Fibrocystic Changes in the Breast

Many breast lumps turn out to be non-cancerous (benign) changes in fibrous tissue (fibrosis) and/or cysts, which together are known as **fibrocystic changes**. These changes used to be called fibrocystic disease, but they are a normal finding in many women.

Fibrocystic changes are most common in women of child-bearing age, but they can affect women of any age.

Fibrosis

Fibrosis refers to an area of fibrous tissue, the same tissue that ligaments and scar tissue are made of. Areas of fibrosis can feel rubbery or firm to the touch.

Cysts

Cysts are fluid-filled, round or oval sacs within the breasts. They are often felt as a round, movable lump (or lumps), which might be tender to the touch. They are most common in women in their 30s or 40s, but they can occur in women of any age. Monthly hormone changes often cause cysts to get bigger and become painful and sometimes more noticeable just before the menstrual period.

Cysts begin when fluid starts to build up inside the breast glands. They start as **microcysts** (very small cysts), which are too small to feel unless they are part of a cluster (group) of microcysts. If fluid continues to build up, they can develop into **macrocysts** (large cysts). These can often be felt easily and can be as large as 1 or 2 inches across.

Diagnosis of fibrocystic changes

Most often, fibrocystic changes are diagnosed based on symptoms, such as breast lumps, swelling, and/or tenderness or pain. These symptoms tend to be worse just

before your menstrual period, and they may change (such as the lumps growing or shrinking) during different stages of your menstrual cycle. At times you may notice some nipple discharge.

If there is a concern about a lump possibly being cancer, a breast ultrasound[1] typically is done to see if the lump is solid or if it has fluid in it (that is, if it's a cyst). There are different types of cysts:

- A **simple cyst** is filled entirely with fluid. Simple cysts are not a cause for concern.
- A **complicated cyst** is similar to a simple cyst, but it has what looks like 'debris' floating in the fluid. Complicated cysts are very unlikely to be cancer, but in some cases a doctor might advise a follow-up exam or a procedure to remove the fluid with a thin, hollow needle, just to be sure.
- A **complex cystic and solid mass**suc/F0id luidlumpbois aT 0 symptomsedurcaus, jug 1 0 0 1 72

using over-the-counter pain relievers.

Some women report that their breast symptoms improve if they avoid caffeine and other stimulants found in coffee, tea, chocolate, and many soft drinks. Studies have not found a clear link between these stimulants and breast symptoms, but many women feel that avoiding these foods and drinks for a couple of months is worth trying.

Because breast swelling toward the end of the menstrual cycle is painful for some women, some doctors recommend over-the-counter pain relievers such as acetaminophen or ibuprofen, or other medicines. It's been suggested that some types of vitamin or herbal supplements might relieve symptoms, but so far none have been proven to be helpful, and some may have side effects if taken in large doses. Some doctors prescribe hormones, such as oral contraceptives (birth control pills), tamoxifen[3], or androgens. But these are usually given only to women with severe symptoms because they also can have serious side effects.

If you have breast symptoms that aren't improving or are getting worse, it's important to see your doctor for further evaluation.

Hyperlinks

1. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-ultrasound.html
2. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-biopsy.html
3. www.cancer.org/cancer/types/breast-cancer/risk-and-prevention/tamoxifen-and-raloxifene-for-breast-cancer-prevention.html

References

Bleicher RJ. Chapter 4: Management of the palpable breast mass. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2014.

Collins LC, Schnitt SJ. Chapter 9: Pathology of benign breast disorders. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2014.

Golshan M. Breast pain. UpToDate. 2021. Accessed

at https://www.uptodate.com/contents/breast-pain on October 27, 2021.

Guray M, Sahin AA. Benign breast diseases: Classification, diagnosis, and management. *Oncologist*. 2006;11;435-449.

Hartmann LC, Sellers TA, Frost MH, et al. Benign breast disease and the risk of breast cancer. *N Engl J Med*. 2005;353:229-237.

