

Gastrointestinal Tract Problems

Indigestion
Nausea and vomiting

Indigestion

- **Indigestion (dyspepsia)** is commonly presented in community pharmacies and is often self-diagnosed by patients, who use the term to include anything from pain in the chest and upper abdomen to lower abdominal symptoms.
- Many patients use the terms indigestion and heartburn interchangeably.
- The pharmacist must establish whether such a selfdiagnosis is correct and exclude the possibility of serious disease.

What you need to know

Symptoms

Age

Adult, child

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 colicky?

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

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 localised upper **abdominal** (the area between the **belly button** and the **breastbone**) **discomfort**, which may be brought on by
 - particular foods,
 - excess food,
 - alcohol or medication (e.g. *aspirin*).

Age

- Indigestion is rare in **children**, who should be referred to the doctor.
- Abdominal pain, however, is a common symptom in children and is often associated with an infection.
- OTC treatment is not appropriate for abdominal pain of unknown cause and referral to the doctor would be advisable.
- Be cautious when dealing with first-time indigestion in patients aged 45 years or over and refer them to the general practitioner (GP) for a diagnosis.
- Gastric cancer, while rare in young patients, is more likely to occur in those aged 50 years and over.

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 which has not responded to treatment, or which has worsened, 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.
- A few medical conditions that may present as indigestion but which require referral are described below:

Ulcer

- Duodenal ulcers are more common and have different symptoms from gastric ulcers.
- Typically the pain of a duodenal ulcer is localised to the upper abdomen, slightly to the right of the midline.
- It is often possible to point to the site of pain with a single finger.
- The pain is dull and is 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.

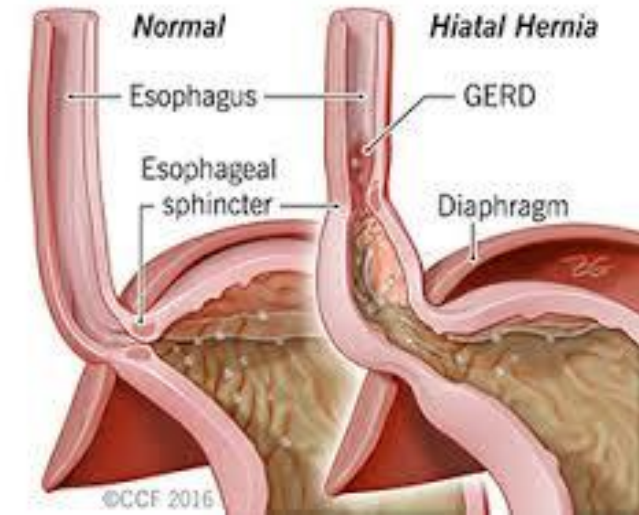
- The pain of a **gastric ulcer** is in the same area but less well localised.
- It is often aggravated by food and may be associated with nausea and vomiting.
- Appetite is usually reduced and the symptoms are persistent and severe.
- Both types of ulcers are associated with *H. pylori infection* and may be exacerbated or precipitated by smoking and NSAIDs.

Gallstones

- .The gall bladder stores bile.
- It periodically contracts to squirt bile through a narrow tube (bile duct) into the duodenum to aid the digestion of food, especially fat.
- Stones can become temporarily stuck in the opening to the bile duct as the gall bladder contracts.
- This causes severe pain (biliary colic) in the upper abdomen below the right rib margin.
- Sometimes this pain can be confused with that of a duodenal ulcer.
- Biliary colic may be precipitated by a fatty meal.

Gastro-oesophageal reflux

- sphincter muscle tone is reduced by drugs such as
 - beta-blockers,
 - anticholinergics and
 - calcium channel blockers,
- the acid contents of the stomach can leak backwards into the oesophagus.
- The symptoms arising are typically described as heartburn but many patients use the terms heartburn and indigestion interchangeably.
- hiatus hernia may be the cause



Irritable bowel syndrome

- Irritable bowel syndrome (IBS) is a common, non-serious, but troublesome, condition in which symptoms are caused by colon spasm
- There is usually an alteration in bowel habit, often with alternating constipation and diarrhoea.
- The diarrhoea is typically worse first thing in the morning.
- Pain is usually present.
- It is often lower abdominal (below and to the right or left of the belly button) but it may 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.
- 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, 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 and alcohol can cause
 - indigestion,
 - aggravate ulcers
 - precipitate biliary colic.

Smoking habit

- Smoking predisposes to, and may cause, **indigestion** and **ulcers**.
- Ulcers heal more slowly and relapse more often during treatment in smokers.
- The pharmacist is in a good position to offer advice on smoking cessation, perhaps with a recommendation to use nicotine replacement therapy.

