



Breast Imaging & You



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MIC is committed to excellence in breast imaging.

MIC offers our patients the most advanced breast imaging which can detect cancers at a very early stage.

Our standard of care is world-class with Digital Breast Tomosynthesis (DBT) for all screening and diagnostic mammograms and Automated Breast Ultrasound (ABUS) and Hand-Held Ultrasound (HHUS) as supplemental imaging for women with dense breast tissue.

Your breast health is important to us and we hope you use the information in this booklet and on our website **mic.ca** to learn more about our breast imaging services, the importance of regular breast cancer screening and some of the causes of breast pain. At the end of the booklet, you will find a chart to keep track of your breast imaging.



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Your healthcare
practitioner

+



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Accurate imaging,
early detection and
better outcomes

Breast Imaging

Breast imaging uses diagnostic imaging equipment to look at the tissue inside your breasts and assess whether there are any abnormalities.



Why is it so important?

Breast imaging can help detect breast cancer at the very early stages – often 2-3 years before you or your healthcare practitioner might notice a lump or other symptoms. In addition, breast imaging gives your healthcare team information to help:

- Assess breast symptoms such as lumps, tenderness or nipple discharge.
- Identify the type, location and stage of breast cancer.
- Determine the results of cancer treatment.
- Evaluate breast implants.

MIC's breast imaging team

MIC's team is made up of skilled technologists and radiologists who specialize in breast imaging.

Our experts review every image and provide a report to your healthcare practitioner, usually within 24 hours.



Our Breast Imaging Services



DBT Mammography

Screening and diagnostic mammograms using the most advanced technology available: Digital Breast Tomosynthesis (DBT) for all patients.



Breast Ultrasounds

Automated Breast Ultrasound (ABUS) or Hand-Held Ultrasound (HHUS) to supplement DBT mammography for women with dense breast tissue.

Diagnostic ultrasounds to check abnormal results from a mammogram or to screen women who are pregnant or should not be exposed to x-rays.



Breast interventions

Breast interventions such as cyst aspiration or image-guided biopsies to further explore any abnormalities.



Breast MRIs

Very detailed images of the breast using our powerful 3T MRI scanner to supplement mammograms and ultrasound.

MIC performs
over **55,000** DBT
mammograms each year



DBT mammograms can show changes in your breasts up to **2-3 years** before you might find a lump



1 in 8 women will be diagnosed with breast cancer in their lifetime

DBT Mammograms

MIC uses Digital Breast Tomosynthesis (DBT) for all mammograms. DBT is an advanced form of mammography that combines a low-dose x-ray system and computer reconstructions to create three-dimensional (3D) images of the breasts.



DBT has been shown to improve cancer detection rates while reducing the number of patients recalled for additional imaging and biopsies.

During your exam, one of our technologists will place your breast on a detector platform and it will be gradually compressed with a plastic paddle. This helps to:

- Even out the breast thickness so that small abnormalities are less likely to be hidden by overlapping breast tissue.
- Lower the radiation dose since a thinner amount of breast tissue is being imaged.
- Hold the breast still during imaging.

Your breast will remain compressed while the x-ray tube moves from one side of your breast to the other in an arc, capturing multiple images from different angles.

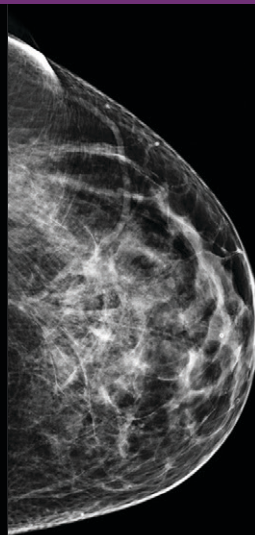
Screening DBT Mammograms

Mammograms are used as a screening tool for early detection of breast cancers in patients who are not experiencing any problems or symptoms with their breasts. Screening mammography can show changes in the breast up to 2-3 years before a patient or practitioner can feel them. DBT screening mammography has been shown to improve accuracy.

