



Week 10 - Diet - Protein

5. How much energy does 1 gram of protein provide?
9 kcals 5 kcals 8 kcals **4 kcals** 7kcals

There are 4 Kcals of energy in 1 gram of protein.

6. How many Amino Acids are there?
13 26 18 10 14 **21**

There are 21 amino acids and they combine together to form the proteins required by the body. Some Amino Acids are interchangeable, but there are at least 8 Amino Acids which the body cannot make for itself. These have to be eaten and they are called the Essential Amino Acids.

7. What does a molecule of protein/amino acid contain?
(there is more than one answer)

Carbon Hydrogen Nitrogen Oxygen Sulphur

Proteins and Amino acids contain Carbon, hydrogen, oxygen, nitrogen and occasionally sulphur.

8. You need to eat a lot of protein to build muscle or if you do a heavy physical job or training.

TRUE **FALSE**

Generally we eat too much protein - mostly from meat (most proteins from meat are 'complete proteins') - and there is little evidence to suggest that it is necessary to increase your normal protein consumption even during very heavy training. There is little scientific evidence indicating that the use of protein supplements will increase the size and strength of muscle or physical performance.

9. Unused protein is broken down to:

glucose and nitrogen sulphur and oxygen oxygen and hydrogen

Unused protein is broken down to glucose and nitrogen parts, the glucose is either used for energy or stored as fat and the nitrogen part is eliminated via urine. Any protein consumed in excess of your body's requirements will be used as an energy source, stored as fat or excreted from the body.

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10. Which plant food is considered to be a complete protein?

Soya

Cereals/grains

Pulses Nuts

Green vegetables

Soya is the only plant food considered to be a complete protein (containing all essential amino acids to meet the human body's requirements) and it also contains fibre, mainly of the soluble type and a number of vitamins and minerals. Calcium absorption from the soya bean is also relatively good. Additionally, phytoestrogens have been shown to have anti-oxidant effects and may have other potential benefits such as effects on cell health. Soya protein has also been shown to have a beneficial effect on total cholesterol.

Sources:

Nutrition for Sport - Steve Wooton - Simon and Schuster - ISBN 0-671-69678-5

British Dietetic Association - www.bda.uk.com

Human Anatomy - Marieb - Benjamin Cummings - ISBN 0-8053-4120-X