

# the Insider

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Since 1985, GastroIntestinal Endoscopy (GIE) has provided an efficient 'Open Access' service for colonoscopy and upper gastrointestinal endoscopy.

GIE provides an enviable level of medical experience. Our seven Gastroenterologists possess a broad base of clinical expertise in their varied speciality areas of interest.

Currently, GIE operates an 'Open Access' service from five centres:

- **Brisbane Endoscopy Services** – a Day Endoscopy Centre located at the McCullough Centre, Sunnybank which is owned and operated by the GIE partners;
- **Chermside Day Hospital** at Chermside;
- **North West Private Hospital** at Everton Park;
- **St Andrew's War Memorial Hospital** at Spring Hill;
- **The Wesley Hospital** at Auchenflower.



**1300 4 GASTRO** (Ph: 1300 4 427876)  
[www.gastros.com.au](http://www.gastros.com.au)

## Intestinal Gas and Bloating

Dr Neville Sandford FRACP

**A variety of intestinal symptoms such as belching, bloating, abdominal pain, or flatulence are commonly attributed by the patient to "excess gas". This is rarely the case. Understanding the physiology of intestinal gas helps the clinician to manage these symptoms and to determine which patients have significant gastro-intestinal disease.**

Intestinal gas is derived from swallowed air (nitrogen and oxygen), or intraluminal production (carbon dioxide, hydrogen, and methane). These five gases account for over 99 per cent of expelled gas and most of this is nitrogen. None of these gases are odiferous, so the odour of flatus is attributable to minor amounts of sulphur-containing compounds, short-chain fatty acids, skatoles, indoles, volatile amines and ammonia.

Carbon dioxide is derived from digestion of fat or protein in the GI tract, from bacterial fermentation of intraluminal substrates, or from interaction of acid and bicarbonate, but this CO<sub>2</sub> is largely absorbed before it reaches the colon. CO<sub>2</sub> in the flatus results from colonic fermentation of non-digestible carbohydrates.

Hydrogen production occurs predominantly in the colon, except in small intestinal bacterial overgrowth. In healthy individuals certain foods (FODMAPs – fermentable oligo-, di- and mono-saccharide, and polyols) are incompletely digested by enzymes in the normal small bowel, leading to increased H<sub>2</sub> production in the colon.

Methane is exclusively produced by specific bacteria in the colon which convert H<sub>2</sub> and CO<sub>2</sub> to CH<sub>4</sub>. The amount of methane in the flatus is determined

by the concentration of methanogens in the colon and may be related to early environmental bacterial colonisation of the colon.

### Gas Disorders

Belching (or eructation) is retrograde passage of gas out of the mouth. It typically follows a meal and is caused by the venting of swallowed air or CO<sub>2</sub> from carbonated beverages by relaxation of the lower oesophageal sphincter (LOS). It is exacerbated by foods which relax the LOS such as caffeine, chocolate, peppermint, or fat. It can be a symptom of gastro-oesophageal reflux disease (GORD). Chronic repetitive belching is a disorder caused by habitual air swallowing (aerophagia) in which air is swallowed and then immediately vented from the oesophagus. It is often a manifestation of anxiety but can be enhanced by gum chewing or smoking and is rarely indicative of a digestive disorder.

Flatulence is often perceived by the patient as abnormal, but the volume of gas passed by healthy individuals varies from 500 to 1500ml per day in 10 to 20 passages of wind. Although "excess" flatus or its foul odour may be a source of concern to the patient, it is rarely associated with serious illness.

*Continued overleaf...*

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## GIE site closures over Christmas period

Our Chermside, St Andrew's and Sunnybank sites will be closed over the Christmas holiday period from 24 December 2011 to 2 January 2012 inclusive.

During the week between Christmas and New Year our North West site will be open on 28 December 2011 and our Wesley site will be open on 30 December 2011 for procedures and a preparation kit clinic.

