

# Carbohydrates

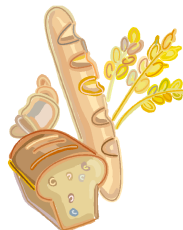
## - The myths

Simplistic nutrition theories are usually based on a prohibition – style of thinking; that is, identify a problem, quickly propose a single cause, then outlaw the speculated cause. Recently the low carbohydrate solution to weight control has returned. Proponents throw around a bit of pseudoscience, proclaim it as evidence and hang on to their beliefs in the face of evidence to the contrary. There is a whole nutrition supplement industry based on this formula.

### Is Carbohydrate fattening?

Excess carbohydrate is stored as glycogen, but on the rare occasion that liver and muscle glycogen stores are full, carbohydrate can be converted to body fat. Yet even when large amounts of carbohydrate are eaten, their conversion to fat is slow and inefficient. The body's major adaptation is to increase the amount of carbohydrate used as a fuel source, and store the excess dietary fat. Excess fat is stored as fat and excess protein as glucose and fat. It is not possible to store excess protein as muscle. There is no evidence that carbohydrates are the culprits of obesity, except in their contribution to total energy.

When carbohydrate is limited as a source of fuel the body will convert muscle protein to glucose for the brain, since glucose is the preferred brain food.



So is carbohydrate fattening? A selective view of the evidence allows some to argue that it is (being selective is how people sell you anything) so we must consult different views before making an informed decision. Nations that consume the most carbohydrate (over 70% of their calories) have very low levels of body fat.

- Excess energy in any form will promote body fat if energy expenditure is not increased. (WHO/FAO Expert Consultation – report “Carbohydrates in Human Nutrition”).
- Recent advice has been to reduce dietary fat and increase activity as a lower fat/ higher carbohydrate diet is probably the best food balance to minimise body fat stores.

### Why I should eat Carbohydrates

Carbohydrates have a quick dampening effect on appetite and thereby stop you from eating too much. Of course this natural appetite-suppressing effect can be overridden at buffets, Christmas dinner etc.

### Carbohydrate as fuel

We need carbohydrate for energy. It is our primary fuel for muscle and brain. In the absence of carbohydrate we must convert muscle proteins to glucose and this can affect performance.



### Should I stop consuming Carbohydrates after 3pm (or 7 pm)?

Some believe carbohydrates eaten late in the day will be stored as fat. But carbohydrates are dealt with the same no matter what time they are eaten (i.e., converted to glycogen). There is not a single scientific paper that will back this claim.

### The low Carbohydrate Diet

Low carb diets have been popular since 1864, but despite claims that they are the answer to weight control, there are no long term studies of such diets, and published studies appear to show no advantage over high carbohydrate/low fat diets. Low carb diets cause weight loss as they are *low calorie* diets. They result in quick weight loss due to loss of muscle glycogen and water associated with it, increased fluid loss from protein breakdown, and fluid loss from lowered serum insulin levels.

When you limit food intake to salad vegetables, lean meats, cheese, yoghurt and a few fruits it becomes very difficult to over-eat. When you limit food to lean meats, low fat dairy, vegetables, breads, oats and rice/pasta and fruits it is *also* difficult to overeat and a glycaemic index may help us choose the best options. These foods provide protection against some diseases such as type 2 diabetes and also provide essential nutrients in the diet.... this style is called “healthy eating”. 65% of Australians don't eat the recommended level of vegetables, 80% don't eat enough fruit. Half of males and two-thirds of females are not eating recommended levels of wholegrain cereal foods. We are however eating more high energy snack foods, soft drinks and confectionary. All evidence suggests we need to engage in “healthy eating”, eat less of these snack foods, and be more active.

*Developed in conjunction with Kate Fleming, Dietitian*

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