

# Gastrointestinal Issues in ASD

## An Overview

Talking about bowel movements (BM) and stool consistency may seem a strange and unpleasant topic of conversation for those new to biomedical treatments. Never feel embarrassed about discussing your child's bowel habits, especially if you have some concern about your child's stools. Parents often have in depth discussions on their children's bowel movements. Why? Because often ASD children have chronic constipation, diarrhoea, bloating, flatulence, etc., which the medical profession has no idea what the underlying cause may be. It's not unusual to hear parents say that their paediatrician or paediatric gastroenterologist has labeled their child's chronic diarrhoea as just "toddlers diarrhoea", end of consultation, pay on the way out please. Many parents on the biomedical path have a greater understanding of children's gastrointestinal issues than many specialists.

### Parents Experience

It is quite common for parents to report that their child's behaviour is much worse before a bowel motion than after they have had a bowel motion, especially if the child is constipated. Common sense would tell you that treating the cause of loose or constipated stools will make the child much happier and more receptive to early intervention treatments. If they have abdominal pain, bloating, anal itching, yeast, parasites, etc, then they will not be happy and behaviour and concentration will be affected.

### Gastrointestinal Findings in ASD Children

#### Loose Stools / Diarrhoea

Loose stools or diarrhoea is not uncommon (often dismissed as "toddlers diarrhoea") and it is an indication of possible: food sensitivities, gut pathogens or parasites, yeast overgrowth, small bowel overgrowth, faecal impaction especially if there is a previous history of constipation or more serious gut pathology.

#### Typical observations in autistic children with diarrhoea:

- 1-3 stools per day
- Soft to loose (chocolate pudding to mashed potato consistency)
- "Grainy", doesn't wipe off skin easily
- Malodorous, stools can really stink!
- Accompanied by irritability, tantrums, or attempts to withhold
- Frequently visible undigested food
- Typically not bloody or containing mucus

I recommend a number of tests to get a more accurate picture of what is happening in the gut. These include a **Comprehensive Digestive Stool Analysis (CDSA)**, an **Organic Acid Test (OAT)** and possibly an **abdominal X-ray (KUB)**. A KUB is especially useful if your child has constipation or constipation with alternating loose stools to assess faecal impaction.



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**John Pietryka**  
Biomedical Naturopath  
55 Marianne Way  
MT WAVERLEY 3149  
[www.allnaturaladvantage.com.au](http://www.allnaturaladvantage.com.au)  
Phone: (03) 8802 7687  
E-mail: [pietryka@optusnet.com.au](mailto:pietryka@optusnet.com.au)

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## Constipation

Constipation means poor peristaltic action, which means poor absorption of nutrients and manufacture and absorption of endotoxins.

### Typical observations in autistic children with constipation:

- Infrequent stools (once every 4-10 days)
- Abdominal distension
- Large bowel movements
- Not typically hard or painful when passed - a good indicator of an underlying inflammatory process
- Pain and irritability
- Often periods of alternating diarrhoea and constipation

Constipation may be due to the usual problems of **low fibre**, especially if they are on a restricted diet, and **inadequate hydration**. Also rule out an **anal fissure**, in which case the child will be holding back due to pain on having a bowel movement. If milk has not already been excluded, constipation may be due to an allergy to milk. The physiology behind the constipation is unclear, but it is associated with lymphonodular hyperplasia, an intestinal immune reaction. **Stress** can be a contributing factor. When **blood sugar levels rise too rapidly**, a signal is sent to the gastrointestinal tract to slow down. Since sugar is primarily absorbed in the duodenum and jejunum, the message affects this portion of the gut most strongly. The result being that the duodenum and jejunum become atonic (literally stop propelling partially digested food through the intestinal tract by peristalsis). **Calcium** supplementation may result in constipation. **Inadequate bile production**, which may be due to inadequate fat in the diet. Fat is required to stimulate bile production.

