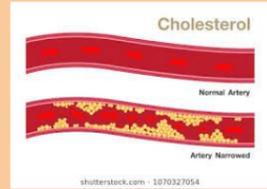
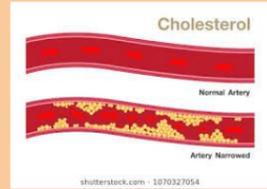
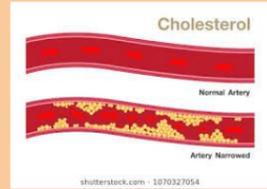


# Macronutrients

Required in large amounts on a daily basis, they provide energy and are nutrients such as carbohydrates, proteins, fats

Carbohydrates		Protein	Fats				
<p><b>Simple carbohydrates</b></p> <p>This form of carbohydrates are broken down easily as they only contain one or two molecules. They are high in sugars. This means they can provide energy quickly.</p> <p>These types of carbohydrate could be eaten by a sportsman to give a quick boost to immediate energy if eaten just before exercising. They can also provide energy immediately during or after exercise.</p> <p>Sources: Fruit, Chocolate Sweets Glucose drinks.</p> 	<p><b>Complex Carbohydrates</b></p> <p>This form of carbohydrates are NOT broken down easily to provide energy because they contain more molecules, this means they provide energy slowly.</p> <p>These type of carbohydrates will need to be eaten more than 2 hours before exercise so they have time to be broken down. These carbohydrates can be used to build energy stores in the body by increasing the amounts over several days before competition. This is called CARBOLOADING.</p> <p>Sources: Pasta, Rice, Potatoes Oats Bread</p> 	<p>Proteins are made up from chains of amino acids, the exact combination differs depending on which food you eat., this is why it is important to eat a variety of foods.</p> <p>Some amino acids can be made in the body but others cannot so we must eat these in our diet, the ones we must eat are called "essential" amino acids. The body can make some amino acids and these are called " non essential" because it is not necessary for us to eat these to make them in the body.</p> <p>Meat, fish, milk and eggs are good sources of protein but there are also good plant sources such as beans and nuts.</p>  <p>Proteins are needed by all the cells in the body for growth and repair. Sportsmen who train hard will cause some damage to their muscles cells (micro-tears) so protein will be important to help rebuild the fibres during recovery after the exercise. A person taking part in strength training could need a slightly higher intake of protein to maintain their muscle health.</p> <p>A balanced diet should contain enough protein without the need of supplements.</p> <p>Gves the same amount of energy per gram (4 calories) as carbohydrate but is only used as an energy provider if other stores are used up.</p>	<p>Fats are an essential part of the diet, they help the body process other nutrients, fat helps the body absorb <u>vitamins A, D and E</u>. These vitamins are fat-soluble, meaning they can only be absorbed with the help of fats.</p> <p>Fats protect vital organs maintain body temperature and importantly are a concentrated form of energy stored in the body.</p> <p>There are 2 types of fat- Saturated fat and Unsaturated fat.</p> <table border="1"> <thead> <tr> <th>Saturated fat</th> <th>Unsaturated fat</th> </tr> </thead> <tbody> <tr> <td> <p>These are found in animal products and processed foods like meats, dairy products and many fast foods. At room temperature they tend to be solid.</p> <p>It is important to limit the amount of saturated fat in your diet because are a thicker more solid form of fat and they contribute to heart disease and high blood pressure because they raise cholesterol (LDL) levels and clog up our blood vessels preventing a good blood flow.</p>  </td> <td> <p>These are found in avocados, oily fish such as salmon, tuna and mackerel and natural oils such as sunflower and olive oil. Some nuts, almonds, brazil and peanuts also contain unsaturated fats. At room temperature they tend to be liquid.</p> <p>Unsaturated fats can lower bad (LDL)cholesterol levels so help to keep the heart healthy.</p>  </td> </tr> </tbody> </table> <p>Both types of fat are high in energy content, 9 calories per gram. They provide more energy than carbohydrates but need more oxygen to produce it. Fat would be a good source of energy for activity lasting for long periods like a marathon. Carbohydrates would fuel the run to start with with fats taking over as the main supplier of energy as the run progresses. If the fat is not used for energy it is stored in the body and can cause health problems if we eat more than we use in the activity.</p>	Saturated fat	Unsaturated fat	<p>These are found in animal products and processed foods like meats, dairy products and many fast foods. At room temperature they tend to be solid.</p> <p>It is important to limit the amount of saturated fat in your diet because are a thicker more solid form of fat and they contribute to heart disease and high blood pressure because they raise cholesterol (LDL) levels and clog up our blood vessels preventing a good blood flow.</p> 	<p>These are found in avocados, oily fish such as salmon, tuna and mackerel and natural oils such as sunflower and olive oil. Some nuts, almonds, brazil and peanuts also contain unsaturated fats. At room temperature they tend to be liquid.</p> <p>Unsaturated fats can lower bad (LDL)cholesterol levels so help to keep the heart healthy.</p> 
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<p>The function of carbohydrates is to provide energy (4 calories per gram) for the body. They are vital for the brain functions, liver functions and muscle contractions. Carbohydrates are broken down into glucose for immediate energy production, if the amount is higher than is needed some can be stored as glycogen in the liver and muscles. If you consume more than this they can be converted into fats which then get stored in the body. First choice energy provider for most activity</p>							

All macronutrients have an energy value. Energy is measured in calories. The more we exercise the more calories we use from our food. An average adult male should consume 2500 calories a day while a female should consume 2000 calories. Sportsmen will need more calories when training or competing because they are being more active and need more energy. The amount will depend on the sport involved. Someone running for 2 hours will use more calories than a gymnast taking part in a competition lasting 2 hours. They runner is constantly working and the gymnast performs a short sequence and then is waiting around. So diet and calorie intake will vary on the sport, the exercise being completed, the age, gender and size of the performer.

