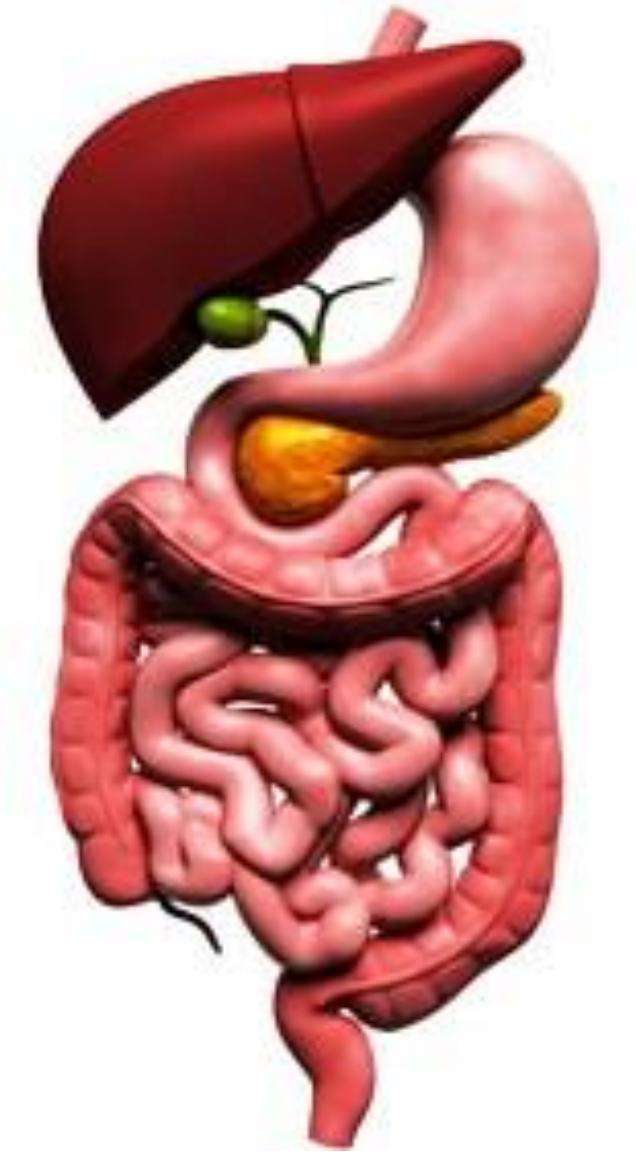
Gastrointestinal Tract Problems



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Heartburn

A form of indigestion, or dyspepsia, also more formally known as gastro-esophageal reflux disease (**GERD**).

Symptoms of heartburn are caused when there is **reflux of gastric contents**, **particularly acid**, into the esophagus, which irritate the sensitive mucosal surface (esophagitis).

Patients will often describe the symptoms of heartburn – typically **a burning discomfort/pain felt in the stomach**, **passing upwards behind the breastbone** (retrosternally).

By careful questioning, the pharmacist can distinguish conditions that are potentially more serious.

What you need to know

Age	**Adult, Child**
Symptoms	**Heartburn** **Difficulty in swallowing** **Flatulence**
Associated factors	
Pregnancy	
Precipitating factors	
Relieving factors	
Weight	
Smoking habit	
Eating	
Medication	**Medicines tried already** **Other medicines being taken**

Age

The symptoms of reflux and esophagitis occur more commonly in patients **aged over 55 years**.

Heartburn is **NOT** a condition normally experienced in **childhood**, although symptoms can occur in young adults and particularly in **pregnant women**.

Children with symptoms of heartburn should therefore be referred to their doctor.

Symptoms

A burning discomfort is experienced in the upper part of the stomach in the midline (epigastrium), and the burning feeling tends to move upwards **behind the breastbone** (retrosternally).

The pain may be felt only in the **lower retrosternal area** or on occasion **right up to the throat**, sometimes associated with an **acid taste in the mouth**.

Associated factors

Deciding whether or not someone is suffering from heartburn can be helped by enquiring about precipitating or aggravating factors.

Heartburn is often brought on by **bending or lying down**.

It is more likely to occur in those who are **overweight** and can be aggravated by a **recent increase in weight**.

It is also more likely to occur **after a large meal**.