All sites will be open for business as usual on 3 January 2012.

*We wish you all a happy and safe Christmas and New Year.*

Continued from page 1...

## Intestinal Gas and Bloating

Evaluation of the patient complaining of flatulence should be guided by the presence of associated warning symptoms such as weight loss, new onset diarrhoea, rectal bleeding, steatorrhoea, nocturnal abdominal pain, vomiting, fever, abdominal tenderness or a succussion splash. These symptoms and signs should prompt investigation for malabsorption, intestinal inflammation and enteric pathogens. Patients without alarm symptoms rarely have a specific underlying disorder, but patients may benefit from dietary modification by avoiding lactose, fructose, sorbitol and undigestible starches (eg bran). If the flatus is malodorous, avoiding high fat content foods (eg pork) should be considered. Addressing psychological factors and reassurance that passage of flatus is normal is also important. Drug therapy with simethicone or activated charcoal is widely used but without convincing evidence of efficacy.

### Bloating

Bloating refers to a person's sensation of abdominal fullness and distension connotes visible or measurable increase in abdominal girth. Although patients usually attribute bloating to excessive gas, this is often not the case. Heightened sensitivity of the afferent enteric nerves can give patients a sensation of abdominal discomfort after meals from the normal dilatation of the intestine from the ingested food. This sensation may be intensified by alteration in intestinal motility. These symptoms are common in irritable bowel syndrome and patients with anxiety disorders. Abdominal distension also occurs in irritable bowel syndrome due to downward displacement of the diaphragm in response to modest increases in intestinal gas and resulting in protrusion of the anterior abdominal wall. This distension is shown to disappear if the patient is anaesthetised. Patients with gut dysmotility however harbour large amounts of excess intraluminal gas resulting in abdominal bulging, but upward displacement of the diaphragm. Following anti-reflux surgery, some patients are unable to belch due to a tight wrap and this can result in gastric distension, excessive flatus and abdominal pain, known as gas-bloat syndrome. This tends to slowly improve with time. As with flatulence, alarm symptoms such as diarrhoea, weight loss or nutritional deficiency should prompt investigation for other conditions.

### Malabsorption

Malabsorption of carbohydrates can lead to complaints of gas, abdominal bloating and flatulence. Unabsorbed carbohydrates provide substrates for bacterial fermentation causing gas production and also increased osmotic load, alteration of intestinal motility and change in bacterial flora. Patients with irritable bowel syndrome have heightened intestinal sensitivity to the effects of malabsorbed carbohydrates, even though the carbohydrate malabsorption may not differ from healthy subjects. Specific forms of carbohydrate malabsorption may be established with breath hydrogen tests after ingesting specific substrates (lactose or fructose), or alternatively an empirical trial of dietary restriction may be sufficient. Bacterial fermentation of raffinose, stachyose and verbascone, the undigestible oligosaccharides in legumes, causes excess gas and avoidance of these foods is beneficial. FODMAP exclusion diets are more complex and should probably be managed only by dietitians experienced in this area to avoid inadvertent restriction of other essential dietary factors.

*Please refer to the article by Jocelyn Hunter Clarke, an accredited dietitian on FODMAPs (opposite page).*

## Did you know?

Did you know that our Wesley Hospital site offers a telephone colonoscopy preparation service for those patients who live more than two hours out of Brisbane?

Many patients who live in rural areas of Queensland and northern New South Wales have had the benefit of this service. This involves setting a convenient time with the patient for a Registered Nurse to ring them.

The preparation kit and instructions are posted out along with the hospital admission information. The Registered Nurse conducts a brief interview with the patient on the telephone to document their medical and surgical history and to go through the preparation kit instructions as well as what happens on the day of the procedure.



