



Upper Limb Musculoskeletal Health



and

Breast Cancer



UNIVERSITY OF SASKATCHEWAN

Canadian Centre for Rural
and Agricultural Health

CCHSA-CCSSMA.USASK.CA

Why is musculoskeletal health important for breast cancer survivors?

Musculoskeletal health is critically important for breast cancer survivors due to the diverse effects of the treatments you undergo.



Treatments such as surgery, chemotherapy, radiation, and hormone therapy can lead to short-term issues like fatigue, muscle weakness, and joint stiffness. They can also potentially cause long-term complications such as reduced strength and mobility, reduced ability to work or perform leisure activities, joint pain and injuries.

- We are studying musculoskeletal health after cancer treatment because many individuals are surprised by the upper limb problems they experience.
- Some limitations can have large and important consequences on a person's ability to return-to-work, participate in leisure activities, or even perform necessary daily activities, like caring for themselves or their family members.
- The first step to addressing any limitations is to understand what problems may occur and to know that any difficulties experienced are often not unique to you; help can be sought to deal with upper limb problems after breast cancer treatment.

Breast cancer treatment

Each of these treatments plays a crucial role in managing breast cancer, either by removing tumors, reducing the risk of recurrence, or reconstructing the breast after surgery.

Surgical Procedures

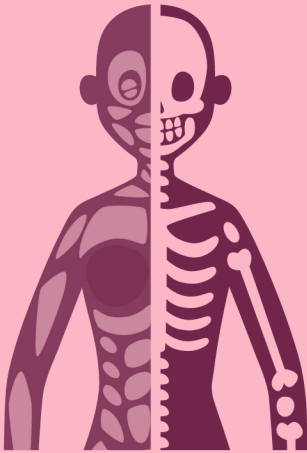
Treatment	Description
Lumpectomy	Surgical removal of the tumor and a small margin of surrounding healthy tissue, preserving as much of the breast as possible (also known as breast-conserving surgery).
Mastectomy	Surgical removal of the entire breast tissue, typically performed when lumpectomy isn't feasible or for more extensive cancer.
Sentinel lymph node biopsy	Sentinel (first nodes) lymph nodes biopsied to check extent of cancer.
Axillary lymph node dissection	Axillary (underarm) lymph nodes removed to prevent further spread of the cancer. Many lymph nodes are removed.
Reconstruction with tissue expander and implant	A tissue expander is placed under the chest muscle at the time of mastectomy as the first stage of reconstruction. Later, in a second surgery, the expander is removed and replaced with an implant.
Reconstruction with own tissue (skin or muscle flap)	Sometimes it is possible to use tissue from another part of your body such as from your lower abdomen (this is called a DIEP flap) to reconstruct the breast after mastectomy.

Other treatments

Treatment	Description
Radiation	Targeted high-energy rays (X-rays or gamma rays) used to destroy cancer cells and shrink tumors, often used after surgery to reduce the risk of cancer returning.
Chemotherapy	Systemic treatment using drugs to kill cancer cells or stop their growth, administered orally or intravenously, affecting the entire body.
Hormone Therapy	Treatment for hormone-sensitive breast cancers that works to block hormones or lower their levels to prevent cancer cells from growing and spreading.
Immunotherapy	Treatment that boosts the body's own immune system to better recognize and fight cancer cells. The treatments send antibodies that attach to the cancer cells and block growth.



What do we mean by musculoskeletal health?



Musculoskeletal health refers to the well-being of our muscles, bones, and joints—the parts of our body that help us move and stay active.

The health of the musculoskeletal system is crucial because it supports our daily activities, such as self-care, family care, household chores or exercise.

Good musculoskeletal health means having strong muscles, flexible joints, and sturdy bones that allow us to move freely without pain or stiffness.

By maintaining good musculoskeletal health, we can enjoy an active lifestyle, reduce the risk of injuries, and maintain a high quality of life.

