

## Diet, behaviour and learning in children

This Food Fact Sheet will look at some foods, nutrients and additives that might affect mood, behaviour and learning. Good for the body – good for the brain.

We often see headlines claiming that diet can affect the mood, behaviour, attention or learning of children. However, the science behind the headlines is sometimes quite limited. What we do know is that the diets of many British children are short of nutrients that are important for the brain. The Eatwell Plate is a model that shows us a balanced diet. Most children would benefit from more fruit and vegetables, and fewer sugary drinks and high-fat or high-sugar snacks.

### The eatwell plate

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



Public Health England in association with the Welsh Government, the Scottish Government and the Food Standards Agency in Northern Ireland

It is well known that the food you eat as a baby and young child affects your health as an adult. It is also thought that giving your child a healthy, well balanced diet helps their mood, behaviour and learning. In short, what's good for the body, may well be good for the brain.

### Will omega-3 fish oil help my child?

Oily fish contains many nutrients. It is usually the best source of omega-3 fats and vitamin D in the diet. Oily fish include sardines, salmon, mackerel, trout, pilchards, herring and tuna (although not canned tuna). We should all be eating at least two portions of fish each week, one which should be oily.

If you are vegetarian, good sources of omega-3 are walnuts, rapeseed and linseed oils. Some foods, such as eggs, bread and dairy, are enriched with omega-3 – check the food label. If your child does not eat fish, it maybe particularly

important to limit their intake of omega-6 rich vegetable oils (e.g. sunflower, corn and soybean oils). This helps our bodies to make better use of omega-3 fats. If you choose to give your child an omega-3 supplement, take care with cod liver oil supplements as they can provide too much vitamin A if taken in large doses. Remember that eating actual fish gives a range of nutrients, not just omega-3 fats.

Eating fish in pregnancy and early childhood appears to be good for your child's development. This may be due to the omega-3 content, the vitamin D, and/or any of the other nutrients found in fish.

There is some evidence that children with autism, ADHD, dyslexia, dyspraxia and psychiatric disorders, are more likely to have low levels of omega-3 fats in their blood. However, it has not been proven that giving omega-3 supplements improves these conditions. We need more research before we can be sure which children might benefit from fish oils and how much to use.

### Should I give my child extra vitamins and minerals?

Low intakes of certain vitamins and minerals are common in children especially if they are very selective eaters. Selective eating is most common between the ages of 18 months and five years. Most breakfast cereals are fortified with vitamins and minerals. High fibre, low-added sugar varieties are the best choice for most children. Don't give extra vitamins and minerals if your child drinks 500mls or more of formula milk, as this is fortified already.

Iron deficiency is not uncommon in children. Low iron intakes are known to affect mood and attention. Red meat is the best source of iron but there are also non-animal sources such as lentils, beans, green leafy vegetables and fortified breakfast cereals.

There is some scientific interest in the role the zinc and magnesium play in attention and mood. It is important to include foods rich in zinc and magnesium. However the evidence is not yet strong enough to recommend specific supplements.



Good food sources of zinc include red meat, some seafood, milk and other dairy foods. Green vegetables, wholegrain cereals and nuts are good sources of magnesium. Folic acid may also play a role in mental health and green vegetables are the best source of this vitamin.

Vitamin D has an important role in brain development. Most of our vitamin D is produced under our skin when it is exposed to the sun in the summer months. We also get a small amount from our diet.

The UK government recommends that all children aged six months to five years are given a daily vitamin D supplement of 7-8.5 micrograms each day, unless they are having 500mls or more of formula milk. Older children who: spend very little time in the sun, have dark skin, always have their skin covered, or live in an area with very little sunlight may also benefit from a vitamin D supplement.

If your child's diet is very selective, you may wish to give them a general daily multi-purpose vitamin and mineral supplement which is suitable for children. Speak to your doctor, pharmacist or dietitian before you do so. A dietitian will be able to support you to improve the eating habits of your child.

## 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 colours: "**May have an adverse effect on activity and attention in children**". Also, many soft drinks and snacks are low in nutrients, so a diet that includes a lot of these is likely to be low in the nutrients that the brain needs.



## Summary

Giving your child 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.

### Further information:

Food Fact Sheets on other topics including Healthy Eating, Omega-3, Vitamin D and a range of allergies are available at [www.bda.uk.com/foodfacts](http://www.bda.uk.com/foodfacts)

### Useful links include:

[www.nhs.uk/Livewell/Goodfood/Pages/eatwell-plate.aspx](http://www.nhs.uk/Livewell/Goodfood/Pages/eatwell-plate.aspx)

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This Food Fact Sheet and others are available to download free of charge at [www.bda.uk.com/foodfacts](http://www.bda.uk.com/foodfacts)

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The information sources used to develop this fact sheet are available at [www.bda.uk.com/foodfacts](http://www.bda.uk.com/foodfacts)

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