

FOOD INTOLERANCE NETWORK FACTSHEET

Fructose Malabsorption

This factsheet is intended for people who are already following a diet that is free of additives and

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Keywords: fructose malabsorption, glucose, fruit, bowel, colon

Fructose malabsorption or too much fruit syndrome

When I was a kid and people still ate real foods instead of highly processed products, everyone knew that if you ate too much fruit in a day – often from your own fruit trees – you could get a stomach ache and maybe the screaming runs for a day or two. The treatment was to eat less fruit.

What is fructose?

One of the components of fruit that can cause these symptoms is a natural fruit sugar called fructose.

Over the last few decades, fructose intake – in fruits, juice, and high fructose syrup - has increased in the Western diet to the point where the amounts commonly consumed in a day may cause mild gastrointestinal distress in normal people and severe symptoms in sensitive people. These days, such symptoms are frequently diagnosed medically as fructose malabsorption.

What is Fructose Malabsorption?

Previously known as fructose intolerance, fructose malabsorption (FM) is a recently recognised condition that can cause gastrointestinal symptoms:

- bloating
- gas
- diarrhoea and/or constipation
- stomach pains and/or cramps

FM is not an abnormality, but a sign that a change of diet may be necessary, according to recent medical thinking.

How is it diagnosed?

- Fructose Malabsorption can be diagnosed by a hydrogen breath test from a medical practitioner but the prevalence of incomplete fructose absorption in healthy subjects was found

to be as high as 50% by Mayo Clinic researchers, who concluded that this test is not particularly useful and instead recommended restricting fructose intake.

- FM can co-exist with intolerance to other food chemicals including additives, salicylates, amines, lactose or gluten. We receive many queries from people who have tried restricting fructose intake as recommended by their doctor and still have problems. In this case, from our point of view, undertaking the RPA elimination diet and challenges supervised by a dietitian is likely to resolve the confusion. For some people, it is necessary to combine reduced fructose with failsafe eating.

What is the treatment?

- If the only problem is FM, symptoms can be controlled by restricting fructose in the diet
- In some cases, taking glucose at the same time as fructose may help

Why does glucose help with FM?

Glucose enhances the absorption of fructose.

This means that:

- foods with a fructose-to-glucose ratio of less than 1 (like bananas) are better tolerated
- foods with fructose-to-glucose ratio of more than 1 (like apples and pears) can be a problem, regardless of actual amount of fructose in the food
- glucose supplements taken at the same time as fructose-containing foods may reduce the symptoms. In a Thai study, giving an equal quantity of glucose and fructose completely overcame the fructose malabsorption.

Which foods should I avoid?

- Fruit and vegetables high in fructose (many fruits, some vegetables)

- Any fructose-containing food in large amounts – including any fruit, fruit juice, dried fruit, tomato paste or sauce
 - Foods with a high fructose-to-glucose ratio, see above
 - HF Corn syrup: processed foods containing high fructose corn syrup (HFCS)
 - Crystalline fructose (sold as 'fructose sugar') and any product containing it
 - Sorbitol: processed foods containing sorbitol (420), Xylitol (967) and some other sugar-free sweeteners which are converted to fructose during digestion
 - Inulin: a thickener made from chicory, inulin contains fructose and is used some yoghurts, thickshakes and other processed foods
 - Wheat: some people are also sensitive to foods rich in fructans (chains of fructose molecules) in foods such as wheat (this doesn't affect all people with FM) - although people with fructose malabsorption don't have to avoid gluten, gluten free breads are often better tolerated by people with fructose malabsorption

Fructose in fruit and vegetables (for failsafers)

Many fruits and vegetables have to be avoided by people with FM. Failsafe foods (those low and moderate in salicylates) that contain fructose and have to be avoided by people with fructose malabsorption include:

Low salicylate:

- pears
- green beans
- shallots, leeks, garlic (and high salicylate members of the onion family)

Moderate salicylate:

- delicious apples (and high salicylate apples)
- mangoes
- papaya
- persimmons
- asparagus

See others in the [Wikipedia article](#) .

Reader Reports

[550] IBS: 'nice, big, healthy bowel' needed dietary modification (May 2007)

I have been aware of the RPAH diet for over 10 years and largely stuck to it during that time to help with symptoms of MS (multiple sclerosis). I have also suffered bowel issues for many years, predominately constipation but sometimes diarrhoea. My symptoms primarily include bloating, constipation and terrible pain. Initially, I thought it was the cause of my MS (bowel and bladder disturbance can be a problem) so just figured I had to live with it. When my lower bowel pain became quite severe - particularly after eating wheat and despite being failsafe - I decided to consult my GP again. She referred me to a gastroenterologist who proceeded to do a colonoscopy to see if some inflammatory bowel disease was present and an endoscopy so she could take a biopsy and take a definite diagnosis on whether I had Coeliac disease or not.

