

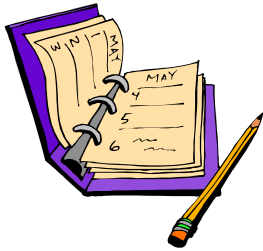
Could diet be affecting my child's behaviour?

TV and newspapers often tell us that changing you're a child's diet can improve their behaviour, improve their concentration, and even make them more intelligent. This leaflet aims to help you make informed choices about your child's diet.

Have you seen a connection between your child's diet and their behaviour?

Some carers can easily identify particular foods or drinks that clearly make their child 'hyperactive', disruptive or irritable. For example you might notice that after eating a certain brand of crisps, or drinking a certain drink, their behaviour changes for the worse.

Other carers find it useful to keep a diary of the foods and drinks their child has eaten, and a diary of their behaviour throughout the day.



Looking back at this over a period of a couple of weeks, they can then identify particular patterns in their child's behaviour that might be related to certain foods or drinks, or to other things such as not having much exercise, or when they are worrying about something such as a school activity or class.

For many children, their diet does not have an effect on their behaviour, for some though, there are obvious foods that affect them.

E-numbers and other food additives

E-numbers are food additives, and their safety is regulated by the government. E-numbers include natural and synthetic additives. For example E300 is ascorbic acid, a form of vitamin C.

Some people identify particular E-numbers that affect their child's mood or behaviour. These could be colourings, flavour enhancers, antioxidants, preservatives or sweeteners.

Additives that have been linked to increased hyperactivity in some children by scientific studies are:

- E102 - Tartrazine - A yellow colouring sometimes found in drinks and lollies

- E110 - Sunset yellow FcF, Orange Yellow S - A yellow colouring sometimes found in squash drinks, sweets and jelly



- E122 - Azorubine, Carmoisine - A red colouring, sometimes found in sweets and jelly and desserts
- E124 - Ponceau 4R, Cochineal Red - A red colouring, sometimes found in jelly and desserts
- E211 - sodium benzoate - a preservative sometimes found in sauces, pickles, meat products and squash drinks

The scientific study does not show that all children are made more hyperactive by these additives, only that some were.

Other additives that some carers have reported affect their child include:

- Other colourings (E100-E199)
- E621 Monosodium glutamate (MSG) a flavour enhancer often found in crisps
- E951 Aspartame, a sweetener used in Diet or No Added Sugar drinks and yoghurts



- Flavourings - these do not have E-numbers
- Caffeine - stimulant found in cola drinks, "energy" drinks, tea, coffee and chocolate

Other foods

Some people report that certain foods or food groups affect them or their child e.g. a specific fruit juice, milk, sugar.

If you notice a definite change in your child's behaviour when having a particular food, it may be advisable to reduce their intake of it, but **it is important not to cut nutritious foods out of a child's diet without a suitable replacement** e.g. cutting out milk can lead to calcium deficiency, cutting out wheat can lead to weight loss or constipation.

If you do decide cut out nutritious foods from your child's diet in the long-term, you should ask your GP, practice nurse or paediatrician to refer your child to a **registered dietitian**, who can check your child is getting a balanced and adequate diet.

Trial food exclusions

If you cannot identify any particular foods that are affecting your child's behaviour but still suspect that it is linked to their diet, you could try excluding some foods for a few days to see if their behaviour improves. For example, you may wish to have a week where your child has no drinks other than water, no sweets, chocolate or crisps. Keep a diary again to see if their behaviour changes and then slowly reintroduce the foods one at a time to see if it is one particular food that affect their behaviour or mood.

So what should my child eat for a healthy mind and body?

The scientific evidence suggests that eating regular meals and a healthy balanced diet is the best way to fuel your child for optimal mental and behavioural performance. Regular physical activity or exercise is also important.

The basics of a healthy diet are:

- Eating 3 meals a day - breakfast, lunch and dinner
- Eating plenty of fruit and vegetables (5 portions a day)
- Eating dairy foods daily (or a substitute to provide calcium)
- Eating starchy carbohydrate foods at each meal (cereals, potatoes, rice, bread, pasta, noodles, yam, etc)
- Eating protein and iron rich food every day (meat, fish, poultry, beans, lentils, soya or Quorn)
- Limiting sugary and fatty foods such as soft drinks, sweets, chocolate, crisps, biscuits and fried food to occasional foods
- Keeping well hydrated by drinking plenty of fluids - preferably water

Following these basics actually means that you avoid a lot of the additives and E-numbers mentioned earlier on in the leaflet.

