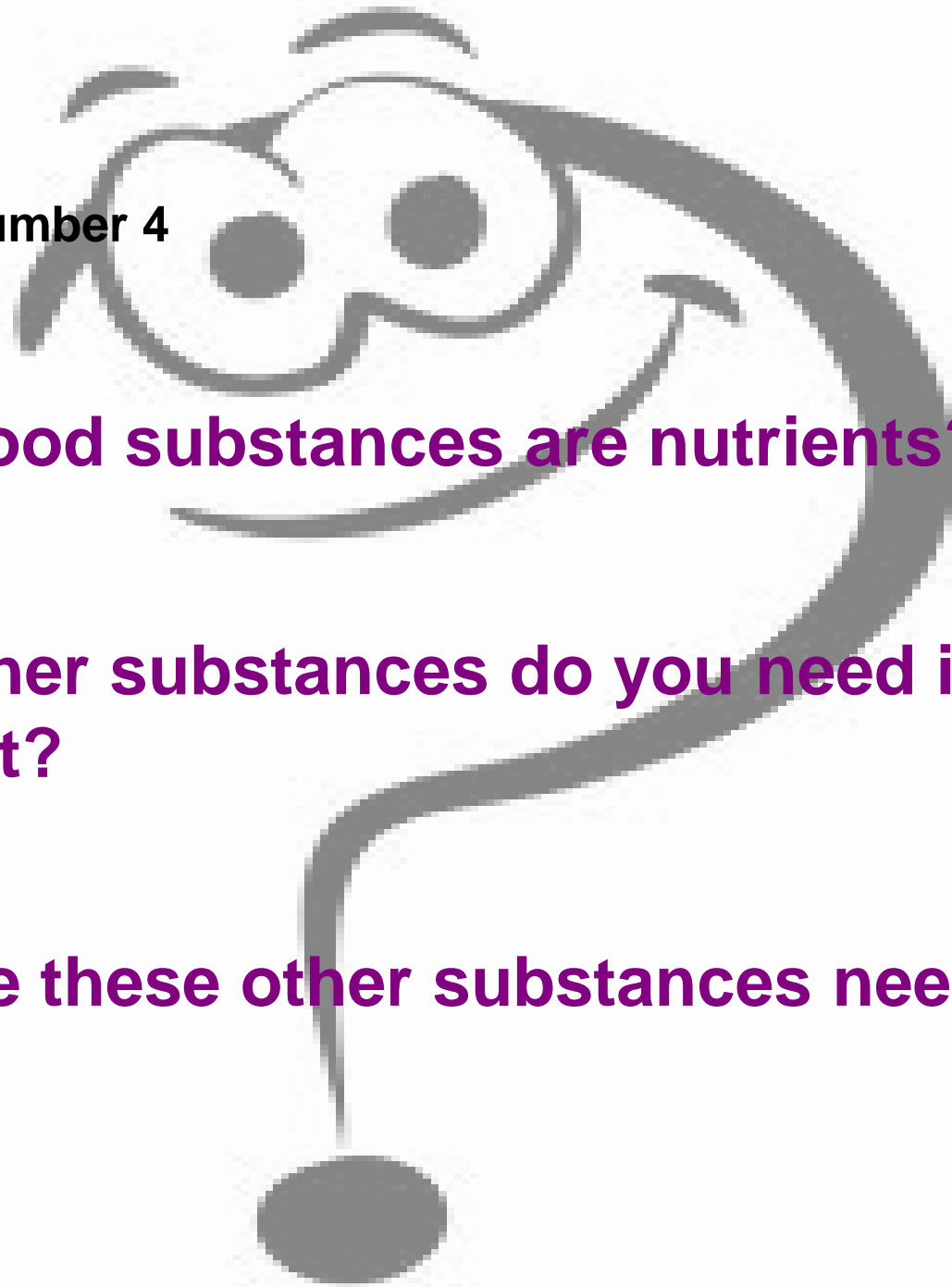


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a) Which food substances are nutrients?

a) What other substances do you need in your diet?

a) What are these other substances needed for?



FOOD TESTS



TEST FOR CARBOHYDRATES (1)

Benedicts Test:

- Add a small amount of Benedicts solution to the food sample.
- Heat in a water bath for a few minutes.
- If sugars are present, the solution changes from blue to bright red / orange.



TEST FOR CARBOHYDRATES (2)

Test for Starch

- Add 2 drops of iodine solution to a food sample.
- If starch is present, solution turns from brownish yellow to blue / black.