Aggravating factors

Alcohol and smoking are known to cause or aggravate heartburn.

Stress is also a factor in the condition.

Caffeine in coffee, tea or soft drinks such as cola, and in some analgesics and cold remedies, also relaxes the lower esophageal sphincter and is also commonly implicated in heartburn.

A large number of medicines are commonly associated with heartburn and people may notice symptoms shortly after starting these treatments.

Aggravating factors (Medication)

The reason for this is that these types of drugs cause relaxation of the lower end of the esophagus.

This normally acts as a sphincter, allowing food into the stomach, but stopping the acid contents of the stomach going up into the esophagus when the stomach contracts.

The lining of the stomach is resistant to the irritant effects of acid, whereas the lining of the esophagus is readily irritated by acid.

Aggravating factors (Medication)

CCBs

Anticholinergics (particularly those with more pronounced anticholinergic effects such as ***Amitriptyline***)

Theophylline

Nitrates

The **PDIs**, such as ***Sildenafil*** and ***Tadalafil***

NSAIDs will make the inflammation in esophagitis worse

Aspirin or **oral Corticosteroids** (e.g. ***Prednisolone***)

Bisphosphonates (***Alendronate, Risedronate***) can cause severe esophagitis

Severe pain

Sometimes the pain can come on suddenly and severely and even radiate to the back and arms.

In this situation differentiation of symptoms is difficult as the pain can mimic a heart attack

Urgent medical referral is essential!

Sometimes patients who have been admitted to hospital apparently suffering a heart attack are found to have esophagitis instead.

Difficulty in swallowing (Dysphagia)

Must always be regarded as a serious symptom!

The difficulty may be either discomfort as food or drink is swallowed or a sensation of food or liquids sticking in the gullet.

Both require referral!

It may be due to obstruction of the esophagus, for example, by a tumor.

Difficulty in swallowing (Dysphagia)

It is possible that the swallowing discomfort may be secondary to inflammation of the esophagus (esophagitis)

- **Due to acid reflux, especially when it occurs while swallowing hot drinks or irritant fluids (e.g. alcohol or fruit juice).**

Regurgitation

It occurs when recently eaten food sticks in the esophagus and is regurgitated without passing into the stomach.

This is due to a mechanical blockage in the esophagus.

This can be caused by a cancer

A stricture is caused by long-standing acid reflux with esophagitis

However, medical examination and further investigations are necessary to determine the cause of regurgitation.

Pregnancy

As many as **half of all pregnant women** suffer from heartburn.

Pregnant women **aged over 30 years** are more likely to suffer from the problem.

The symptoms are caused by an **increase in intra-abdominal pressure** and **incompetence of the lower esophageal sphincter**.

It is thought that **hormonal influences**, particularly **progesterone**, are important in the lowering of sphincter pressure.

Heartburn often begins in **mid-to-late pregnancy** but may occur at **any stage**.

The problem may sometimes be **associated with stress**.

Treatment timescale

If symptoms have not responded to treatment after 1 week, the patient should see a doctor.

When to refer

- Children
- Pain radiating to arms
- Difficulty in swallowing
- Regurgitation
- Increasing severity
- Long duration
- Related to prescribed medication
- Failure to respond to antacids

Management

The symptoms of heartburn respond well to treatments that are available OTC.

There is also a role for the pharmacist to offer practical advice about measures to prevent recurrence of the problem.

Pharmacists will use their professional judgement to decide whether to offer medications.

The decision will also take into account customer preference.

Antacids

Antacids can be effective in controlling the symptoms of heartburn and reflux, more so in combination with an alginate.

Preparations that are high in sodium should be avoided by those who are pregnant and anyone on a sodium-restricted diet (e.g. those with heart failure or kidney or liver problems).

