

# How to treat

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# IRRITABLE bowel syndrome

## Background

IRRITABLE bowel syndrome (IBS) is a complex clinical condition which, although not life threatening, is associated with significant morbidity and reduction in quality of life. It is a chronic condition and often affects young people, particularly women.

It places a significant burden on health care services because of frequent presentations to GPs and emergency departments for ongoing symptoms. As a result, patients with IBS have a high rate of inappropriate medical investigations, procedures and surgical interventions that expose them to unnecessary risk.

Moreover, up to 70% of patients with IBS are not diagnosed correctly.

The diagnosis is often delayed and usually requires numerous presentations before the constellation of symptoms are correctly recognised.

Lastly, treatment plans are usually lacking, leading to ongoing frustration among these patients.

### Epidemiology

IBS exists within the confines of a much larger group of disorders known as functional gastrointestinal disorders. These include:

- Functional chest pain.
- Functional dyspepsia.
- Functional abdominal pain syndrome.
- Chronic functional constipation.
- Chronic functional diarrhoea.

These disorders are defined by the

'Rome criteria', the latest published in 2006 being the Rome III (see Signs and symptoms, page 34).

Not surprisingly for a disorder with evolving research and diagnostic criteria, the epidemiology of IBS varies widely. In Australia about one-third of the population are diagnosed with a functional gut disorder and almost 10% of the population fulfil the diagnosis of IBS.

In community practice people with IBS often tend to be women, and the condition has generally been thought to have a female:male ratio that exceeds 2:1. However, data collected from random population surveys indicate there is no gender preference in IBS.

A commonly offered explanation to reconcile these differences is that females are more likely to be affected by IBS symptoms, with greater impact on their quality of life, and that their threshold for seeking health care advice is lower than that of their male counterparts.

There is also evidence of familial aggregation, with IBS being twice as common in relatives of IBS patients than in the general population, which suggests a possible genetic component to the aetiology of the disorder. This is supported by twin studies, which in general have found a statistically significant increase in the prevalence of IBS in monozygotic twins compared with dizygotic twins.

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## Pathogenesis

THE pathogenesis of IBS is incompletely understood despite a large volume of research in the area. The factors that contribute to the development of IBS can be divided into genetic and environmental, with the latter further subdivided into physical components and psychological components.

### Genetics of IBS

Although genetic predisposition appears to contribute only a moderate amount to the development of IBS, there has been a significant amount of research into potential candidate genes. Initially, the serotonin reuptake transporter (SERT) protein was seen as a potential candidate. However, the results of studies have been conflicting and inconsistent, culminating in a meta-analysis that suggested the SERT protein may not explain genetic liability to IBS.

Recent research suggests there is stronger evidence for implication of alpha-2 adrenergic receptors. These receptors are involved in controlling the release of noradrenaline from presynaptic nerve endings in the sympathetic nervous system.

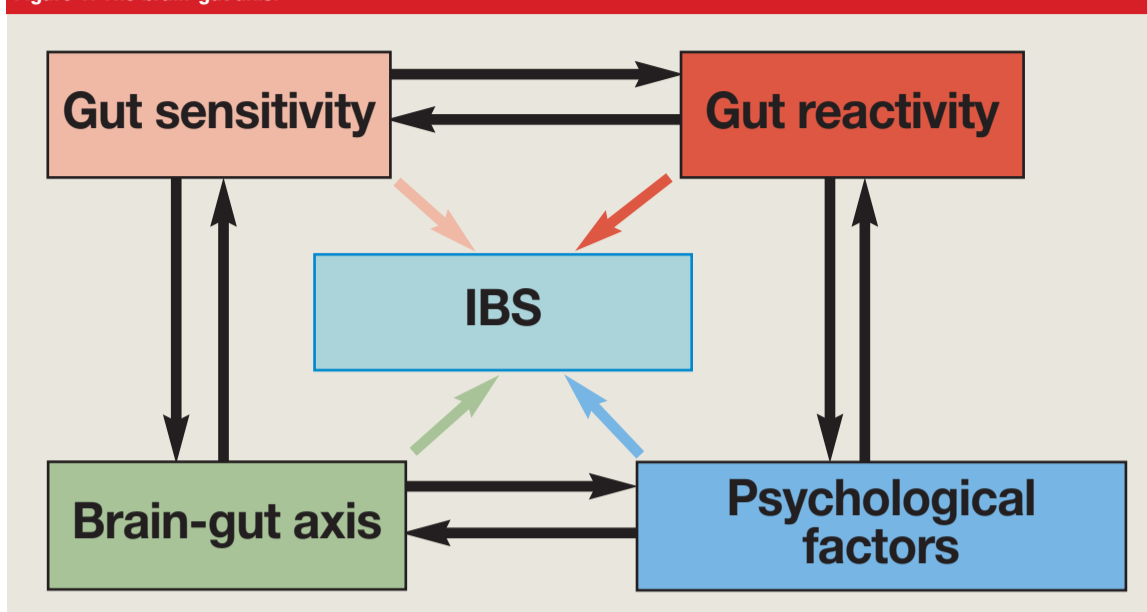
It is thought that polymorphisms of the gene may result in dysregulation of the inhibitory negative feedback loops, resulting in increased noradrenaline release. Noradrenaline also has a role in increasing the release of serotonin. It has activity in both the motor and sensory pathways.

Unfortunately, thus far the search for a candidate gene has had only limited success, perhaps in part related to the heterogeneous nature of the disease and due to the lack of an objective marker to define the condition.

### Environmental factors

Environmental factors play an important role and account for more than two-thirds of the tendency to manifest the syndrome. It is hypothesised that, in a person with appropriate genetic predisposition, environmental factors result in the overt phenotypic manifestation of the disease. The underlying mechanisms underpinning this dis-

Figure 1: The brain-gut axis.



order lie in altered gut sensitivity, reactivity and motility, as well as deregulation of the brain-gut axis (figure 1).