## Frequently asked questions

**Dr Alistair Cowen, Gastroenterologist, respondent**

### **Q.** How long should antacids be ceased before undergoing an upper endoscopy?

**A.** Heartburn without any alarm symptoms is treated with lifestyle modifications, antacids, H2 receptor antagonists, short courses of proton pump inhibitors, etc. Heartburn with alarm symptoms or of such severity that long-term proton pump inhibitory therapy is being contemplated should have endoscopy before instituting long-term PPI therapy for the following reasons:

1. To exclude co-morbidities.
2. To assess the severity of reflux ulceration.
3. To determine if Helicobacter infection is present.

If endoscopy is undertaken while the patient is on PPI therapy and no ulceration is present, it is not possible to say whether this is the result of PPI therapy or whether even in the untreated state the patient does not have reflux ulceration. This is an important distinction. Patients without significant reflux ulceration while not on PPIs should be treated on a symptomatic basis. Where significant reflux ulceration is present in the untreated state then long-term PPI therapy to prevent progression to Barrett's oesophagus with the subsequent risk of adenocarcinoma is appropriate.

PPIs should therefore be stopped for a minimum of three (3) weeks before endoscopy. Antacids on their own are unlikely to conceal significant reflux ulceration and can therefore be continued. The patient however should be advised to take the minimum amount of antacid consistent with a tolerable level of symptoms.

# The Low FODMAP Diet and Irritable Bowel Syndrome

Jocelyn Hunter Clarke

The following article was written by Jocelyn Hunter Clarke, an accredited practicing dietitian in private practice in Brisbane. Jocelyn has over 15 years experience as a dietitian and runs a weekly IBS/FODMAP clinic. She also lectures undergraduate and postgraduate dietetic students on food intolerance.

The low FODMAP diet has emerged as a key player in the effective management of patients with Irritable Bowel Syndrome (IBS). Recent research by Professor Peter Gibson, Dr Sue Shepherd and their teams at Box Hill Hospital and Monash University in Melbourne has provided strong evidence to recommend the widespread application of a low FODMAP diet in individuals with IBS. Evidence from double blind placebo controlled trials indicates that a low FODMAP diet improves symptoms in up to 74 per cent of individuals with IBS. It is a specific diet that requires expert instruction and supervision by a dietitian trained in the FODMAP approach.

Barostat and gas infusion studies indicate that the physiological basis for functional gut symptoms is luminal distension. A heightened response to luminal distension can induce symptoms of pain, a sensation of bloating, visible abdominal distension and changes in gut motility in individuals with IBS. The research has focussed on minimising the consumption of dietary factors that induce luminal distension and this has led to the development of the low FODMAP diet.

FODMAP is an acronym for a specific group of fermentable, poorly absorbed short-chain carbohydrates that are widespread in the diet. They comprise of a monosaccharide (fructose), a disaccharide (lactose), oligosaccharides (fructans and galactans) and polyols (sorbitol and mannitol).

Ingestion of the poorly absorbed FODMAPs increases the delivery of substrate to the distal small intestine and proximal colon where it is available for fermentation by bacteria and exerts an osmotic effect. The subsequent luminal distension from increased gas and fluid contributes to the common symptoms of IBS. Poor absorption of FODMAPs is normal and in individuals without the visceral hypersensitivity or motility disturbances that occur in IBS, this malabsorption creates wind and has a natural laxative effect. So it is important to remember that the underlying disorder is the IBS, not FODMAPs malabsorption.

## Q. When should follow up/rescreening be undertaken for coeliac disease?

**A.** Patients with biopsy proven coeliac disease should be assessed at 6-8 weeks following the commencement of a gluten free diet. If there is a complete clinical response then rescreening is not necessary in adults. If symptoms persist then a review of the gluten free diet by an accredited dietitian is required. If the diet appears adequate and symptoms persist then rebiopsy should be undertaken to determine if the patient is a non-responsive coeliac (up to 5 per cent of adult coeliacs require a course of steroids to initiate a small bowel mucosal response). If there has been a histological response then co-morbidities such as lymphoma and lymphocytic colitis should be considered.