Laronga C, Tollin S, Mooney B. Breast cysts: Clinical manifestations, diagnosis, and management. UpToDate. 2021. Accessed at https://www.uptodate.com/contents/breast-cysts-clinical-manifestations-diagnosis-and-management on October 27, 2021.

Orr B, Kelley JL. Benign breast diseases: Evaluation and management. *Clin Obstet Gynecol*. 2016;59(4):710-726.

Sabel MS. Clinical manifestations, differential diagnosis, and clinical evaluation of a palpable breast mass. UpToDate. 2021. Accessed at https://www.uptodate.com/contents/clinical-manifestations-differential-diagnosis-and-clinical-evaluation-of-a-palpable-breast-mass on October 27, 2021.

Santen RJ, Mansel R. Benign breast disorders. *N Engl J Med*. 2005;353:275-285.

Last Revised: January 25, 2022

Hyperplasia of the Breast

Hyperplasia is an overgrowth of the cells that line the **lobules** (milk-producing glands) or **ducts** (small tubes) inside the breast. It is not cancer, but some types of hyperplasia are linked with a higher risk of developing breast cancer.

Diagnosis of hyperplasia

Hyperplasia can be described as either **usual** or **atypical**, based on how the cells look under a microscope.

In **usual ductal hyperplasia**, there is an overgrowth of cells lining the ducts in the

Reducing breast cancer risk or finding it early

Both ADH and ALH are linked to a higher risk of breast cancer. Even though most women with ADH or ALH will not develop breast cancer, it's still important to talk with a health care provider about your risk and what you can do about it.

Options for women at higher risk of breast cancer from ADH or ALH may include:

- **Seeing a health care provider more often**(such as every 6 to 12 months) for a breast exam along with a yearly mammogram[4]. Additional imaging with breast MRIs[5] may also be recommended, especially if you have other factors that raise your risk of breast cancer.
- **Making lifestyle changes tolower breast cancer risk.** To learn more, see Can I Lower My Risk of Breast Cancer?[6]
  Taking medicine to help lower breast cancer risk. For more on this, see Deciding Whether to Use Medicine to Reduce Breast Cancer Risk[7]o57fs55ndmcGS269 7-r Risk7

Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2014.

Guray M, Sahin AA. Benign breast diseases: Classification, diagnosis, and management.

Lobular Carcinoma in Situ (LCIS)

Lobular carcinoma in situ (LCIS) is a type of breast change that is sometimes seen when a breast biopsy[1] is done. In LCIS, cells that look like cancer cells are growing in the lining of the milk-producing glands (lobules) of the breast, but they don't invade through the wall of the lobules.

Is LCIS cancer?

LCIS is not considered cancer, and it typically does not spread beyond the lobule (that is, it doesn't become invasive breast cancer) if it isn't treated. But having LCIS does increase your risk of later developing an invasive breast cancer in either breast. (See "How does LCIS affect breast cancer risk?")

on a mammogram[2], although pleomorphic and florid LCIS are sometimes found this way. Most often, LCIS is found when a breast biopsy[3] is done for another problem that's Duringsovedd thicheckeddin0 0eg /GS381 gs (nearby.62.4uring a biopsy, sm2ll pilab.)w 98.69 704 m

MRI[7] may also be recommended, especially if a woman has other factors that raise her risk of breast cancer.

- **Making lifestyle changes to lower breast cancer risk.** To learn more, see Can I Lower My Risk of Breast Cancer?[8]
- **Taking medicine to help lower the risk of breast cancer.** For more on this, see Deciding Whether to Use Medicine to Reduce Breast Cancer Risk[9].
- **Surgery, called bilateral prophylactic mastectomy[10] (removal of both breasts), to reduce risk.** (This is more likely to be a reasonable option in women who also have other risk factors for breast cancer, such as a *BRCA* gene mutation[11].) This may be followed later by breast reconstruction[12].

