

**Why we
fatheads need
to watch our
diets, rather
than diet.**

Derek Pugh



When I was at school one of my teachers always called us ‘fatheads’ as he rapped a large bunch of keys against our skulls. That was a long time ago but I wonder if he knew then how right he was. If you take out the water, what’s left of our brain is about 60% fat, so having a fatty brain is a good thing.

But there are nice fats, not so nice fats, and then downright bad fats. Many foods and most of the fast food you may be eating will have been cooked in oil that is not one of the good fats, and whilst eating it occasionally may do you no apparent harm, eating the bad fats all the time is like using cheap oil in a formula one racing car – eventually you will have problems. This article introduces you to some of the science to explain why.

The fats we need to eat to build our brain cells are called essential fatty acids (EFAs). There are two kinds – omega 3s and omega-6s. The brain has the highest content of omega-3 fatty acids found in the body. You find them in the outer coating of the neurones where the neurotransmitters bind to allow the cell to communicate, and in the myelin, which insulates the neurones. EFAs are long chain molecules that are woven into the fabric of the cell membranes and they provide flexibility. If the brain cell membranes become too stiff key brain

chemicals can't do their jobs and brain activities such as learning, reaction speeds and memory start to decline. Other fats you may eat (think French fries) are also long chain molecules but they lack the flexibility of the omega fats. As they replace the omega 3s in the cell membranes the cells become more rigid, and so function is impaired. It's as simple as that.

Some of the bad fats you may have heard of are Trans fats (or Trans fatty acids). You can get these from fatty meat, and they are created chemically during cooking with vegetable oil. They are not 'essential' fats but there are plenty in oil fried food. They are the reasons that people who wish to remain as healthy as possible generally avoid fast food restaurants and deep fried foods.

Neurones only have to do one thing – communicate by sending an electro-chemical message - and the nutrients needed to allow this come from our food. The best source of EFAs is seafood, particularly oily fish from cold water sources and some plants like chia seeds and walnuts. Some people take fish oil or krill oil nutritional supplements that have brain benefits if they don't eat sufficient EFAs in their diet.

Jean Carper, author of *Your Miracle Brain* states that the type of fat you put into your body might be the most important decision you make on behalf of your brain

throughout your lifetime, and it is not only our mental capacities that depend on the right proportion of fats, but also our longevity and vulnerability to depression. Research shows animals fed the wrong fats end up dumber than animals fed the right fats. In fact one of the best ways to screw up the perfectly good brain you are born with is to eat the wrong fats – at any age.

If you have ever seen butter go bad you know what ‘rancid’ means. It’s a term that describes the oxidation of the fat and it can happen in the brain fat too. Once it has been oxidised – chemically altered after a reaction with oxygen – fats are pretty much useless to us and some of the by-products, called ‘free radicals’, are toxic. That’s why we use ‘antioxidants’. The fats in our brain are pretty sensitive to oxidation but if we eat an array of antioxidants we can maintain them and keep our brains healthy. One of the advantages of modern life is the availability of these antioxidants – you get them in fruits, vegetables and spices. Avocados are particularly good, also berries, coffee and freshly brewed tea (not the bottled kind). Eggs, nuts and seeds are good sources of brain nutrients too.

Dark green vegetables like spinach are packed full of antioxidants. Dr Larry McCleary, a neurosurgeon and author of *The Brain Trust Program*, says they have the antioxidant power to “whip oxygen free radicals like Popeye whipped Bluto.” McCleary says eating dark

green vegetables will slow brain aging, improve memory and enhance dexterity. I recommend McCleary's book to people who want to know more about diet and the brain. It even suggests brain friendly menus.

Brain cells are even more sensitive than other body cells to nutrients and dietary chemicals and your diet and lifestyle (mental stimulation and physical exercises) can have a dramatic impact.



References

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Derek Pugh is an experienced Principal and teacher in both Australian and International Schools. He now runs workshops in Brain Compatible Education for students, teachers,

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