Protein, Carbs and Weight loss

This article aims to tackle some of the issues regarding weight loss, particularly emphasising the importance of protein in your diet. We will focus on two main uses for protein within the human body; these are to aid the production of new muscle and to preserve existing muscle.

Why do we need muscle?

Muscle plays a vital role in bodily function for even sedentary individuals. Increasing one's strength through muscle gain can improve posture, reduce the chances of injury and help make every day tasks and activities easier. Muscle mass is also a significant factor affecting the body's metabolism. Muscle, like a domestic pet, is high maintenance! Even at rest it requires a constant supply of energy to be sustained, and growing it requires even more. All this consumption of energy can be responsible for a significant amount of calorie expenditure in the body.

How do we 'make' muscle?

One popular misconception is that protein miraculously makes muscles grow and eating it will guarantee muscle growth. This is not strictly true. To put it simply, protein, when it is broken down, provides your body with the 'building blocks' to make muscle (and many other tissues). It is the various forms of resistance (weight) training that will actually instigate muscle growth, where protein acts as the fuel.

When heavy weights are lifted that we are not used to, the body goes through a process known as overload, in which the muscle is broken down. The body's natural response is to attempt to rebuild the damaged muscle so that it is stronger and doesn't struggle as much next time around. In order to do this the body must be provided with the building materials, i.e. protein. Without it would be like attempting to build a house without any bricks.

Preservation of muscle

Skin, hair, nails, sweat and body fluids are also predominantly made up of protein, but unlike muscle they all grow or are 'shed' whether there is sufficient dietary protein or not. If sufficient protein isn't provided the body's existing muscle must be broken down in order to fuel these functions. This shows that without an ongoing supply of protein, suitably coupled with regular training, your muscle will gradually deteriorate. This is part of the reason we lose strength as we age.

Good quality protein

The constituents of protein, described earlier as our 'building blocks' are known as amino acids, nine of which are essential to the body. We are generally spoilt for choice in terms of sources of protein - it can be drawn from meat, poultry, fish, seafood, eggs and dairy produce such as cheese, yoghurt and whey protein (animal sources), nuts, seeds, pulses grains and cereals, as well as products such as Quorn and Tofu (plant sources). Animal sources are complete as they comprise all nine essential amino acids, whereas plant sources

contain only some and must mix and match to provide the body with the complete set. This is why vegetarians can struggle to eat all the necessary amino acids unless they eat several types of plant proteins. Unfortunately good quality sources of animal or plant protein are harder to get your hands on than would appear at first glance. Nearly all supermarket ready meals go through some form of processing before they hit the shelf, reducing the quality of the protein itself and usually showering it with undesirable additives. Similarly, fast food such as fish from the chip shop would be good protein, but its saturated fat content offsets much of the benefits. Bacon and sausages, although complete proteins, tend to be processed and fatty, but a little occasionally is no bad thing. The general guideline is to aim for pure, fresh produce where possible and head towards lean meat, unbattered fish and poultry.

High protein/low carb diets

High protein and low carb diet plans have been on the receiving end of endless debate – Dr Atkins' plan probably being the most controversial of all. The theory is carbohydrate, in its simplest form, is body fuel. It is broken down into glucose, stored in the muscles and liver as glycogen, and acts as a 'reservoir' of energy - readily available whenever it is needed. However excessive carbohydrate intake or a sudden rush of sugary carbs will lead to the carbs being readily converted to fat and stored in the body. If the body is deprived of carbohydrates, chemicals are released to indicate to the body it needs to find some alternative form of fuel, so it starts breaking down fat stores and protein from muscle in order to meet its energy needs. The idea is that through continual carb deprivation the body will keep on tearing away at its own fat, and to a lesser entent muscle, and the individual concerned will ultimately lose weight.

Unfortunately this comes with several significant drawbacks. Glycogen is the preferred source of fuel for tasks as simple as standing up, and also for activity of the brain. The net effect of its withdrawal could result in an individual feeling tired, light-headed and irritable. It is also possible that glycogen depletion can result in loss of water, and in extreme cases, indirectly put the heart, liver and kidneys at greater risk.

Finding the middle ground

Generally speaking extreme diets are a bad idea – they promote a sudden change in lifestyle and destroy sustainable habits that are often the key to long-term success. However, we can learn something from the theories. Maintaining a high protein content in your diet has clear advantages such as promoting muscle growth and maintenance or repairing tissues such as skin and nails. In the context of losing weight, reducing your carbohydrate intake can offer benefits too, so long as some very specific rules are adhered too. Ensuring protein intake is from good, lean sources will minimise the intake of fat and other 'undesirables', and will provide your body with all the essential building blocks necessary to generate and preserve muscle. Keeping hydrated is always important but should be emphasised, especially if the carbs are in low supply. Finally, sticking to low Glycaemic Index (G.I.) carbohydrates suppresses hunger for longer as they release energy slowly, and will help regulate blood sugar levels. Low G.I. carbs are derived from whole grain sources, brown versions of bread, rice and pasta and some vegetables and fruit.

Summary

Summing up, muscle is essential for daily function, provides for a better quality of living and is a useful tool for weight control. Protein is responsible for providing the means to develop and preserve muscle so forms a vital part of everyone's diet. Introducing a low carb lifestyle should be approached with caution, but with the right advice and an increased awareness of the health risks it can offer benefits.