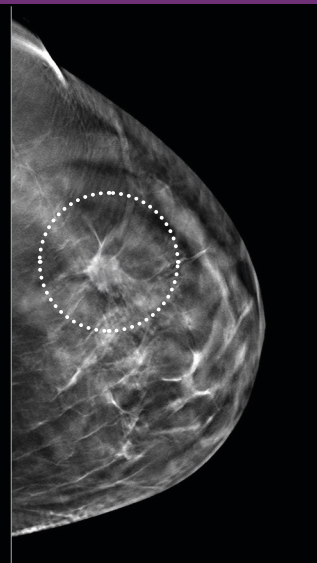


Diagnostic DBT Mammograms

Diagnostic mammograms are used to evaluate a patient who has either had breast cancer or is experiencing symptoms such as a breast lump, pain or nipple discharge. Diagnostic mammograms may also be used to check an area of concern on a screening mammogram.



Conventional 2D
mammogram



DBT 3D mammogram:
Cancer detected



Breast cancer screening

About 1 in 8 women in Alberta will be diagnosed with breast cancer during their lifetime. Screening mammograms are a straightforward, simple procedure and the best way to find breast cancer early, when treatment may work better.

When you have a screening mammogram, there is a small chance our radiologists will request more imaging to get a better look at your breast tissue. If we find something suspicious, you may need to have a biopsy to test for cancer cells. Most biopsies will be benign or non-cancerous.

The risk of breast cancer increases as you get older. Alberta's *Screening for Life* program uses the following guidelines for screening mammograms depending on your age and other factors:

Under 40

If you are under 40 and not at elevated risk due to family history or other risk factors, the risk of breast cancer is much lower and generally, there is no benefit in having screening mammograms. Talk to your healthcare practitioner if you are concerned that you may have an increased risk of breast cancer.

Ages 40-44

If you are between 40 and 44, talk to your healthcare practitioner about your breast cancer risk and whether you should start having regular screening mammograms.

Your healthcare practitioner will give you a referral for your first screening mammogram. After that, you can book your own appointments without a requisition form.

Ages 45-74

If you are between 45 and 74, you should have regular screening mammograms since the risk of breast cancer increases with age.

Age 75 and older

Talk to your healthcare practitioner to decide whether to continue with regular screening mammograms.

Mammograms do not catch everything. Check with your healthcare practitioner if something doesn't feel normal for you, even if your mammogram showed nothing unusual.



Did you know Alberta revisited guidelines in 2022?

Women age 45 and up can now self-refer for screening mammography.

80%

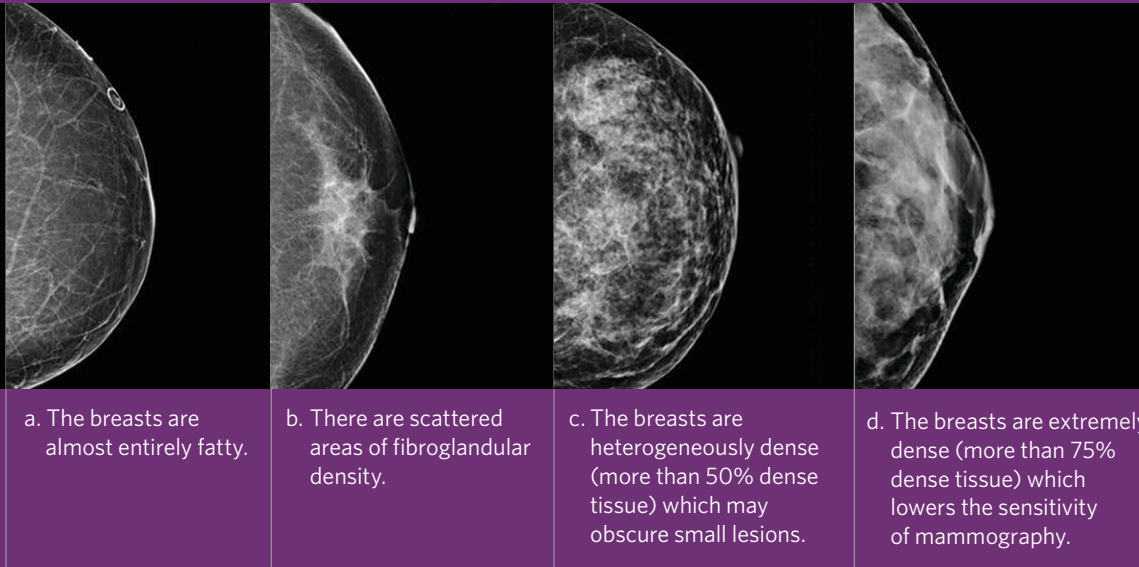
of women who develop breast cancer have no family history.