TEST FOR PROTEINS

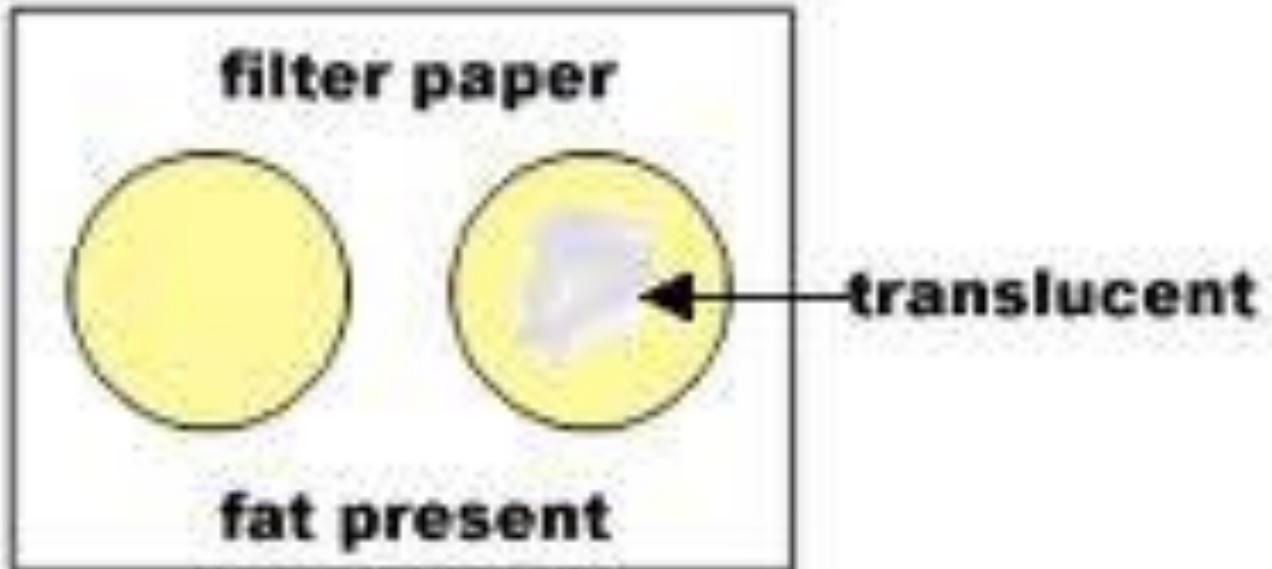
Biuret Test

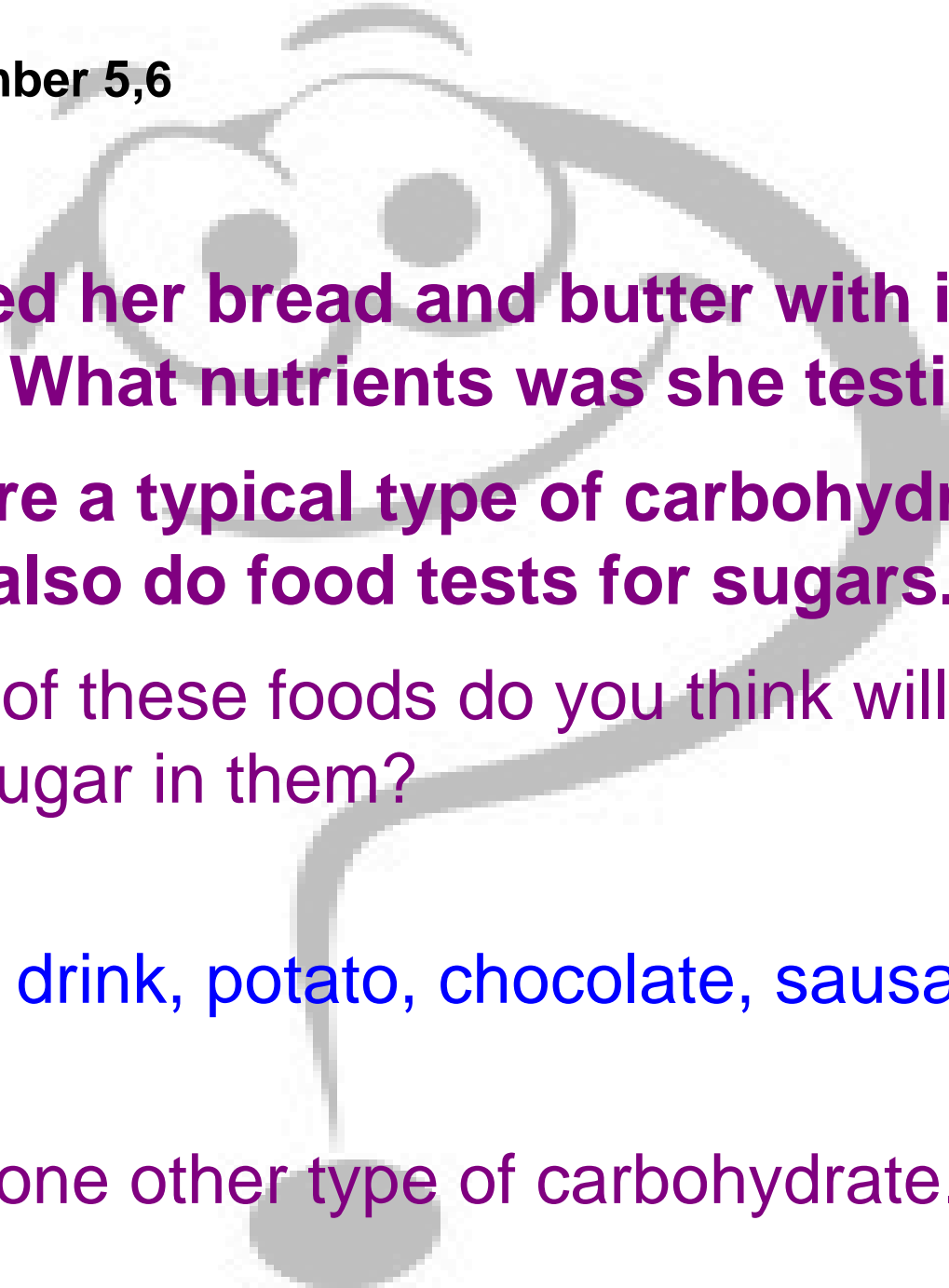
- Add about 5 drops of Biuret solution to a food sample.
- If protein is present, solution will turn from blue to purple.



TEST FOR FATS

- Rub a small dry food sample on some white paper.
- Hold the paper up to the light.
- If fat is present, the food sample leaves a greasy mark.



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- 5) Gita tested her bread and butter with iodine solution. What nutrients was she testing for?
- 6) Sugars are a typical type of carbohydrate. You can also do food tests for sugars.
- a) Which of these foods do you think will have a lot of sugar in them?

Fish, fizzy drink, potato, chocolate, sausages

- a) Name one other type of carbohydrate.