Hyperlinks

1. /cancer/types/breast-cancer/screening-tests-and-early-detection/breast-biopsy.html
2. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms/mammogram-basics.html
3. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-biopsy.html
4. www.cancer.org/cancer/diagnosis-staging/tests/biopsy-and-cytology-tests/understanding-your-pathology-report/breast-pathology/lobular-carcinoma-in-situ.html
5. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-biopsy/surgical-breast-biopsy.html
6. www.cancer.org/cancer/types/breast-cancer/treatment/surgery-for-breast-cancer/breast-conserving-surgery-lumpectomy.html
7. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-mri-scans.html
8. www.cancer.org/cancer/types/breast-cancer/risk-and-prevention/can-i-lower-my-risk.html
9. www.cancer.org/cancer/types/breast-cancer/risk-and-prevention/deciding-whether-to-use-medicine-to-reduce-breast-cancer-risk.html
10. www.cancer.org/cancer/types/breast-cancer/risk-and-prevention/preventive-surgery-to-reduce-breast-cancer-risk.html
11. www.cancer.org/cancer/types/breast-cancer/risk-and-prevention/breast-cancer-

1. /cancer/types/breast-cancer/non-cancerous-breast-conditions/fibrosis-and-simple-cysts-in-the-breast.html
2. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms/what-does-the-doctor-look-for-on-a-mammogram.html
3. www.cancer.org/cancer/diagnosis-staging/tests/biopsy-and-cytology-tests.html

References

Collins LC, Schnitt SJ. Chapter 9: Pathology of benign breast disorders. In: Harris JR,/cancer/types/br

Fibroadenomas of the Breast

Fibroadenomas are most common in women in their 20s and 30s, but they can be found in women of any age. They tend to shrink after a woman goes through menopause.

Diagnosis of fibroadenomas

Some fibroadenomas are too small to be felt, but some can be up to several inches across. A woman can have one or many fibroadenomas.

Fibroadenomas can often feel like a marble within the breast. They tend to be round or oval and have clear-cut borders. You can move them under the skin, and they're usually firm or rubbery, but not tender. Some fibroadenomas are only found by an imaging test (such as a mammogram[1] or ultrasound[2]).

A breast biopsy[3]

such cases, removing them might mean removing a lot of nearby normal breast tissue, causing scarring and changes in the shape and texture of the breast.

It's important that women with fibroadenomas have regular breast exams or imaging tests to make sure the fibroadenomas are not growing.

Sometimes one or more new fibroadenomas can appear after one is removed. This usually means that another fibroadenoma has formed – it does not mean that the old one has come back.

Hyperlinks

1. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms/mammogram-basics.html
2. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-ultrasound.html
3. www.cancer.org/cancer/diagnosis-staging/tests/biopsy-and-cytology-tests/biopsy-types.html

References

Collins LC, Schnitt SJ. Chapter 9: Pathology of benign breast disorders. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2014.

Geethamala K, Vani BR, Srinivasa Murthy V, Radha M. Fibroadenoma: A harbor for various histopathological changes. *Clin Cancer Investig J* 2

https://www.cancer.gov/types/breast/breast-changes on October 29, 2021.

Orr B, Kelley JL. Benign breast diseases: Evaluation and management. *Clin Obstet Gynecol*. 2016;59(4):710-726.

Sabel MS. Overview of benign breast disease. UpToDate. 2021. Accessed at https://www.uptodate.com/contents/overview-of-benign-breast-disease on October 29, 2021.

Santen RJ, Mansel R. Benign breast disorders. *N Engl J Med*. 2005;353:275-285.

Last Revised: January 25, 2022

Phyllodes Tumors of the Breast

Phyllodes tumors (or phylloides tumors) are rare breast tumors that start in the connective (stromal) tissue of the breast, not the ducts or glands (which is where most breast cancers start). Most phyllodes tumors are benign and only a small number are malignant (cancer)

Phyllodes tumors are often divided into 3 groups, based on how they look under a microscope:

- **Benign** (non-cancerous) tumors account for more than half of all phyllodes tumors. These tumors are the least likely to grow quickly or to spread.
- **Borderline** tumors have features in between benign and malignant (cancerous) tumors.
- **Malignant** (cancerous) tumors account for about 1 in 4 phyllodes tumors. These tend to grow the fastest and are the most likely to spread or to come back after treatment.