Breast cancer screening saves lives. To learn more, visit: screeningforlife.ca

Dense breast tissue

When we talk about dense breasts, we are referring to the type of tissue found inside your breasts. While some breasts are made up almost entirely of fatty tissue, others are made of thick, fibrous tissue and milk glands — or dense tissue.

Radiologists use the following classification developed by the American College of Radiology to describe breast tissue:



When you have a screening mammogram at MIC, your radiologist will include a description of your breast tissue in the report we send to your healthcare practitioner.



Breast density is included in women's results letters.



Automated Breast Ultrasound (ABUS) for women with dense breast tissue

Dense breast tissue can make it harder for radiologists to find cancer on a mammogram since it can mask the appearance of tumors and may slightly increase your breast cancer risk.

To get a better look at dense breast tissue, MIC uses screening DBT mammography supplemented by Automated Breast Ultrasound (ABUS) or Hand-Held Ultrasound (HHUS).

This combination of advanced technologies has been proven to increase detection of breast cancer by up to 36% in women with dense breasts compared to using only mammography.



How does ABUS work?

ABUS uses a wide transducer that automatically scans your breast creating hundreds of 3D breast tissue images. This gives our radiologists a much more complete picture of dense breast tissue, allowing them to view abnormalities more clearly.

Patients with a pacemaker or glucose monitor are not eligible for ABUS as the transducer may interfere with their device. In this case, we will opt for HHUS as a supplemental imaging exam for dense breast tissue.



Factors affecting breast density include:
age, family history, pregnancy, and hormone therapy.

Hand-Held Ultrasound (HHUS) enhances targeting in dense breast tissue

Hand-Held Ultrasound is another option for scanning individuals with extremely dense breast tissue (classification C or D). It is a portable and highly sensitive ultrasound device that can target specific areas of the breast.

This increased sensitivity makes HHUS an excellent option for supplemental screening to detect cancer. It has the added advantage of using Doppler imaging to view vascularity in the tissue, which can help in diagnosis.

MIC is proud to offer supplemental ultrasound (ABUS or HHUS) at every clinic where we perform screening mammography. This gives patients with dense breasts many options to schedule their exams at a convenient location.

How does HHUS work?

A highly trained technologist will apply a warm, water-based gel directly on your skin and use a small transducer to bilaterally screen both breasts entirely. Compared to an ABUS, the pressure from an HHUS is more targeted, as the technologist moves the transducer across both breasts.

Screening DBT mammography and ABUS/HHUS will detect most, but not every breast cancer. If you have dense breasts, ask your healthcare practitioner what is right for you.

In Alberta,
 **45%** of patients who undergo screening mammography have dense breasts.

Common questions about dense breasts and ultrasound

Can breast density change over time?

Yes. Breast density can change over time, so it is important to follow your healthcare practitioner's screening recommendations consistently.

Can I assume I have dense breasts if they are small?

Breast density has nothing to do with the size of your breasts or the way they feel. Dense breasts can feel soft, lumpy, or firm, and so can larger breasts.

Can ABUS/HHUS replace my regular mammogram?

No. ABUS/HHUS should be used in conjunction with screening mammography, not as a replacement. Together, the multimodality imaging process provides a complete picture, ensuring the most accurate breast health assessment for patients with dense tissue.



Can I self-refer for an ABUS/HHUS?

The *Screening for Life* program only allows patients to self-refer for screening mammography, not supplemental ultrasound imaging.

Patients need a requisition from their practitioner to book an ABUS/HHUS, provided they meet the right criteria.

Screening for the 2SLGBTQI+ Community

All patients, regardless of gender identity or sexual orientation, should consider breast cancer screening if their practitioner recommends it.

Breast cancer poses a threat to anyone with fatty tissue on top of the chest muscle. This tissue is commonly referred to as *breast tissue*, but some patients may refer to it as *chest tissue*. Our team evaluates this tissue using medical imaging to screen for abnormalities such as breast cancer, before patients may notice any symptoms.