H2 -Antagonists

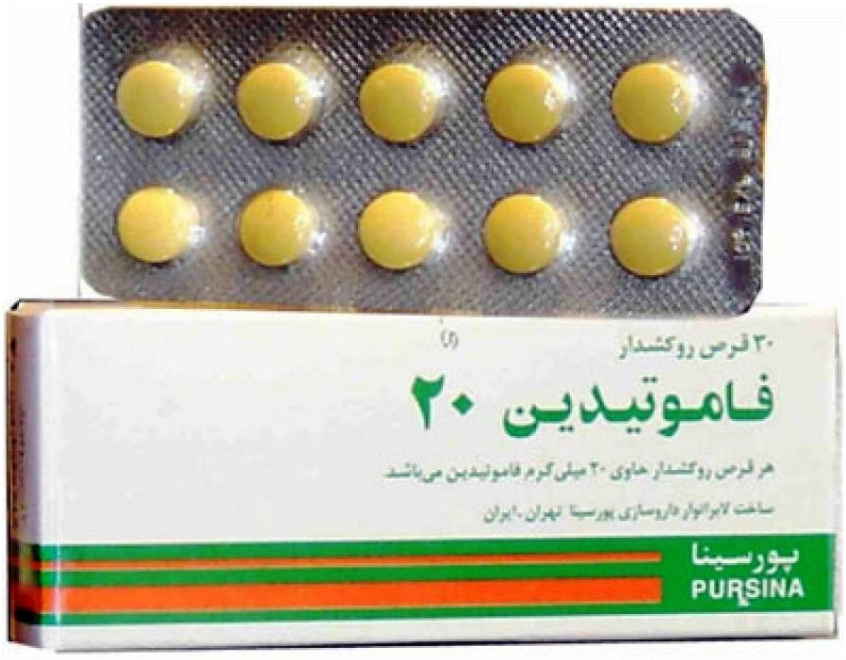
***Cimetidine*, *Famotidine* and *Nizatidine* were approved for P use in the 1990s,**

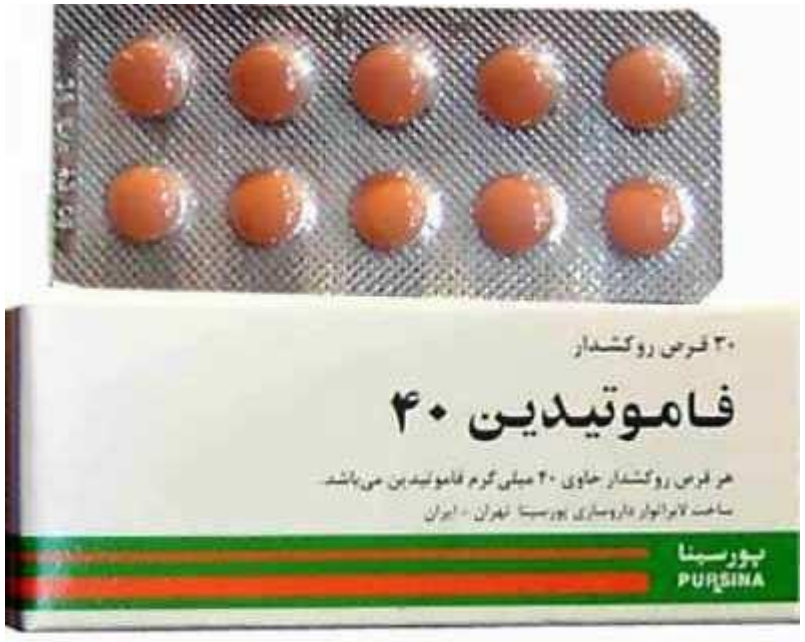
But are NOT currently marketed as OTC products.

Ranitidine: withdrawn from the market!

Famotidine for GERD

Low dose (OTC)	10 mg twice daily
Standard dose	20 mg twice daily





Cimetidine for GERD

Low dose (OTC)	200 mg twice daily
Standard dose	400 mg twice daily

Nizatidine for GERD

Low dose (OTC)	75 mg twice daily
Standard dose	150 mg twice daily

Proton Pump Inhibitors (PPIs)

PPIs can be used for the relief of heartburn symptoms associated with reflux

PPIs are generally accepted as being among the most effective medicines for the relief of heartburn.

It may take a day or so for them to start being fully effective.

During this period a patient with ongoing symptoms may need to take a concomitant antacid.

PPIs work by suppressing gastric acid secretion in the stomach.

Proton Pump Inhibitors (PPIs)

Patients taking a PPI should be advised NOT to take H2AR at the same time.

The tablets should be swallowed whole with plenty of liquid prior to a meal.