The food standards agency website www.eatwell.gov.uk is a useful resource for more information on healthy eating at all ages.

Fish, fish oils and omega 3s

Omega 3 fatty acids (omega 3) are proven to improve brain development in under-5s and protect against heart disease in adulthood. There is research being done to see if they help with learning and behaviour.



The government recommends that we all should get omega 3 from eating 2 portions of fish a week including one serving of oily fish.

Boys can have up to four portions of oily fish a week, but it's best to limit girls no more than two portions of oily fish a week (this is to do with toxins that are sometimes present in oily fish that could affect unborn babies in high doses).

Avoid giving children shark, swordfish and marlin. This is because these fish contain relatively high levels of mercury, which might affect a child's developing nervous system.

Examples of omega-3-rich oily fish are: Mackerel, Kippers, Pilchards, Trout, Salmon, Sardines, Herring, Eel, Whitebait, Anchovies, Swordfish, Bloaters, Cachas, Carp, Hilsa, Jack fish, Katla, Orange roughy, Pangas, Sprats, fresh or frozen Tuna (omega 3 oils are extracted in tinning in the UK).

Some easy ideas for including oily fish in your child's diet are (remember to remove all the bones for children):

- 🐟 sandwich or jacket potato with
 - tinned pilchards,
 - sardines
 - mackerel in tomato sauce,
 - tinned salmon with mayonnaise
 - salmon
 - tuna pâté

- 🐟 fisherman's pie made with
 - mackerel
 - salmon
 - trout

🐟 salmon or tuna fish cakes with baked beans and mashed potato;

🐟 pilchards, sardines or mackerel in tomato sauce with pasta

🐟 stir fried vegetables with tuna or salmon served with noodles.

If your child does not eat fish there are other foods containing omega 3s:

- dark green leafy vegetables
- wholegrain cereal products, e.g. granary bread

- linseeds/flax, walnuts, pecans, peanuts or almonds (avoid whole nuts in children under 5 years or if your child is at risk of allergies)
- omega 3 enriched foods, e.g. Columbus eggs, some margarines, some milks
- Olive oil, Rapeseed/Canola oil, linseed/flax oil or walnut oil

If your child does not like oily fish or any of the foods listed above, then they may benefit from a fish oil or plant based omega 3 oil supplement.

Consult your doctor before taking a supplement if your child is on medication or has a medical condition such as epilepsy or haemophilia.

There have been some studies to investigate whether high doses of omega 3 oils as a supplement can help children with their concentration at school and even improve the symptoms of children with attention deficit hyperactivity disorder (ADHD) or autistic spectrum disorders (ASD). These studies are as yet inconclusive, and it is not clear what precise dose of omega 3 is needed, and what balance of essential fats (known as EPA and DHA). Researchers feel that these high doses take 3 months of daily supplements before their full effects are seen. High dose supplements can be quite expensive.

There are many different omega 3 and fish oil supplements on the market. When choosing a supplement watch out that:

- It is suitable for the age of your child
- It is not too high in vitamin A as this can become toxic in large amounts, especially in children:

Safe upper limits of vitamin A	
○	for infants 0.3mg/day
○	1-3 years 0.6mg/day
○	4-6 years 0.9mg/day
○	6-12 years 1.4mg/day
○	12-18 years 1.8mg/day



- It has Vitamin E (tocopherols) to help the body to use the omega 3 and improve the supplement's shelf life.
- It is a reputable UK brand, as all fish oils supplements in the UK have to have been purified to reduce pollutants

Produced by: Zoe Connor, Dietitian, June 2006 with help from members of DASIG (Dietitians' Autistic Spectrum Interest Group) and numerous other health and education colleagues. Some information has been adapted from leaflets by Nutrition & Dietetic Department, West Middlesex University Hospital



This leaflet is not subject to copyright, so can be freely copied, but please cite the writers

Registered dietitians in the UK hold the only legally recognised graduate qualification in nutrition and dietetics and work to promote nutritional well-being, treat disease and prevent nutrition-related health problems. Their unique skill is to interpret and translate the science of nutrition into practical, impartial and safe information about food and health. Dietitians are registered by the Health Professions Council (www.hpc-uk.org) and work within an agreed statement of conduct. Their advice is sound and based on current scientific evidence.