

	Nutrient	Source	Function	Effects too little (deficiency)	Effect of too much (access)
MACRONUTRIENTS	Carbohydrates Click here to see a video.	<p>Starches – found in cereal grains such as rice, wheat, oats, plus starchy tubers (potatoes and sweet potatoes) and vegetables (carrots, beets, corn)</p> <p>Sugars – lactose found in milk and dairy, fructose found in honey, fruits and some vegetables (peppers, tomatoes etc.)</p>	<p>Two types:</p> <p>1. Starchy (complex) provide energy when broken down – slow release energy to the body (wholegrain provide slower release carbohydrates)</p> <p>2. Sugary (simple) provide quick release energy to the body's' cells.</p>	<p>Deficiency of carbohydrates is extremely rare in the UK.</p> <p>Long term lack of carbohydrates in the diet can cause Ketosis – a condition where the body switches to using protein as an energy source.</p> <p>Visible symptoms- lack of energy and weight loss.</p> <p>Non- visible symptoms- Not enough fibre from wholegrains foods leads to constipation and other intestinal problems.</p>	<p>If not used for energy it becomes stored as fat. Visible symptoms weight gain and obesity.</p> <p>Non- visible- eating too much non refined(white carbs) leads to tooth decay, raising blood sugar levels and type 2 diabetes.</p>
	Proteins Click here for video	<p>High Biological Value (HBV) protein: Meat, fish, poultry, eggs,</p> <p>Low Biological Value (LBV) protein: Tofu, beans, nuts.</p>	<p>Protein is digested by the body into its component parts – called amino acids. There are 8 which are essential for adults and 12 for children. HBV protein foods contain all the essential amino acids.</p>	<p>Visible symptoms-</p> <ul style="list-style-type: none"> Wasting of muscle & muscle loss Oedema – build up of fluids in the body Slow growth in children <p>Severe deficiency leads to kwashiorkor (bloating of the stomach)</p> <p>Non-visible symptoms- weaker immune system which needs protein to function properly.</p>	<p>Visible symptoms excess stored as fat, lead to weight gain and obesity.</p> <p>Non-visible symptoms- Puts a strain on how well the kidneys work.</p>
	Fats Click here for video Click here for more info	<p>Butter, cheese, dairy foods including yogurt, crème fraiche, milk</p> <p>Oils, lard, suet, dripping.</p>	<p>Fat is a term used to describe lipids – this can refer to solid fats and oils. Fat is broken down by the body and used for energy, Also used to provide warmth when stored under the skin. Is a dietary carrier of fat soluble vitamins A, D, E & K.</p> <p>Two types of fats: Unsaturated and saturated.</p>	<p>Visible symptoms- Weight loss over time as the body uses stores of fat. Person feels cold as fat under skin acts as insulator.</p> <p>Non-visible symptoms- Bruising of the bones as they are not protected. Lack of fat in the diet can lead to deficiencies of fat soluble vitamins A, D, E & K.</p>	<p>Common issue in the UK</p> <p>Visible symptoms- Stored under the skin in adipose tissue cells, which leads to disease such as type 2 diabetes, obesity and heart disease and high bloody pressure.</p> <p>Non-visible symptoms- Internal organs store fat which prevents them working properly. Fat blocks arteries.</p>



Unsaturated Fat:

- *Liquid at room temperature.*
- *Mainly from non-animal (plant) sources.*
- *Can lower blood cholesterol.*

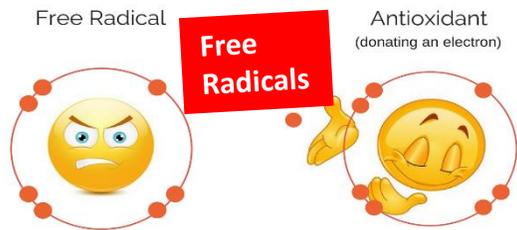


Saturated Fat:

- *Solid at room temperature.*
- *Mainly from animal sources. *With the exception of palm and coconut oil.*
- *Causes high blood cholesterol.*

Vitamins and Minerals are chemicals found naturally in food. With the exception of Vitamin D, which can be manufactured through the action of sunlight on the skin, vitamins cannot be made by the body, and must be provided by the diet. They are needed in minute (tiny) amounts to perform specific functions and fall into two different classes:

Water Soluble	Fat Soluble
C	A
B group	D
	E
	K



Essentially, damaged oxygen molecules with an extremely unstable atomic structure. They attack fats and proteins all over the body, especially those in membranes that line the blood vessels, the skin and other connective tissue. They can make you age a lot quicker! Anything we do to raise our metabolic rate (like exercise) accelerates the production of free radicals.

Water Soluble	Needed For	Found In	Deficiency/ Excess AC1.3 Explain characteristics of unsatisfactory nutritional intake.
C Antioxidant	Normal structure and function of connective tissue e.g. collagen. Helps healing process. Antioxidant (protects from free radicals). Helps absorb iron in the body. Improves immune system.	Main sources from plants – fruits and vegetables. Milk and liver contain small amounts.	Deficiency- Scurvy, very rare symptoms include bleeding gums, wounds not healing properly, tiredness. Lack of vitamin C effects absorption of iron. Excess is eliminated from the body within 24 hours so not a problem.
B1 Thiamin	Normal function of the nervous system and heart	Whole grains, meat, flour and breakfast cereals.	Deficiency- Beri-beri (disorder of the nervous system). Excess-body excretes it.
B2 Riboflavin	Release of energy from food.	Milk, eggs, green vegetables, cererals.	Deficiency- Dry cracked skin around the mouth and nose. Excess-body excretes it.
B3 Niacin	Energy release, skin and membranes.	Milk, eggs, cheese, meat.	Deficiency- disease pellagra. Symptoms can include dermatitis, dementia and diarrhoea. Excess-body excretes it.
B9 Folate	Red blood cells and nervous system.	Green leafy vegetables.	Deficiency- can lead to anaemia. Symptoms can include insomnia, depression and forgetfulness. Excess-body excretes it.
B12 Colbalbumin	Cell division and blood formation. Normal structure of nerves.	Animal sources – milk, meat and eggs. Some algae and bacteria can produce B12.	Deficiency- Anemia (rare), may be found in vegetarians. Excess-body excretes it.