The brain-gut axis is responsible for two-way communication between the GI tract and the brain and consists of the autonomic nervous system, neuroendocrine system and neuroimmune pathways.

### Altered gut sensitivity

This hypothesis stems from several trials that have found that patients with IBS have lower perception thresholds, leading to a hypersensitive (ie, exaggerated) response to bowel distension with a balloon. Thus, distension, or bowel stretch, that would not be felt or would be perceived as innocuous by people without IBS evokes a significantly more painful sensation in those with IBS.

Gonadal hormones are also thought to play a role in the development of rectal hypersensitivity, with evidence that during menses women with IBS (but not controls) have increased rectal sensitivity with rectal distension. This is associated with increased symptomatology. The many studies that have attempted to elucidate the mechanism for this phenomenon have usually concluded that it is likely due to an inter-

play between both central and peripheral factors.

### Altered reactivity

The heightened gut sensitivity in patients with IBS may result from overactivity of neuroimmune pathways. This is based on the knowledge that mast-cell mediators in IBS patients markedly increase the firing of mesenteric nociceptive neurones, compared with mediators obtained from controls.

There is also an increase in mast cell density in the terminal ileum, descending colon, rectum and caecum in patients with IBS. These mast cells have been found to spontaneously release histamine and tryptase at a greater rate than controls.

People with IBS also have increased density of nerve fibres surrounding mast cells as well as an increased number of nerve fibres positive for substance P, neurone-specific enolase and 5-hydroxytryptamine. There are also subtle increases in chronic inflammatory cell numbers, in particular, T lymphocytes often expressing the CD25 marker (IL-2 receptor), which raises the possibility of an inflammatory aetiology for IBS.

### Altered perception

Functional MRI studies or PET scans have also shown that there is likely to be a central component to the devel-

opment of visceral hypersensitivity. While identical areas of the brain (limbic system) are activated in IBS patients and controls when stimulated with noxious rectal stimulation, the level of activation is far greater in those with IBS.

Patients with IBS have higher rates of psychological disturbance, with high prevalence of depression, anxiety and personality disorders. Prevalence of childhood abuse is also higher and those with a history of abuse show higher levels of brain activation to noxious stimulus.

Psychological stress is also thought to modulate symptomatology and may be the driver for higher pain scores, poorer daily functioning and increased number of physician visits. People with maladaptive coping strategies or a dissociative personality type may also be predisposed to developing IBS.

### Altered gas transport

Patients with IBS often complain of bloating and visible abdominal distension. IBS patients are thought to have impaired transit of intestinal gas as well as altered gas distribution throughout the bowel. Symptoms in IBS appear to be related to the presence of small-bowel gas rather than colonic distension.

There also appears to be a failure of reflexive control of intestinal gas transit, resulting in slow gas clearance and bloating. However, quantitative CT imaging analysis has consistently failed to show excessive gas in the GI tract.

Other mechanistic causes for abdominal distension, such as diaphragmatic depression or excessive lordosis, although conceptually appealing, have not been shown to be responsible.

### Altered gut microbiota

Recent investigations also suggest that alterations in the type of gut microbiota may contribute to the development of IBS symptoms. DNA sampling has suggested that there is an absence of certain lactobacillus species as well as a reduction in numbers of other bacterial families in IBS patients compared with controls. Whether this observation is causal or secondary to the disorder itself is not known.

Furthermore, it is believed that the small bowel, which is normally sterile, may become overwhelmed by bacterial infection. Small-intestinal bacterial overgrowth could lead to breakdown and premature fermentation of nutrients, leading to excess distension, flatus, cramps and diarrhoea.

### Post-infective IBS

A strong correlation also exists between previous bacterial gastroenteritis and the development of IBS. After outbreaks of campylobacter and *Escherichia coli* gastroenteritis, longitudinal studies have shown that more than one-third of patients may develop IBS symptoms two years after bacterial gastroenteritis.

Post-infective IBS could almost be classified as a separate disorder, as its presentation and epidemiology differ significantly from those of the other subtypes. Post-infective IBS tends to be diarrhoea predominant. It generally affects men and women equally, and patients tend to have less psychological disturbance. Biopsies from patients with post-infective IBS also show an increase in CD3 lymphocyte numbers, raising the possibility of low-grade inflammation.

## Signs and symptoms

IBS is a disorder defined by its symptoms and characterised by a lack of biochemical or pathological markers of disease. Therefore, the diagnosis relies solely on the patient's history. The diagnostic criteria have evolved over time in an attempt to identify a homogeneous population. The first formal diagnostic criteria used were the Manning criteria in 1978 which were superseded by Rome I (1988), Rome II (1999) and more recently the Rome III classification in 2006 (table 1).

The Rome III criteria require chronicity, as evidenced by a longer than six-month history of symptoms. Active disease is also neces-

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Table 1: Diagnostic criteria for irritable bowel syndrome

Manning*	Rome I**	Rome II†	Rome III‡
Three of more of the following are present: <ul style="list-style-type: none"> <li>Abdominal pain with relief from pain with defaecation</li> <li>Increased stool frequency with pain</li> <li>Looser stools with pain</li> <li>Mucus in stools</li> <li>Feeling of incomplete emptying</li> <li>Abdominal distension</li> </ul>	Three months of continuous or recurring symptoms of abdominal pain or irritation that: <ul style="list-style-type: none"> <li>May be relieved by defaecation</li> <li>May be associated with a change in frequency of stool</li> <li>May be related to a change in stool consistency</li> </ul> Two or more of the following are present at least one-quarter of the time: <ul style="list-style-type: none"> <li>A change in stool frequency</li> <li>Noticeable difference in stool form</li> <li>Passage of mucus in stools</li> <li>Bloating or feelings of abdominal distension</li> <li>Altered stool passage</li> </ul>	At least 12 weeks in the preceding 12 months of abdominal pain with two of: <ul style="list-style-type: none"> <li>Relief by defaecation</li> <li>Onset associated with change in frequency of stool</li> <li>Onset associated with change in stool appearance</li> </ul> (Supportive but not essential) Present more than one-quarter of the time: <ul style="list-style-type: none"> <li>Abnormal stool frequency</li> <li>Abnormal stool form</li> <li>Abnormal stool passage</li> <li>Passage of mucus</li> <li>Bloating or feeling of abdominal distension</li> </ul>	Greater than six-month history of symptoms, with presence of symptoms on at least three days a month for the preceding three months. Recurrent abdominal pain or discomfort with two or more of the following: <ul style="list-style-type: none"> <li>Improvement with defaecation</li> <li>Onset associated with change in frequency of stool</li> <li>Onset associated with change in stool form</li> </ul> Symptoms that support the diagnosis but are not included in the criteria: <ul style="list-style-type: none"> <li>Abnormal stool frequency</li> <li>Abnormal stool form</li> <li>Straining at defaecation</li> <li>Urgency or incomplete emptying</li> <li>Passing mucus</li> <li>Bloating</li> </ul>