It is important that the tablets are not crushed or chewed.

Alcohol and food do not affect the absorption of PPIs.

If no relief is obtained within 2 weeks, the patient should be referred to GP.

Drowsiness has been reported but rarely.

Treatment with PPIs may cause a false negative result in the 'breath test' for *Helicobacter.*

Omeprazole for GERD

Low dose	**10 mg daily**
Standard dose (OTC)	**20 mg daily**

Pantoprazole for GERD

Low dose (OTC)	20 mg daily
Standard dose	40 mg daily

Lansoprazole for GERD

Low dose (OTC)	**15 mg daily**
Standard dose	**30 mg daily**

Esomeprazole for GERD

Low dose (OTC)	200 mg daily
Standard dose	400 mg daily

Rabeprazole for GERD

Low dose	10 mg daily
Standard dose	20 mg daily

Obesity

If the patient is overweight, weight reduction should be advised.

There is some evidence that weight loss reduces symptoms of heartburn.

Food

Small meals, eaten frequently, are better than large meals, as reducing the amount of food in the stomach reduces gastric distension, which helps to prevent reflux.

Gastric emptying is slowed when there is a large volume of food in the stomach; this can also aggravate symptoms.

High-fat meals delay gastric emptying.

The evening meal is best taken several hours before going to bed.

Posture

Bending, **stooping** and even **slumping** in an armchair can provoke symptoms and should be avoided when possible.

It is better to **squat** rather than bend down.

Since the symptoms are often worse when the patient lies down, there is evidence that **raising the head** of the bed can reduce both acid clearance and the number of reflux episodes.

Using extra pillows is often recommended, but this is not as effective as raising the head of the bed (for example, with bricks under the bed).

Clothing

Tight, constricting clothing, especially waistbands and belts, can be an aggravating factor and should be avoided.

Other aggravating factors

Smoking, alcohol, caffeine and chocolate have a direct effect by making the lower esophageal sphincter less competent by reducing its pressure and therefore contribute to symptoms.

The pharmacist is in a good position to offer advice about how to stop smoking, offering a smoking cessation product where appropriate.

The knowledge that the discomfort of heartburn will be reduced can be a motivating factor in giving up cigarettes.

Dyspepsia

Indigestion (dyspepsia) is **upper abdominal discomfort or pain** that may be described as a **burning sensation, heaviness or an ache**.

It is often **related to eating** and may be accompanied by symptoms such as **nausea, fullness** in the upper abdomen or **belching**.

It is commonly presented in community pharmacies and is often self-diagnosed by patients.

Many patients **use the terms indigestion and heartburn interchangeably** and there may be an overlap in symptoms.

The pharmacist must establish whether such **a self-diagnosis is correct** and **exclude the possibility of serious disease**.

What you need to know

Age	**Adult, Child**
Symptoms	
Duration of symptoms	
Previous history	
Details of pain	**Where is the pain?** **What is its nature?** **Is it associated with food?** **Is the pain constant or spasmodic?** **Are there any aggravating or relieving factors?** **Does the pain move to anywhere else?**
Associated symptoms	**Loss of appetite** **Weight loss** **Nausea/vomiting** **Alteration in bowel habit**

What you need to know

Diet	
Any recent change of diet?	
Alcohol consumption	
Smoking habit	
Medication	
Medicines already tried	
Other medicines being taken	

Symptoms

The symptoms of typical indigestion include:

- **Poorly localized upper abdominal (the area between the belly button and the breastbone)**
- **Discomfort that may be a burning, heaviness or ache,**
- **Which may be brought on by particular foods, excess food, alcohol or medication (e.G. NSAIDS or *aspirin*).**

Age

Indigestion is **rare in children**.

Abdominal pain is a common symptom in children and is often associated with **an infection**.

OTC treatment is not appropriate for abdominal pain of unknown cause in children, and referral to the GP surgery would be advisable.

Age

Be cautious when dealing with **first-time indigestion in older people**

NICE recommend an age threshold of 55 years for refer these patients

This concern is based on the risk of **gastric cancer**, which, while rare in young patients, is more likely to occur in those aged 55 years and over.

Careful history taking is therefore of paramount importance here.