Other medicines being taken

- Gastrointestinal (GI) side effects can be caused by many drugs, so it is important for the pharmacist to ascertain any medication that the patient is taking.
- **NSAIDs** 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.
- Sometimes these drugs cause **indigestion**. Elderly patients are particularly prone to such problems, and pharmacists should bear this in mind.
- **aspirin, ibuprofen and iron** are among those that may produce symptoms of indigestion.

When to refer

Age over 45 years, if symptoms develop for first time
Symptoms are persistent (longer than 5 days) or recurrent
Pain is severe
Blood in vomit or stool
Pain worsens on effort
Persistent vomiting
Treatment has failed
Adverse drug reaction is suspected
Associated weight loss
Children

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

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.
- 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.

Dimeticone (dimethicone)

- *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
- Evidence of benefit is uncertain.

Domperidone

- *Domperidone* 10 mg can be used for the treatment of **postprandial stomach symptoms** of excessive fullness, nausea, epigastric bloating and belching, occasionally accompanied by epigastric discomfort and heartburn.
- It increases the rate of gastric emptying and transit time in the small intestine, and also increases the strength of contraction of the oesophageal sphincter.
- *Domperidone* can be used in patients aged 16 years and over. The maximum dose is 10 mg and the maximum daily dose 40 mg.

Interactions with antacids

- Because they raise the gastric pH, antacids can interfere with **enteric coatings on tablets** that are intended to release their contents further along the GI tract.
- The consequences of this may be that release of the drug is unpredictable; adverse effects may occur if the drug is in contact with the stomach.
- Alternatively, enteric coatings are sometimes used to protect a drug that may be inactivated by the low pH in the stomach, so concurrent administration of antacids may result in such inactivation.

- Taking the doses of antacids and other drugs at least 1 h apart should minimise the interaction.
- Antacids may reduce the absorption of some antibiotics and antifungals (*tetracyclines, azithromycin, itraconazole, ketoconazole, ciprofloxacin, norfloxacin, rifampicin*).
- Absorption of *(ACE) inhibitors, 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.
- 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.

Motion sickness

Motion sickness and its prevention

- Motion sickness is thought to be caused by a conflict of messages to the brain, where the vomiting centre receives information from the eyes, the GI tract and the vestibular system in the ear.
- Symptoms of motion sickness include nausea and sometimes vomiting, pallor and cold sweats.

- Parents commonly seek advice about how to prevent motion sickness in children, in whom the problem is most common.
- Any form of travel can produce symptoms, including air, sea and road.
- Effective prophylactic treatments are available OTC and can be selected to match the patient's needs.

Age

- Motion sickness is common in young children.
- The incidence of motion sickness seems to greatly reduce with age, although some adults still experience symptoms.
- The minimum age at which products designed to prevent motion sickness can be given varies, so for a family with several children careful product selection can provide one medicine to treat all cases.

Mode of travel/length of journey

- Details of the journey to be undertaken are useful.
- The estimated length of time to be spent travelling will help the pharmacist in the selection of prophylactic treatment, since the length of action of available drugs varies.
- Once vomiting starts there is little that can be done, so any medicine recommended by the pharmacist must be taken in good time before the journey if it is to be effective.
- The fact that it is important that the symptoms are prevented before they can gain a hold should be emphasised to the parents.
- If it is a long journey, it may be necessary to repeat the dose while travelling and the recommended dosage interval should be stressed.

Management

- Prophylactic treatments for motion sickness, which can be bought OTC, are effective and there is usually no need to refer patients to the doctor.
- Anticholinergic activity is thought to prevent motion sickness and forms the basis of treatment by **anticholinergic agents** (e.g. *hyoscine*) and **antihistamines**, which have anticholinergic actions (e.g. *cinnarizine* and *promethazine*).

Antihistamines

- Antihistamines include *cinnarizine*, *meclozine* and *promethazine*.
- Anticholinergic effects are thought to be responsible for the effectiveness of antihistamines in the prophylaxis of motion sickness.
- All have the potential to cause drowsiness and *promethazine* appears to be the most sedative.
- *Meclozine* and *promethazine theoclate* have long durations of action and are useful for long journeys since they need to be taken only once daily.
- *Cinnarizine* and *promethazine theoclate* are not recommended for children younger than 5 years, whereas *meclozine* can be given to those over 2 years.
- The manufacturers of products containing these drugs advise that they are best avoided during pregnancy.

Anticholinergic agents

- The only anticholinergic used widely in the prevention of motion sickness is *hyoscine hydrobromide*, which can be given to children over 3 years.
- Anticholinergic drugs can cause drowsiness, blurred vision, dry mouth, constipation and urinary retention as side effects, although they are probably unlikely to do so at the doses used in OTC formulations for motion sickness.
- Children could be given sweets to suck to counteract any drying of the mouth.

