

Barium enema examination

What is a barium enema examination?

A barium enema is a rectal injection of barium contrast. This coats the lining of the colon and rectum and X-ray films are obtained under fluoroscopic control. Air introduced into the large bowel may be used to give a double-contrast technique. Barium enemas are performed much less often than in the past because of the increasing use of colonoscopy and CT colonography.

A small bowel barium enema refers to the use of a specially designed tube passed nasally and into the duodenojejunal flexure under fluoroscopic control, after which dilute barium is infused via the tube until it reaches the terminal ileum in continuous flow. It is used to investigate suspected small bowel disease (eg, [Crohn's disease](#), lymphoma) and malabsorption (eg, [coeliac disease](#)). It is an unpleasant procedure for the patient and is often now replaced by CT or ultrasound where possible.

This rest of this article refers to barium enema as used in the large bowel.



By Glitzy queen00 at English Wikipedia., Public domain, via Wikimedia Commons

Indications

- To assess the anatomy of the large bowel and occasionally the terminal ileum.
- Abnormalities detected include large bowel obstruction, tumours, ulcers, [diverticular disease](#), inflammatory bowel disease, [intussusception](#), [Hirschsprung's disease](#) and thickening of the lining of the colon or rectum.
- A barium enema is not reliable for the diagnosis of rectal pathology.

Therapeutic uses

- [Intussusception](#):
 - Conservative treatment with barium, air or saline enema is often effective in children who present with intussusception, unless diagnosis and treatment are delayed.

- **Volvulus:**
 - Barium enema may be effective in reducing large bowel volvulus in children but resection of the involved segment and primary anastomosis is the definitive treatment.
- Refractory bleeding colonic diverticulæ: high-dose barium enema is as effective as endoscopic haemostasis for the prevention of recurrent diverticular bleeding.^[1]

Cautions and possible complications

- Barium enema is uncomfortable for the patient and requires good patient mobility and co-operation. More patients find the procedure embarrassing than do patients having colonoscopy or CT colonography.^[2] It should not be requested for frail elderly patients unless there is a clear indication.
- A rectal examination or sigmoidoscopy is essential to avoid missing abnormalities.
- Radiation exposure is relatively low.

- The barium enema is a relatively safe procedure. Rare complications include:^[3]
 - Bowel perforation:
 - Occurs in between 2-4/10,000 patients, usually related to iatrogenic trauma from catheter placement.
 - Pre-existing diseased bowel is more likely to perforate than normal healthy bowel.^[4]
 - The mortality rate associated with intraperitoneal perforation is high due to the combination of barium and bacterial load which causes acute peritonitis and shock.
 - Barium impaction - causes large bowel obstruction.
 - Water intoxication.
 - Allergic reactions.
 - Cardiac arrhythmias.

Prevention of endocarditis

Currently, antibacterial prophylaxis is *not* recommended for the prevention of [endocarditis](#) in those undergoing radiological procedures involving their lower gastrointestinal tract.^[5] Any infection in patients at risk of endocarditis should be investigated and treated promptly to reduce the risk of endocarditis. Patients at risk of endocarditis should be educated as to the signs of infective endocarditis and told to seek expert advice if these occur.

Contra-indications

- Allergy to the latex balloon on the tip of enema tube (rare).
- Severe rectal inflammation or recent rectal biopsy (delay for seven days after a full-thickness biopsy). Patients with active colitis should not have a barium enema.
- Acute gastrointestinal bleeding (precludes the use of angiography).
- Pregnancy: X-rays of the abdomen and pelvis should be avoided.

Preparation and procedure

- Low-residue diet for three days prior to the procedure and laxatives 24 hours before.
- Nil by mouth after midnight.
- Bowel washout immediately prior to procedure.
- Antispasmodic (eg, hyoscine butylbromide) may be given to minimise spasm.
- The patient lies on their side and an enema tube is inserted into the rectum.
- Barium is run into the colon under gravity and radiographs are taken. Air is also then introduced into the rectum for a double-contrast barium enema.

Disclaimer: This article is for information only and should not be used for the diagnosis or treatment of medical conditions. Egton Medical Information Systems Limited has used all reasonable care in compiling the information but makes no warranty as to its accuracy. Consult a doctor or other healthcare professional for diagnosis and treatment of medical conditions. For details see our [conditions](#).

Authored by:	Peer Reviewed by: Dr Toni Hazell	
Originally Published: 20/11/2023	Next review date: 23/08/2023	Document ID: doc_572

View this article online at: patient.info/doctor/barium-enema-examination

Discuss Barium enema examination and find more trusted resources at [Patient](#).



To find out more visit www.patientaccess.com
or download the app



Follow us