BALANCED DIET



- **Different food contain different food substances.**
- **No one food contains all the food substances that you need, and as a result you need to eat many different foods.**
- **If you eat the right amounts of a wide variety of foods, you have a balanced diet.**
- **A food pyramid can help you plan a balanced diet.**

HEALTHY EATING PLATE

Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.



The more veggies – and the greater the variety – the better. Potatoes and French fries don't count.

Eat plenty of fruits of all colors.



STAY ACTIVE!

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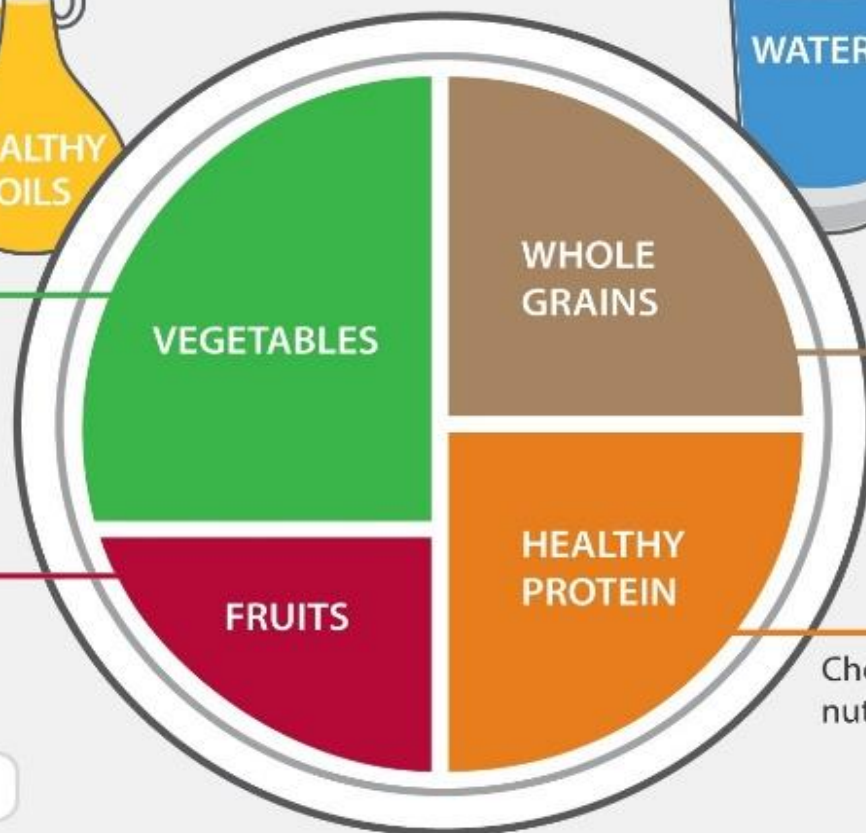
Harvard T.H. Chan School of Public Health
The Nutrition Source
www.hsph.harvard.edu/nutritionsource



Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

Eat a variety of whole grains (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

Choose fish, poultry, beans, and nuts; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.



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FOOD FOR ENERGY

- **Carbohydrates are good sources of energy.**
- **Starch and sugar are two kinds of carbohydrates.**
- **Starch is found in foods like bread, rice, pasta and potatoes.**
- **Sugars are found in many foods, including sweets, cakes and fruit.**
- **When carbohydrates are not used up, they can be turned into fat in your body.**



FOOD FOR ENERGY

- **Fats are also found in foods like milk, cheese, butter and eggs.**
- **Fat is stored to be used for energy in the future.**
- **Some fat is stored under the skin to stop heat from escaping from your body.**
- **Different people need different amounts of food.**
- **You need more food if you are very active or are a boy.**
- **The amount of chemical energy that food contains is measured in kilojoules (KJ).**

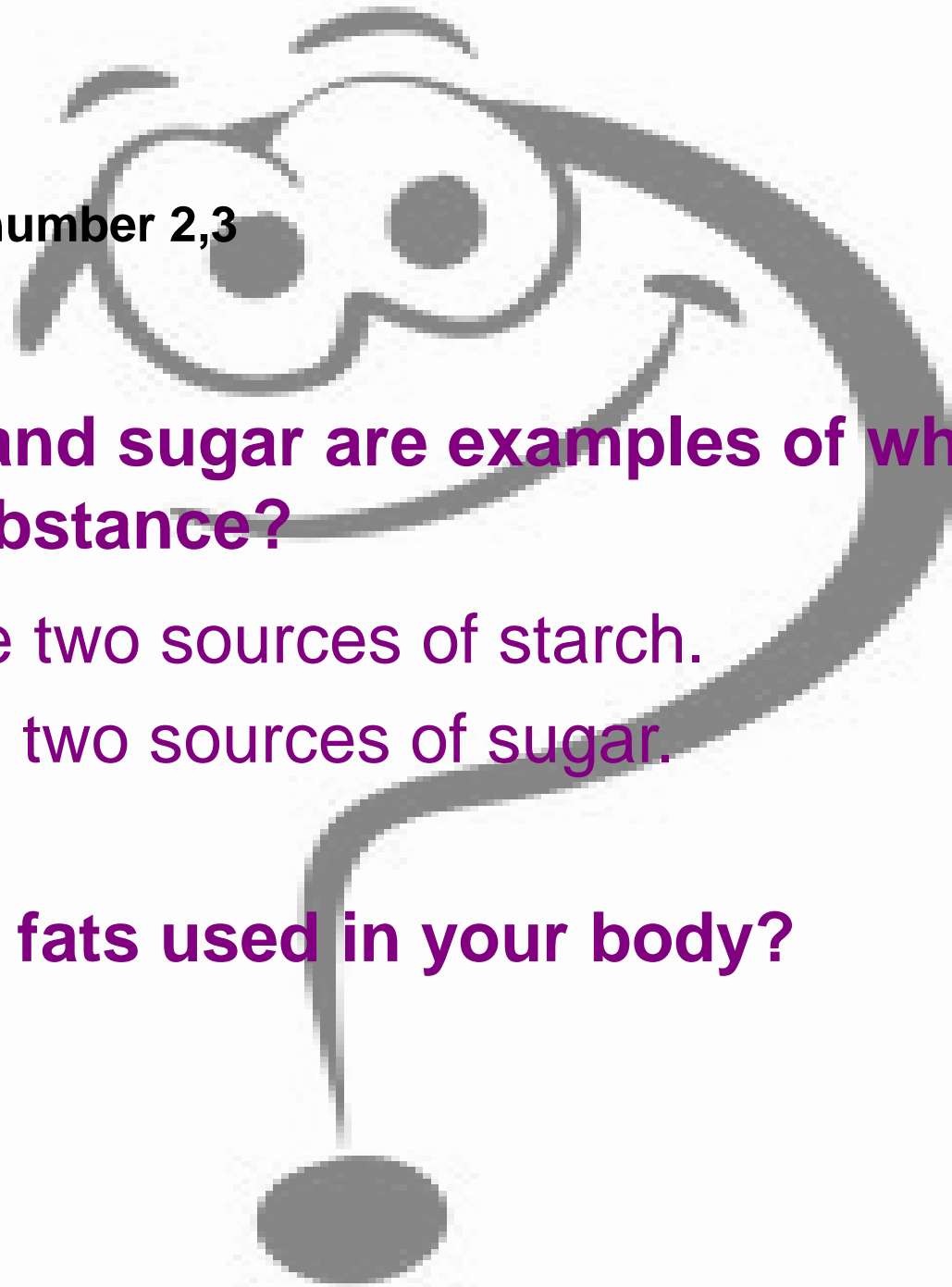
Book 8 pg. 10 number 2,3

2) Starch and sugar are examples of what food substance?

a) Name two sources of starch.

b) Name two sources of sugar.

3) How are fats used in your body?



Proteins