Duration/Previous History

Indigestion that is persistent or recurrent should be referred to the doctor, after considering the information gained from questioning.

Any patient with a previous history of the symptom that has NOT responded to treatment, or that has got worse, should be referred.

Details of Pain/Associated Symptoms

If the pharmacist can obtain a good description of the pain, then the decision whether to advise treatment or referral is much easier.

Ulcer

Ulcers may occur in the stomach (gastric ulcer) or in the first part of the small intestine leading from the stomach (duodenal ulcer).

Both types of ulcers are associated with H. pylori infection and may be exacerbated or precipitated by smoking and NSAIDs.

Duodenal Ulcer

Duodenal ulcers are more common and have different symptoms from gastric ulcers.

Typically, the pain of a duodenal ulcer is said to be localized to the upper abdomen, slightly to the right of the midline.

Patients can point to the site of pain with a single finger.

most likely to occur when the stomach is empty, especially at night.

It is relieved by food (although it may be aggravated by fatty foods) and antacids.

Gastric Ulcer

The pain of a gastric ulcer is in the same area but less well localized.

It is often aggravated by food and may be associated with nausea and vomiting.

Appetite is usually reduced, and the symptoms of gastric ulcer are persistent and severe.

On examination, there is tenderness in the upper abdomen.

Gastric ulcer is worrying because of the associated risk of cancer.

Gallstones

Single or multiple stones can form in the gall bladder.

This causes severe episodic pain (biliary colic) in the upper abdomen below the right rib margin.

Biliary colic may be precipitated by a fatty meal.

Because the secretion of bile is impaired, the gall bladder can become distended and persistently painful and is prone to infection (cholecystitis).

Sometimes these pains can be confused with that of a duodenal ulcer.

GERD

Many patients use the terms heartburn and indigestion interchangeably, and sometimes the two conditions cannot be differentiated.

Heartburn is a pain arising in the upper abdomen passing upwards behind the breastbone (retrosternal) towards the throat.

It is often precipitated by a large meal or by bending and lying down.

Heartburn can often be treated by the pharmacist but sometimes requires referral.

Irritable Bowel Syndrome (IBS)

IBS is a common, non-serious but troublesome condition in which symptoms are thought to be caused by bowel spasm.

The cause is unknown, but it is commonly associated with anxiety and stress.

There is usually an alteration in bowel habit, sometimes with alternating constipation and diarrhea.

Pain is usually present and a common feature is that this is often relieved by defecation.

It is usually lower abdominal (below the umbilicus), but it may sometimes be upper abdominal and therefore confused with indigestion.

Any persistent alteration in normal bowel habit is an indication for referral.

Atypical angina

Angina is usually experienced as a **tight, painful constricting band across the middle of the chest**, sometimes with **radiation to the neck and/or arms**.

Atypical angina pain may be **felt in the lower chest or upper abdomen**.

It is likely to be **precipitated by exercise or exertion**.

If this occurs or is suspected, urgent referral is necessary.

More serious disorders

Persisting upper abdominal pain, especially when associated with anorexia and unexplained weight loss, may herald an underlying cancer of the stomach or pancreas.

Ulcers sometimes start bleeding, which may present with blood in the vomit (haematemesis) or in the stool (melaena).

In the latter, the stool becomes tarry and black.

Urgent referral is necessary!

Diet

Fatty foods, or **excessive consumption**, can cause indigestion, aggravate ulcers and may precipitate biliary colic if there is gall bladder abnormality.

Alcohol, particularly large amounts, can cause indigestion symptoms.

Smoking habit

Smoking predisposes to, and may cause, indigestion and ulcers.

Ulcers heal more slowly and relapse more often during treatment in people who smoke.

The pharmacist is in a good position to offer advice on smoking cessation, perhaps with a recommendation to use nicotine replacement therapy.

Medicines already tried

Anyone who has tried one or more appropriate treatments without improvement or whose initial improvement in symptoms is not maintained should see the doctor.

Other medicines being taken

GI side effects can be caused by many drugs.

NSAIDs and *Aspirin* have been implicated in the causation of ulcers and bleeding ulcers, and there are differences in toxicity related to increased doses and to the nature of individual drugs.

These drugs commonly cause indigestion.