Regular screening mammograms are still recommended even if:

- You have no family history of breast/chest cancer
- You're a lesbian, bisexual, or queer woman
- You've had a hysterectomy
- You're taking testosterone
- You've been through menopause
- You feel healthy and have no symptoms of breast/chest cancer

Supplemental Ultrasound Imaging

The *Screening for Life* program only allows patients to self-refer for screening mammography, not supplemental ultrasound imaging (ABUS/HHUS).

Patients with extremely dense breasts who would like the added assurance of an ABUS/HHUS exam with their annual screening mammogram will need a requisition from their practitioner each year.

Unique risk factors and considerations

Gender affirming hormones

Patients who have taken gender affirming hormones (like estrogen) to increase the size of their breasts for **more than five years in total** should consider screening mammography. The five years do not have to be back-to-back.

Screening mammograms are not recommended for patients who have taken gender affirming hormones (like estrogen) for **less than five years in total**.

Top surgery

Patients who haven't had top surgery to remove breast tissue should consider screening mammography (even if they've had a hysterectomy or are taking testosterone).

Screening mammograms are not recommended for patients who've had top surgery to remove breast tissue.



We encourage you to have a conversation with your health care provider to discuss your unique history and risk factors to determine if you should consider breast cancer screening.

Abnormalities and further testing



If your radiologist sees something abnormal on your mammogram, they may send you for a diagnostic mammogram, a diagnostic ultrasound or a breast MRI.

This can be very stressful, but 9 out of 10 women who go for extra tests do not have breast cancer.

Some common breast abnormalities that are not cancer include:

- Fluid-filled sacs (cysts). Up to 60% of women will have these at some point in their lives.
- Small solid nodules (fibroadenomas).
- Small calcium deposits (benign calcifications).

While only a very small number of abnormalities will be cancer, you should follow the recommendations of your MIC radiologist for additional testing. This is the only way your radiologist can determine if the abnormalities in your breast tissue require further investigation.

→ **90%**
of women who
have additional
tests do not
have breast
cancer



Diagnostic mammography

Your radiologist may ask for additional mammography images to help them get a better view of your breast tissue. This is called a diagnostic mammogram.



Diagnostic breast ultrasound

Your radiologist may want to look more closely at a targeted area in your breast tissue and may request a diagnostic breast ultrasound. This is a safe, painless procedure which uses high-frequency sound waves to produce pictures of the internal structures of your breast and axilla (armpit).

Your practitioner may request a diagnostic ultrasound if you have a lump or you are having pain and tenderness that is not usual for you. It can also be used as a screening tool for women who are pregnant or should not be exposed to x-rays (necessary for a mammogram).



Breast Magnetic Resonance Imaging (MRI)

MIC's powerful new 3T MRI scanner produces very detailed pictures of the structures of the breast to supplement mammograms and ultrasound, particularly for women at high risk for breast cancer due to family history. The 3T MRI helps our radiologists determine the extent and staging of cancer, diagnose breast implant rupture and assess the effectiveness of cancer treatment.

Breast MRI in community clinics is not insured by Alberta Health Care.



Breast interventions

If your healthcare team needs more information to determine whether an abnormality is harmless, the next step is to test some of the tissue for cancer cells.

A breast biopsy is a procedure used to find out more about lumps or abnormalities that have been detected in your breast tissue.



To perform the biopsy, your MIC radiologist will use either ultrasound or a special mammography machine to guide a needle to the suspicious area in your breast and obtain a tiny tissue sample. This sample is then sent to a laboratory to determine whether the growth is benign or cancerous and the results will be sent to your healthcare practitioner.

If your testing shows you have a cyst in your breast tissue, your MIC radiologist can perform a simple procedure to remove the fluid. This can help relieve any discomfort you may have from the cyst.



All procedures are performed under local freezing.
Stitches are not required for these procedures.



Ultrasound-Guided Core Biopsy

Ultrasound is used to guide a special hollow needle to the abnormality in your breast and take a tiny cylinder-shaped (core) sample of tissue.

Tomosynthesis or Vacuum Assisted Breast Biopsy

A special mammography machine is used to guide a needle to the abnormality in your breast to take a small tissue sample.

Wire Localization Procedure

Ultrasound or mammography guidance is used to insert a fine wire in your breast to mark the exact location of the area of concern before a surgeon removes the lump or abnormal tissue.