FOOD FOR GROWTH AND REPAIR

- **Proteins are needed to make new cells to help us to grow and repair our bodies.**
- **Proteins are found in foods like meat, fish, eggs, cheese, beans and milk.**



Proteins

FOOD FOR GROWTH AND REPAIR

- **When a woman is breast feeding, the baby will be getting most of the proteins from the milk.**
- **This is why a pregnant or breast feeding woman will require more proteins. If a woman keeps eating the same amount of food after she stops breast feeding, then she will likely gain weight as she is consuming an excess of nutrients.**



Vitamins &
Minerals

FOOD SUBSTANCES FOR HEALTH

- **Vitamins and mineral salts (often called minerals) are needed in small quantities.**
- **They are often found in fruits and vegetables.**
- **They help to keep our bodies healthy.**
- **For example, iron is needed to make red blood cells and vitamin C helps cells in tissues to stick together properly.**

VITAMINS AND MINERALS

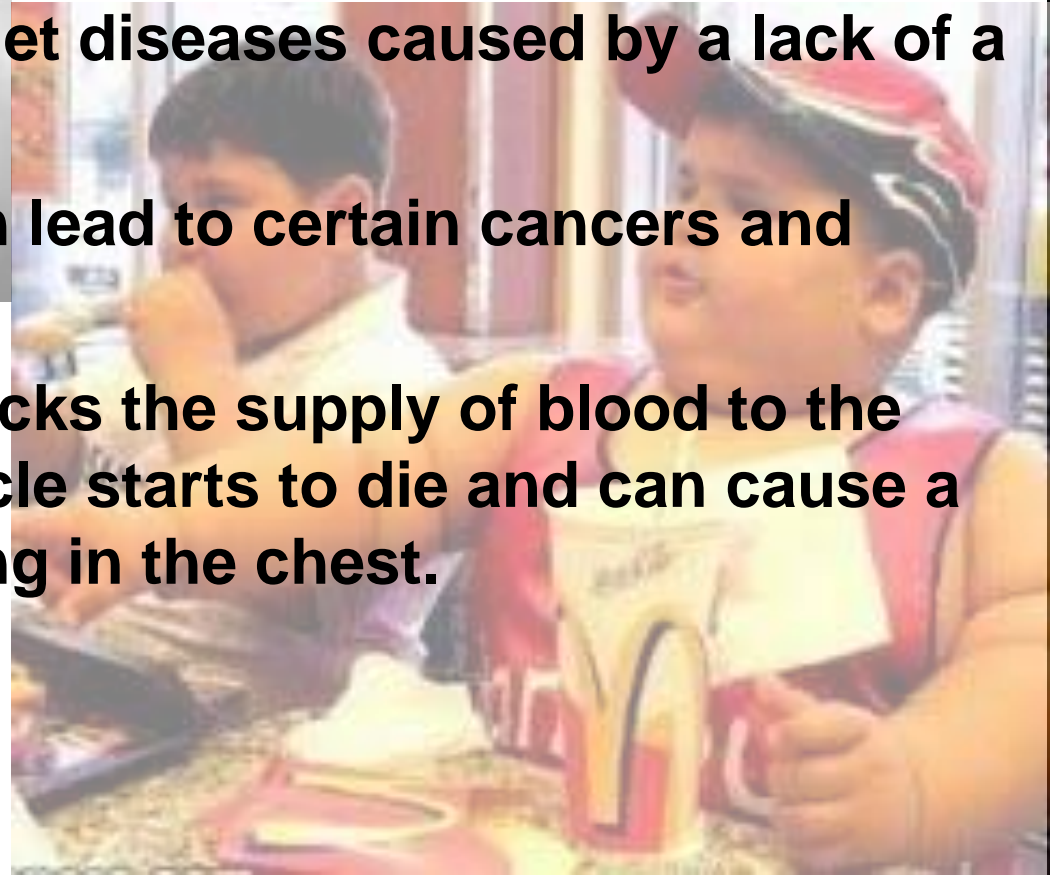
- **Vitamin C helps wounds to heal. A lack of vitamin C results in Scurvy.**
- **Calcium is needed for strong teeth and bones. A lack of calcium results in weakened teeth and bones.**
- **Iron, when combined with haemoglobin is needed to transport oxygen around the body. A lack of iron results in anaemia.**

