

Patient information: Breast cancer screening

Mammography is an X-ray technique used to study the breasts. It can help find breast cancer at an early stage (when treatment is more likely to succeed). About 1 in 8 women will get breast cancer during their lives. Most cases of breast cancer occur in women who are past **menopause**. By age 40 years, mammography should be a regular part of your health care.

This pamphlet explains:

- how the test is done
- what the test results mean
- when you should have mammography

Your Breasts

Your breasts are made up of glands, fat, and thickened (fibrous) tissue. They respond to changes in levels of the hormones **estrogen** and **progesterone** during your monthly menstrual cycle. Hormones change the amount of fluid in the breast. This may make fibrous areas in the breast more painful.

Your breasts will change during pregnancy, breastfeeding, and menopause. You may notice changes if you use hormonal contraception (birth control) or **hormone therapy**. Even if you have **breast implants**, there can be changes in your breasts.

What Is Mammography?

Mammography is a simple X-ray process. It passes low doses of X-rays through the breasts. No dyes have to be injected or swallowed, and no instruments will be put in your body.

Some growths are very small or lie deep in the breast tissue. These growths can be hard to detect. Some growths are **benign** (not cancer); others may be malignant (cancer). Mammography is a good way to find cancerous growths before they are large enough to be felt. When cancer is found in this early stage, it is easier to treat. Caught early enough, breast cancer often can be cured.

Mammography also is useful for checking growths that have been felt during a physical exam by a health care provider or a breast self-exam. It can be done in a health care provider's office, a clinic, a mobile screening van, or a hospital. Your health care provider can order the test. It is done by an X-ray technician trained in mammography. The results then are read by a specially trained doctor (radiologist).

No matter where the test is done, you should get a report of the results from the radiologist or your health care provider. Ask your health care provider about anything you do not understand.

Who Should Have Mammography?

Women aged 40 years and older should have mammography done every year. If you have certain risk factors, your health care provider may suggest you have the test at a younger age.

You also may need mammography if you have any of these signs:

- Unexplained lump or thickening in the breast or in the armpit
- Puckers, dimples, redness, or other changes in the skin of the breast
- Discharge or bleeding that comes from the nipple
- A recent change in the nipple, such as a retracted nipple (a nipple that has pulled inward)

If any of these signs apply to you, talk to your health care provider about having a physical exam and mammography.

Mammography is vital for all women, especially women aged 40 years and older. The size of your breasts does not matter. Whether you have breast implants does not matter. Women who have had breast cancer surgery also may need mammography and other tests to check any breast tissue that remains. An ultrasound exam may be done first in younger women who are found to have a lump in their breasts.

What to Expect

The day you have the test done, you should not wear powders, lotions, or deodorants. This is because most of these products have substances that can show on the X-ray films. They can make the films hard for the radiologist to read.

To get ready for the test, you will need to undress from the waist up and put on a gown. You will be asked to stand or sit in front of the X-ray machine. Two smooth, flat plastic or glass plates will be placed around one of your breasts. You will briefly feel pressure on your breast. The plates will flatten your breast as much as possible so that the most tissue can be viewed with the least radiation. After the first X-ray, the plates may be removed so that the breast can be X-rayed from one or more other positions. The test then is done on the other breast.

The pressure of the plates may make the breasts ache. This discomfort will go away shortly. If you menstruate, you may want to have the test done in the week right after your period. The breasts often are less tender at this time.

If you have breast implants, tell your health care provider. You also should mention your implants to the person who is giving the test. Breast implants can make it more difficult to see certain parts of the breast tissue. There is some risk that the implant may burst during the test. Therefore, extra care should be taken when the breast is compressed.

Risk Factors

Most women who get breast cancer have no risk factors except age—as a woman gets older, her risk increases (up to age 80 years). However, if a woman has any of the following risk factors, she may be at increased risk for developing breast cancer:

- Certain **genes (*BRCA1* and *BRCA2*)** passed on from her parents
- Breast cancer in her mother, daughter, or sister
- No term pregnancies or pregnancy later in life (older than age 30 years)
- Early menstruation (younger than age 12 years)
- Late menopause (older than age 55 years)
- Never breastfed a child

These factors also may increase the risk of breast cancer for some women:

- Personal history of cancer of the breast, endometrium, ovary, or colon
- Postmenopausal obesity
- Alcohol intake
- Recent hormone therapy
- Recent use of birth control pills
- Tall stature
- Jewish heritage

Are There Any Risks?