The situation is more difficult in children where it may be difficult to determine if small bowel villous atrophy is due to true coeliac disease or intestinal infection.

It must be noted that patients with negative antibodies and even normal small bowel biopsies may subsequently develop clinical coeliac disease. A past normal small bowel biopsy does NOT preclude the possible development of coeliac disease in later life.

Patients with positive antibody screening tests but normal small bowel biopsies are at greater risk of subsequent development of clinical coeliac disease.

Before referring individuals with IBS to a dietitian for instruction on low FODMAPs diet, it is important to rule out coeliac disease. For coeliac disease screening tests to be accurate, an individual needs to be consuming adequate gluten, for example 4 slices of bread per day, in the weeks before testing is undertaken.

Breath testing can be helpful for fine tuning the low FODMAP diet. A positive test is not diagnostic as many symptom-free individuals have positive breath tests, however a negative breath test for a particular FODMAP, for example fructose or lactose, means that the low FODMAP diet can be more liberal and include fructose and lactose. From a dietitian's point of view, the breath testing allows for an individualised diet, as the substances that are well absorbed need not be restricted. If breath tests are unavailable a full low FODMAP diet can be implemented followed by re-challenges.

The full low FODMAP diet includes restriction of fructose, lactose, sorbitol, mannitol, fructans and galacto-oligosaccharides. It should be initially trialled for 4-6 weeks. The diet is nutritionally sound and supplementation isn't required. Once the trial is complete the next stage is re-challenging with specific FODMAPs to identify the key triggers and test tolerance. The long-term aim is to broaden dietary choice as much as possible and maintain adequate symptom control.

There are number of resources available to assist individuals with the low FODMAP diet and these can be ordered at [www.monash.edu.au/ehcs](http://www.monash.edu.au/ehcs) and [www.shepherdworks.com.au](http://www.shepherdworks.com.au). These resources include shopping guides, food lists and recipe books. These resources are excellent but it is important to refer individuals to an experienced dietitian for guidance on implementing the diet and dietary challenges to avoid unnecessary long-term dietary restrictions. An experienced dietitian will also assess for other food components that may be triggering symptoms, such as bioactive food chemicals, in individuals in whom a low FODMAP diet is not the answer.

A firm clinical diagnosis of coeliac disease cannot be made on antibody screening tests alone.

Whether the relatives of patients with coeliac disease should have serological screening is a contentious issue. Certainly children who have failed to achieve milestones in weight or height, or have any symptoms consistent with coeliac disease should be screened. Those with a strong family history of coeliac disease should also have serological screening.

## Q. Helicobacter – when is a breath test worth doing?

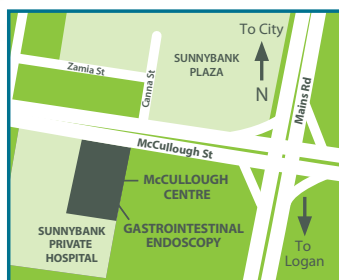
**A.** The most important use of urea breath testing for Helicobacter is to determine if a course of Helicobacter eradication has been successful. It is preferable to wait eight (8) weeks after the end of the antibiotics before undertaking the breath test. (If the Helicobacter has been largely but not totally eliminated, there will be insufficient organisms to give a positive breath test until repopulation occurs).

The breath test may also be useful where it is important to determine Helicobacter status but endoscopy is not considered appropriate (eg before commencing NSAIDs in patients with a previous history of peptic ulcer or GI bleeding, co-morbidities excluding endoscopy, etc).