Why do women need more iron than men?

- **Iodide is needed to form thyroid hormone. A lack of iodine results in decreased levels of thyroid hormone.**

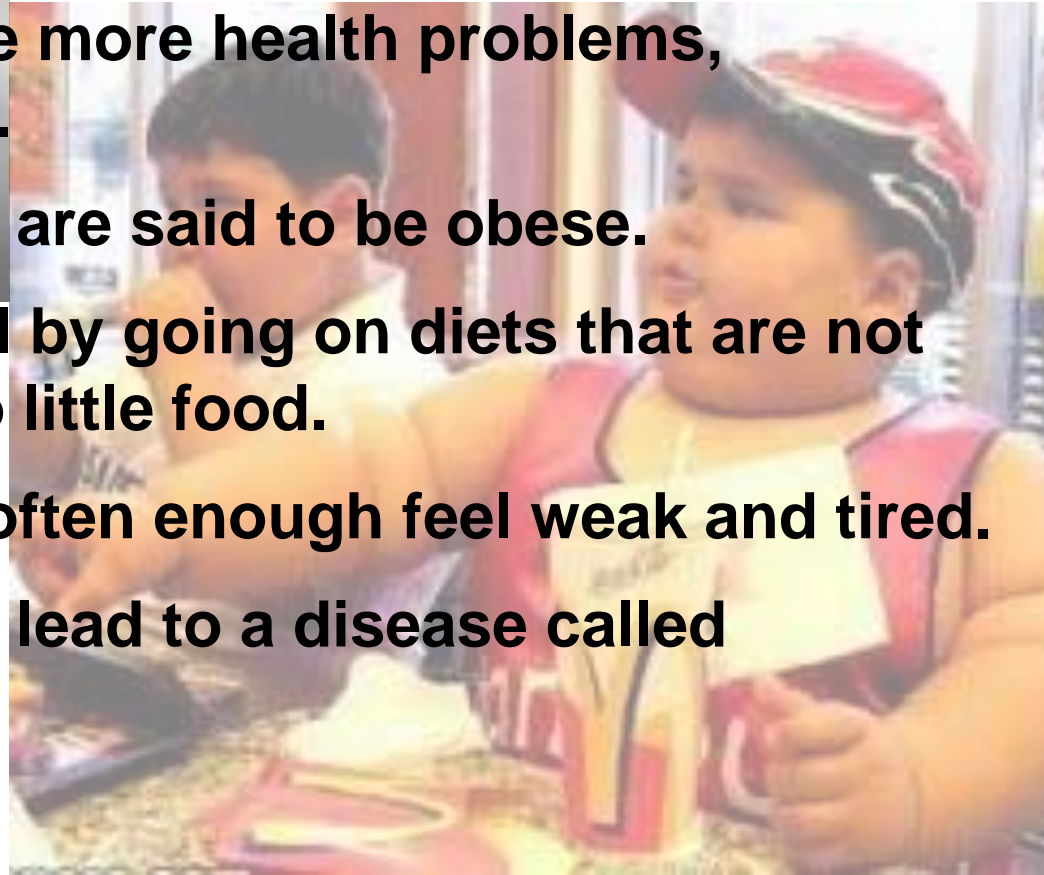
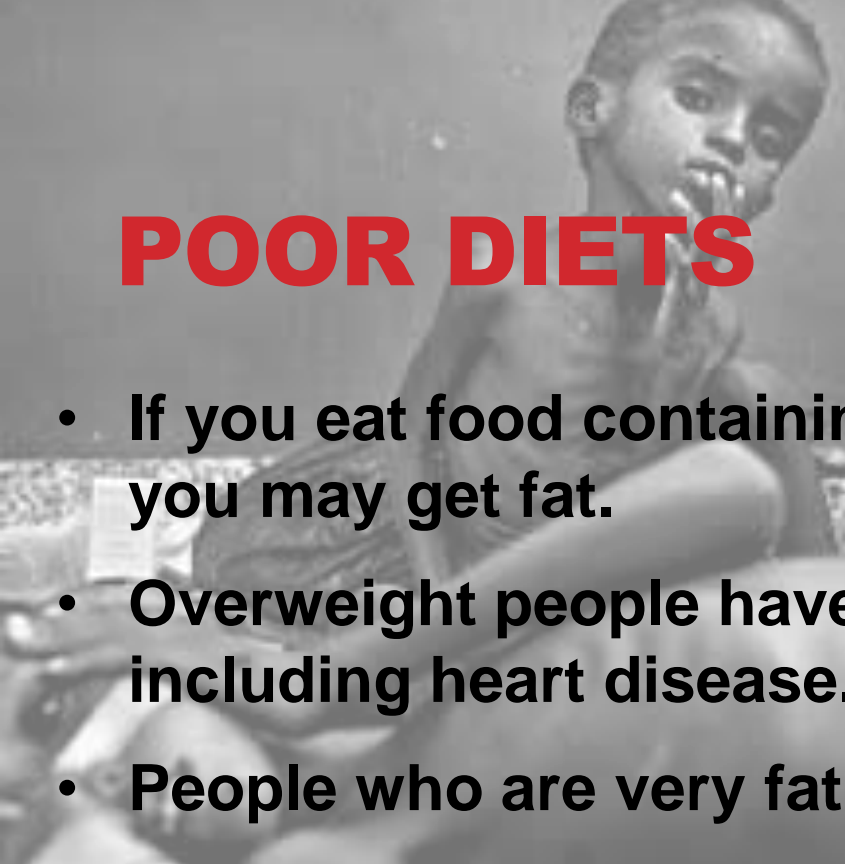
POOR DIETS

- **In some parts of the world, people cannot get enough to eat and they starve.**
- **In other areas, people get diseases caused by a lack of a particular nutrient.**
- **Eating too much fat can lead to certain cancers and heart disease.**
- **In heart disease, fat blocks the supply of blood to the heart muscle. The muscle starts to die and can cause a painful squeezing feeling in the chest.**



POOR DIETS

- **If you eat food containing more energy than you use up, you may get fat.**
- **Overweight people have more health problems, including heart disease.**
- **People who are very fat are said to be obese.**
- **Some people become ill by going on diets that are not balanced or contain too little food.**
- **People who do not eat often enough feel weak and tired.**
- **In some cases, this can lead to a disease called anorexia.**



KWASHIORKOR

- **Results from a diet that is low in protein.**
- **It is characterised by a swelling of the tummy.**



ANOREXIA

- **Individuals suffering from this condition refuse to eat, and if they do, they eat very little.**
- **It is characterized by a general wasting of the body.**

