

Low fat diets

What is a low fat diet?

A low fat, and by association high carbohydrate, diet is consistent with the [UK dietary guidelines](#). The low fat diet is based mainly on the diet-heart hypothesis, which argues that increased dietary fat consumption leads to an increased build-up of fat in the arteries; and that this leads to an increased prevalence of chronic disease. Also, as fat is more energy dense than carbohydrate (9 calories per gram versus 4 (1)) it is argued that reducing fat intake will result in reduced total calories; which theoretically could aid in weight loss or help prevent weight gain.

What foods are encouraged?

The recommended foods for a low fat approach are included in the “Eatwell guide” (Figure 1), which provide a good guide to what foods are suitable. The traffic light system on many foods is also aligned to this dietary approach.

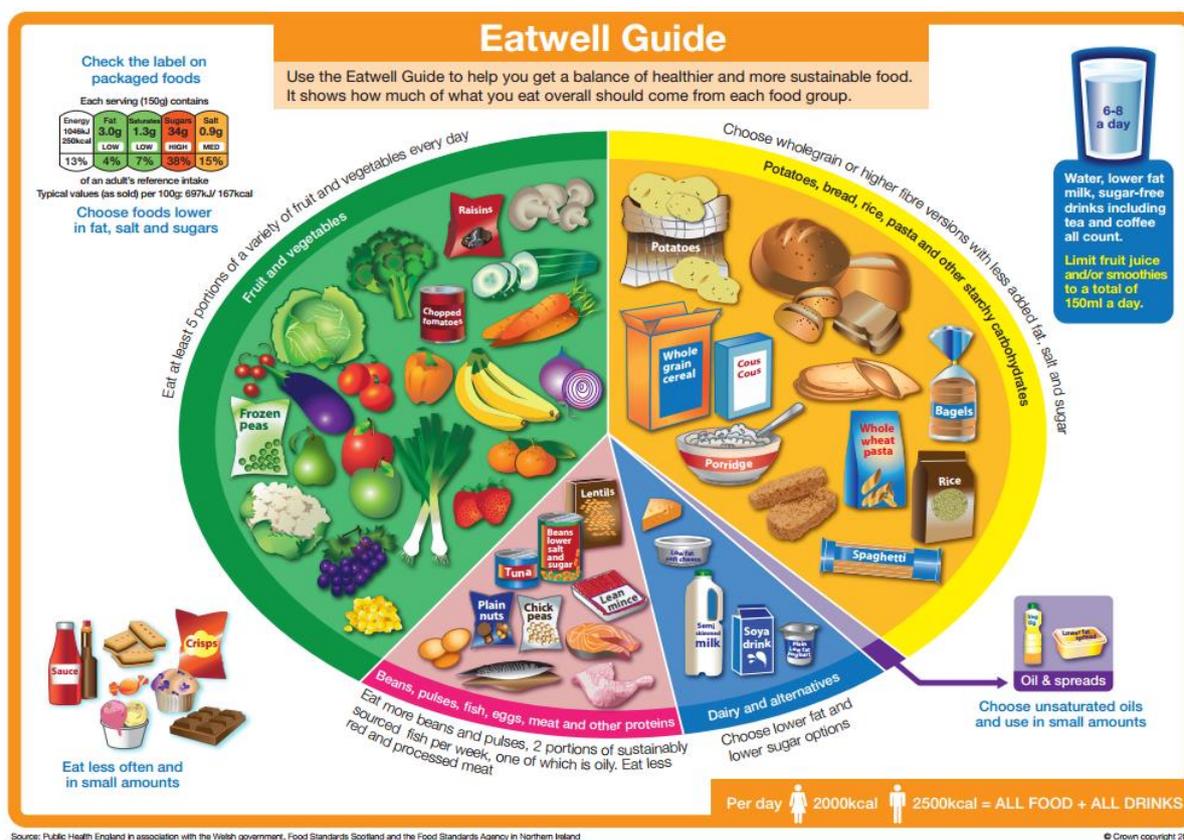


Figure 1. The Eatwell Guide (Source: Public Health England in association with the Welsh government, Food Standards Scotland and the Food Standards Agency in Northern Ireland- available [here](#))

The bulk of what you would be encouraged to eat is made up of starchy carbohydrates (as opposed to refined carbohydrates and added sugar, which are not promoted by ANY diet) and vegetables. Moderate protein consumption would be encouraged (2-3 portions per day) as well as some milk and dairy (lower fat versions).

What does the research say?

Reduction in total fat intake has been shown, in a meta-analysis of high quality studies, to lead to a sustained reduction in body weight in adults (2). Although the actual changes were relatively small (-1.57kg, 95%CI -1.97 to -1.16kg) they were clinically meaningful, suggesting that the changes observed would have been beneficial for the participants involved. In type 2 diabetics a diet with less than 30% of energy from fat has been shown to lead to sustained weight loss, of 6%, and improvements in HbA1c (a marker of glycaemic control) over a 4-year period (3).

What's the downside?

Although it works for some people there are also many who question the recommendations to consume a low fat diet, arguing that there was not sufficient evidence to support its introduction (4) and even suggesting it may have contributed to the current epidemics of obesity and diabetes. This approach may be particularly limited for people with Type 2 diabetes, as this condition is characterised by a resistance to insulin which means when carbohydrates are consumed they are not used efficiently.

