

Carbohydrates, proteins & fats.

The basics.



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Carbohydrates.

There are 3 main types of carbohydrate:

- Sugars - These are the simplest, most basic building blocks of carbohydrates.
- Starches - These are long chains of sugars linked together.
- Fibre - These are the most complex form of carbohydrate. They are very long, branched, interlinking chains of sugars.

Every gram of pure carbohydrate supplies our body with 4 calories.

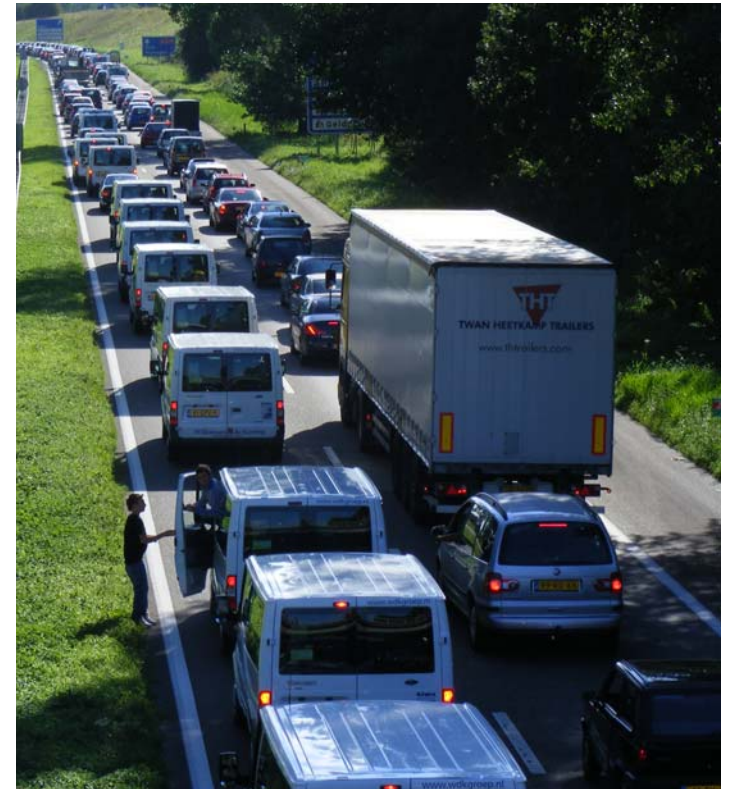
What do carbohydrates do?

Carbohydrates are our bodies preferred source of energy. When we eat carbohydrates, our gut breaks them down into individual sugar molecules. These then travel round our bodies in our blood to be used for either energy or stored for later use.

Simple sugars in our diet rush immediately from our gut into our blood. This sudden rush is not ideal for our body and can cause it and its hormones to overreact. Like rush hour traffic leading to road chaos. Long term over consumption of simple sugars can lead to Type 2 Diabetes.

The more complex starches take longer to trickle to our blood (because it takes time for them to be broken down first). This slower, more controlled release into our blood is much better for our bodies. It gives us a steady, constant supply of energy, like the roads *not* at rush hour leading to a quick, pleasant journey.

Fibre is so complex, our bodies can't break it down at all. It simply passes through our gut without releasing any energy at all. But, because it is so complex, it interferes with the release of simple sugars, slowing down their passage to our blood. This is just one of the many benefits of having plenty of fibre in your diet.



Where do you get carbohydrates from?

The healthiest sources of complex carbohydrates are from:

- Fruits
- Vegetables
- Whole grains (eg, wholegrain bread, wholegrain pasta, wholegrain cereals).

But we get too much simple, refined carbohydrates from processed foods such as:

- Fast foods and takeaways
- White flour products (eg white bread)
- Fizzy drinks
- Cakes, sweets, chocolate.
- Biscuits and pastries.



Conclusions.

