

Most people are under the impression that starchy foods such as bread and potatoes make you fat.

This is not the case - unless you cover your bread and potatoes with high-fat foods such as cheese, butter or sour cream.

Excess sugars and carbohydrates are stored as glycogen - not fats. Carbohydrates are not converted to fats. Animals, bacteria and fungi convert glucose to glycogen which is the form that glucose is stored.

Except in abnormal, extreme conditions, carbohydrates are not converted to fat in humans.

Consider the following.

In some animal species, carbohydrates in excess of requirements are converted to fat via the pathway of lipogenesis. [...]. Other than in the experimental situation of gross carbohydrate overfeeding, conversion of carbohydrate to stored lipids does not occur to any appreciable extent in humans.[1]

As Marc Hallerstein, professor of Nutritional Science at Berkeley states:

Fat cannot be converted to carbohydrate in animals because animals lack the enzymes of the glyoxylate pathway, and carbohydrate is not converted to fat because of a functional block of uncertain cause.[2]

Under most dietary conditions, the two major macronutrient energy sources (CHO and fat) are therefore not interconvertible currencies; CHO and fat have independent, though interacting, economies and independent regulation.[3]

A research team at University of Lausanne concluded:

These findings challenge the common perception that conversion of CHO to fat is an important pathway for the retention of dietary energy and for the accumulation of body fat.[4]

One remarkable study from 1979 showed that by simply ADDING 12 slices of white bread (at 70 calories a slice) or high-fiber bread (at 50 calories a slice) to existing diet of overweight participants (a diet that resulted them in being overweight in the first place), resulted in an average weight loss of 9 kg over a period of 8 weeks. There was no change in their physical activity or exercise.[5]

The final paragraph is from a 2003 paper.

An overwhelming amount of evidence shows that the ratio of fat to carbohydrate in the diet is the primary factor in the macronutrient composition of the diet that easily causes passive over-consumption of energy and thus leads to weight gain. In contrast, high-carbohydrate diets seem relatively benign, regardless of the type of carbohydrate. [6]

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**Fats make you fat - not carbohydrates.**

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## Footnotes

1. Mann, J. & Truswell, A. S. (eds.) (2017) *Essentials of Human Nutrition*. Fifth Edition. London: Oxford University Press.
2. Hellerstein, M. K. (2001) No common energy currency: de novo lipogenesis as the road less traveled. *The American Journal of Clinical Nutrition*. 74 (6), 707-708.
3. Hellerstein, M. K. (1999) De novo lipogenesis in humans: metabolic and regulatory aspects. *European Journal of Clinical Nutrition*. 53 (1), s53-s65.
4. Acheson, K. et al. (1982) Glycogen synthesis versus lipogenesis after a 500 gram carbohydrate meal in man. *Metabolism*. 31 (12), 1234-1240.
5. Mickelsen, O. et al. (1979) Effects of a high fiber bread diet on weight loss in college-age

males. *The American Journal of Clinical Nutrition*. 32 (8), 1703-1709.

6. Saris, W. H. (2003) Sugars, energy metabolism, and body weight control. *The American Journal of Clinical Nutrition*. 78 (4), 850S-857S.