

Nutrition Information for children with complex medical diagnosis:

Autism Spectrum disorders and diet in children

Autism and Autistic Spectrum Disorders (ASD) Autistic Spectrum Disorders (ASD) are a range of complex lifelong developmental disabilities that affect the way a person communicates and relates to people around them.

ASD is an umbrella term for 3 common diagnoses:

- Autism
- Pervasive Developmental Disorder not otherwise specified
- Asperger's Syndrome

Children with ASD have 3 main areas of difficulty, known as the 'triad of impairments':

- Social interaction – difficulty with social interaction
- Social Communication – difficulty with verbal and non-verbal communication

This information provides an overview of the two most common dietary concerns in ASD:

- Restricted/Obsessive Diets
- Using diet as a treatment for ASD ("Biomedical Interventions").

Restricted/Obsessive Diets

Many children with ASD have selective eating that goes beyond the usual 'picky eating' behaviour seen in most children at specific developmental stages. These types of self-limiting diets are usually a direct result of the disorder. The diet may be limited to as few as 2 or 3 foods.

Common Feeding Concerns include:

- Difficulty with transition to textures (especially during infancy)
- Difficulty accepting new foods
- Restricted intake due to colour, texture, packaging and food temperature

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- Difficulty with meal time preparation e.g. specific plate and cutlery, positioning of food on a plate
- 'Continually eating' rather than having mealtimes

Strategies for dealing with Selective Eating

- Most children do best when meal times are the same time, place, situation every day
- Use visual timetables and visual schedules. Written timetables or picture symbol schedules detailing when and where they will eat, what will be eaten and the type of behaviour expected at meal times makes mealtimes more predictable and a less anxious occasion for the child.
- Whilst children should not be restrained, seating that encourages staying at the table can be helpful.
- Establish as calm and comfortable environment as possible
- Some children eat more when they have a video or music on, whilst for others this may be too distracting.
- Work to broaden the variety of a child's diet expanding on already accepted food groups e.g.: different types of bread
- Do not assume that the child will automatically refuse a food in a new environment e.g. they may eat fish fingers at granny's but not at home.
- Setting small goals in stages will allow the child step by step to reach a larger goal e.g. before encouraging a child to eat vegetables, they may need to learn to accept a small amount on their plate first. The amount may be as small as a pea but this allows the child to remain secure within the environment they are familiar with.

Changes in dietary intake will be a slow process and not all strategies will work for each child.

Behaviour modification needs to be tailored to each individual child and family situation.

Knowledge of the composition of different foods, alternative substitutes and supplementation is the expertise the dietitian can bring to ensure the child has an adequate diet. Reassurance and advice during these critical periods of growth is a valuable use of dietetic resources.

Special diets ("Biomedical Interventions") and ASD

The amount of information available via the Internet, books, parent networks and other organisations to parents of children with autism, can be overwhelming and often contradictory.

Interest in the use of diet and vitamins as a therapeutic approach for autism is high.

"Biomedical Interventions" are often advocated to parents of children with autism and there are often anecdotal reports of dramatic improvements. Although diets are a popular treatment for ASD there is a lack of consistent and good quality scientific evidence to support their recommendation as a treatment for ASD symptoms. The following is a brief overview of several of the most common dietary "treatments", focusing on approaches for which there is peer-reviewed research available. Peer-reviewed research is scientific, academic work which has been evaluated by others working in the same field (Oxford Dictionary of English, 2nd Edition).

1. Gluten Free Casein Free (GFCF) Diet

This is the most popular and best known dietary intervention.

The theory behind the treatment:

It has been suggested that people with ASD have a gut which is abnormally "leaky". The poorly digested casein and gluten leak into the bloodstream where these "opoid-like" proteins interfere with the normal functioning of the nervous system, affecting mental function and behaviour. (The "Opoid" theory). It is therefore proposed that by eliminating foods containing gluten and casein from the diet, autistic behaviours may be reduced.

The evidence:

Well-respected independent reviews of the evidence have found it to be inconclusive and the GFCF diet cannot be recommended as a standard treatment for autism due to the limited data available.