In the presence of insulin resistance, which is common in people who are overweight or obese in particular, the consumption of carbohydrates can set off a cycle leading to hunger and weight gain (**Figure 2**). If people have a good tolerance to insulin however and eat mainly lower GI foods which do not cause too big an increase in blood glucose then a low fat approach can be suitable to achieve their health goals.

The diet-heart hypothesis underpinning the relationship is flawed. The assumption that dietary fat (especially cholesterol and saturated fat) leads to the accumulation of fat in our blood vessels is not supported by evidence. A review of the evidence can be found [here](#).

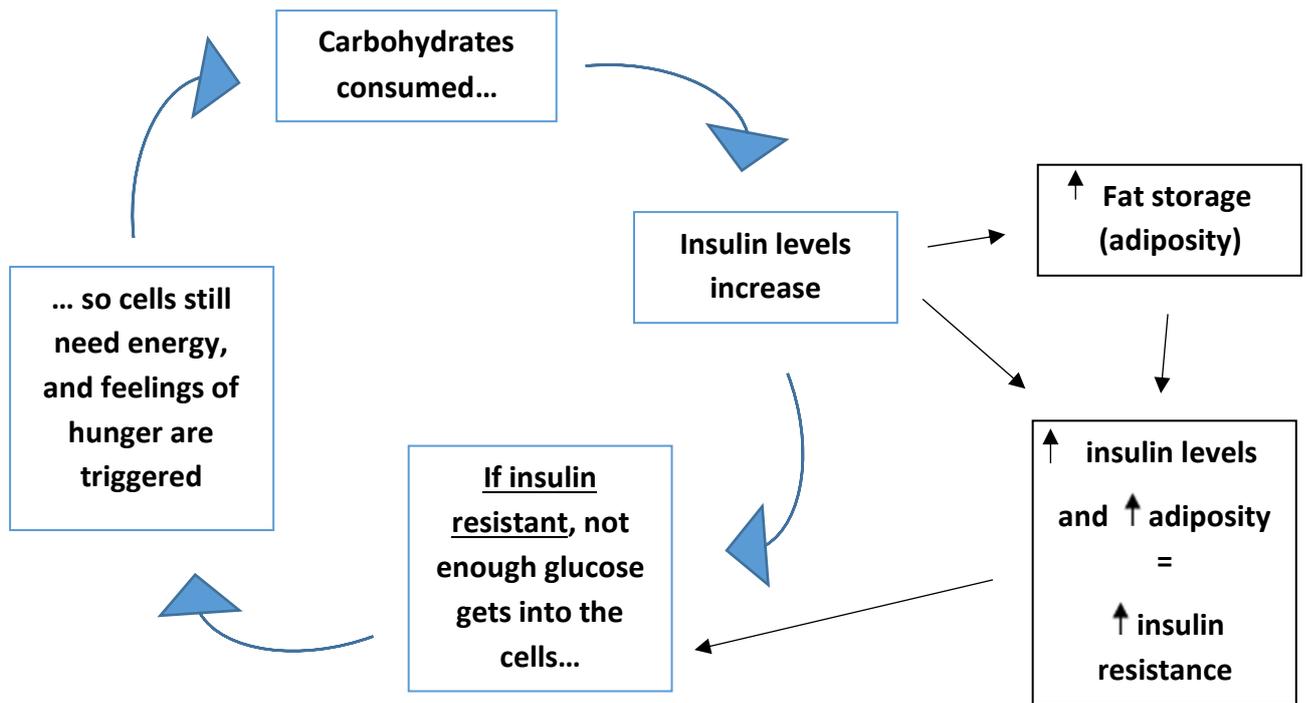


Figure 2. The (possible) effect of eating carbohydrates if resistant to insulin

Some further reading/resources

UK Dietary Guidelines:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/547050/government_dietary_recommendations.pdf

Specific examples of a low fat dietary approach include:

- The DASH diet: <http://dashdiet.org/default.asp>
- The Ornish diet: <http://www.everydayhealth.com/diet-and-nutrition/the-ornish-diet.aspx>

Other relevant links:

<https://www.heartuk.org.uk/low-cholesterol-foods/choose-low-cholesterol-foods>

<http://www.diabetes.co.uk/diet/low-fat-diet.html>

References

1. Widdowson EM. Assessment of the Energy Value of Human Foods. Proceedings of the Nutrition Society. 1955;14(02):142-54.
2. Hooper L, Abdelhamid A, Moore HJ, Douthwaite W, Skeaff CM, Summerbell CD. Effect of reducing total fat intake on body weight: systematic review and meta-analysis of randomised controlled trials and cohort studies. BMJ. 2012;345:e7666.
3. Wing RR. Long-term effects of a lifestyle intervention on weight and cardiovascular risk factors in individuals with type 2 diabetes mellitus: four-year results of the Look AHEAD trial. Archives of internal medicine. 2010;170(17):1566-75.
4. Harcombe Z. Dietary fat guidelines have no evidence base: where next for public health nutritional advice? British Journal of Sports Medicine. 2016.