Barium tests

betterhealth.vic.gov.au
Barium tests are used to examine the condition of the digestive tract using a white, ‘radio-opaque’ powder called barium sulphate. For the barium meal, the powder is mixed with water (and sometimes flavouring), swallowed and then x-rays are taken. For a barium enema, the powder is mixed with a fluid and introduced through a tube inserted into the rectum. The images allow the radiologist to evaluate a wide range of problems, including areas of narrowing, ulceration or damage to the digestive tract.

The barium meal, barium swallow and barium enema are tests that help doctors examine the digestive system. Barium is a white, ‘radio-opaque’ powder that is not transparent to x-rays or other forms of radiation. It is used to show up the organs of the digestive system during x-ray. Barium tests allow a radiologist to evaluate a wide range of problems, including areas of reflux, narrowing or ulceration to the digestive tract. Other tests such as endoscopy or computerised tomography (CT) scan are now more commonly used than the barium test to examine the digestive tract.

Barium swallows and enemas

Barium (barium sulphate) powder is mixed with water and can be swallowed (flavouring may be added) or introduced as an enema through a tube inserted into the rectum. The mixture passes quickly into your digestive tract and its progress is followed by taking x-rays over different periods of time, depending on which part of your digestive tract the doctor wants to observe.

All images are generated using a special type of x-ray machine called a fluoroscope, which projects images onto a video screen.

A barium swallow is used to help diagnose swallowing or reflux problems. It literally allows the doctor to watch your swallowing motion. It is also used to examine your oesophagus. A barium enema is used to diagnose problems affecting your large bowel.

Problems that may be diagnosed with barium tests

By looking at the x-rays, the doctor is able to see a wide range of problems including:

- Abnormal shape of the digestive tract
- Areas where the digestive tract has become narrow
- Ulceration
- Damage to the digestive tract lining.

Issues to consider with barium tests

Before the procedure, you need to discuss a range of issues with your doctor including:

- **Bowel habits** – if you are constipated, you will be given a laxative the night before the barium meal. For the enema you will be given a specific diet and laxatives to ensure the bowel is clear. You will probably need to take the laxatives for two days before the test.
- **Eating** – you are not allowed to eat or drink anything for eight hours before the test. The x-rays will be easier to read if there are no food particles in the digestive tract.
- **Health conditions** – tell your doctor if you have insulin dependent diabetes, so that you can decide together the best time for you to fast and have the test.
- **Pregnancy** – pregnant women should not have these tests.

Barium test procedure

In many barium tests, you may be given an injection to relax your muscles. This may be given directly into a vein (IV) or into your muscles (IM). This will help with the cramping feeling and provide a better test result. The radiologist may ask you if you have glaucoma, in which case this drug is not recommended and an alternative may be used.

You will be asked by the radiographer to stand or lie in a number of different positions while x-rays are taken. The x-ray machine is linked to a television monitor and photographs or video footage can be taken if necessary. Generally, the procedure takes around 20 minutes.

Sometimes you may need to have follow-up x-rays. In some cases, several x-rays may be required, over three to six hours, in order to examine the small intestine and colon (large bowel).

**Barium swallow – procedure**

You may be asked to swallow the barium so the doctor can observe your swallowing. You may also be asked to swallow barium with your head tilted (head down) on
the x-ray machine to help the doctor understand how your oesophagus works.

In some barium meals, the drink is fizzy because it contains ingredients that cause gas. This gas helps to expand your stomach and duodenum. (You may have to resist the urge to burp.) You may have to swallow other substances to create this gas.

The gas allows the barium to coat the inside of your stomach so the radiologist can get a clear view of the stomach lining.

**Barium enema – procedure**

The barium sulphate goes into the bowel through a tube inserted into the rectum. The fluid is moved around your large bowel while the radiologist watches using x-ray fluoroscopy.

Some barium may be drained and then replaced with air by the radiologist. This is so the whole of the large bowel can be viewed and any changes caused by your condition can be seen. This can be difficult or embarrassing, as you may experience cramps or flatulence (farting).

**After the barium test**

After the procedure, you can expect:

- Constipation
- Light-coloured faeces
- Flatulence (depending on the examination)
- Blurred vision, if you have been given a muscle relaxant – you should not drive until your vision returns to normal.

**Possible complications of barium tests**

Barium examinations are safe tests, but complications can sometimes occur. These may include:

- If a section of the digestive tract has an undiagnosed break or split (perforation), the barium meal may leak into the abdominal cavity.
- If the bowel is obstructed, the barium can become impacted.
- The barium can lodge in the appendix and cause appendicitis.
- There may be side effects (such as blurred vision) from the drugs used during the test.
- It is possible to accidentally breathe in the barium meal instead of swallowing it (this is very rare).

**Self-care after a barium test**

Be advised by your doctor, but general suggestions include:

- Barium can cause constipation, so it is best to drink plenty of fluids for at least one full day following the test.
- Eat more fruit than usual for the next day or two to help move your bowels.
- See your doctor if you haven’t had a bowel motion within three days.