Malignant phyllodes tumors are different from the more common types of breast cancer. They are less likely to respond to some of the treatments commonly used for breast cancer, such as the hormone therapy[9] or chemotherapy[10] drugs normally used for breast cancer. Phyllodes tumors that have spread to other parts of the body are often treated more like sarcomas[11] (soft-tissue cancers) than breast cancers.

Phyllodes tumors can sometimes come back in the same place. Because of this, close follow-up with frequent breast exams and imaging tests are usually recommended after treatment.

Hyperlinks

1. www.cancer.org/cancer/risk-prevention/genetics/family-cancer-syndromes.html
2. www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/ultrasound-for-cancer.html
3. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mag (www.cancer.org/cancer/risk-prevention/genetics/family-cancer-syndromes.html)T 7 73n (www.cancer.org/cancer/risk-prevention/genetics/family-cancer-syndromes.html)T www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-biopsy/core-needle-biopsy-of0 G 1 ws0o14O2Fs0.2 01 l S 0 G 1 w 0 0. 87 460.6

Breast. 5th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2014.

Grau AM, Chakravarthy AB, Chugh R. Phyllodes tumors of the breast. UpToDate. 2021. Accessed at https://www.uptodate.com/contents/phyllodes-tumors-of-the-breast on November 1, 2021.

Guray M, Sahin AA. Benign breast diseases: Classification, diagnosis, and management. *Oncologist*. 2006;11;435-449.

Hartmann LC, Sellers TA, Frost MH, et al. Benign breast disease and the risk of breast cancer. *N Engl J Med*. 2005;353:229-237.

Henry NL, Shah PD, Haider I, et al. Chapter 88: Cancer of the breast. In: Niederhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 6th ed. Philadelphia, Pa: Elsevier; 2020.

Jagsi R, King TA, Lehman C, et al. Chapter 79: Malignant tumors of the breast. In: DeVita VT, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 11th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2019.

Moutte A, Chopin N, Faure C, et al. Surgical management of benign and borderline phyllodes tumors of the breast. *Breast J*. 2016;22(5):547-552.

National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology. Breast Cancer. Version 8.2021. Accessed at www.nccn.org/professionals/physician_gls/pdf/breast.pdf on November 2, 2021.

Orr B, Kelley JL. Benign breast diseases: Evaluation and management. *Clin Obstet Gynecol*. 2016;59(4):710-726.

Last Revised: June 15, 2022

Intraductal Papillomas of the Breast

Intraductal papillomas are benign (non-cancerous), wart-like tumors that grow within the milk ducts of the breast. They are made up of gland tissue along with fibrous tissue and blood vessels (called fibrovascular tissue).

Treatment of breast papillomas

Whether or not papillomas need to be treated depends on factors such as their size, if there is more than one, and if they're causing symptoms. Because papillomas can sometimes be linked with other, more serious breast findings, doctors may recommend surgery[4] to remove them and the part of the duct they're in.

Hyperlinks

1. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms.html
2. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-ultrasound.html
3. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-biopsy.html
4. www.cancer.org/cancer/types/breast-cancer/treatment/surgery-for-breast-cancer.html

References

Sabel MS. Overview of benign breast disease. UpToDate. 2021. Accessed at https://www.uptodate.com/contents/ overview-of-benign-breast-disease on November 2, 2021.

Santen RJ, Mansel R. Benign breast disorders. *N Engl J Med*. 2005;353:275-285.

Tatarian T, Sokas C, Rufail M, et al. Intraductal papilloma with benign pathology on breast core biopsy: To excise or not? *Ann Surg Oncol*. 2016;23(8):2501-2507.

Last Revised: January 25, 2022

Fat Necrosis and Oil Cysts in the Breast

Fat necrosis is a benign (non-cancerous) breast condition that can develop when an area of fatty breast tissue is injured. It can also develop after breast surgery or radiation treatment.