## GIE practice locations and contact details

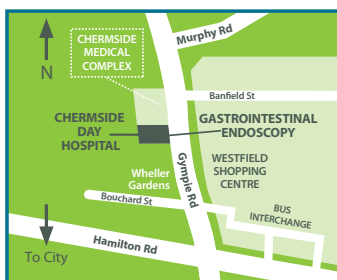
For all appointments, call 1300 4 GASTRO (Ph: 1300 4 427876)



### Brisbane Endoscopy Services

Suites 16-18  
McCullough Centre  
259 McCullough Street  
Sunnybank QLD 4109

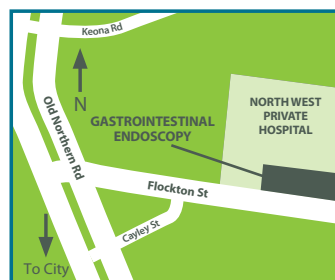
Phone: 07 3344 1844  
Fax: 07 3344 2739



### Cherside Day Hospital

Level 1  
Cherside Medical Complex  
956 Gympie Road  
Cherside QLD 4032

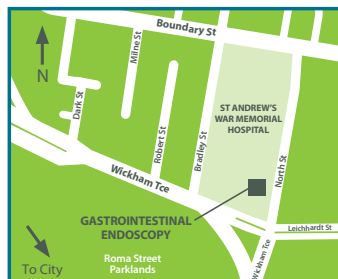
Phone: 07 3120 3407  
Fax: 07 3120 3443



### North West Private Hospital

Endoscopy Unit  
137 Flockton Street  
Everton Park QLD 4053

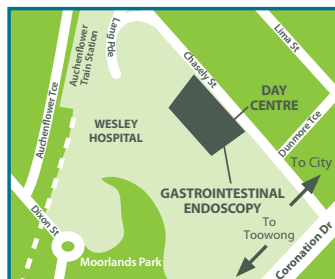
PO Box 443 Everton Park QLD 4053  
Phone: 07 3353 3322  
Fax: 07 3353 9325



### St Andrew's War Memorial Hospital

Endoscopy Centre  
457 Wickham Terrace  
Spring Hill QLD 4000

Phone: 07 3834 4499  
Fax: 07 3834 4503



### Wesley Hospital

3rd Floor  
East Wing  
451 Coronation Drive  
Auchenflower QLD 4066

Phone: 07 3870 3799  
Fax: 07 3870 5069

## Private practice locations & contact details

**Dr Andrew Bryant** MB BS FRACP Dip Av Med (Otago)

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Level 2, St Andrew's Place,  
33 North St, Spring Hill QLD 4000

T: 3831 7238  
F: 3831 7261

**Dr Alistair Cowen** MB BS (Hons) MD FRACP

**Does NOT Privately consult**  
**Open Access procedures only**

T: 3353 9325  
F: 3350 4143

**Dr Hugh Spalding** MB BS FRACP BVSc PhD

**Main Rooms:**  
St Andrew's Hospital,  
Level 7, Suite 4, St Andrew's Specialist Centre  
457 Wickham Tce, Spring Hill QLD 4000

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F: 3270 4588

## GP visits

Our marketing team, Kath and Boh, have been out on the road visiting GPs and their practice staff to ensure they have all the information they need in order for GIE to facilitate the needs of patients and the referring doctors. Our Consultants are pleased to come out to your practice to talk with you about clinical issues and with this in mind we are currently in the planning phase for these talks.

Your feedback is also very important, so if you have any ideas or suggestions that you feel would be of benefit, please don't hesitate to put these forward.

**If you have any questions, please contact Justine Whelan on 3270 4597 or [justine@gastros.com.au](mailto:justine@gastros.com.au)**

## GIE at St Andrew's War Memorial Hospital

As mentioned in our last newsletter, we have opened an open access endoscopy facility for colonoscopy and upper gastrointestinal endoscopy at the St Andrew's War Memorial Hospital.

The staff there would be pleased to assist should you wish to refer your patient to this centre and bookings can be arranged to suit your patients' needs. We are pleased to have a site located within the Brisbane CBD that is easily accessible.

**For further enquiries, please refer to the practice contact details on the last page of this newsletter.**