This information is taken from 'Fuel for Performance, Nutrition for Sport',
a sports nutrition resource updated and revised by the following Welsh sports dietitians:
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## Protein

Protein is important for building new and repairing old tissue such as muscle. Protein requirements are therefore increased during periods of rapid growth e.g. during adolescence

Athletes require protein for strength, speed and / or endurance training but protein only provides fuel in extreme exercise conditions. Eating protein in combination with carbohydrate in the recovery period may help the adaptation to training. It is therefore an important nutrient, particularly if you:

- regularly undertake hard training sessions that cause muscle damage
- are a young athlete who is still growing
- consume an unbalanced vegetarian diet
- want to increase muscle mass (bear in mind that this will only happen in combination with an appropriate training program and that most benefit is seen in those who are unaccustomed to strength training)

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## Main types of protein and their dietary sources

- Protein is made up of small units called amino acids. There are two types of amino acids, essential amino acids and non-essential amino acids. Essential amino acids cannot be made by the body or not at a fast enough rate to meet the body's needs and must be obtained from the diet.

- Only certain foods contain all 8 of the essential amino acids in amounts needed by the body. These foods include meat, poultry, fish, milk, dairy products, eggs and soya beans. The protein in these foods is often referred to as having a 'high biological value'. Most other foods containing protein (pulses, nuts, seeds etc) are regarded as having a 'low biological value' (i.e. they lack one or more of the essential amino acids). The table below shows some good sources of protein in your diet:

### Good sources of protein in your diet

| **High biological value (i.e. contain all the essential amino acids)** | **Low biological value (i.e. lack one or more of the essential amino acids)** |
|---|---|
| Meat, poultry, offal<br>Fish, shellfish<br>Cheese<br>Eggs<br>Milk<br>Yoghurt<br>Soya beans and soya products e.g. tofu, tempeh<br>Mycoprotein (Quorn®) | Cereal and grains e.g. bread, rice<br>Pulses (peas, lentils, beans e.g. baked, haricot, kidney)<br>Nuts and seeds<br><br>Low biological value foods can be combined e.g. beans on toast, so that a meal can be planned to contain all the essential amino acids - contact a sports dietitian or registered sport and exercise nutritionist for further advice |

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