***Clopidogrel* is an antiplatelet agent that also increases risk of GI bleeding.**

Elderly patients are particularly prone to such problems, and pharmacists should bear this in mind.

Treatment timescale

If symptoms have not improved within 5 days, the patient should see the doctor.

When to refer

- 55 years of age or over
- Unexplained weight loss (without meaning to)
- Difficulty swallowing (dysphagia)
- Persistent or recurrent nausea or vomiting
- Iron deficiency anemia (however this diagnosis will require a blood test)
- Patient concerned by a lump or mass in the stomach
- Blood in the vomit or blood in the stools (which may be black and tarry–melana)

When to refer

- Persistent abdominal pain, particularly if severe or unrelated to meals
- No response to H2 antagonists or PPI
- These symptoms may be a sign of a more serious underlying health problem, such as a stomach ulcer or stomach cancer.

Management

Once the pharmacist has excluded serious disease, treatment of dyspepsia with antacids or an **H2 antagonist** may be recommended and is likely to be effective.

PPIs are available OTC, specifically for **heartburn and reflux symptoms**.

The preparation should be selected on the basis of the individual patient's symptoms.

Smoking, **alcohol** and **fatty meals** can all aggravate symptoms, so the pharmacist can advise appropriately.

Antacids

In general, liquids are more effective antacids than are solids; they are easier to take, work more quickly and have a greater neutralizing capacity.

The liquid allows a large surface area to be in contact with the gastric contents.

Some patients find tablets more convenient, and these should be well chewed before swallowing for the best effect.

It might be appropriate for the patient to have both; the liquid could be taken before and after working hours, while the tablets could be taken during the day for convenience.

Antacids

Antacids are best taken about 1 h after a meal because the rate of gastric emptying has then slowed and the antacid will therefore remain in the stomach for longer.

Taken at this time antacids may act for up to 3 h compared with only 30 min–1 h if taken before meals.

Repeated doses may be needed for full effect.

Aluminium and Magnesium salts

Aluminium-based antacids are effective, but they tend to be **constipating**.

- The use of aluminium antacids is best **AVOIDED** in **anyone who is constipated** and in **elderly** patients who have a tendency to constipation.

Magnesium salts are **more potent** acid neutralizers than aluminium salts.

- They tend to cause **osmotic diarrhea** as a result of the formation of insoluble magnesium salts and are useful in patients who are constipated or prone to constipation.

Combination products containing aluminium and magnesium salts may cause less bowel disturbance and are therefore valuable preparations for recommendation by the pharmacist.

Dimeticone

Dimeticone **is sometimes added to antacid formulations for its defoaming properties.**

Theoretically, it reduces surface tension and allows easier elimination of gas from the gut by passing flatus or eructation (belching).

Evidence of benefit is uncertain.

Interactions with antacids

The BNF advises that antacids should preferably NOT be taken at the same time as other drugs since they may impair absorption.

Antacids may also damage enteric tablet coatings designed to prevent break down in the stomach.

The consequences of this may be that release of the drug is unpredictable; also adverse effects may occur if the drug is released earlier than intended, in the stomach.

Taking the doses of antacids and other drugs at least 1 h apart should minimize interactions.

Interactions with antacids

Antacids may reduce the absorption of some **antibiotics and antifungals** (**Tetracyclines**, ***Azithromycin***, ***Itraconazole***, ***Ketoconazole***, ***Ciprofloxacin***, ***Norfloxacin***, ***Rifampicin***).

Absorption of **ACEIs**, **Phenothiazines**, ***Gabapentin*** and ***Phenytoin*** may also be reduced.

Sodium bicarbonate may increase the excretion of ***Lithium*** and lower the plasma level, so a reduction in lithium's therapeutic effect may occur.

- Antacids containing *sodium bicarbonate* should not therefore be recommended for any patient on lithium therapy.

Interactions with antacids

The changes in pH that occur after antacid administration can result in a decrease in iron absorption if iron is taken at the same time.

The effect is caused by the formation of insoluble iron salts due to the changed pH.

Taking iron and antacids at different times should prevent the problem.

H2 bloclers

Famotidine **can be used for the short-term treatment of dyspepsia and heartburn.**

Treatment with *H2RA* is limited to a maximum of 2 weeks.

Any question?!