

## 6 Steps to a Healthy Brain

Our mission at Food for the Brain is to raise awareness about the link between nutrition and mental health. We are a charitable foundation working to inform organisations and empower individuals to change their diet and lifestyle and take greater control of their own mental health. Alongside the charity, our not-for-profit clinic, the Brain Bio Centre, helps individuals by utilising nutrition, diet and lifestyle recommendations to assist mental health conditions.

For all ages, the importance of optimum diet and lifestyle for the health of the brain cannot be understated. By making simple changes in what we eat and how we lead our lives we can significantly improve our health and mental well-being. There are simple steps you can take to keep your brain in good shape and avoid damage that poor nutrition and lifestyle choices can cause.

Our brain uses up more energy than any other organ in our body. Despite the adult human brain weighing an average of around 1.4kgs, it steals about 20% of the body's energy requirements<sup>1</sup>. It requires a continuous stream of energy, even when we may not appear to be using it, such as when we're sleeping, there is still a high baseline consumption of glucose, which is our body's main source of fuel<sup>2</sup>. Two thirds of the brain's energy are used to help neurons, our brain cells, send signals, but the remaining third is used for basic housekeeping, or in scientific terms cell-health maintenance. When our brains are healthy, the rest of our body is healthy, plus we also feel great.



### **1. Keep your blood sugar balance in check**

It is well known that having a diet high in refined sugars and carbohydrates can lead to inflammation in the body and poor insulin regulation, which consequently affects neurotransmitter activity in the brain (neurotransmitters are chemical messengers produced by nerve cells so that they can communicate with each other).

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<sup>1</sup> <http://www.pnas.org/content/99/16/10237.full>

<sup>2</sup> <http://www.scientificamerican.com/article/why-does-the-brain-need-s/>

Our body breaks down refined carbohydrates such as refined grains like white bread and confectionary very quickly into glucose, which send our blood sugar levels soaring. Our pancreas then has to secrete large amounts of insulin to transport the glucose into the cells to be used as energy or stored as fat. If we are continuously feeding on these refined foods our cells eventually become desensitised to insulin and we are left with high levels of glucose in the blood stream. Over long periods of time this can have a disastrous effect on the health of our blood vessels in our body as well as our brain. Not only does this send the neurotransmitters out of kilter, which contributes to low mood and anxiety, but it can also lead to atherosclerosis that consequently contributes to inflammation in the brain<sup>3</sup>.

Replace refined carbohydrates with the following foods:

- Quinoa, brown rice, oats, buckwheat, millet, wholemeal bread and wholemeal pasta

Avoid to the following foods which are high in sugar:

- White bread, white pasta and white rice, confectionary, pastries and sugary fizzy drinks

Avoid stimulants which raise our blood sugar levels:

- Coffee and alcohol

## 2. Increase intake of Omega 3

Omega 3 is an essential fatty acid which is found mainly in oily fish and nuts and seeds such as walnuts and chia seeds. It is called an essential fatty acid (EFA) because it's vital to our health and as we cannot synthesise it ourselves in our body, we need to obtain it from our diets. Omega 3 is important for a number of reasons. The human brain is nearly 60 percent fat and the type of fat you eat will determine your brain's integrity and ability to perform. Omega 3 plays an important role in the synthesis and functions of neurotransmitters as well as the health of our brain cells. Clinical observation studies have related deficiency of omega 3 to impaired brain performance and diseases<sup>4</sup>.

To increase your intake of Omega 3 eat the following foods on a regular basis:

- Sardines, Anchovies, Mackerel, Herring and Wild Salmon
- Flaxseeds, hemp seeds, chia seeds and walnuts

Avoid harmful fats such as those listed below will prevent damage to your brain cells:

- Hydrogenated vegetable fats in processed foods such as: shop-bought cakes and biscuits, hard margarines, takeaways, pastry, pies and fried foods<sup>5</sup>.

