



Low carbohydrate diets for weight loss:

Sugar and its role in obesity has been highlighted in the press recently. Authors are now highlighting the quantity of sugar added to soft drinks and confectionary is making us overweight more so than fat.

The aim of this blog is to briefly look at the rationale behind this arguement and whether a low cabohydrate diet can result in successful weight loss. The second part of the blog will explore if a low carbohydrate diet can enhance athletic performance.

The resources for this blog are the authors Volek and Phinney, Dr John Biffa , Gary Taubes and Professor Tim Noakes all of whom are proponents of a low carbohydrate, high fat diet. However I will be critiquing these authors findings when it comes to athletic performance.

First some basics. When we eat carbohydrates insulin is released from the pancreas and transports the carbohydrate to the liver or muscles. We only have a limited storage capacity of

carbohydrates and excess are converted to lipids (fat) by the liver. We have virtually unlimited storage capacity for fat. When we eat lots of sugary food two important things happen. We become resistant to insulin which means we need more of it to perform the same function. We stimulate the reward centres in our brain which makes us strive for more (think about how easy it is to overeat on chocolate, cake, even bread compared to say a bowl of plain full fat natural yoghurt).

The fact we become insulin resistant means our blood sugar levels rise and we become prone to developing diabetes.

The fact our reward centres are stimulated means we seek more and therefore are prone to overeat and become overweight.

In contrast eating foods with high protein and even fat produce satiety and we are far less likely to overeat. This is the argument that it is not necessary to count calories because you will feel full and satisfied before you overeat.

There is plenty of anecdotal evidence of individuals who have lost substantial weight following a low carbohydrate high fat diet. However there is also plenty of longitudinal studies showing no significant difference in following a isocaloric diet irrespective of its make up. This means in my opinion it is down to individual preference if you find it easy to avoid overeating when eating carbohydrate then why change. However if you struggle and also seem to want more when you consume carbohydrate try changing to a higher protein and fat diet and cut down carbohydrates including grains and fruit.

Now let's look at whether low carbohydrate, high fat diets can improve athletic performance. The authors who advocate low carbohydrate diets state we become better at fat oxidation and therefore because we have unlimited stores of it athletic performance is improved. There are also studies supporting this. However all of these studies were on endurance performance at moderate intensity where fat is the predominant energy source. There is a lack of research to support this when the sport requires short bouts of very intense exercise where because of the time taken to mobilise fatty acids, carbohydrates are the main energy source. This fact is highlighted by authors who maintain a higher level of carbohydrate intake is required intense type of sports (Jeukendrup). To summarise the above following a low carbohydrate high fat diet might be easier to follow, will reduce or reverse insulin resistance, and therefore result in successful weight loss and health benefits. However individual variations mean you should establish what suits you, if you don't overeat carbohydrate why change.

If you compete in endurance sports then a high fat diet might improve performance but you should experiment with this, however in sports with short bouts of high intensity I would advise you consume adequate carbohydrate to optimise performance.

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