2. Exclusion of Phenolic compounds and foods high in salicylates

The theory behind the treatment:

This is linked to the findings of a small sample of children with ASD having impaired levels of enzymes needed to breakdown compounds in foods high in salicylates and phenolic compounds resulting in raised levels of neurotransmitters such as serotonin, which may affect behaviour.

The evidence:

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

3. Exclusion of Food Additives

The theory behind the treatment: It is believed that people with ASD cannot tolerate a range of additives, including Aspartame, MSG, artificial colours (e.g. sunset yellow (E110), tartrazine (E102), carmoisine (E122), Ponceau 4R (E124)) and sodium benzoate (E211) resulting in adverse affects on their behaviour.

The evidence: While the avoidance of particular additives is very common, there has been little good quality research on the affect of food additives on people with ASD.

4. Yeast Free Diet

The theory behind the treatment:

It is believed that a "leaky gut" in people with ASD, may be caused by an overgrowth of yeasts in the gut, following treatment with antibiotics. This then results in behavioural symptoms of ASD, allergic reactions or increased susceptibility to allergies. The theory is that by eliminating dietary yeasts these symptoms can be prevented.

The evidence: Yeast overgrowth in the gut is usually treated by prescribed medications and there is no evidence that eating less dietary sources of yeasts helps.

5. Supplements

Vitamin and mineral supplementation, e.g. Vitamins A, C, B6, Magnesium, Zinc

The theory behind the treatment:

People with autism may have abnormal or impaired metabolic or biochemical processes and high doses of vitamins or minerals may be needed to correct for this.

The evidence : Well respected, independent reviews of the evidence that supplementation with vitamins and minerals is beneficial, have found it to be inconclusive. Supplements can be costly and it Irish should also be noted that sometimes the suggested doses exceed the safe upper limit for adults and little is known about long term high doses in children.

6. Fish Oils and other supplements rich in omega 3 fats

The theory behind the treatment:

Omega-3 fats play a key role in brain development and function. Imbalances or deficiencies of essential fatty acids may contribute to a range of behavioural, learning difficulties or neurodevelopmental disorders such as ASD.

The evidence:

While there is some evidence that omega 3 supplements improve other neurodevelopmental disorders such as learning difficulties, mood disorders and in children with developmental co-ordination disorder (DCD) there is not enough evidence available in the case of ASD. Fish oil supplements can be quite costly and more autism-specific research is required to add to our knowledge in the area, since we don't know enough about their longer term use and any associated health risks, or if the effects of supplements are greater than achieved by eating a healthy diet, as recommended for the general population.

7. Probiotics and Enzymes

Probiotics can be taken as powders or as yoghurt drinks and there are also numerous digestive enzyme products aimed at people with ASD.

The evidence:

There is no research currently available to indicate that probiotics have any therapeutic benefit in ASD. In addition, there is no evidence that enzyme preparations have a useful role in ASD.

Safety and Biomedical Interventions

Despite the fact that there remains as yet, insufficient evidence to confidently recommend any of these biomedical interventions for the treatment of the condition, there are often many anecdotal reports of dramatic improvements available, which can be compelling enough to persuade parents to embark on this process.

There may be the perception that dietary change is safer than using medications, however, these dietary interventions are not without potential hazards. Elimination of foods containing gluten and casein, eg, in the CFGF diet is a significant change and could be nutritionally imbalanced, leading to nutritional deficiencies or poor growth, while little is known of the autism-specific effects of high doses of vitamins, minerals and fish oil supplements in children.

It is therefore important to consult a Consultant Paediatrician, General Practitioner or Dietitian before commencing on any dietary intervention.

A qualified dietitian, eg, can discuss the implications of the diet for the individual patient weighing up potential benefits with the difficulties they are likely to face. They are likely to recommend that any intervention be undertaken on a trial basis initially, and can provide guidance to ensure a logical approach is undertaken during this trial period, so that as far as possible, the effect of the diet is clear and objective, while at the same time safeguarding its nutritional adequacy.