- *Hyoscine* has a short duration of action (from 1 h to 3 h). It is therefore suitable for **shorter journeys** and should be given 20 min before the start of the journey.
- Anticholinergic drugs and antihistamines with anticholinergic effects are best avoided in patients with **prostatic hypertrophy** because of the possibility of urinary retention and in **glaucoma** because the intraocular pressure might be increased.

- Pharmacists should remember that **side effects** from anticholinergic agents are **additive** and may be increased in patients already taking drugs with anticholinergic effects, such as **tricyclic antidepressants** (e.g. *amitriptyline*), **butyrophenones** (e.g. *haloperidol*) and **phenothiazines** (e.g. *chlorpromazine*).
- It is therefore important for the pharmacist to determine the identity of any medicines currently being taken by the patient.

Table 2 Treatments for motion sickness.

Ingredient	Minimum age for use (year)	Children's dose	Adult dose	Timing of first dose in relation to journey	Recommended dose interval (h)
<i>Cinnarizine</i>	5	15 mg	30 mg	2 h before	8
<i>Hyoscine hydrobromide</i>	3	3–4 years: 75 µg 4–7 years: 150 µg 7–12 years: 150–300 µg	300 µg	20 min before	6
<i>Meclozine</i>	2	2–12 years: 12.5 mg	25 mg	Previous evening or 1 h before	24
<i>Promethazine theoclate</i>	5	5–10 years: 12.5 mg Over 10 years: 25 mg	25 mg	Previous evening or 1 h before	24

Alternative approaches to motion sickness

- *Ginger*
- Ginger has been used for many years for travel sickness.
- Clinical trials have produced conflicting findings in travel sickness.
- No mechanism of action has been identified
- Ginger would be worth trying for a **driver** who suffered from motion sickness, since it does not cause drowsiness, and might be worth considering for use in **pregnant women**

Nausea and vomiting

Nausea and vomiting

- Nausea and vomiting are symptoms that have many possible causes.
- From the pharmacist's point of view, while there are treatments available to prevent nausea and vomiting, there is no effective OTC treatment once vomiting is established.
- For that reason, this section will deal briefly with some of the causes of these symptoms

Age

- The very young and the elderly are most at **risk of dehydration** as a result of vomiting.
- Vomiting of milk in infants less than 1 year old may be due to infection or feeding problems or, rarely, an obstruction such as pyloric stenosis.

- Regurgitation sometimes occurs in babies, where it is known as possetting and is a normal occurrence.
- When regurgitation occurs in adults, it is associated with oesophageal disease with difficulty in swallowing and requires referral

Pregnancy

- Nausea and vomiting are very common in pregnancy, usually beginning after the first missed period and occurring early in the morning.
- Pregnancy should be considered as a possible cause of nausea and vomiting in any woman of childbearing age who presents at the pharmacy complaining of nausea and vomiting.
- Nausea and vomiting are more common in the first pregnancy than in subsequent ones.

Duration

- Generally, adults should be referred to the doctor if vomiting has been present for longer than 2 days.
- Children under 2 years are referred, whatever the duration, because of the risks from dehydration.
- Anyone presenting with **chronic vomiting** should be **referred** to the doctor since such symptoms may indicate the presence of a peptic ulcer or gastric carcinoma.

Associated symptoms

- An **acute infection** (gastroenteritis) is often responsible for vomiting and, in these cases, diarrhoea may also be present.
- In young children, the **rotavirus is the most common cause** of gastroenteritis; this is highly infectious and so it is not unusual for more than one child in the family to be affected.
- In such situations, there are usually associated cold symptoms.
- Vomiting without other symptoms, in the very young, can be caused by serious infection such as meningitis, and is an indication for immediate referral.

Alcohol intake

- People who drink large quantities of alcohol may vomit, often in the morning.
- Alcoholic patients often feel nauseous and retch in the morning.

Medication

- Prescribed and OTC medicines may make patients feel sick and it is therefore important to determine which medicines the patient is currently taking.
- *Aspirin* and NSAIDs are common causes. Some antibiotics may cause nausea and vomiting, for example, *doxycycline*.
- Oestrogens, steroids and narcotic analgesics may also produce these symptoms.

- Symptoms can sometimes be improved by taking the medication with food, but if they continue, the patient should see the doctor.
- *Digoxin* toxicity may show itself by producing nausea and vomiting, and such symptoms in a patient who is taking *digoxin*
- Vomiting, with loss of fluids and possible electrolyte imbalances, may cause problems in elderly people taking *digoxin* and diuretics.

Management

- Patients who are vomiting should be referred to the doctor, who will be able to prescribe an anti-emetic if needed.
- The pharmacist can initiate rehydration therapy in the meantime.