



# Diet and autistic spectrum disorder

**A**utistic spectrum disorders (ASDs) are common developmental disorders that affect the way a person communicates and relates to people around them. ASDs include autism, pervasive development disorder not otherwise specified (PDD-NOS) and Asperger's syndrome, and are complex, lifelong disorders.

This sheet briefly summarises two of the most common dietary concerns in ASD - extreme faddy eating and using diet as a treatment for ASD, and highlights that although many useful behavioural strategies exist to help with extreme faddy eating, there is limited evidence for the use of diet as a treatment for ASD.

## Extreme faddy eating

People with ASD may have any one or a number of the following problems with eating a varied diet, which can lead to them being extremely faddy eaters:

- Being very distressed at trying any new foods
- Having a strong preference for foods of a particular colour such as only ever eating red foods
- Only accepting processed foods with familiar packaging, and rejecting favourite foods when the packaging changes
- Distress in some meal time environments such as if it is too noisy, too bright, or if they can smell other foods
- Only eating food that is presented in a consistent way such as always on the same plate

Many individuals with these eating problems seem to live healthily on what seems like an unhealthily restricted diet. If a person's diet is causing health problems such as constipation, weight loss, poor growth, obesity, or nutrient deficiencies, a Registered Dietitian can assess the adequacy of the diet and advise appropriately.

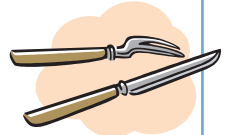


Strategies which may help with selective eating include:

- Making mealtimes predictable by having a structured eating routine, using visual

timetables detailing when and where to eat and what will be eaten, or visual schedules detailing behaviour expected at meal time, or foods to be tried at a meal time. Individuals with ASD often respond better to visual instructions - i.e. writing, picture symbols, photos, signing - rather than verbal

- Getting help with underlying medical issues that may be making eating problems worse - including dental or gut problems, such as painful teeth or constipation; changing medications that are known to reduce appetite; and help with physical difficulties eating or swallowing from speech and language, occupational or physiotherapists



- Identifying an individual's specific anxieties, and devising a slow step-by-step programme for overcoming them, including creating a calm, comfortable eating environment
- Being imaginative in finding things to motivate more varied eating e.g. devising a board game where specific squares instruct to try a different food, writing special stories about eating, keeping a visual list of foods liked, and foods to try next.



## Diet as a treatment for ASD

Although 'diets' are a popular treatment for ASD, particularly advocated by alternative nutritional practitioners, there is a lack of consistent and good quality scientific evidence.

Therefore, no particular diets are recommended across the board for the treatment of ASD.

A minority of individuals with ASD do seem to find that their specific behaviour or bowel problems improve with some dietary changes, but there are no blood or other clinical tests that can reliably indicate which dietary changes could be helpful to individuals.

The following is a brief overview of six of the most common dietary 'treatments'.



Exclusion diets or food avoidance

### 1. Gluten-free and casein-free (GF/CF) diet

**Involves:** Avoiding gluten - a protein contained in wheat, barley and rye, and a similar protein in oats. Bread, pizza, pasta, pastry, biscuits, some breakfast cereals, and some processed foods contain gluten. Plus avoiding casein - a protein in cow's milk and similar proteins in goat's and sheep's milk. Yogurt, cheese, butter, some margarines, ice-cream, milk chocolate, biscuits, and some processed products contain casein.

**The theory:** People with ASD have a gut which is abnormally 'leaky', creating an intolerance to these proteins which affects mental function, and influences behaviour.

**The evidence:** Well-respected independent reviews of the evidence have found the evidence inconclusive. There is evidence that supports and refutes the use of this diet.

### 2. Exclusion of food additives

**Involves:** Avoiding a wide range of food additives, which commonly include colourings (E100-E199), the flavour enhancer monosodium glutamate (MSG, E621), the sweetener aspartame (E951), flavourings (not given E-numbers), benzoate preservatives (E210-219) and caffeine.

