

## Balancing carbs in a Healthy Eating Plan

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Carbohydrates are required by the body for energy. They can be split into complex carbs, such as bread, pasta, rice and potatoes, and simple carbs (sugars), which include healthy fruit and veg, but also unhealthy yoghurts, chocolate and sugar. In the body, carbohydrates are stored as glycogen in the liver (around 100g) and in the same form in skeletal muscle (around 300g in a fully-carbed average male).

So how do you integrate carbs into a healthy eating plan? When people think of healthy eating, they tend to just think of fruit, veg, and low-fat goods. Seems simple, so why does hardly anyone stick to it? Is it because we just love our junk-food, or is it because this one-dimensional method never delivers? I suspect a bit of both.

'Healthy Eating' is a notion championed by everybody from celebrity 'diet experts' to supermarkets, many of whom stick to the time-old ideas mentioned above. There is also a small but increasing number of individuals whose advice opposes the norm, who offer an alternative view of high-protein, moderate-fat and controlled carbs. So who do you believe? Well, the Government's Nanny State Department are always glad to throw in their two cents and, in 1992, kindly provided us with a 'Healthy Eating Pyramid' to help us become healthier, adding to previous advice. The decade-and-a-half that followed have seen obesity levels rise to incredible heights.<sup>1</sup> I invite you to spot the connection.

This 'Healthy Eating Pyramid' advocates 6-11 servings of carbohydrates per day and less than 1 serving of fat per day. This remains the official advice for each and every one of us, whether we are training for marathons or exercising only when walking to the fridge. More importantly, where is the essential oil going to come from? [see different article Overcoming Fat Phobia].

This one-dimensional view is compounded by the recommendations of the RDA committee; of the calories in the diet, we are told, 60% should come from carbs, 30% from fats and just 10% from protein. Other popular diet plans like 'the Zone' diet suggest a 40-30-30 mix, and the infamous Atkins diet gives no such ratios but proposes a carbohydrate intake of just 20g per day. There are abundant diet schemes, each offering a different ratio.

With the exception of the Atkins plan and other extreme plans, not one of these is wrong per se. However, most will not be suitable for any individual simply because they do not take into account the disparity in requirements from person to person. The failure of these 60-30-10s and 40-30-30 ratios is that they do not make any reference to the changing energy requirements that occurs in an individual as their calorific requirements increase. Eg. A marathon runner in training may require twice the calorie intake of a sedentary person, yet does not require twice the fat intake. This is why carbohydrate requirement should always be calculated on the basis of activity level, not as a percentage of calorie intake. Unlike protein or fat, carbohydrates have just one purpose; energy. Therefore carb

intake and energy requirements should have an exact correlation.

In any case, it remains obvious that there is a massive over-dependence on carbohydrates in the Western diet. To establish this, we do not need laboratory experiments or case studies to come to a conclusion. A combination of history and common sense tells us that our ancestors lived on a diet rich in meat, nuts and veg, seasonally supplemented with fruit and berries. There was no pasta, bread, cereals... not even rice or potatoes. Compared to today's diets, this is a low-carb intake, yet this is the balance that we have spent thousands evolving on. The Governments promotion of carbohydrates was dictated by post-war politics and the overavailability of grains, and has been compounded by the political influence of junk-food corporations, who effectively decide government policy<sup>2</sup>.

A sedentary person requires between 2-3g of carbs per day for every kilogram of lean mass. On an average 80kg (12½ stone) man in reasonable shape this represents 120g-150g of carbohydrates each day. You can contrast these figures with the RDA guidelines for a typical male, which provides a whopping 400g of carbohydrates. This is towards the top end of athletes' requirements – who need between 4-6g of carbs per day, or even more if they are running long distances – but certainly far too much for the average sedentary person.

So, having established that the nation consumes more carbohydrates than they require, what are the consequences of this imbalance? If you take a stroll down any busy high street, the answer is staring you in the face. Excess carbohydrates readily convert to subcutaneous (under the skin) fat. Your body can easily convert excess carbs into palmitic acid, a saturated fat, at a rate of 40g per day on top of normal processes<sup>3</sup>. One of the stages in the conversion of sugar to energy is the breakdown of a six-carbon sugar into two-carbon acetates, but when there is an excess availability of acetates – eg. overconsumption, or intake of sugary foods - they are strung together to form fatty acids. Many people struggle to lose weight because they choose low-fat items that encourage overconsumption and are often high in sugar.

There has been a growing acceptance as to the problems of excess carbs, which unfortunately has often resulted in extreme carb-cutting. This also disrupts the body's homeostasis and severely hampers healthy metabolism. The Atkins diet is the most famous example of this naïve way of thinking and can seriously damage your health. As mentioned above, the optimum daily carb intake varies from person to person, although the minimum is similar in most people and rests at the 100g mark. This is the amount used each day by your central nervous system and brain, which both require carbohydrates as, unlike skeletal muscle, they cannot function on protein and fats alone. Therefore, taking in less than this minimum amount causes breakdown of muscle tissue and internal organs, neither of which is conducive to health, performance or weight loss. Bad breath, poor concentration/co-ordination and mood swings are other negative side-effects.

We are also not just what we eat, we are also when we eat. This is particularly true of carbohydrates. Two key factors influence when we should be eating carbs, and that is the ease at which carbs convert to bodyfat and the need to balance carb intake to energy expenditure. For most people, this means easing off carbs towards the end of the day (although not cutting them out). This is because you only need a significant amount of

carbs before exercise, so a bowl of cereal before bed will simply result in an excess of carbs. As we now know, this leads to fat storage. Your glycogen stores are at their lowest in the morning, so this should be reflected in an appropriate increase in carbohydrate intake. A bowl of porridge is ideal for this purpose.

Porridge, and oats in general, are an excellent source of carbohydrates as they contain good amounts of fibre and minimal sugar. The same can be said of brown rice, potatoes, ricecakes, ryvita bread. Although wholemeal bread and pasta would appear to fit this category also, they should not be consumed where choice is available as these wheat products contain phytic acid, a substance known to block the absorption of vitamins and minerals. Vegetables should be consumed freely as, although they contain simple carbs, the fibre/vitamin/mineral content is excellent, so you should try to include these whenever possible.

Like so many issues in health and fitness, information becomes clouded when ignorant views are promoted by the media and questionable Government policy. However, a logical look at the issue sees that by taking the diet of our caveman ancestors as a base point, and by intelligently balancing our consumption to our individual requirements, we will reap the benefits in the results we get from our nutrition regime.

#### References

1. Health Survey for England Report (2003).
2. Marion Nestle, 2003. Food Politics.
3. Quistoriff and Grunmet (2003), Transformation of sugar and other carbohydrates into fat in humans.

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