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<sup>3</sup> <http://brainhealthbook.com/blog/>

<sup>4</sup> <http://www.ncbi.nlm.nih.gov/pubmed/20329590>

<sup>5</sup> <https://www.bda.uk.com/foodfacts/TransFats.pdf>

### 3. Increase your intake of antioxidants

Antioxidants are substances that are predominantly found in vegetables and fruits which help to protect the cells of our body from damage. Essentially, they're antidotes to oxidation, a process which is caused by things like exposure to pollutants, cigarette smoke and toxins from the food we eat. They are also vital for supporting thousands of chemical reactions in our bodies such as synthesising hormones, immune cells and creating energy. Avoiding the brain pollutants such as those listed above and eating a diet rich in the following foods can help to stop the chain reaction of damage, allowing your cells to regenerate and perform at their best:

- Green leafy vegetables: kale, spinach, chard, broccoli, mustard greens
- Colourful vegetables: peppers, carrots, tomatoes, sweet potato, squash
- Fruits: citrus fruit, berries, kiwi, red grapes

### 4. Increase your intake of B vitamins

In each of our cells exists a vital process called the methylation cycle. This is essential for the synthesis of our neurotransmitters as well as many other mechanisms and is dependent on B vitamins, particularly B6, B12 and folate. The malfunctioning of the methylation cycle can occur either due to a diet deficient in these nutrients or it could also occur due to a genetic variation. This consequently leads to abnormally high levels of an amino acid called homocysteine as it is no longer recycled properly, which can be very damaging to our cells. By maintaining normal levels of homocysteine in our blood we can ensure proper metabolism of neurotransmitters thereby helping to balance moods <sup>6</sup>. B vitamins are widely found in food, but some require higher levels in their diet. These vitamins can be found in the following foods:

- Wholemeal grains such as brown rice, brown pasta, brown bread and oats
- Dark green leafy vegetables
- Organic poultry and grass-fed beef
- Organic dairy such as yoghurt, cheese and milk
- Pulses such as lentils and all types of beans
- Nuts and seeds

As we age, we become more susceptible to deficiencies in vitamins such as B12 due to malabsorption, which is why it's more important to make sure that we are getting the right amounts of these essential nutrients. We can also help boost our levels of B vitamins by supplementing with a good quality B complex supplement.

### 5. Get enough sleep and rest

The benefits of sleep and rest are indisputable. Yet we are in the middle of a sleep deficiency epidemic where 47 per cent of people report to having difficulty falling asleep or staying asleep throughout the night <sup>7</sup>. With our addiction to technology taking over our lives, most of us are now incapable of even going to bed without our phones or tablets or the television switched on, resulting in constant stimulation which

<sup>6</sup> <https://www.nutrition.org.uk/healthyliving/lifestages/older-life.html?limit=1&start>

<sup>7</sup> 'Optimum nutrition for the mind' by Patrick Holford, p184

stops us from being able to completely 'switch off'. Without a proper night's sleep our body quickly uses up our stores of vital nutrients such as vitamin c, zinc and magnesium, which is why we become more prone to colds and infections. Poor sleep also leads to low levels of serotonin and melatonin, neurotransmitters which are vital for our mental health. Low levels of these neurotransmitters make you more likely to eat more sugary foods and refined carbohydrates because these foods increase levels of serotonin <sup>8</sup>. Aim to get at least 7 hours of uninterrupted sleep a night for optimal brain function.

## 6. Hydration

Your brain is composed of 73% water, which is not only used to maintain hydration of our cells and tissues, but also plays an important role in manufacturing neurotransmitter and hormones <sup>9</sup>. Without the right balance of water in our brain and the rest of our body our blood cannot effectively deliver nutrients to cells and transport waste material out. This leaves us feeling fatigued and can impair our cognitive function. It is important to drink at least 1.5 litres of water a day to maintain an optimal balance of water in our system.

Making these changes to your diet and lifestyle can greatly improve your health. They don't need to be made all at once, in fact making changes slowly is much better to increase the chances of new habits actually becoming an effortless and integrative part of your everyday life. If you'd like more information and support on how nutrition can play a positive part in your life please visit our website at [www.foodforthebrain.org](http://www.foodforthebrain.org). Information about our clinic the Brain Bio Centre can also be found here if you're interested in having a professional consultation with one of our experienced nutritional therapists.

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<sup>8</sup> <http://www.sleepcouncil.org.uk/wp-content/uploads/2013/01/Get-a-Good-Nights-Sleep.pdf>

<sup>9</sup> <http://water.usgs.gov/edu/propertyyou.html>