# Brain food – what exactly should we be eating?

**What make the best brain food?**
Our brain is the hungriest part of our body. It consumes about 20% of our energy.

Did you know that the type of food we eat can influence alertness, attention, concentration, thinking, memory, learning, and decision-making?

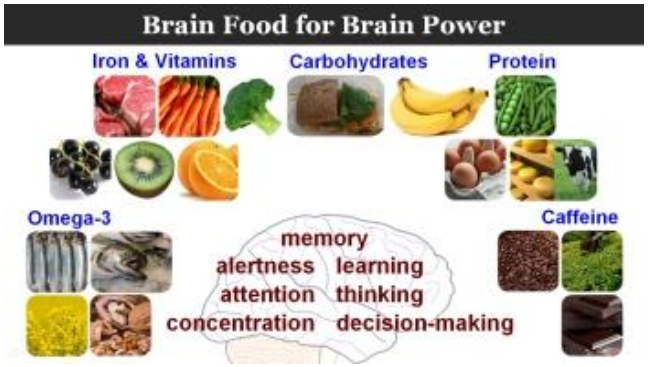
The fact is that we can all boost our brain power by eating the right sorts of foods. In general, food that is good for the body is also good for the brain. But not only is ***what*** we eat important, ***when*** we eat is also very important. Let me illustrate with a short story.

Several years ago I was in a team of consultants on a 'fly in-fly out' assignment in the South Island (New Zealand) town of Oamaru. We all stayed in the same hotel, and usually met together each morning at breakfast.

Our breakfast choices were quite diverse, from a full-on 'big breakfast' for some, to coffee and slice of toast for my colleague Jodie. At around 9:30 a.m. each morning, Jodie would leave the office briefly, to return with a large 'sticky bun', which she consumed with great relish.

After a few days of this routine, during breakfast another colleague (Alistair) asked Jodie about her 'sticky bun' ritual. Jodie explained that she simply needed some sweet food to keep going until lunchtime.

Alistair then described how his 'big breakfast', and particularly the bacon and eggs, gave him the energy to go through until lunchtime. He challenged Jodie to try a breakfast of bacon and eggs, and to see whether she then needed her (now) famous mid-morning sticky bun 'fix'.



By eating the right foods we get the best performance

Next morning Jodie took up the challenge – demolishing a good plate of bacon and eggs for breakfast. Later, in the office, we all watched Jodie as the clock approached 9:30 a.m. To our surprise, nothing happened!

After a few minutes Jodie became aware that we were all staring at her. "*What*!" she said. "*It's time*" we all said. "*I don't need a bun today,*" Jodie replied, "*I am feeling fine.*"

The next morning at breakfast, there were several more orders for a bacon and egg breakfast – mine was one of them. Thanks to Alistair and Jodie, I became a convert to the 'hearty breakfast club'.

The point here is that while the bacon and egg breakfast is often seen as something for manual workers, in this story we were all doing 'brain work'. Jodie's coffee and toast breakfast meant that her brain was running out of energy mid-morning. By changing her diet, she overcame that.

*For this Post, I am going to draw from the Scientific American Mind article "Brain Food" (October/November 2007). This article provided some enlightening information about the connection between nutrition and brain power. Although it is several years old, from my research, much of what has been published since about nutrition and brain power appears to be very similar* [*See Notes*].

Research (and practical experience!) shows that a good breakfast is essential for brain function in the morning. Our brain operates best when our blood glucose levels are stable. That is why Jodie needed her mid-morning sticky bun 'fix'!

Unlike our muscles, our brain does not store energy, so it requires a constant supply of food to maintain blood glucose. Regular snacking on the right foods throughout the day can help to keep blood glucose levels stable. This ensures that our brain cells remain active.

## Carbohydrates for blood glucose


**Starch and fibre-rich foods** such as whole-grain breads and vegetables benefit brain function because they keep blood glucose levels stable

When our blood glucose levels drop, we lose the ability to concentrate. However, very high levels of blood glucose can inhibit our mental function (many diabetics experience this condition). We can prevent fluctuations in our blood glucose

levels by being selective about which carbohydrates we consume.

Simple sugars (table sugar, sweets) elevate blood glucose levels quickly. This can provide quick energy, and is useful when blood glucose drops, however the effect does not last. Our pancreas responds by releasing insulin, which accelerates glucose uptake by body tissues, and so the levels drop.

On the other hand, starch and fibre-rich (complex) carbohydrates such as bananas, whole-grain breads, vegetables and legumes (peas, beans, soybeans, peanuts, lentils) raise blood glucose levels more moderately. Fibre, which is indigestible, also slows glucose intake.

**Bananas** contain glucose, starch, fibre, vitamins, amino acids, minerals, making them ideal brain fuel.

Starchy and fibrous foods also improve cognitive (thinking) abilities, raise concentration levels, and promote mental endurance. Research shows that people who eat a breakfast of complex carbohydrates tend to have better attention and memory performance throughout the morning.

## Iron for oxygen

Brain cells require oxygen to metabolise blood glucose. Oxygen is transported to the brain in haemoglobin, which is an iron-containing protein found in our red blood cells. Iron deficiencies in children can impair brain development, leading to problems in speech and reading. In adulthood, iron deficiencies can cause problems with our cognitive abilities.