\*Saito Y, et al. The epidemiology of irritable bowel syndrome in North America: a systematic review. *American Journal of Gastroenterology* 2002; 97:1910-15.

†Chey WD, et al. Utility of the Rome I and Rome II criteria for irritable bowel syndrome in US women. *American Journal of Gastroenterology* 2002; 97:2803-11.

‡Longstreth GF, et al. Functional bowel disorders. *Gastroenterology* 2006; 130:1480-91.

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sary, shown by the presence of symptoms on more than three days a month over the previous three months. The Rome III criteria also rely less heavily on lack of a structural or anatomical abnormality than previous classifications.

The characteristic symptoms experienced that are required to fulfil the diagnostic criteria are:

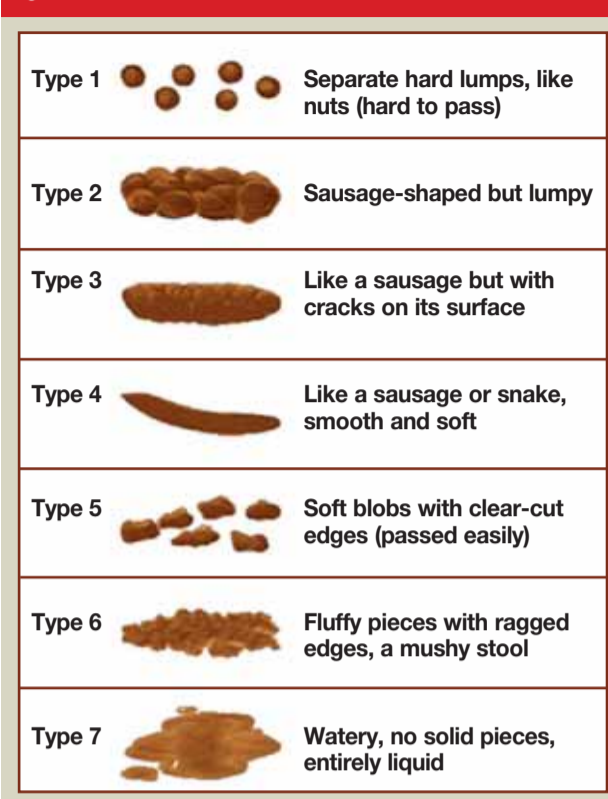
- Recurrent abdominal pain or discomfort with two of the following:
  - improvement with defaecation.
  - onset associated with a change in frequency of stool.
  - onset associated with a change in form of stool.

Symptoms that support the diagnosis but are not included in the criteria include:

- Abnormal stool frequency:
  - more than three bowel actions a day.
  - fewer than three bowel actions a week.
- Abnormal stool form:
  - hard lumpy stool (Bristol 1-2 [figure 2]).
  - loose watery stool (Bristol 6-7 [figure 2]).
- Straining at defaecation.
- Urgency or incomplete emptying.
- Passing mucus.
- Bloating.

**It is important to note that up to three-quarters of patients change subtypes over the course of a year.**

Figure 2: The Bristol stool chart.



Irritable bowel syndrome can be further classified into subtypes by the Rome III criteria, which can be used to guide research and treatment.

- IBS with constipation — hard lumpy stools for >25% of bowel motions and soft mushy stools for <25% of bowel motions.
- IBS with diarrhoea — loose mushy stools for

>25% of bowel motions and hard lumpy stools for <25% of bowel motions.

- Mixed IBS — hard lumpy stools for >25% of bowel motions and soft mushy stools for >25% of bowel motions.
- Unsubtyped IBS — inadequate information on stool characteristics to meet the criteria of the other three subtypes.

Table 2: Alarm symptoms or red flags

- Age >50
- Blood on the toilet paper or PR bleeding
- Anaemia
- Weight loss
- Fever
- Family history of colon cancer or ovarian cancer
- Major change in symptoms

These subtypes are best determined with the aid of the Bristol stool chart (figure 2).

It is important to note that up to three-quarters of patients change subtypes over the course of a year. The most common change is from IBS with either constipation or diarrhoea to mixed IBS and vice versa, but up to one-third of patients alternate between IBS with constipation and IBS with diarrhoea. Interestingly, the proportion of patients in each group remains essentially the same.

The natural history of IBS suggests that 5% of patients followed longitudinally are ultimately diagnosed with an organic disorder, 20% develop worsening symptoms, while symptoms

remain unchanged in 50% and either improve or resolve in 25%.

Factors that predict improvement at one year include:

- Severe symptoms at presentation.
- Poor health-related quality of life.
- IBS with constipation.
- Presence of anxiety, depression or stress.
- Symptoms related to meals.
- Absence of comorbidity.
- Good improvement at three months.

The diagnostic utility of the Rome criteria can be further strengthened with consideration of ‘alarm symptoms’. Table 2 lists warning signs that should prompt consideration of organic disease and trigger referral for further investigation.