Stages of fat necrosis

There are different stages of fat necrosis. As the fat cells die, they release their contents, forming a sac-like collection of greasy fluid called an **oil cyst**. Over time, calcifications[1] (small deposits of calcium) can form around the walls of the cyst, which can often be seen on mammograms[2]. As the body continues to repair the damaged breast tissue, it's usually replaced by denser scar tissue.

Diagnosis of fat necrosis and oil cysts

Oil cysts and areas of fat necrosis can form a lump that can be felt, but it usually doesn't hurt. The skin around the lump might look thicker, red, or bruised. Sometimes these changes can be hard to tell apart from cancers on a breast exam or even a mammogram. If this is the case, a breast biopsy[3] (removing all or part of the lump to

look at the tissue under the microscope) might be needed to find out if the lump contains cancer cells.

Doctors can usually tell an oil cyst by the way it looks on a mammogram or breast ultrasound[4]. But if it could be something else, some type of needle biopsy (a fine needle aspiration[5] or core needle biopsy[6]) might be done.

How do fat necrosis and oil cysts affect breast cancer risk?

These breast changes do not affect your risk for breast cancer.

Treatment of fat necrosis and oil cysts

As long as doctors are sure of the diagnosis, fat necrosis and oil cysts usually don't need to be treated. Sometimes fat necrosis goes away on its own. If a needle biopsy is done to remove the fluid in an oil cyst, it can also serve as treatment.

If the lump gets bigger or becomes bothersome, however, surgery may be done to remove it.

Hyperlinks

1. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms/what-does-the-doctor-look-for-on-a-mammogram.html
2. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms.html
3. www.cancer.org/cancer/diagnosis-staging/tests/biopsy-and-cytology-tests/biopsy-types.html
4. www.cancer.org/cancer/diagnosis-staging/tests/imaging-tests/ultrasound-for-cancer.html
5. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-biopsy/fine-needle-aspiration-biopsy-of-the-breast.html
6. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-biopsy/core-needle-biopsy-of-the-breast.html

References

Collins LC, Schnitt SJ. Chapter 9: Pathology of benign breast disorders. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2014.

Guray M, Sahin AA. Benign breast diseases: Classification, diagnosis, and management. *Oncologist*. 2006;11;435-449.

Mastitis

Diagnosis of mastitis

Mastitis can often be diagnosed based on symptoms and the results of a breast exam. It usually affects only one breast.

How does mastitis affect your risk of breast cancer?

Having mastitis does not raise your risk of developing breast cancer.

Treatment of mastitis

Mastitis is typically treated with antibiotics, along with emptying the milk from the breast. In some cases, a breast abscess (a collection of pus) may form. Abscesses are treated by draining the pus, either by surgery or by aspiration (using a thin, hollow needle, often guided by ultrasound[1]

Dixon JM. Lactational mastitis. UpToDate. 2021. Accessed at https://www.uptodate.com/contents/lactational-mastitis on November 3, 2021.

Dixon JM, Bundred NJ. Chapter 5: Management of disorders of the ductal system and infections. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2014.

Orr B, Kelley JL. Benign breast diseases: Evaluation and mag ET BT east.r-45tSeBT 1 0 0 1 72 686.1

Duct Ectasia

Duct ectasia does not increase your risk for breast cancer.

Treatment of duct ectasia

Duct ectasia that is causing symptoms sometimes gets better without treatment. Warm compresses and antibiotics may be used in some cases. If the symptoms don't go away, the abnormal duct might need to be surgically removed.

Hyperlinks

1. www.cancer.org/cancer/diagnosis-staging/tests/biopsy-and-cytology-tests/biopsy-types.html
2. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms/mammogram-basics.html
3. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-ultrasound.html

References

Collins LC, Schnitt SJ. Chapter 9: Pathology of benign breast disorders. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2014.

Dixon JM, Pariser KM. Nonlactational mastitis in adults. UpToDate. 2021. Accessed at https://www.uptodate.com/contents/nonlactational-mastitis-in-adults on November 3, 2021.

