



## Low-FODMAP diets: irritable bowel syndrome (IBS)

### Intervention

A nutritionally balanced diet that is low in fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAPs) for adults with irritable bowel syndrome (IBS).

#### Basis of the intervention

FODMAPs are fermentable, osmotically active, short-chain carbohydrates that are either not absorbed or only slowly absorbed in the small intestine. The unabsorbed carbohydrates, along with osmotically trapped water and electrolytes, enter the colon where they are rapidly fermented by bacteria to short-chain fatty acids and carbon dioxide, hydrogen and methane.

FODMAPs increase small intestinal water volume and colonic gas production, with secondary effects on small and large intestine motility. These factors may lead to symptoms of IBS, especially in those with visceral hypersensitivity and/or gastrointestinal motility abnormalities.

Although lactose intolerance may be associated with IBS, fructose malabsorption, where some ingested fructose reaches the colon, is a physiological occurrence.

### Indication

Patients diagnosed with IBS.

#### Diagnosis of IBS

IBS is defined by the Rome III criteria as recurrent abdominal pain or discomfort for at least 3 days each month in the last 3 months in the absence of a pathologically based disorder. Pain and discomfort must be associated with at least two of:

- the abdominal pain/discomfort improves on defecation
- the onset is associated with a change in frequency of stool
- the onset is associated with a change in form (appearance) of stool.

For a diagnosis of IBS, the onset of symptoms must have occurred at least 6 months before the initial clinical presentation, in addition to fulfilling the criteria cited above.

### Precautions

- The long-term benefits and risks of low-FODMAP diets are not known. As a consequence, patients should not continue a strict low-FODMAP diet beyond the recommended trial period.
- Wheat, rye and legumes are FODMAP-containing foods and so may be restricted as a consequence of this diet. Care should be taken to compensate for this to ensure a nutritionally balanced diet. Reducing or eliminating these food items may affect gut microbiota, although the duration and significance (if any) of this effect has not yet been ascertained.
- For patients with concomitant conditions and/or dietary habits associated with a greater risk of nutritional deficiency, deficiencies should be considered and addressed before commencing low-FODMAP diets.
- Patients with comorbid conditions that already require dietary interventions but who may benefit from a low-FODMAP diet must be supervised by a practising dietitian (see Description).

### Adverse Effects

No adverse events have yet been reported; however, clinical trials were powered for efficacy not safety. Participant numbers were small and the duration of the dietary intervention was brief.



## Availability

Dietitians with experience in the area of IBS, or less specifically, gastrointestinal (bowel/stomach) disorders, can be located through the Dietitians Association of Australia 'Find an Accredited Practising Dietitian' link: <http://dmsweb.daa.asn.au/dmsweb/frmfindapdsearch.aspx?>

Patient resources are also available from the Monash University low-FODMAP diet webpages (see Consumer resources).

## Description

The diet is trialled for 4–8 weeks and then reviewed, after which FODMAP-containing foods are gradually reintroduced and their tolerance evaluated. Only 'culprit' FODMAPs should continue to be restricted after repeated re-introduction. However, there are currently no published data concerning the relationship between the duration of 'culprit' food restriction and patient safety.

## Tips and Challenges

Patients are best managed by practising dietitians with experience in IBS or low-FODMAP diets. This is because of the individualised nature of the diet and the potential for nutritional deficiencies. GPs, however, can provide general information on the concept of low FODMAP diets and direct people to the Monash University webpages for additional information (see Consumer resources).

Adherence to this diet may be difficult for approximately 30% of patients with an IBS that is potentially linked to FODMAPs. Conversely, convincing adherent patients who have not responded to stop the low-FODMAP diet can also be difficult.

Assessing lactose absorption using hydrogen-breath-testing may help to distinguish those patients whose IBS is associated with lactose intolerance. Hydrogen-breath testing, however, is not recommended for guiding clinical decisions relating to any other FODMAP.

## Grading

NHMRC Level 2 evidence

## References

HHalmos E, Power V, Shepherd S et al. A diet low in FODMAPS reduces symptoms of irritable bowel syndrome. *Gastroenterology* 2014;146(1):67–75. DOI: 10.1053/j.gastro.2013.09.046.

Staudacher HM, Irving PM, Lomer MCE et al. Mechanisms and efficacy of dietary FODMAP restriction in IBS. *Nat Rev Gastroenterol Hepatol* 2014;11(4):256–66. DOI:10.1038/nrgastro.2013.259.

Tuck CJ, Muir JG, Barret JS et al. Fermentable oligosaccharides, disaccharides, monosaccharides and polyols: role in irritable bowel syndrome (Review). *Expert Rev Gastroenterol Hepatol* 2014;8(7):819–34. DOI: 10.1586/17474124.2014.917956.

## Consumer resources

The Monash University low-FODMAP diet webpages provide information about FODMAP diets. A patient booklet and smart phone app about FODMAP diets are also available for purchase from this site. (The app can also be purchased from App Store or Google Play.)

[www.med.monash.edu/cecs/gastro/fodmap](http://www.med.monash.edu/cecs/gastro/fodmap)

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