Examination of the patient is also an important component in assessing the likelihood of IBS; however, the examination aims to rule out organic disease rather than detect any diagnostic sign that is positive for IBS. Thorough abdominal examination should be performed to exclude any abdominal masses, and a rectal examination undertaken to exclude rectal pathology, perianal disease and anal sphincter dysfunction.

## Investigations

INVESTIGATION of suspected IBS should follow the algorithm given in figure 3. In patients who meet the Rome criteria for IBS and who do not have any alarm symptoms, the pre-test probability of organic disorder such as colorectal cancer, inflammatory bowel disease or infectious diarrhoea is <1%. However, coeliac disease is about 10 times more common in patients who fulfil the Rome criteria, and so should be actively excluded. About 25% of IBS patients have lactose malabsorption, but this is not significantly different from the prevalence in the general population.

The UK National Institute for Health and Clinical Excellence (NICE) guidelines from February this year recommend FBC, ESR, C-reactive protein (CRP) and coeliac antibody testing to exclude anaemia (alarm symptom), inflammatory bowel disease and coeliac disease. The guidelines do not recommend ultrasound, sigmoidoscopy, colonoscopy, barium enema, thyroid function tests, faecal ova and parasites, faecal occult blood or hydrogen breath tests.

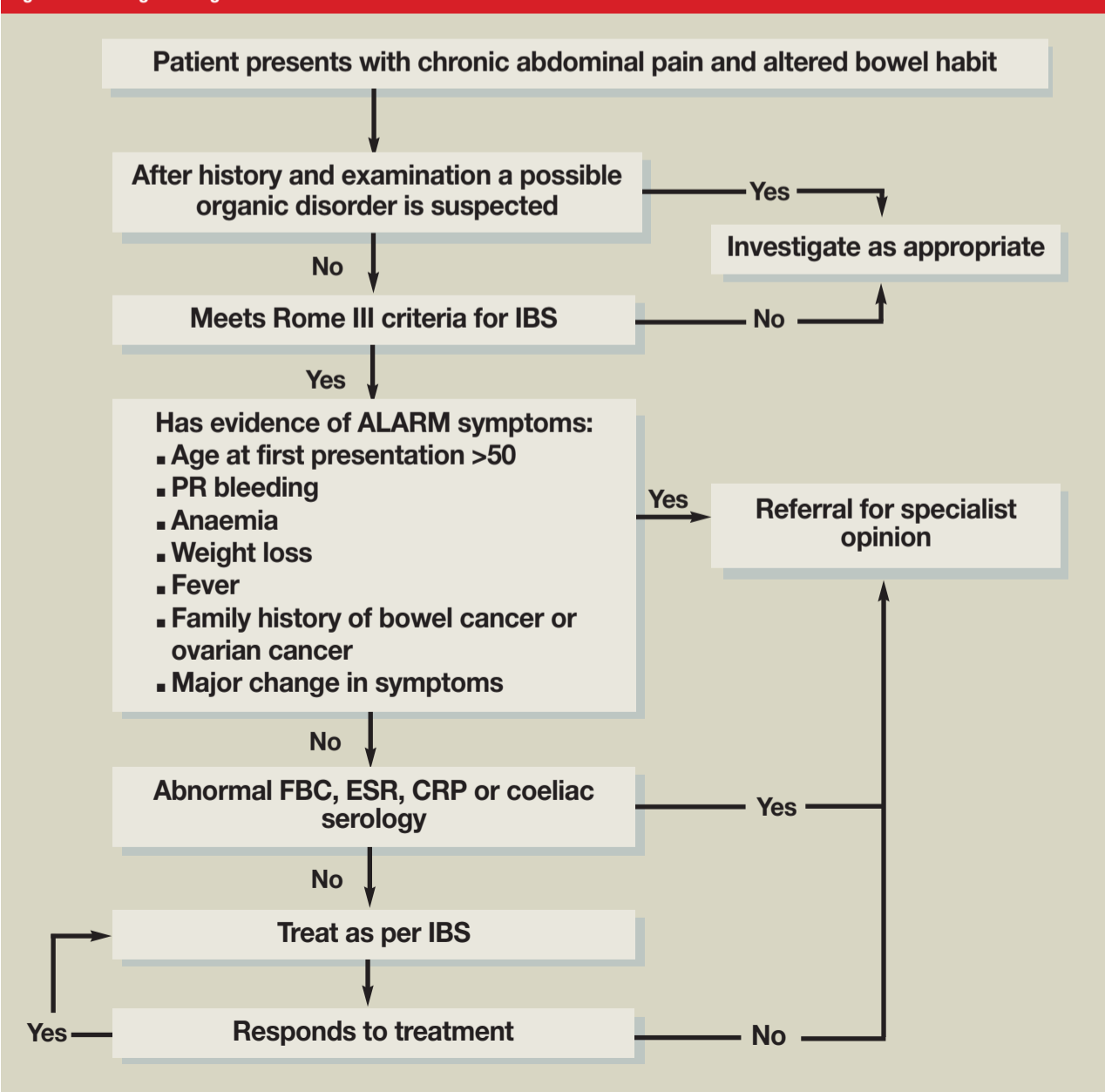
Despite this recommendation, hydrogen breath tests (for lactose and fructose intolerance) can play a significant role in the management of IBS, as a significant proportion of people will find symptomatic relief with a restrictive diet.

Lactose or fructose malabsorption is very common in the community (about 25% prevalence) and the delivery of undigested carbohydrate to the distal small bowel is thought to result in an osmotic effect that causes the secretion of excess fluid into the small intestine.

There is also increased fermentation of carbohydrates by colonic bacteria, resulting in increased gas production which, in a hypersensitive IBS patient, results in bloating and pain.



Figure 3: Investigation algorithm.



## Treatment

### First line

#### Lifestyle modification

MANY patients who have IBS feel let down by the medical system. They have often misunderstood well-meaning explanations of the 'brain-gut axis' hypothesis as "It's all in your head" and may feel that doctors do not take them seriously.

