

A Guide to Considering Dietary and Biomedical Interventions for the Treatment of ASD

Introduction

There is lots of information available on the internet and from different support organisations supporting the use of diets and supplements for the treatment of autistic spectrum disorder (ASD - which includes autism and Asperger's syndrome).



The quality of this information varies. The number of different interventions recommended can be overwhelming, and the advice from different organisations is often contradictory.

So can't my doctor or dietitian advise me on the best diets to try?

Due to a lack of high quality scientific evidence, neither the National Autistic Plan, nor professional guidance from a national group of dietitians working in autism (DASIG) recommends these interventions. Therefore, until further published evidence, dietitians or medical professionals are unlikely to (and possibly obliged not to by their professional codes of conduct) recommend that you try any diet or supplements as treatment.

So what support can they give me?

It is always recommended that you discuss any changes to your child's treatment with their doctor, before implementing them.



It is also important to seek a dietitian's support before attempting to restrict your child's diet in any way.

Your dietitian may be able to provide you with written information supporting you in following some avoidance diets e.g. gluten and/or casein free diets. They can also monitor your child's growth, assess their diet to ensure an adequate nutritional intake is maintained, and advise on the safe maximum levels of different nutritional supplements taken.

Which diets are suggested by different organisations?

There are lots of different diets suggested by different organisations.



The most common is to **avoid gluten** and **casein** (proteins commonly found in wheat, rye, oats and barley, and milk).

Other suggestions include **avoiding chocolate, yeast, sugar, citrus fruits, salicylates** (a natural compound found in many fruits and vegetables), **fruit juice, bananas, aspartame** (an artificial sweetener), **MSG** (a flavour enhancer), **nitrites and nitrites** (preservatives) or **food colourings**; the elimination of a number of different **artificial additives** and foods containing salicylates (the **Feingold Diet**); **rotation** of different foods in the diet on different days; eating a diet of natural foods plus other foods thought to have special properties (such as The **Body Ecology Diet**), or eating a diet low in a specific food group (such as The **Specific Carbohydrate Diet™**)

Is there any risk of harm to your child's health in trying these diets?

Restricting a child's diet without the expert advice and supervision of a registered dietitian can lead to nutritional deficiencies and compromise a child's growth.

For example, cutting out gluten can cause a child's diet to be low in fibre, and cause constipation. If a child is not willing to eat gluten-free substitutes, then their diet can also be low in overall calories, and they can fail to grow well.

Cutting out casein can lead to a low calcium intake, which in severe cases can cause bone disease (rickets).

The more foods that are cut out of a child's diet, the higher this risk of an inadequate nutritional intake.

If your child is a very selective or picky eater, restricting their diet further can also put them at further risk of nutritional deficiencies. Some organisations suggest that following a special diet for ASD can result in a child eating a more varied diet, but this is often not the case.

Diets restricting major food groups such as all carbohydrates are not recommended for children unless under close medical or dietetic supervision. Following such a diet long-term would only be recommended if the benefits of

following the diet are clearly seen and outweigh the risks of such a restrictive diet.

Considerations before trying any dietary changes

Following a restrictive diet can be time-consuming and it can be difficult to cut favourite foods out of a child's diet. Some families prefer for the whole family to follow the same diet, so their child does not feel singled out.

When cutting out major components of the diet such as gluten and casein, suitable replacements for these foods are often more expensive than the regular products. Gluten-free products can only be prescribed to those diagnosed with Coeliac disease or Dermatitis Herpatiformis (life-long gastrointestinal intolerances to gluten which can cause bowel and nutritional problems or skin problems).

What tests are available to see if my child would benefit from a special diet?

Unfortunately, there are no reliable tests available either privately or on the NHS that can determine if your child would benefit from any of these diets.

There are a couple of tests carried out on the NHS to help to diagnose severe food allergies (skin prick tests and blood RAST tests) - however these only really useful to point to foods that can cause immediate reactions such as a life-threatening anaphylactic reaction to nuts.



None of the blood, hair, electromagnetic or alternative tests available privately have been shown to have any reproducibility or efficacy.

Urine tests commonly available for children with ASD are unproven to have any connection with food intake or any food intolerance.

Blood tests are available through the NHS for Coeliac disease. This test is only useful if your child is currently eating gluten - so it is best to have this test **before** starting a gluten-free diet.

Which different nutritional supplements (“biomedical interventions”) are suggested for the treatment of ASD?

Some organisations suggest that taking high doses of different vitamins and minerals can help with ASD, these include **Vitamin A**, **Vitamin B3**, **Vitamin B6**, **Vitamin C**, **Folic Acid**, **Calcium**, **Magnesium** and **Zinc**. Some also suggest **fish oils**, **evening primrose oils** or **cod liver oil**.



Is there any harm in trying these supplements for my child?

It is not recommended for adults, let alone children, to take high doses of any individual vitamins or minerals unless they have a specific need. There is no good quality evidence at present to show that children with ASD have any specific needs for these supplements.

Care should be taken not to exceed the safe upper limit set by government agencies for any nutrients, as long term effects of taking large doses is unknown, particularly in young children. You can find current recommended doses of different vitamins and minerals from the foods standards agency www.foodstandards.org.

For example the safe upper limit of **vitamin B6** for adults is 10mg/d. Taking high doses (more than 200mg/day) of vitamin B6 has been linked to neuropathy (e.g. muscle pain and weakness), and more than 2000mg/day to irreversible nerve damage (in adults). Some organisations suggest that doses of up to 1000mg per day are beneficial for children with ASD. It is not advised to exceed 200mg/day, especially not for children who may be unable to communicate any feelings of neuropathy.

What about a multi-vitamin and mineral supplement?

If you don't feel your child eats a varied diet, your local pharmacist can recommend an appropriate multivitamin and mineral supplement for your child's age. Alternatively a registered dietitian is skilled in identifying any specific nutrients deficient in a child's diet.

What about fish oils?

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, Cacha, 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 and 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 and 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 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) are best. 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

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



If you decide to try any of these "interventions", take a systematic approach to any changes.

If you make a decision to follow any dietary interventions it is important that you plan the change carefully.

Only make one dietary change at a time, and try not to make dietary changes when your child is starting other treatments- e.g. an intensive behaviour programme or change in medication.

Try to implement the diet in 4 stages:

1. **Baseline** - Monitor your child's behaviour and bowel habit carefully for a couple of weeks on their normal diet - record this in a diary
2. **Implement dietary change strictly** - for a set time, e.g. a month. Continue to keep a diary of behaviour and bowels
3. **Consider** the significance of any changes seen on the diet. Weigh this up carefully with any difficulties you have found in following the diet



4. **Stop** the dietary change and monitor any changes in behaviour and bowels. If there is a clear deterioration in your child's symptoms, reinstate the change.

If you decide to continue with a dietary restriction long-term, a dietitian can help to ensure that your child's diet is adequate - you probably need to continue seeing a dietitian yearly at least.

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.