**Long-term outlook**

You will need to make another appointment with your doctor to discuss the results of your barium examination. A negative result may require further tests if symptoms persist. Treatment depends on the diagnosis.

**Other tests**

Other tests are now more commonly used than the barium test to examine the digestive tract. These include:

- **Flexible endoscopy** – an endoscope is a slender tube with a lens at one end and a telescope at the other. This is inserted through an orifice (such as mouth or anus) or a small incision and the doctor looks down the telescoped end for a magnified view.
- **Computed tomography (CT) scan** – the CT scan uses x-rays and digital computer technology to create an image of internal body structures. Nowadays CT can be used to replace an endoscopy – this test is called a virtual colonoscopy.

**Where to get help**

- Your doctor

**Things to remember**

- Barium tests are used to examine the condition of the digestive tract using a white, ‘radio-opaque’ powder called barium sulphate.
- For the barium meal, the powder is mixed with water (and sometimes flavouring), swallowed and then x-rays are taken.
- For a barium enema, the powder is mixed with a fluid and introduced through a tube inserted into the rectum.
- The images allow the radiologist to evaluate a wide range of problems, including areas of narrowing, ulceration or damage to the digestive tract.

**References**

- Infection control in endoscopy, Gastroenterological Society of Australia. [More information here.](#)

**Send us your feedback**
1/4 How would you rate this website?

- ☐ Excellent
- ☐ Good
- ☐ Average
- ☐ Fair
- ☐ Poor

Next Submit Now Cancel

Send us your feedback

- Rate this website
- Your comments
- Questions
- Your details

Please note that we cannot answer personal medical queries.
If you are looking for health or medical advice we recommend that you:

- talk to your doctor or pharmacist
- dial triple zero (000) in an emergency
- ring NURSE-ON-CALL Tel. 1300 60 60 24.

2/4 Your Comments

Tell us who you are

Select an option: 

Enter your comments below (optional)

Next Submit Now Cancel

Send us your feedback

- Rate this website
- Your comments
- Questions
- Your details

3/4 Questions

What are you here to do?: Looking for information on

Did you find what you were looking for?

- ☐ Yes
- ☐ No

Next Submit Now Cancel

Send us your feedback

- Rate this website
- Your comments
- Questions
- Your details

4/4 Your details

Postcode

Email Address

Submit Now Cancel

Send us your feedback

Thank you. Your feedback has been successfully sent.

betterhealth.vic.gov.au
More information

Medical tests

The following content is displayed as Tabs. Once you have activated a link navigate to the end of the list to view its associated content. The activated link is defined as Active Tab

- Health checks
- Imaging and scans
- Pathology tests
- Cancer screening and detection
- Pregnancy and newborn

Health checks

- Blood and pathology tests
  Blood and pathology tests leave many people squeamish, but they’re an important part of detecting, diagnosing and treating disease. In fact, if you’re sick, many decisions about your care...
- Eye tests
  Regular eye tests or check-ups detect problems early, so you can have early treatment to minimise any permanent damage to your eyes...
- Health checks for men
  Men should see their doctor for regular medical check-ups...
- Health checks for women
  A woman at high risk of a particular disease should be checked more frequently and/or at an earlier age...
- Hearing tests
  A ringing sensation in the ears (tinnitus), or people complaining that you talk too loudly are signs you may need to have your hearing checked...
- Maternal and child health services
  Your local maternal and child health service will be a great source of support after your baby is born...
- Secrets to healthy ageing (slideshow)
  Experts say the key to living well into our 80s and 90s is making a commitment to live healthily. Check out these simple ideas and embrace your senior years!

Imaging and scans

- Bone density testing
  Most procedures that measure bone density are quick and pain-free...
- Bushfire preparation advice
  Being prepared for a bushfire helps you cope better in an emergency...
- Coronary angiogram
  A coronary angiogram is the most accurate diagnostic test for a range of heart problems, including coronary heart disease...
- CT scan
  The CT scan is a medical imaging procedure that uses x-rays and digital computer technology to create detailed images of the body...
- ECG test
  A doctor may recommend an electrocardiogram for patients who may be at risk of heart disease because of family history, smoking, overweight, diabetes or other conditions...
- Mammography
  The compression of your breast in a mammogram may cause a little discomfort, but shouldn't be painful...
- MRI scan
  The MRI scan is a medical imaging procedure that uses a magnetic field and radio waves to take pictures inside the body...
- PET scan
  PET scans are tests that show how an organ or tissue is working...
- Talking to children about bushfire risk
Children can be affected by information regarding bushfire risk and they may become concerned about issues of safety. Talking to children openly in a way that suits their age, while also involving...

- Ultrasound scan
  Ultrasound is a scan used to study internal body structures...