**The theory:** That people with ASD are intolerant to these additives, which affects their behaviour.

**The evidence:** There is no evidence that people with ASD should avoid food additives. All food additives are regulated by the government for safe use in the UK, but some people show intolerance to individual or groups of food additives numbers.

### 3. Exclusion of phenolic compounds and foods high in salicylates

**Involves:** Exclusion of a wide range of foods including cheese, chocolate, tomatoes, oranges, bananas, yeast extract, some food colourings and many other fruits and vegetables.

**The theory:** That some individuals lack the enzymes needed to break down compounds in these foods, affecting symptoms of ASD.

**The evidence:** There is no evidence to suggest that avoiding these foods is beneficial.

### 4. Yeast-free diet

**Involves:** There is no standard 'yeast free' diet, but it often excludes natural and refined sugars (including fruit), fermented foods such as breads, vinegar, alcohol, cheese, soy sauce, coffee and processed meats.

**The theory:** Eating less yeast and sugar reduces the growth of yeasts in the gut, which in theory make the gut more leaky and make an individual suffer from intolerances.

**The evidence:** Yeast overgrowth in the gut is usually treated by prescribed medications, and there is no evidence that eating less sugar and dietary yeasts (which are not the same as gut yeasts) helps.

Supplements

### 5. High doses of vitamin B6 and magnesium

**The theory:** Individuals with ASD have an abnormal vitamin B6 metabolism, and so need high doses to correct this.

**The evidence:** There is some weak evidence for improvement in ASD behaviour following high doses of vitamin B6 and magnesium, but well respected independent reviews of the evidence have found the evidence inconclusive.



### 6. Fish oil and other fat supplements rich in omega 3 fats

**The theory:** Omega 3 fats improve cell membranes in the brain, and improve some aspects of brain function.

**The evidence:** There is some evidence that omega 3 fat supplements improve other neurodevelopmental disorders such as mood disorders, learning difficulties and developmental coordination disorder, but none specifically for ASD. There are no studies showing whether longer term use of fish oils maintains these changes, or carries any health risks not yet identified. More studies are needed to see whether these effects are greater than achieved by eating a healthy diet containing fish as recommended for the general population.

## The drawbacks of using diet as a treatment for ASD

- Although the perception is that dietary change is much safer than the use of medications, excluding foods without making sure the diet stays balanced can cause dietary deficiencies, weight loss and poor growth. The risks increase as more foods are excluded, and children who are extreme faddy eaters can be at high risk of having an inadequate diet.
- Taking individual vitamins or minerals at high doses can sometimes be harmful. The levels of vitamin B6 recommended are often above the recommended upper safe dose. These levels have been linked to nerve damage in a small number of people, and there is a particular risk that some individuals with ASD do not feel pain or aren't able to communicate that they are feeling pain, so would not recognise the tingling which could warn of nerve damage.
- For individuals who find change very upsetting, dietary changes may be hard to achieve, even slight changes such as taking capsules.
- Supplements and dietary changes can be costly.

**It is always best to discuss treatment changes with a doctor.**



### The role of a Registered Dietitian in diet and ASD

Registered Dietitians can provide tailored, holistic advice and support on achieving a healthy, balanced diet including the use of vitamins and minerals to supplement a diet if needed, and can support individuals with ASD who decide to try diet as a treatment. Registered Dietitians work in the NHS and privately, liaising with other health and education professionals where needed.

Ask your family doctor for a referral to a local dietitian or find a freelance dietitian in your area through [www.dietitiansunlimited.co.uk](http://www.dietitiansunlimited.co.uk).

**For more information about ASD: National Autistic Society [www.nas.org.uk](http://www.nas.org.uk)**

**To find a private dietitian: [www.dietitiansunlimited.co.uk](http://www.dietitiansunlimited.co.uk)**

**For Government advice on the recommended and safe doses of vitamins and minerals: [www.eatwell.gov.uk](http://www.eatwell.gov.uk)**

**Further information about diet and ASD visit [www.nutritionnutrition.com](http://www.nutritionnutrition.com)**

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