Guray M, Sahin AA. Benign breast diseases: Classification, diagnosis, and management. *Oncologist*. 2006;11;435-449.

Last Revised: January 25, 2022

Radial Scars and Some Other Non-cancerous Breast Conditions

These are some of the less common types of benign (non-cancerous) tumors and conditions that can be found in the breast.

Radial scars

Radial scars are also called **complex sclerosing lesions**. They're most often found when a breast biopsy[1] is done for some other purpose. Sometimes radial scars show up as a distortion of the normal breast tissue on a mammogram.

Radial scars are not really scars, but they look like scars when seen with a microscope. They don't usually cause symptoms, but they are important because:

- If they are large enough, they may look like cancer on an imaging test such as a mammogram[2], or even on a biopsy.
- They seem to be linked to a slight increase in a woman's risk of developing breast cancer.

Doctors often recommend surgery to remove radial scars, but in some cases they can use imaging tests instead to watch for any concerning changes.

Other breast changes that are not cancer

Other types of benign masses and other changes can also be found in the breast. Many of these are described on other Non-cancerous Breast Conditions pages.

Some types of benign breast changes that are not covered on those pages are listed below. None of these conditions raise breast cancer risk, but they may need to be biopsied[3] or removed to know what they are and to be sure they don't have any cancer cells in them.

- **Lipoma:** a fatty tumor that can appear almost anywhere in the body, including the breast. It is usually not painful.

- **Hamartoma:** a smooth, painless lump formed by the overgrowth of mature breast cells, which can be made up of fatty, fibrous, and/or gland tissues
- **Hemangioma:** a rare tumor made up of blood vessels
- **Hematoma:** a collection of blood within the breast caused by internal bleeding
- **Adenomyoepithelioma:** a very rare tumor formed by certain cells in the milk duct walls
- **Neurofibroma:** a tumor that's an overgrowth of nerve cells
- **Granular cell tumor:** a tumor that starts in early forms of Schwann cells, which normally surround and help insulate nerve cells. These tumors rarely start in the breast.

Hyperlinks

1. www.cancer.org/cancer/diagnosis-staging/tests/biopsy-and-cytology-tests/biopsy-types.html
2. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms/mammogram-basics.html
3. www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/breast-biopsy.html

References

Amir RA, Sheikh SS. Breast hamartoma: A report of 14 cases of an under-recognized and under-reported entity. *Int J Surg Case Rep*. 2016;22:1-4.

Chang A, Bassett L, Bose S. Adenomyoepithelioma of the breast: A cytologic dilemma. Report of a case and review of the literature. *Diagn Cytopathol*. 2002;26:191-196.

Collins LC, Schnitt SJ. Chapter 9: Pathology of benign breast disorders. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2014.

Guray M, Sahin AA. Benign breast diseases: Classification, diagnosis, and management. *Oncologist*. 2006;11;435-449.

Lv M, Zhu X, Zhong S, et al. Radial scars and subsequent breast cancer risk: A meta-analysis. *PLoS ONE*. 2014:9(7):e102503.

Matrai C, D'Alfonso TM, Pharmer L, et al. Advocating nonsurgical management of patients with small, incidental radial scars at the time of needle core biopsy: A study of 77 cases. *Arch Pathol Lab Med*. 2015;139:1137-1142.

Orr B, Kelley JL. Benign breast diseases: Evaluation and management. *Clin Obstet Gynecol*. 2016;59(4):710-726.

Sabel MS. Overview of benign breast disease. UpToDate. 2021. Accessed at https://www.uptodate.com/contents/overview-of-benign-breast-disease on November 3, 2021.

Last Revised: January 25, 2022

Written by

The American Cancer Society medical and editorial content team (https://www.cancer.org/cancer/acs-medical-content-and-news-staff.html)

Our team is made up of doctors and oncology certified nurses with deep knowledge of cancer care as well as editors and translators with extensive experience in medical writing.