- X-ray examinations
  An x-ray examination uses a special machine to take two-dimensional pictures of internal body structures to help diagnose conditions or injuries...

Pathology tests

- Biopsy
  Before a biopsy, you need to discuss a range of issues with your doctor or surgeon...

- Blood and pathology tests
  Blood and pathology tests leave many people squeamish, but they’re an important part of detecting, diagnosing and treating disease. In fact, if you’re sick, many decisions about your care...

- Blood count
  The full blood count (FBC) test looks for abnormalities in the blood, such as unusually high or low numbers of blood cells...

- Egg freezing
  You can freeze your eggs for medical reasons or for reasons that are more to do with your life circumstances...

- Medical procedures - non-surgical
  Non-surgical procedures are used to diagnose, measure or treat problems such as disease or injury...

- Newborn bloodspot screening
  Every newborn baby in Australia is offered a newborn bloodspot screening test to identify those at risk of rare, but serious, medical conditions...

- Pregnancy tests - maternal serum screening
  Maternal serum screening can indicate increased risk of abnormalities in the unborn child, but is not a diagnosis...

Cancer screening and detection

- Bowel cancer screening
  The National Bowel Cancer Screening Program (NBCSP) offers kits for free to Australians between the ages of 50 and 74 years of age...

- Breast screening
  A breast x-ray or mammogram every two years is recommended for women aged 50 to 69...

- Cancer screening
  The aim of cancer screening is to find cancer in its early stages...

- Cervical screening test
  The cervical screening test protects up to 30 per cent more women than the PAP test...

- Genetic testing for inherited cancer
  A predisposition to certain cancers can be inherited via altered genes...

- Prostate cancer
  Prostate cancer can be treated in a variety of ways, so discuss treatment options with your doctor...

Pregnancy and newborn

- Diabetes - gestational
  Gestational diabetes is diabetes that occurs during pregnancy and usually disappears when the pregnancy is over...

- Egg freezing
  You can freeze your eggs for medical reasons or for reasons that are more to do with your life circumstances...

- Newborn bloodspot screening
  Every newborn baby in Australia is offered a newborn bloodspot screening test to identify those at risk of rare, but serious, medical conditions...
Pregnancy - prenatal tests
A range of tests is available to pregnant women to confirm pregnancy and monitor the baby's development in the womb.

Pregnancy testing
Sometimes, a home pregnancy test may be positive when a woman isn’t pregnant.

Pregnancy tests - chorionic villus sampling
Chorionic villus sampling (CVS) is a pregnancy test that checks the baby for some abnormalities.

Pregnancy tests - maternal serum screening
Maternal serum screening can indicate increased risk of abnormalities in the unborn child, but is not a diagnosis.

Pregnancy tests - ultrasound
Ultrasound is used during pregnancy to check the baby's development and to help pick up any abnormalities.

Related Information

- ECG test
  A doctor may recommend an electrocardiogram for patients who may be at risk of heart disease because of family history, smoking, overweight, diabetes or other conditions.

- Bone density testing
  Most procedures that measure bone density are quick and pain-free.

- Coronary angiogram
  A coronary angiogram is the most accurate diagnostic test for a range of heart problems, including coronary heart disease.

- EEG test
  In a person with epilepsy, an electroencephalogram (EEG) may show bursts of abnormal discharges in the form of spikes and sharp wave patterns.

- Hearing tests
  A ringing sensation in the ears (tinnitus), or people complaining that you talk too loudly are signs you may need to have your hearing checked.

Related information on other websites

- Central Melbourne Medical Imaging,
- Royal Children’s Hospital Melbourne.

Content Partner

This page has been produced in consultation with and approved by: Monash University - Department of Medical Imaging and Radiation Sciences

Last updated: February 2015

Page content currently being reviewed.

Content on this website is provided for information purposes only. Information about a therapy, service, product or treatment does not in any way endorse or support such therapy, service, product or treatment and is not intended to replace advice from your doctor or other registered health professional. The information and materials contained on this website are not intended to constitute a comprehensive guide concerning all aspects of the therapy, product or treatment described on the website. All users are urged to always seek advice from a registered health care professional for diagnosis and answers to their medical questions and to ascertain whether the particular therapy, service, product or treatment described on the website is suitable in their circumstances. The State of Victoria and the Department of Health & Human Services shall not bear any liability for reliance by any user on the materials contained on this website.

betterhealth.vic.gov.au
My Health Life helps you manage your health

With tools, information and recommendations tailored to you, it’s your personal and secure health dashboard.

Learn more

Medical Dictionary

Enter a search term: Enter keyword(s)

Search

Search for your topic using the Merriam Webster medical dictionary

Service Search

Find services near you

Service: Select a service
Location: 

Type a minimum of three characters then press UP or DOWN on the keyboard to navigate the autocompleted search results

Use my location

Find a service

Find a doctor

Need to find a doctor in your local area? Take a look at the general practitioners entry in our health service profiles.

see general practitioner