Red meats (lamb, beef) contain the most easily absorbed iron. Plant seed oils, legumes, and some herbs carry trivalent iron, which is less easy for the body to absorb. Foods rich in vitamin C (black currants, kiwifruit, broccoli, oranges, carrots) can aid iron absorption. Vegans can acquire iron by eating a combination of vitamin C foods with trivalent iron-carrying plant foods.

**Red Meat** contains easily absorbed iron.
**Legumes** are an alternate source of iron.
**Vitamin C** from fruits and vegetables aids absorption of iron.

Certain other vitamins, minerals, and trace elements are also important for brain function. Vitamin B1 enables glucose metabolism; potassium, sodium, and calcium are used for metabolic reactions in the brain. Even slight deficits in these (say – from a 'fast food' diet) can lead to fatigue and concentration problems. Bananas and carrots are good sources of potassium and other minerals.

## Proteins for alertness

Our brain also depends on amino acids for producing enzymes and neurotransmitters (chemical messengers). Research shows that small, high-protein meals of low-fat dairy products, fish, lean meats, eggs and legumes can make people more alert and attentive. Bananas also contain protein.

**Protein** can make us more alert and attentive.
High-protein meals may affect memory.

Swiss researchers found that relative to a meal rich in carbohydrates, a balanced meal or a protein-rich meal led to more accurate short-term memory and improved attention, beginning about an hour after the meal was consumed.

While high-protein meals may decrease memory and thinking abilities, paradoxically a high-protein meal can improve decision-making.

## Omega-3 for brain health

Unsaturated fats, especially omega-3 fatty acids found in fish (mackerel, tuna, herring, salmon) are good brain food. These also help keep blood vessels in the brain healthy. Similar benefits can be gained from eating linseed, canola, soy and walnut oils, which contain properties the body converts to omega-3 fatty acids.

**Omega-3** fatty acids found in fish keep blood vessels in the brain healthy.

Adequate amounts of nutrients from Omega-3 fatty acids (and other foods) can only reach the brain if the body gets enough fluid. Even slight dehydration can slow this, causing short-term memory problems and reasoning difficulties.

## Caffeine for concentration

Caffeinated drinks (coffee, tea) can improve short-term concentration, learning, and memory. Effects from drinking coffee can take hold within about 20 minutes, and last for two to three hours. Because tea contains less caffeine, and it is released more slowly, its effects are weaker, but have a longer lasting impact. Dark chocolate is another source of caffeine. Too much caffeine (say – four cups of coffee) may cause a decline in concentration.

**Caffeine** can improve short-term concentration and memory.

Effects from coffee take hold in about 20 minutes.

Our first set of free nuggets for this Post are three short videos:

**Good brain food (Dr Goldman) - the American Academy of Anti-Ageing Medicine** (2min:30sec) Dr Goldman discusses nutrition and the brain.

**5 Foods That Boost Your Memory (everyday Health)** (01min:35sec) Amy Jamieson-Petonic of the Cleveland Clinic talks about five foods that help memory.

**Food for Thought. Get the most for your brain from your diet** (01min:27sec) Marlo Mitler gives some choices of foods for the brain.

The second set of free nuggets are three reads:

**Brain Food: What to Eat When Revising** (by Florence Lee, 21 Mar 2013). This short Post is written around how to prepare for exams, it contains some useful tips (about a 3-minute read).

**The brain diet: Eating the right foods can improve your memory, lift your mood and help you concentrate for longer** (by Rita Carter, 4 April 2012). This article, covering concentration, mood, alertness, memory and cravings, is quite informative, if a little 'technical' (about a 5-minute read).

**Brain Food** (Bewellbuzz, Oct 03, 2011). This Post covers a number of food options to keep the brain healthy (about a 4-minute read).

### Notes:

*The October/November 2007 Scientific American Mind article "***Brain Food***" was authored by Dr Ingrid Kiefer, then a nutrition scientist at the Medical University of Vienna (Austria). The* ***Oct/Nov 2007 issue of Scientific American Mind*** *can be purchased online for $US 7.95.*

**Zap**
A concentrated burst of energy or power.

**Nugget**
A piece of wisdom or knowledge that helps to inform, empower, motivate, or inspire.

## Summary

What we eat and when we eat influences how well our brain works. Eating breakfast, and snacking on the right foods, ensures our blood glucose levels are stable throughout the day.

Starch and fibre-rich carbohydrates such as bananas, apples, vegetables, beans, whole-grain bread and cereals, all provide a longer-lasting effect. Simple sugars raise glucose levels more quickly, but do not last.

Adequate amounts of iron in our diet helps supply the brain with oxygen, which allows us to stay mentally sharp. Remember to also take in some vitamin C.

Protein packed snacks such as a tuna, egg, or cheese sandwich can boost attention. This can be useful before an important meeting such as an interview.

Omega-3 fatty acids from fish and nuts strengthen brain function, but remember to drink regularly to avoid dehydration.

Caffeine helps our concentration – coffee takes effect within about 20 minutes, tea takes longer, but last longer as well. Dark chocolate also contains caffeine.

Bananas, which contain glucose, starch, fibre, vitamins, amino acids, minerals, are ideal brain fuel.

A low-calorie, protein-rich lunch (say – fish or chicken salad) will help maintain attention and memory throughout the afternoon.

http://freezapnuggets.com/wordpress/?p=537

**Coming next:** Listening - the secret to successful communication