- Carbohydrates are an important part of our diet and we shouldn't avoid them.
- We should all be eating mostly "natural" plant based foods (foods straight from the farm) such as fruit, veg and whole grains, made up of complex carbohydrates.
- We should severely restrict highly processed, man-made foods such as crisps, cakes, sweets, pastries, biscuits, white bread, white pasta etc, made up of simple carbohydrates.
- Processing foods (turning them from natural foods into artificially sweetened, coloured, flavoured and preserved products) usually means removing the "good" complex carbohydrates, replacing them with "bad" simple carbohydrates.

Proteins



Proteins are the bricks and mortar of our body. They are found in our muscles, bones, skin, hair, blood and internal organs.

There are 10's of thousands of different kinds of protein, but they are all made up from about 20 different amino acids linked together in different combinations. We can create from scratch all but 8 of these amino acids. We must get these 8 "essential" amino acids from our diet to survive.

- Foods that contain all amino acids are called Complete protein sources.
- Foods that are missing some amino acids are called Incomplete protein sources.

Every gram of pure protein supplies our body with 4 calories.

What do proteins do?

The majority of the protein we eat is digested in our gut, broken down into their amino acids, then “turned into” various parts of our body.

Our body uses proteins to grow and repair itself. Without a daily supply of fresh protein, our body is forced to cannibalise itself and breakdown one part, for use in another.

Lack of protein in our diets can cause reduced growth, loss of muscle, lowered immunity, weakening of the heart and even death.

Luckily, and average adult only needs about 0.8 grams per kilo of bodyweight each day. In the western world, we usually get more than enough.



Where do you get protein from?



Complete protein sources include animal based foods, dairy and eggs. But, red meat is also high in “bad” saturated fat.

Incomplete protein sources include beans, nuts and whole grains. But because of their incomplete nature, a mixture of different incomplete protein sources are needed to get all the essential amino acids.

Conclusion.

- Getting enough protein in our diet is essential, but in the western world, it is unlikely we wont get enough.
- If you are a vegetarian, ensure you eat a mixture of beans and nuts, or make sure you include dairy or eggs in your diet.
- If you are a meat eater, try to eat mainly fish or poultry, as these are low in “bad” saturated fats.
- Eating a source of protein each and every meal is a good way of making you feel fuller for longer, preventing you snacking on unhealthy sugary snacks.

Fats

There are 3 main types of fat in our diets:

- Unsaturated - These are found as either mono-unsaturated or poly-unsaturated fats. These are the “good” fats for our body and are mainly liquids at room temperature.
- Saturated - These are the “bad” fats for our body and are mainly solid at room temperature.
- Trans Fats - These are the “very bad” fats for our body. They are mostly man-made and are solid at room temperature.

Every gram of pure fat supplies our body with 9 calories.



What do fats do?



One of the major roles of fat in our body is as a very concentrated fuel store. Only 1kg of bodyfat can fuel an average woman for nearly 4 days!

Fats also play a vital role in the membrane of every cell in our body. It also provides protection by cushioning us from knocks and hits, and insulates us when the temperature drops.

Various vitamins and hormones essential to life are made in our body from fat molecules.

“Good” unsaturated fats decrease levels of our “bad” LDL cholesterol, while increasing levels of our “good” HDL cholesterol.

“Bad” saturated fats increase levels of our “bad” LDL cholesterol. And our bodies can produce saturated fat by itself, so we don’t need to consume any more.

“Very bad” trans fats not only decrease levels of our “good” HDL, but increase levels of our “bad” LDL cholesterol. They are also linked to heart disease, stroke, diabetes and other chronic conditions.

Where do you get fats from?

Unsaturated fats are found mainly in plant based foods, like vegetable oils, nuts and seeds.

Saturated fats are found mainly in animal based foods such as red meat and dairy products.

Trans fats are found mainly in man-made, highly processed foods like commercially baked goods, margarines and fried foods.



Conclusions.

- Eating fat is not bad for us, but eating too much of the *wrong kind of fat* can be.
- Get the majority of your fats from healthy unsaturated fats from plant based foods.
- Limit the amount of unhealthy saturated fats from animal based foods.
- Try to eliminate entirely the very bad trans fats from man-made processed foods.
- Many processed foods labelled as “low fat” have had their fat content replaced with simple carbohydrate sugars.