As a result many patients have turned to alternative medical therapies or increasingly restrictive diets in an effort to control their symptoms. Therefore the first approach in managing patients with IBS is to validate their symptoms as real.

At the first visit it is important to determine the type and severity of their symptoms as well as the impact on their quality of life. It is important to allay their fear of cancer and provide reassurance that, while IBS can be a very distressing disorder, it is not life threatening.

It is helpful to discuss possible stressors with patients and, after a therapeutic alliance has been established, introduce the concept of the brain-gut axis and the role of psychological therapy.

It is also advisable to provide patients with practical dietary advice to avoid overly restrictive diets, which may result in micronutrient deficiencies. Patients can be encouraged to avoid caffeinated drinks, alcohol, sorbitol-containing foods or gums and to drink plenty of water. A food diary can be an effective way to identify food triggers. It is advisable to involve a dietitian early if a restrictive diet is prescribed.

#### Fibre

Fibre advice in IBS is somewhat more complicated. While soluble fibre (psyllium, ispaghula, pectins, oats) may have a modest effect on global IBS symptoms, insoluble fibre (bran, corn) or resistant starch (potatoes, breads, cereals) may worsen symptoms. There is no published evidence that dietary fibre improves abdominal pain in IBS. Moreover, a recent Cochrane meta-analysis found that there was no significant benefit for bulking agents in the treatment of IBS.<sup>1</sup>

#### Probiotics

Many patients are keen to try probiotics as a first-line treatment and there is some evidence to support this management approach, although the strength of the data is limited by the variability of bacteria strains used in the studies as well as the therapeutic dose administered.

Studies suggest that probiotics may cause less distension and flatulence and may possibly result in overall symptom improvement compared with



placebo. The benefit of probiotics may also depend on the live dose administered as well as the probiotic species used. The UK NICE guidelines recommend trialling probiotics for at least four weeks to exclude the confounding effects of the menstrual cycle.

#### Pharmacological

Given the heterogeneity of IBS, symptomatic treatments should be tailored for the individual by their GP. A good approach is to ask the patient to identify a key symptom that they would like to focus on improving, then develop a treatment plan aiming to alleviate this.

Patients with 'IBS with diarrhoea' may find relief with loperamide whereas patients with 'IBS with constipation' can benefit from laxatives. Osmotic laxatives such as macrogol 3350 or magnesium sulphate are preferred over stimulant laxatives.

It may be necessary to prescribe both antidiarrhoeal and laxative medications alternately, as up to one-third of patients may change classification over a year, and to educate patients on how to titrate their medications to achieve an appropriate stool consistency. The Bristol stool chart (figure 2) can be a useful tool to guide the patient.

A recent Cochrane meta-analysis has also shown that antispasmodic medications (eg, mebeverine, peppermint oil) are efficacious in IBS, with improvement in abdominal pain and global symp-

tom scores. With these agents, the number of patients needed to treat to show a benefit is only five.<sup>1</sup>

### Second line

#### Pharmacological

Antidepressants have long been used as a second-line treatment for IBS although there is limited evidence for their effectiveness. The rationale for their use is twofold. Firstly, because of the high prevalence of associated psychological disorders, their use may alleviate any confounding depressive or anxiety symptoms.

Secondly, antidepressants are used for their analgesic and anticholinergic effects on the gut. Evidence suggests that mucosal hypersensitivity is reduced and thresholds for perception of symptoms are raised. Several recent randomised trials as well as a recent Cochrane meta-analysis have examined this issue. In contrast to a prior meta-analysis, the Cochrane review found no significant benefit of antidepressants.<sup>1</sup>

However, there have been three subsequent randomised, placebo-controlled trials. The first study showed no benefit with either imipramine or citalopram compared with placebo.<sup>2</sup>

The second study examined amitriptyline in an adolescent population with IBS and found that the drug resulted in decreased incidence of loose stool and resulted in an overall improvement in symptoms.<sup>3</sup>

The third study was conducted in subjects with diar-

rhoea-predominant or alternating IBS. The results showed that dextropropofol (not currently available in Australia) significantly reduced stool consistency and diarrhoea, with adequate overall relief of IBS symptoms.<sup>4</sup>

Tricyclic antidepressants tend to cause constipation, so they are more beneficial in IBS with diarrhoea, whereas SSRIs are preferable in IBS with constipation. Ideally patients should be started on low doses at night (eg, 5-10mg amitriptyline) and the dose titrated on frequent review.

Tegaserod, a 5-HT<sub>4</sub> agonist, has been previously used with success in constipation-predominant IBS. However, it has since been withdrawn because of an excess of ischaemic heart disease and strokes.

Alosteron, a 5-HT<sub>3</sub> antagonist previously used in IBS with diarrhoea has also been withdrawn because of an increase in the incidence of ischaemic colitis and severe constipation. It is still available in some countries via restricted prescribing programs.

Antibiotics have been tried on the basis that a significant proportion of IBS patients (up to 80% in some series) have evidence of small-intestinal bacterial overgrowth. This can be detected on hydrogen breath testing.

While studies have shown that an abnormal or positive hydrogen breath test is no more common in IBS patients than in the general popula-

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tion, up to 25% of IBS patients will have improved symptoms after antibiotics if there was a normalisation of the hydrogen breath test.

Neomycin has been studied in small trials with some effect, at least in the short term, and several studies have shown that rifaximin (not currently available in Australia), a minimally absorbed gut-selective antibiotic, improves IBS symptoms significantly.

#### Psychological

Current guidelines recommend that, if after 12 months of pharmacotherapy the patient has failed to respond, they should be referred for psychological interventions. Treatment options include cognitive behaviour therapy (CBT) and hypnotherapy.

Research in psychotherapy has been hampered by a high placebo response rate and difficulties determining appropriate controls; however, most studies suggest a positive response above and beyond that of pharmacological therapy. The IBS symptoms most responsive to psychotherapy are abdominal pain and diarrhoea, although the therapeutic effect of CBT appears to wane after 6-12 months.