Mammography exposes a woman to a very low dose of X-rays. The dose is much lower than the natural level of radiation received from the environment during a 1-year period. In the past, there was some concern about the amount of radiation a woman would be exposed to during the test. Improved equipment and techniques now result in very low doses. Thus, risk is very low, even with repeated tests. If needed, mammography can be done during pregnancy.

Some types of cancer cannot be seen on a mammogram. Even lumps that can be felt may not show up. The combination of mammography, regular breast exams by your health care provider, and being aware of changes in your breasts may give the best results. If you feel a lump, see your health care provider.

What If the Test Result Is Positive?

Most lumps found in the breast are benign—not cancer. To confirm the results of mammography, other imaging tests, such as ***ultrasonography*** and ***magnetic resonance imaging***, also may be useful. Magnetic resonance imaging of the breast is a method used to view tissue inside the breast by using a strong magnetic field and radio waves. With ultrasonography, sound waves are used to create pictures of the inside of body organs or tissues, such as the breast. This method can show whether the lumps are solid or filled with fluid, such as with a cyst. You also may need to have the test again if the results of the first test were not clear.

Other tests can give more information about the type of lump. They include the following:

- Needle aspiration, in which a needle is inserted into the lump to find out whether it is fluid filled or solid. A sample of fluid or tissue may be drawn out for study under a microscope.
- Biopsy, a surgical procedure in which a small incision (cut) is made to remove the entire growth or a sample for study under a microscope.

In some cases, special breast X-rays also may be used along with these tests. This allows your health care provider to get a better view of the area that is being studied.

Finally...

Combined with regular checkups and breast self-exams, mammography is a good way to find cancer at an early and more curable stage. It has large benefits and small risks. For women aged 40 years and older, mammography should be part of your routine health care.

Glossary

Benign: Not cancer.

BRCA1 and BRCA2: Genes that increase the risk of breast cancer and certain other types of cancer.

Breast Implants: Sacs filled with saline or silicone gel that are placed in the chest or breast area.

Estrogen: A female hormone produced in the ovaries.

Genes: DNA “blueprints” that code for specific traits, such as hair and eye color.

Hormone Therapy: Treatment in which estrogen, and often progestin, is taken to help relieve some of the symptoms caused by the low levels of hormones produced by the body.

Magnetic Resonance Imaging: A method of viewing internal organs and structures by using a strong magnetic field and radio waves.

Menopause: The time in a woman's life when the ovaries have stopped functioning; defined as the absence of menstrual periods for 1 year.

Progesterone: A female hormone that is produced in the ovaries and that prepares the lining of the uterus for pregnancy.

Ultrasonography: A test in which sound waves are used to examine internal structures. During pregnancy, it can be used to examine the fetus.

This Patient Education Pamphlet was developed by the American College of Obstetricians and Gynecologists. Designed as an aid to patients, it sets forth current information and opinions on subjects related to women's health. The average readability level of the series, based on the Fry formula, is grade 6-8. The Suitability Assessment of Materials (SAM) instrument rates the pamphlets as "superior." To ensure the information is current and accurate, the pamphlets are reviewed every 18 months. The information in this pamphlet does not dictate an exclusive course of treatment or procedure to be followed and should not be construed as excluding other acceptable methods of practice. Variations, taking into account the needs of the individual patient, resources, and limitations unique to the institution or type of practice, may be appropriate.

Copyright October 2011 by the American College of Obstetricians and Gynecologists. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, posted on the Internet, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher.

ISSN 1074-8601

Requests for authorization to make photocopies should be directed to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

To reorder Patient Education Pamphlets in packs of 50, please call 800-762-2264 or order online at <http://sales.acog.org>.

The American College of Obstetricians and Gynecologists
409 12th Street, SW
PO Box 96920
Washington, DC 20090-6920