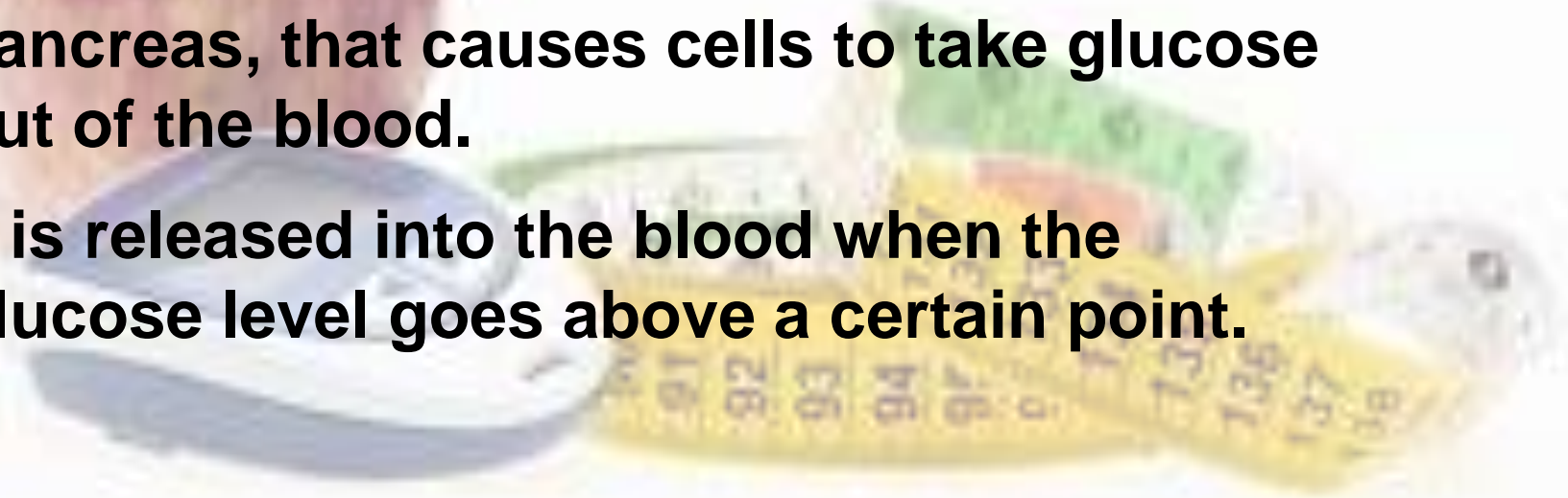


HEART DISEASE



DIABETES

- **Diabetes causes high levels of glucose to build up in the blood, which can damage the brain, eyes and kidneys.**
- **Insulin is a chemical that is made in the pancreas, that causes cells to take glucose out of the blood.**
- **It is released into the blood when the glucose level goes above a certain point.**



DIABETES

- **People with type I diabetes, cannot make insulin.**
- **People with type II diabetes, do not produce enough insulin.**
- **Obese people are at risk of developing type II diabetes.**
- **Some people with diabetes have to inject themselves with insulin to make sure that their blood glucose does not get too high.**
- **Others control their diabetes by cutting down on the amount of sugary foods that they eat.**

Risks from Smoking

Smoking can damage every part of the body

Cancers

Head or Neck

Lung

Leukemia

Stomach

Kidney

Pancreas

Colon

Bladder

Cervix

Chronic Diseases

Stroke

Blindness

Gum infection

Aortic rupture

Heart disease

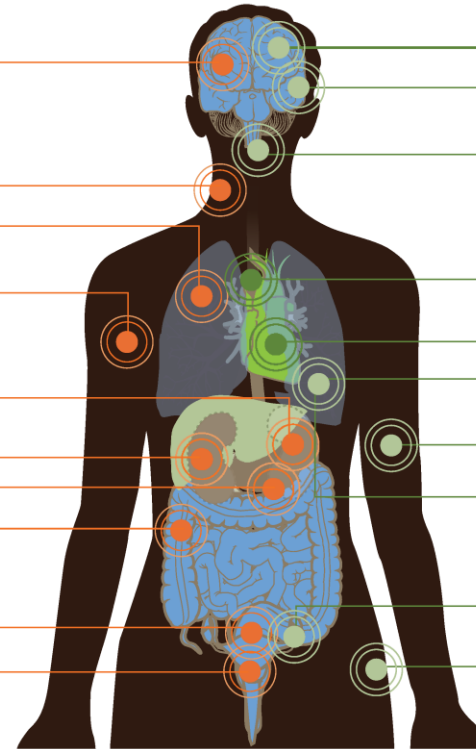
Pneumonia

Hardening of the arteries

Chronic lung disease & asthma

Reduced fertility

Hip fracture



**SHOCKING
ISN'T IT!!**

EFFECTS OF SMOKING

- Smoking consists of a lot of harmful substances which have a negative impact on the body
These include:

- Ammonia
- Nicotine
- Carbon Monoxide
- Tar
- And another 4,000 different compounds; 70 of which are known to cause cancer.