Factors associated with a poor response to CBT include:

- Male gender.
- Belief that IBS would result in serious consequences.
- Belief that IBS is due to an external aetiology.
- The presence of a formal psychiatric disorder.

Given the importance psy-

chological factors and stress play in the development of IBS, it is not surprising that relaxation therapy is a successful treatment for the disorder. A short course of small-group relaxation training results in improvement in quality of life as well as a decrease in the need for medical care. The benefit of relaxation training appears to persist for at least up to one year.

Gastrointestinal-tract-directed hypnotherapy has also been shown to result in a significant improvement in global IBS symptoms. Unfortunately the benefits after an initial course of therapy are short lived, as studies have shown that, while there is significant symptomatic benefit at three months, it is not sustained at 12 months.

### Role of alternative therapy

Aloe vera is a very popular treatment prescribed by alternative medicine practitioners. There have been two randomised placebo-controlled trials to date, which showed there was no benefit of aloe vera in the treatment of IBS. The main side effects from aloe vera include abdominal pain and diarrhoea, as well as hypokalaemia and other possible electrolyte imbalances, hypoglycaemia and possible dehydration. It is also a very expensive treatment.

Herbal therapies are heavily marketed directly to patients and so are used by a significant number of patients for controlling IBS symptoms. Studies have generally been limited by poor methodology and so need to be interpreted with caution. Fewer than half of the herbal medications examined in these trials resulted in a possible benefit in IBS symptoms. These medications warrant further investigation in more rigorous trials but currently there are not adequate data to widely recommend their use.

There is also no evidence to recommend acupuncture for the treatment of IBS. Most studies in this area are generally of poor quality.

### Role of the GP

The most important role for the treating doctor is to establish a therapeutic alliance with the patient to provide support and information about the disorder. It is important to validate patients' symptoms and empower patients to manage their disorder. Patients should also be assessed for any concurrent psychological or psychiatric comorbidities, and treatment introduced, if appropriate.

If the patient fits the Rome III criteria and does not have any significant examination findings, their GP should order FBC, CRP, ESR and

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coeliac serology to rule out organic disease and confirm the diagnosis. Patients should be referred to specialist care for consideration of endoscopy and further investigation if any 'alarm symptoms' are present or if the patient presents for the first time over age 50.

Lifestyle changes should be suggested and symptomatic treatments should be considered if appropri-

ate. Referral to a dietitian should be considered if particular foods are identified as possible triggers. The patient should be informed of the likely clinical course of the disorder and reassured it will not cause physical damage. Realistic treatment goals must be set, for example, improvement in quality of life rather than complete resolution of symptoms.

If the patient is refractory to

treatment or has severe symptoms, they should be referred for a specialist opinion.

### Role of the treating specialist

The treating specialist will reassess the patient and, if there are any alarm symptoms, organise further investigations such as colonoscopy, gastroscopy or radiological imaging, as appropriate.

If the patient does not have any

features suggesting organic pathology, and anxiety or depression appear to be predominant features, an antidepressant may be prescribed, particularly if the disorder has a significant negative impact on quality of life or there is chronic pain.

Hydrogen breath tests may also be organised to guide therapeutic dietary interventions or to prompt antibiotic treatment for small-intestinal bacterial

overgrowth. Referral to a specialist pain-management service may be necessary in severe cases.

If the patient is refractory to pharmacological therapy, psychotherapy may be considered, such as CBT, relaxation training or hypnotherapy. The GP's role over this period is to provide psychological support and motivation for lifestyle changes as well as titrating symptomatic treatments.

## Conclusion

IBS can result in considerable morbidity for the individual and affect quality of life. Frequent presentations for medical review can often result from the absence of a diagnostic label and from lack of explanation of the nature of the condition and how it impacts on health.

The aetiology of IBS is yet to be fully elucidated; however, it appears to result from a combination of genetic and environmental factors. There is a strong association with psychological comorbidity such as anxiety and depression.

IBS can be successfully diagnosed by employing the Rome III criteria. Investigations beyond FBC, ESR, CRP and coeliac serology are generally not required. However, if any 'red flags' or 'alarm symptoms' are present, the patient should be referred for specialist assessment and further investigation.

It is important that a strong therapeutic alliance is established between the patient and treating doctor and that the patient feels their concerns are being taken seriously. Patients' symptoms can usually be managed successfully with lifestyle modification and symptomatic treatments such as combinations of antispasmodics, antidiarrhoeal and laxative medications. If patients fail to respond to first-line treatments or if their disorder has a severe impact on quality of life, they should be referred for a specialist opinion.

### Evidence-based practice

Intervention	Level of evidence
Antispasmodic medications are efficacious	Level I
Antidiarrhoeal medications are efficacious	Level I
Bulking agents are <i>not</i> helpful	Level I
Antidepressants may be beneficial	Level II
Probiotics may be beneficial	Level II
Cognitive behavioural therapy may be beneficial	Level II
Hypnotherapy may be beneficial	Level III
Aloe vera is <i>not</i> helpful	Level II

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### Online resource

Irritable Bowel Information & Support Association of Australia Inc: [www.ibis-australia.org](http://www.ibis-australia.org)

## Authors' case studies

### Abdominal pain with diarrhoea and constipation

A 29-YEAR-old social worker presents to her GP with crampy abdominal pain associated with intermittent diarrhoea alternating with constipation, which have been present for the past five years. She was diagnosed with a sensitive stomach by a naturopath, who altered her diet from dairy to soy milk, which gave some relief.

Her GP sends faecal samples to rule out an infective cause, and loperamide is trialled but just makes her constipated. She tries a high-fibre diet but finds that it makes her abdominal distension worse. She is embarrassed with these symptoms, as she develops bloating when she has the pain and "looks nine months pregnant".

Her FBC, coeliac serology and inflammatory markers are negative. She undergoes hydrogen breath tests, which show lactose intolerance, and she is placed on a formal elimination diet by an experienced dietitian. She has considerable improvement of her symptoms but still has occasional crampy abdominal pain and bloating, for which she takes Buscopan prn.

