Introduction
Atropine blocks the effects of acetylcholine at muscarinic receptors. Its effects are dose-dependent with small doses of atropine inhibiting salivary and bronchial secretions and sweating; moderate doses dilating the pupil, inhibiting accommodation and increasing heart rate (vagolytic effect); larger doses decreasing gut motility, and high doses inhibiting gastric acid secretion. 1,2,3

The 2004 WHO Model Formulary lists oral atropine for its effects on the gut and primarily as an 'antispasmodic' for the treatment of patients with dyspepsia, irritable bowel syndrome and diverticular disease. Another product listed for these indications is hyoscine butylbromide. The Formulary also lists atropine in the treatment of certain cardiovascular or ophthalmic conditions, or in situations related to anaesthesia - these are not discussed further in this review.

Product and Dosage
Atropine (as the sulfate) is available as 0.6 mg tablets. The recommended adult dosage for its use as an antispasmodic is 0.6–1.2 mg orally at night.1

Evidence of value
Irritable bowel syndrome (IBS): The evidence supports the claim that anticholinergic drugs are more effective than placebo in reducing pain,4-9 or both pain and global improvement 10-12 in patients with IBS whose predominant symptom is abdominal pain. However, anticholinergic drugs have not been found to reduce diarrhoea or constipation. 4,11 The British National Formulary (March 2004) notes that 'evidence of the value of antimuscarinics in irritable bowel syndrome has not been established'.

Diverticular disease: No systematic review reports that anticholinergic drugs have any benefit in diverticular disease. No clinical guideline recommends the use of atropine (or other anticholinergic drugs) for the treatment of diverticular disease.3-15

Dyspepsia: There is no evidence to recommend the use of atropine (or other anticholinergic drugs) in the treatment of dyspepsia.16-20

Adverse effects
The unwanted effects of oral atropine given in 'therapeutic' doses include: constipation; urinary retention; dry mouth, eyes and skin; dilatation of pupils with loss of accommodation and photophobia; occasionally confusion (particularly in the elderly).1,3

Recommendation
Atropine is a non selective (muscarinic) anticholinergic drug with a high potential for anticholinergic adverse effects. Overall, it offers little help in patients with irritable bowel syndrome and no proven benefit in diverticular disease or dyspepsia. Atropine should be deleted from the Model List of Essential Medicines as a gastrointestinal antispasmodic product for use in adults. This review does not consider the place of atropine in cardiovascular or ophthalmic conditions or situations related to anaesthesia.

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(October 2004)
References

2. MDConsult Core Collection, Drugs, Generic Drugs: Atropine Sulfate (IM-IV-SC)
3. BNF No. 47 (March 2004) Home > Contents > 1 Gastro-intestinal system > 1.2 Antispasmodics and other drugs altering gut motility

18. PRODIGY Guidance-Dyspepsia-proven DU or GU. Last revised in October 2003. [www.prodigy.nhs.uk/guidance.asp?gt=Dyspepsia - proven DU or GU](http://www.prodigy.nhs.uk/guidance.asp?gt=Dyspepsia - proven DU or GU)


**Search Strategy**

In addition to primary papers, secondary and tertiary sources searched included:

- British National Formulary (BNF)
- Cochrane Library
- Consensus Statements of the British Society of Gastroenterology and the America Gastroenterological Association
- MDConsult Core Collection
- BNF
- National Institute for Clinical Excellence (NICE)
- Prodigy