Fortunately, all my results came back clear and the gastro told me that after examination she concluded that I had a 'nice big healthy bowel' (I guess that's a compliment to the gastro fraternity!) As she had eliminated all other possible diseases, she further concluded that I simply had IBS which has no real treatment. She said that dietary modification could help however, and referred me to a bowel dietician.

The dietician explained to me about fructans (a natural sugar) found in the onion family, wheat, chicory and asparagus. Having been failsafe, I knew about the amine and salicylate intolerance I have but thought that eliminating fructans could help considering I found leeks, spring onions and wheat appeared to affect me despite them all being failsafe and despite my not having Coeliacs. This all really helped so now I have refined my diet again and have eliminated all the trigger food chemicals (MSG, salicylates, amines) as well as fructans (leeks, spring onions, wheat, asparagus). This has helped my IBS greatly. I am now just trying to give up percolated coffee [moderate in salicylates] every morning as that appears to trigger IBS symptoms. This fructans information may just be another piece of the puzzle for some people who suffer IBS. - by email.

[728] Needed to be failsafe and reduced fructose for full results (June 2009)

I am still struggling a bit here trying to deal with fructose malabsorption and failsafe, plus other malabsorptions (raffinose and sorbitol) that mean I don't tolerate well any fruit, veges or legumes except for potato, celery and lettuce. If I increase my salicylates then I get anxiety and other symptoms. Basically pears, onions of any sort and leeks are on the banned list (as well as other veges and fruit) - which I have been eating a lot of ! This explains why I wasn't getting full results on failsafe eating. Jane, VIC

[727] IBS from fructose malabsorption plus defiance from salicylates and amines (June 2009)

I have 2 kids (2 and 4 yrs) with fructose malabsorption and my daughter has irritable behaviour and defiance from salicylates and amines so we are looking at a combination of low fructose and failsafe eating. – by email, VIC

[726] Fructose intolerance diagnosis not the whole answer (June 2009)

My eight-year-old daughter has been diagnosed with fructose intolerance and while we have seen a dietitian it seems that we have recently hit a brick wall and she is constantly getting tummy aches. I am exploring other causes at the moment but was wondering if you could give me any information about preservatives and spices (which I am suspicious of) that could help me manage her better. The attitude I have had from doctors is here is the diagnosis good luck and seeya later, I really wonder how much they really know. I am literally alone doing my own research and homework ...

Three years on: Together with your help, our dietitian and the web, our daughter is growing, is a lot happier and not as sick as often. As well as fructose, we avoid flavour enhancers (MSG 621 and others) and suspect sulphites (220-228), salicylates and cheese are an issue for our daughter too. All in all we as a family are a lot happier, family and friends are now more understanding and accepting of our daughter and her food issues and we are constantly learning. We have also learnt that the key is "listen to your body". by email, SA.

Scientific references

Shepherd SJ, Gibson PR. Fructose malabsorption and symptoms of irritable bowel syndrome: guidelines for effective dietary management. *J Am Diet Assoc.* 2006;106(10):1631-9.

This article describes a Melbourne diet study over 14 months with 67 patients diagnosed with IBS and fructose malabsorption.

Gibson PR et al, Review article: fructose malabsorption and the bigger picture. *Aliment Pharmacol Ther.* 2007 15;25(4):349-63.

According to these researchers, FM is 'not a an abnormality but a physiological process offering an opportunity to improve functional gastrointestinal symptoms by dietary change'.

Densupsoontorn N et al. Fructose malabsorption in Thai adult. *Asia Pac J Clin Nutr.* 2007;16(2):209-12. Fructose malabsorption previously unrecognised in Thailand may be increasing due to rising consumption of western-style soft drinks sweetened with HFCS.

These authors noted that an equal amount of glucose would 'abolish' fructose malabsorption.

Beyer PL et al. Fructose intake at current levels in the United States may cause gastrointestinal distress in normal adults. *J Am Diet Assoc.* 2005;105(10):1559-66.

This study concluded that fructose, in amounts commonly consumed, may result in mild gastrointestinal distress in normal people.

Skoog SM, Bharucha AE. Dietary fructose and gastrointestinal symptoms: a review. Am J Gastroenterol. 2004 ;99(10):2046-50.

This review from Mayo Clinic researchers suggests that breath testing with fructose alone may not reflect fructose ingestion under normal circumstances and instead recommends that restricting fructose ingestion is a practical approach to testing in patients with suspected incomplete fructose absorption. In the light on Dr Shepherd's later research (above) the [recommendations from the Mayo Clinic](#) about a low fructose diet may appear overly restrictive.

Further information

[Introduction to food intolerance](#)

The [Wikipedia article](#) on fructose malabsorption.

Dr Shepherd's book 'Fructose Malabsorption Food Product Guide' is available in libraries and through her [website](#) .

www.fedup.com.au

The information given is not intended as medical advice. Always consult with your doctor for underlying illness. Before beginning dietary investigation, consult a dietician with an interest in food intolerance. You can see our list of experienced and supportive dietitians <http://fedup.com.au/information/support/dietitians>

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