### Chronic Bali belly?

A 45-year-old previously well man presents to his GP with a 12-week history of

**She was diagnosed with a sensitive stomach by a naturopath, who altered her diet from dairy to soy milk, which gave some relief.**

intermittent abdominal pain, bloating and diarrhoea. He is a smoker and drinks eight standard drinks a week. Current medications include ramipril for hypertension and aspirin for cardiac protection.

He has no significant family history and no significant medical history. However, on further questioning it is revealed that he underwent a period of hospitalisation when on holiday in Bali six months ago, where



he had a severe diarrhoeal illness, presumed to be bacterial gastroenteritis.

His FBC, coeliac serology and inflammatory markers are normal and because of his past history he underwent faecal microscopy testing to exclude bacterial and protozoan infection.

He is treated with loperamide prn and booked for hydrogen breath testing to guide potential dietary manipulations. On subsequent follow-up he has had

considerable improvement in his symptoms and is no longer requiring medications. Therefore further dietary modification is not required.

### Abdominal pain with chronic constipation

A 74-year-old woman with multiple medical problems, including a long history of constipation, presents to her GP with moderate left-sided abdominal pain and constipation that is worsening, but

interspersed with intermittent bouts of diarrhoea.

Recently, she has experienced a sensation of incomplete evacuation. She has noted occasional blood and mucus on the toilet paper with straining, and has had mild bloating.

An abdominal X-ray is reported to be normal apart from showing moderate faecal loading. During her presentation to the emergency department with abdominal pain, an abdominal CT scan is performed, which shows severe diverticular disease associated with mesenteric stranding suggestive of diverticulitis.

Given her age and alarm symptoms this woman proceeded to colonoscopy which revealed a sigmoid malignancy. She underwent an uneventful sigmoid colectomy.

The above three cases illustrate the diagnostic challenges associated with IBS as well as the potential pitfalls. The first two clinical vignettes represent two classic presentations of IBS, namely mixed IBS and post-infectious IBS, respectively.

The last case highlights some of the potential warning signs or red flags to look for when making a diagnosis of IBS. Furthermore, the late age of presentation is unusual for IBS and prompts a consideration for alternative diagnosis.

## GP's contribution



**DR CAROLYN BLOCK**  
Double Bay, NSW

### Case study

ISABELLA, 32, came to see me as a new patient, having recently returned from living in Europe for the past two years. She had always suffered with a “nervous tummy” but things had become much worse during her time away.

Isabella's mother, who had been told by a naturopath that she had coeliac disease, felt better by eradicating gluten from her diet, but was unwilling to re-try gluten so that formal testing could be performed. Her mother felt sure that Isabella was gluten intolerant. Isabella did not want to cut out gluten from her diet,

so she presented for coeliac testing.

Isabella experienced severe bloating and flatulence and an irregular bowel habit that alternated between diarrhoea and constipation. She had pain and discomfort regularly and had found no obvious pattern to her symptoms. She also experienced frequent headaches and back pain. There was neither a hormonal pattern nor a food trigger for her bowel symptoms.

Blood tests showed no abnormalities and no evidence of coeliac disease. When discussing her results on a subsequent visit, she divulged that her time overseas had been highly emotionally stressful because of a very demanding job with long hours and the breakdown of a long-term relationship. Both of these had led to very erratic and unhealthy eating practices.

With diet and lifestyle changes including an increase



in exercise, and the beginning of a new relationship, Isabella is finding that her symptoms are improving.

### Questions for the author

There has been talk of the ‘leaky gut’ leading to most of our bowel symptoms and allergies. Could you comment on this?

Alteration in intestinal permeability has been arguably implicated in a variety of gut disorders. Although there are many hypotheses and counter-arguments, more work needs

to be done to decide whether one can blame intestinal mucosal inflammation or bacterial overgrowth in the intestinal milieu to be responsible for any changes in intestinal permeability.

Furthermore, leaky gut is often used loosely to imply causality, but more work needs to be done to prove that translocation of antigens does occur across the gut epithelium, leading to symptoms or allergic diathesis in patients with functional bowel disorders.

Many people use enemas, suppositories and colonic irrigation to help deal with their symptoms. Do you think these are useful adjuncts?

Enemas or suppositories may be used by patients with severe constipation who have not tolerated or failed adequate doses of standard therapy.

Usually patients with constipation-predominant IBS

tend not to have such severe degrees of faecal impaction requiring colonic lavage. While some recent published data suggest there may be a role for its use in intractable defaecations disorders (see the October 2008 issue of the *British Journal of Surgery*) there are no data for IBS.

Given that there is a lack of regulation of the industry in Australia and a risk of serious complication such as perforation or infection, it is not a recommended treatment for IBS.

Dietary limitations or remedies put into place by complementary practitioners can have devastating sequelae, as you mentioned with aloe vera. Are there any warnings on these remedies to this effect and how often should blood tests be performed if patients are on such therapies?

It is important that dietary limitations are prescribed in conjunction with an experi-

enced dietitian to ensure nutritional requirements are adequately met. Any dietary manipulation must also be tailored to the individual patient, and its impact on any concurrent medical issues (eg, fluid restriction, salt restriction) must be carefully considered.

Complementary therapies are being increasingly used by patients to manage functional gut disorders. To date there is no evidence that these treatments are beneficial in IBS, but this may be in part due to the difficulty in designing clinical trials to adequately test them. It is important to ascertain from the patient which type of therapy is being considered. The doctor is then able to educate the patient as to the risks of the treatment to allow the patient to make an informed decision.

It is impossible to recommend appropriate monitoring protocols because of the heterogeneous nature of the treatments available today.



## How to Treat Quiz

Irritable bowel syndrome  
— 3 October 2008

### INSTRUCTIONS

Complete this quiz online and fill in the GP evaluation form to earn 2 CPD or PDP points. We no longer accept quizzes by post or fax.

