

# Can eating certain foods make you smarter?

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Trying to keep up with what constitutes a "healthy" diet can be exhausting. With unending options at the supermarket, and diet advice coming from all directions, filling your shopping trolley with the right things can seem an overwhelming task.

For a long time we've known diet is key to maintaining [physical health](#).

But [emerging evidence](#) indicates diet quality also plays a critical role in our cognitive function.

We're learning some of the best things to eat in this regard include vegetables, nuts and berries, foods containing "[good fats](#)" and, possibly, [fermented foods](#).

As well as potentially improving our [brain function](#), eating these sorts of foods could improve our mental well-being – and could even help the planet, too.

## Diet and brain function

In the face of [rising obesity rates](#), over the past couple of decades, researchers have questioned whether increased weight, or poor diet, could influence cognition. They have since looked at what sorts of diets might impair or improve the function of our brains.

Long term follow-up studies show obesity is associated with [mild impairments](#) in several domains of cognitive function, including [short-term memory](#), attention and decision-making.

Research has also shown [short-term memory is poorer](#) in people who report eating more saturated fat and sugar.

Conversely, the Mediterranean diet has been associated with [better brain health](#) and maintenance of cognitive abilities into older age. A Mediterranean diet is based on vegetables, whole grains, legumes and nuts, with healthy fats such as olive oil. Intake of red meat, saturated fats and sugar is limited.

A [healthy diet](#) has many elements, so let's look at what particular foods might explain these benefits.

## Vegetables, nuts and berries

Evidence indicates eating more vegetables [slows the gradual decline](#) in cognitive abilities that occurs naturally as we age.

While all veggies are likely to contribute, those in the cruciferous (Brassicaceae) family [may confer particular benefits](#) through their high fibre, folate, potassium and vitamin content. Vegetables in this family include broccoli, cauliflower, brussels sprouts, and fad favourites kale and rocket.

Interestingly, while there's good evidence for the protective role of vegetables, there's less evidence when it comes to fruit.

Berries, though, contain high levels of antioxidants. These compounds protect the body by scavenging harmful free radicals and reducing inflammation. Together these functions are likely to protect our cognitive ability.

Studies in rats, and in older people with mild cognitive impairment, indicate supplementing diets with berries [improves performance in various memory tasks](#).

Nuts, meanwhile, are excellent sources of monounsaturated and polyunsaturated fats, minerals and vitamins. [Studies in animals](#) have shown the addition of nuts improves learning and memory. [Emerging evidence in humans](#) suggests consuming nuts within a Mediterranean-style diet improves measures of cognition, such as the capacity for verbal reasoning.

## Healthy fats

Healthy diets such as the Mediterranean diet are also characterised by foods such as oily fish, avocados, olive oil and small amounts of animal-derived fats (such as from red meat).

One of [our experiments](#) in rats showed diets high in saturated fat from lard or high in sugar led to memory impairments, whereas an oil-based diet high in polyunsaturated fats didn't.

Importantly, rats fed these different diets [did not differ](#) in their total energy intake – only the type of fat and sugar varied.

While we can't comment directly on the effects in humans, these findings suggest eating excess sugar, or animal-based fats, may negatively impact cognition.

## Fermented foods

For thousands of years humans have prolonged the life of foods through fermentation, which increases the proportion of *Lactobacillus* and other healthy gut bacteria.

Kombucha and kefir are trendy right now, but other popular fermented foods include kimchi, miso, yoghurt and sauerkraut. Intake of these foods is thought to maintain the diversity of the gut microbiome.

Interest in the potential cognitive effects of fermented foods stems from [emerging evidence](#) for the importance of the gut microbiota in cognition and health.

It's well known that a [poor diet](#) can reduce the diversity of the gut

microbiome. Our work in rats has shown the cognitive impairments produced by exposure to an [unhealthy "cafeteria" diet](#) – a Western-style diet high in saturated fat and sugar – are linked to changes in the gut microbiome.

## Beyond cognition

It's not possible to attribute "miracle" properties to one [food](#) group alone. We suggest a balanced, varied diet is the best approach to sustain not only brain health, but heart health too.

And there may be other reasons to seek out these foods. A [newly published study](#) showed eating fruit and vegetables improved mental well-being. Subjects tended to feel happier, less worried, and reported higher levels of overall life satisfaction.

The link between diet quality and better mental health is [now well-established](#).

The recently published [EAT-Lancet report](#) adds a further compelling reason to eat healthily: the environment. This commission argued for a ["planetary health" diet](#) – akin to the Mediterranean diet – consisting of whole grains, vegetables, fruits, nuts and dairy, healthy fats, with low animal protein and few processed foods.

It is thought that shifting to such a [diet](#), together with reducing food waste and adopting more sustainable food production systems, will minimise environmental damage and safeguard individual health.

The central message is the health of individuals and of the planet are inextricably linked, and this requires a rethink of global food systems.

Overhauling food systems – and individual food habits – will not be

simple while foods high in fat and sugar are so readily available and relatively cheap.

Nonetheless, recognising that eating well might benefit the planet, as well as the body and brain, might motivate people to change their dietary habits.

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