

# Double Contrast Barium Enema (DCBE): What You Should Know



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*Before the test, you use a strong laxative and/or enema to clean out the colon. This procedure involves taking x-rays of the rectum and colon after you are given an enema with a barium solution, followed by an injection of air. The barium coats the lining of the intestines so that polyps and other abnormalities are visible on the x-ray. This test is recommended every 5 years.*

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A Double contrast Barium Enema is a radiological exam that looks for polyps or cancer in the colon or rectum. During this procedure a physician administers a liquid with barium through the anus and into the rectum and colon. The barium compound helps to show the image of the lower gastrointestinal tract on an x-ray. This test is relatively painless. Unlike a colonoscopy, the procedure does not allow polyps or tissue samples to be removed. If something abnormal is detected, an additional test may be required for further examination.

A barium enema, also known as a lower GI (gastrointestinal) exam, is a test that uses x-ray examination to view the large intestine. There are two types of this test: the single-contrast technique where barium sulfate is injected into the rectum in order to gain a profile view of the large intestine; and the double-contrast (or "air contrast") technique where air is inserted into the rectum.

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## Why the test is performed?

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A barium enema may be performed for a variety of reasons, including to aid in the diagnosis of colon and **rectal cancer** (or colorectal **cancer**), and inflammatory disease. Detection of polyps (a benign growth in the tissue lining of the colon and rectum), diverticulum (a pouch pushing out from the colon), and structural changes in the large intestine can also be established with this test. The double-contrast barium enema is the best method for detecting small tumors (such as polyps), early inflammatory disease, and bleeding caused by ulcers.

The decision to perform a barium enema is based on a person's history of altered bowel habits. These can include **diarrhea**, **constipation**, any lower abdominal **pain** they are currently exhibiting, blood, mucus, or pus in their stools. It is also recommended that this exam be used every five to 10 years to screen healthy people for colorectal cancer, the second most deadly type of tumor in the United States. Those who have a close relative with colorectal cancer or have had a precancerous polyp are considered to be at an increased risk for the disease and should be screened more frequently to look for abnormalities.

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## Preparation

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In order to conduct the most accurate barium enema test, the patient must follow a prescribed diet and bowel preparation instructions prior to the test. This preparation commonly includes restricted intake of dairy products and a liquid diet for 24 hours prior to the test, in addition to drinking large amounts of water or clear liquids 12-24 hours before the test. Patients may also be given **laxatives**, and asked to give themselves a cleansing enema.

In addition to the prescribed diet and bowel preparation prior to the test, the patient can expect the following during a barium enema:

- They will be well draped with a gown as they are secured to a tilting x-ray table.
- As the barium or air is injected into the intestine, they may experience cramping pains or the urge to defecate.
- The patient will be instructed to take slow, deep breaths through the mouth to ease any discomfort.

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## How is the test performed?

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To begin a barium enema, the patient will lie with their back down on a tilting table in order to have x-rays of the abdomen taken. A well-lubricated rectal tube is inserted through the anus. This tube allows the physician to slowly administer the barium into the intestine. While this filling process is closely monitored, it is important for the patient to keep the anus tightly contracted against the rectal tube to help maintain its position and prevent the barium from leaking. This step is emphasized to the patient due to the inaccuracy that may be caused if the barium leaks. A rectal balloon may also be inflated to help retain the barium. The table may be tilted or the patient moved to a different position to aid in the filling process.

As the barium fills the intestine, x-rays of the abdomen are taken to distinguish significant findings. There are many ways to perform a barium enema. One way is that shortly after filling, the rectal tube is removed and the patient expels as much of the barium as possible. Upon completing this, an additional x-ray is taken, and a double-contrast enema may follow. If this is done immediately, a thin film of barium will remain in the intestine, and air is then slowly injected to expand the bowel lumen. Sometimes no x-rays will be taken until after the air is injected.

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## Side Effects and Risks

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While a barium enema is considered a safe screening test used on a routine basis, it can cause complications in certain people. The following indications should be kept in mind before a barium enema is performed:

- Those who have a rapid heart rate, severe **ulcerative colitis**, toxic megacolon, or a presumed perforation in the intestine should not undergo a barium enema.
- The test can be cautiously performed if the patient has a blocked intestine, ulcerative colitis, diverticulitis, or severe bloody diarrhea.
- Complications that may be caused by the test include perforation of the colon, water intoxication, barium granulomas (inflamed nodules), and allergic reaction. These are all very rare.

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## Additional Resources

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American Cancer Society

[www.cancer.org](http://www.cancer.org)

Nebraska Colon Cancer Screening Program

[www.hhss.ne.gov/crc](http://www.hhss.ne.gov/crc)

For More Information:

Nebraska Colon Cancer Screening Program

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