The mark required to obtain points is 80%. Please note that some questions have more than one correct answer.

### ONLINE ONLY

[www.australiandoctor.com.au/cpd/](http://www.australiandoctor.com.au/cpd/) for immediate feedback

### 1. Which TWO statements about the epidemiology of irritable bowel syndrome (IBS) are correct?

- a) Almost 10% of the Australian population fulfil the diagnosis of IBS
- b) IBS is more common in women, with a female:male ratio of 3:1
- c) There is no evidence of familial aggregation in IBS
- d) The diagnosis of IBS is often delayed

### 2. Which TWO statements about the aetiology of IBS are correct?

- a) Patients with IBS have higher rates of psychological disturbance
- b) Patients with IBS have been shown to have decreased numbers of mast cells in parts of the GI tract
- c) Patients with IBS have been shown to have excessive gas in the GI tract
- d) It is suggested that there is an absence of certain lactobacillus species in IBS patients

### 3. Which THREE statements about post-infective IBS are correct?

- a) Studies following patients have shown that about 10% of patients may develop IBS symptoms after bacterial gastroenteritis
- b) Post-infective IBS tends to be diarrhoea predominant
- c) Patients with post-infective IBS tend to have less psychological disturbance
- d) Biopsies from patients with post-infective IBS have shown increased numbers of CD3 lymphocytes

### 4. The Rome III diagnostic criteria for IBS require more than six months of symptoms, with symptoms present on at least three days a month for the preceding three months. Which TWO of the following sets of symptoms would fulfil the characteristic symptoms required under the Rome III criteria?

- a) Recurrent abdominal pain, the onset of which is associated with a change in stool form and which improves with defaecation
- b) Recurrent abdominal pain associated with nausea, bloating and straining at defaecation
- c) Recurrent abdominal pain, the onset of which is associated with a change in stool frequency and which improves with defaecation
- d) Recurrent abdominal pain associated with bloating, urgency to open the bowels and passing mucus

### 5. Rozanne, 24, presents with a 12-month history of intermittent abdominal pain, relieved by defaecation. She describes being constipated sometimes, but describes diarrhoea at other times. Physical examination is normal. Which TWO statements about the Rome III diagnostic criteria for subtypes of IBS are correct?

- a) ‘IBS with constipation’ requires hard lumpy stools for >50% of the bowel motions and soft mushy stools for <25% of the bowel motions
- b) ‘IBS with diarrhoea’ requires loose mushy stools for >25% of the bowel motions and hard lumpy stools for <50% of the bowel motions
- c) IBS is classified as ‘mixed’ when there are hard lumpy stools for >25% of the bowel

- motions and soft mushy stools for >25% of the bowel motions
- d) IBS is classified as ‘unsubtyped’ when there is inadequate information on stool characteristics to meet the criteria of the other three subtypes

### 6. Which THREE investigations are recommended by the UK National Institute for Health and Clinical Excellence guidelines for the investigation of patients with suspected IBS?

- a) FBC
- b) Abdominal ultrasound
- c) Coeliac antibody testing
- d) ESR and CRP

### 7. Which THREE of the following are alarm symptoms or ‘red flags’ that should prompt consideration of organic disease and trigger referral for further investigation?

- a) Anaemia
- b) Fever
- c) Passing mucus
- d) Family history of ovarian cancer

### 8. A detailed history shows that Rozanne fulfils the diagnostic criteria for IBS. She has no alarm symptoms or ‘red flags’. Results of investigations recommended to exclude organic pathology are all normal. Which TWO statements about the management of patients with IBS are correct?

- a) The first step in managing patients with IBS is to validate their symptoms as real
- b) There is no evidence that probiotics are of benefit in IBS

- c) Avoiding caffeinated drinks and sorbitol-containing foods may be beneficial in IBS
- d) Both soluble and insoluble types of fibre have been shown to improve symptoms in patients with IBS

### 9. Which TWO statements about pharmacological treatments in IBS are correct?

- a) Stimulant laxatives are preferred over osmotic laxatives in treating patients with ‘IBS with constipation’
- b) Antispasmodic medications are efficacious in IBS
- c) If considering antidepressant therapy as second-line treatment in IBS, tricyclic antidepressants would be more beneficial in ‘IBS with diarrhoea’, whereas SSRIs would be preferable in ‘IBS with constipation’
- d) Antibiotics have not been shown to be of any benefit in patients with IBS

### 10. Which TWO statements about psychological therapies in IBS are correct?

- a) If a patient with IBS has failed to respond to 12 months of pharmacotherapy, referral for psychological interventions should be considered
- b) CBT has been most helpful in patients with IBS with constipation
- c) The benefits of small-group relaxation training in IBS patients appear to persist for at least one year
- d) Hypnotherapy has shown sustained benefits for up to two years in patients with IBS

### CPD QUIZ UPDATE

The RACGP now requires that a brief GP evaluation form be completed with every quiz to obtain category 2 CPD or PDP points for the 2008-10 triennium. You can complete this online along with the quiz at [www.australiandoctor.com.au](http://www.australiandoctor.com.au). Because this is a requirement, we are no longer able to accept the quiz by post or fax. However, we have included the quiz questions here for those who like to prepare the answers before completing the quiz online.

Australian Doctor  
**Education.**

**HOW TO TREAT** Editor: **Dr Wendy Morgan**  
Co-ordinator: **Julian McAllan**  
Quiz: **Dr Wendy Morgan**

**NEXT WEEK** With the advent of new antidepressant treatments and new measures for adjunctive care of patients with depression, the next How to Treat is a timely examination of the diagnosis and management of depression in adults, now the fourth most common disorder identified and treated in general practice in Australia. The authors are **Dr Helen Schultz**, senior registrar, St Vincent's Health, Melbourne; **Ms Nga Tran**, senior mental health pharmacist, St Vincent's Health, Melbourne; and **Professor David Castle**, chair of psychiatry, St Vincent's Health and the University of Melbourne, Victoria.