BDA The Association of UK Dietitians

Food Fact Sheet

Diet, behaviour and learning in children

Nutrition is important for the brain as well as the body. A well fed brain is more likely to lead to good mood, behaviour and learning.

Eating regular meals, and having a diet that includes a wide variety of foods, are the most effective ways of ensuring that the brain is well nourished.

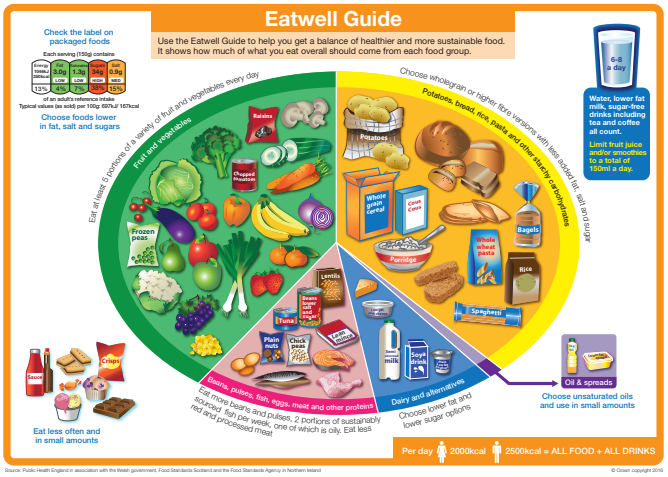
For those who find it hard to eat a wide variety of foods, nutrition supplements can play an important role. In addition, some children are affected by particular foods and their mood or behaviour is improved by removing these foods from the diet.

Eating regularly.

Many parents and teachers report that children's concentration and mood gets worse if they go too long without eating. The brains of young children in particular, need a regular supply of energy so that they can think effectively. There is evidence that eating breakfast leads to better learning than not having breakfast. It may also be helpful to eat food that is digested more slowly so that the supply of energy lasts until the next meal or snack. This means that meals including fibre may be particularly helpful for the brain.

Eating a variety of foods.

We need nearly 40 different nutrients and the more varied our diet is, the more likely it is that we get enough of everything we need. The Eatwell Guide is a model that shows us a balanced diet. Most children would benefit from more fruit and vegetables, and fewer sugary drinks, high-fat and high-sugar snacks.



Some nutrients appear more important than others for the brain. This can be because they are actually more important, or just because they have been more thoroughly studied. Iron, iodine, zinc, selenium, magnesium and omega 3 are thought to be particularly important for the brain. Low intakes of these are relatively common.

How might specific nutrients affect mood, behaviour or learning?

There is a strong link between low iron and poor mood and concentration. There is also some evidence that omega 3 fats help with attention. There might be a link between low magnesium and anxiety as well as a link between low zinc and poor attention and sleep.

The number of children who do not get enough iron, omega 3, vitamin D, magnesium or zinc is quite high. For some children, increasing their intake of foods containing one or more of these nutrients could make a difference to mood, behaviour and learning. It not likely to make a difference if you are already getting enough of course. For more information on omega 3 and vitamin D, see the BDA's Food Fact Sheets on these topics.

Which is best – supplements or real food?

A varied and nutritious diet is the most reliable way to ensure that your child's developing brain and body gets everything it needs. The body often absorbs nutrients better from real food than from

supplements. Red meat and pulses are good sources of iron and zinc. Green vegetables are a good source of magnesium. Oily fish is the best source of omega 3. Fish, milk, yoghurt and eggs are good sources of iodine.

Not every child accepts a varied diet so supplements can be a helpful "safety net" in some cases. A general vitamin and mineral supplement is helpful for any child with a poor diet. An omega 3 supplement might benefit a child who eats very little oily fish. Most children need vitamin D supplements.

Is omega 3 just a "red herring"?

No – eating fish in pregnancy and early childhood appears to be good for your child's development. Whilst this may be because of other nutrients found in seafood that are good for the brain, like selenium and iodine, having enough omega 3 fat is essential and oily fish is the best source. Evidence shows that omega 3 is important in brain development and function. Children and adults should include two servings of fish a week for general health and wellbeing with at least one of these portions being rich in omega 3 like mackerel, salmon or herring. There are also plant-based sources of omega 3 like walnuts, flaxseed oil, rapeseed oil, green leafy vegetables and some fortified foods for those following a plant-based diet.

Low blood levels of omega 3 are more likely in children with conditions like ADHD, Autism, dyslexia, dyspraxia and some psychiatric disorders. Taking omega 3 supplements may improve attention but not hyperactivity in children with ADHD. There is some evidence that it can improve mood and reduce anxiety, but this evidence is mostly from studies with adults.

Does my child have a food intolerance?

You may think that your child becomes irritable, hyperactive or loses concentration when they eat certain foods. This could be due to a genuine food intolerance. However, it could be just a coincidence. Removing foods that might be causing problems is called an exclusion diet. One popular example, for children with an ADHD or autism diagnosis, is a "gluten and casein free" diet. This diet excludes wheat and dairy products. However, the current evidence into the effects of these diets on mood and behaviour is inconsistent. Artificial colours used in some soft drinks and foods can affect behaviour and attention and have no nutritional value. Look for the following warning on labels of products containing certain colouring: "May have an adverse effect on activity and attention in children".

Summary

Giving your child regular meals, and a healthy, well-balanced diet helps their development, mental wellbeing and physical health. For some children, supplements may be needed in addition to the diet. Your child might benefit from reducing their intake of foods that are low in nutritional value, especially if they also contain specific food additives. Excluding other foods from your child's diet might also help if they happen to be sensitive to them, however it is safer to do this under the supervision of a dietitian.

Written by Dave Rex, Dietitian.

The information sources used to develop this fact sheet are available at www.bda.uk.com/foodfacts