Food sensitivities can also cause constipation. An interesting study of patients with chronic constipation found that when they were placed on a more restricted, oligoantigenic diet their bowel movements normalized. In these individuals the following foods were implicated: wheat, egg, tomato, fish, cocoa, goat's milk, soy, oranges and legumes. In another study wheat, egg, tomato, beef, cocoa, soy, oranges, goat milk, fish, legumes, peas, cauliflower, and beans were implicated. The constipation reappeared 1-4 days after the re-introduction of these foods into the diet. The patients with food hypersensitivity-related constipation presented the following characteristics: a longer duration of illness, lower body mass index, higher frequency of self-reported food intolerance, higher frequency of **nocturnal abdominal pain** and **anal itching**.

A condition called **lichen sclerosis (LS)** may present with constipation and/or other gastrointestinal tract complaints in girls. LS is an uncommon inflammatory disorder that can occur at any age, but has a predilection for the vulvar skin of prepubertal girls. An often unappreciated sign of LS, extremely distressing to these children, is severe constipation, which is unrelieved by standard treatment measures.

### Alternating Constipation / Diarrhoea

Alternating constipation and diarrhoea could be an indication of **faecal impaction**. Faecal impaction is a condition that doctors and paediatric specialists are reluctant to consider. Often it is the parent that is persistent on a KUB X-ray to be performed that the problem is finally recognised.

## Ileal Lymphoid Nodular Hyperplasia

Dr Wakefield has found that 52% of the autistic children tested have lymphoid nodular hyperplasia. This is seen in the **colon and terminal ileum** and not higher up in the gut. Immunologically, he noted that their IgG1 levels were raised and feels that this lymphoid hyperplasia is antigen driven. This suggests that the condition is caused by a **food allergen**.

## Intestinal Permeability “Leaky Gut”

An inflamed gut is more permeable to partially digested food and bacterial fragments e.g. lipid polysaccharides from bacterial breakdown, partially digested food products and other endotoxins. Depending on the individual and their ability to detoxify these leaky gut metabolites, a number of symptoms can arise, from neurological, endocrine and metabolic e.g. mood changes, memory lapses, irritable bowel, loss of energy, reduced immune response, arthritis, malnutrition, bloating, etc.

## Small Bowel Overgrowth

The upper portion of the small intestine is designed to be relatively free of bacteria. The reason is simple: when bacteria are present in significant concentrations in the duodenum and jejunum, they compete with the host for nutrition. When bacteria (or yeast) get to the food first, problems can occur. The organism can ferment the carbohydrates and produce excessive gas, bloating and abdominal distension. The bacteria can also breakdown protein via the process of putrefaction to produce vasoactive amines. For example, bacteria and yeast contain enzymes (decarboxylases) that can convert histidine to histamine and tyrosine to tyramine. The compounds formed from the amino acids ornithine and lysine, are putrescine and cadaverine, respectively. All of these compounds are called **'vasoactive amines'** because they can cause constriction and relaxation of the blood vessels by acting on the smooth muscle that surrounds the blood vessels. In the intestinal tract excessive vasoactive amine synthesis can lead to increased gut permeability ('leaky gut' syndrome), abdominal pain, altered gut motility and pain.

## Pancreatic Insufficiency

A few preliminary reports suggest that food allergy may cause some cases of acute pancreatitis. **Food allergies** identified in these cases included beef, milk, potato, eggs, fish and fish eggs and kiwi fruit.

## Stool Colour

The stool colour can be a useful indicator of gastric function. The digested food material that will eventually be passed as stool normally undergoes a progressive colour change from green to more yellow to brown. Hence stools that are greenish or yellow often indicates increased intestinal motility. Very pale stools that float may indicate poor fat metabolism. Therefore it is always useful to note the colour of stools and mention it to your practitioner.

## But my child has no gut symptoms

Just because your child does not have any obvious gastrointestinal issues (loose stools, bloating, pain, reflux, etc) does not mean that all is well. Research is showing that a high proportion of ASD children do have silent gastrointestinal issues and damage to their gut lining. Especially if they are non-verbal. A damaged gut lining, makes the gut "leaky", decreases absorption of nutrients, and destroys the cells in the lining of the gut that produce the essential enzymes required for digesting gluten and casein proteins as well as carbohydrates.