Cyst aspiration

Ultrasound is used to guide a very thin needle and syringe to the abnormality in your breast to remove fluid, usually to relieve symptoms such as pain.

Breast Pain

70%

Breast pain is one of the most common breast problems and affects up to 70 percent of women at some point in their lifetime.



Many women have breast tenderness and pain, also called mastalgia. You may notice it at the same time as your monthly period (cyclic) or it may not follow any pattern (non-cyclic).

Breast pain can worsen with hormonal changes, the medicine you take, or the amount of stress in your life. You are more likely to experience breast pain before you go through menopause.

Cyclical breast pain

This is the most common type of breast pain and may be caused by normal monthly hormonal changes when you get your period. The pain is usually felt in both breasts and feels like a heaviness or soreness in the breast that radiates to the armpit and arm.

Cyclic breast pain occurs more often in younger women and is usually most severe before your period starts. Most cyclic pain goes away without treatment and usually disappears at menopause.

Non-cyclical breast pain

This is a less common type of breast pain. It is described as a sharp, continuous, burning pain that occurs in a specific area of the breast. The pain is not caused by monthly hormonal changes and may occur in only one breast. Women experiencing non-cyclic breast pain are usually 30-50 years of age.

Some non-cyclic pain may be caused by a fibroadenoma or a cyst. If your healthcare practitioner can identify the cause, they may be able to treat the pain.

Does breast pain indicate breast cancer?

Breast pain is generally not a symptom of breast cancer. However, in rare cases, painful lumps may be caused by breast cancer.

Chest wall pain

Chest wall pain (also called musculoskeletal pain) is sometimes confused with breast pain. Chest wall pain is found in the muscles and bones of the chest. The pain can affect one or both sides of the chest and can spread out from the armpit. Physical activity can make the pain worse. This pain often goes away in time.

Your healthcare practitioner should evaluate the pain, especially if you have a history of trauma or surgery in the area or have a heart condition.

Assessing your breast pain

You should discuss your symptoms with your healthcare practitioner if your breast pain:

- Lasts longer than three weeks.
- Is in one area of the breast.
- Is getting worse, affecting your everyday activities or waking you up at night.

To assess your breast pain, your practitioner will ask you about your breast health and family history, and then examine your breasts. You may also have a mammogram and/or an ultrasound to look for the cause of the pain (such as a cyst). It's important to tell your practitioner where the pain is, how much pain you're having, and how long the pain lasts.

Relieving breast pain

You may be able to relieve breast pain by:

- Eating a low-fat diet and increasing the amount of whole grains, fruits and vegetables.
- Reducing your salt intake.
- Reducing the amount of caffeine you consume.
- Wearing a well-fitted, supportive bra.
- Taking magnesium supplements two weeks before your period starts.

There are other options which you should discuss with your healthcare practitioner. These include:

- Reviewing your prescription for birth control pills (oral contraceptives).
- Adjusting hormone replacement therapy.
- Draining fluid-filled cysts.
- Pain relief or anti-inflammatory medication.

To learn more, visit **MyHealth.Alberta.ca**

Keep track of your breast imaging

Knowing your breast imaging history helps make you an active partner in your breast health and gives MIC the information we need to compare your images and make note of any changes. This chart can help you keep a record of your breast imaging and remind you when to schedule your next appointment.



Type of procedure	Procedure date	Referring Practitioner	Procedure Clinic	Notes/results	Next appointment



Taking control of your breast health

No matter how old you are, you need to know what looks and feels normal for you. Follow the screening and testing recommended by your MIC radiologist and your healthcare practitioner.

If you notice any unusual changes in your breasts—even if your mammogram and other imaging is normal—talk to your healthcare practitioner.

How to book an appointment

MIC offers breast imaging at clinics throughout the Edmonton area.
To book an appointment at a location convenient to you, contact us at:



Central Booking

Ph: 780.450.1500

Toll Free 1.800.355.1755

Fax: 780.450.9551



Patient Connection

Try MIC's online management suite
mic.ca

- Instant booking and confirmation
- Reschedule or cancel your exams

When you call, please have available:

- Your Alberta Health Care Insurance card
- Your exam requisition with your healthcare practitioner's exam instructions

Note: MIC accepts all diagnostic imaging requisitions.



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