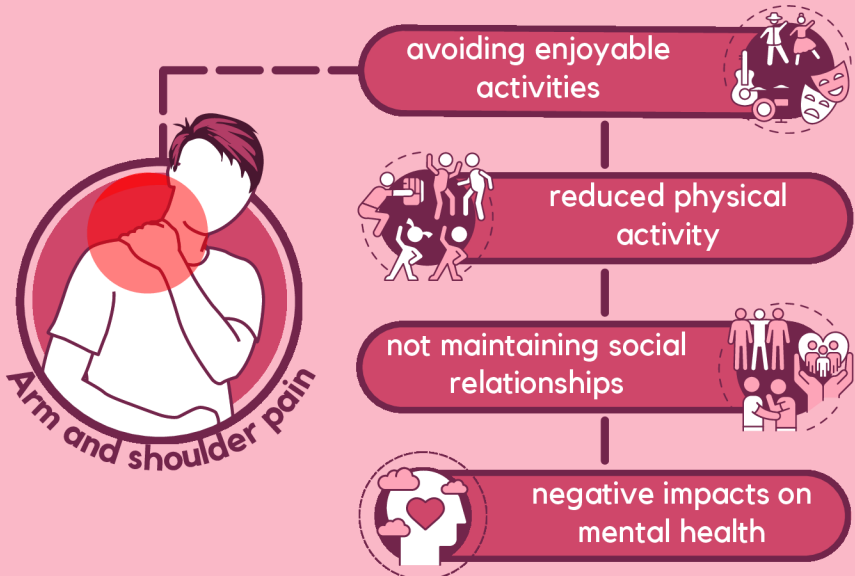


Musculoskeletal health is connected to quality of life

As musculoskeletal health declines, so does our quality of life. Aspects of life such as physical health, mental health, social relationships, ability to work and economic stability, self-care and daily activity abilities, ability to participate in recreation and leisure activities, and sleep can all be affected by musculoskeletal health.

Maintaining musculoskeletal health helps to maintain health in other areas.

For example, if you are experiencing pain or discomfort in your arm and shoulder, you may have to avoid activities you enjoy, like swimming, playing an instrument or spending time with family.



Many domains of health and quality of life are connected and therefore musculoskeletal health can affect many aspects of life!

Post-treatment musculoskeletal effects

After treatment, it is common to experience new, and sometimes lasting, muscle or joint problems. After breast cancer treatment, these are typically affecting the upper limb and can be immediate or delayed.



Certain treatments are more strongly associated with upper limb musculoskeletal issues: specifically, mastectomies, axillary lymph node dissections, and radiation are currently considered the highest risk.

However, treatment type does not necessarily result in the presence or absence of musculoskeletal issues. More information is needed to understand why you might experience severe, moderate, mild, or no upper limb problems after breast cancer treatment.



Common upper limb problems can include:

- Chest tightness
- Cording in the armpit and down the arm
- Chest weakness
- Arm weakness
- Arm swelling (lymphoedema)
- Arm or shoulder pain
- Loss of range of motion at the shoulder



Breast cancer survivors may also be more likely to develop secondary upper limb musculoskeletal disorders, such as:



- Shoulder/Rotator cuff injuries
- Upper back pain
- Frozen shoulder (a condition that limits movement in the shoulder joint)

Along with these symptoms, people may also experience a lack of support to address musculoskeletal health needs.

It is a goal of our research group to address this gap.

Our Research

Recent research conducted by a group at the University of Saskatchewan has discovered some potential connections between physical changes following breast cancer treatment and musculoskeletal disorders.



The results from these studies showed that breast cancer survivors have a more difficult time performing work-related tasks than non-cancer controls. Survivors often moved slower or could not move as much weight as those who didn't have cancer, likely a direct result of the upper limb problems

and movement changes from cancer treatment. This could interfere with a breast cancer survivor's ability to return to work as well as usual activities of daily living. These limitations should be addressed in rehabilitation.

Additionally, our research group determined that some muscle and joint movement differences may be connected to the development of other shoulder injuries after treatment.

However, more research is needed to understand how different types of surgery influence secondary injuries and functional abilities.



The current project aims to understand how specific procedures, like different types of reconstruction or history of radiation, affect physical abilities, movement patterns, and secondary injuries.



Suggestions for addressing arm problems

Posture



Maintaining good posture after treatment is crucial for musculoskeletal health as it can help to:

- Alleviate pain in the shoulders, neck, and back
- Maintaining muscle strength of the back and core muscles to prevent imbalances and reduce the risk of falls or injuries
- Support overall mobility and functionality
- Improve self confidence and body image

Tips to maintain good posture:

- **Sit and stand tall:** Keep your shoulders back and relaxed, your chest forward, and your head level. Avoid slouching or leaning forward.
 - Align your ears, shoulders, and hips when sitting or standing. This helps maintain the natural curve of your spine.
- **Move regularly:** Avoid staying in one position for too long. Take breaks to stretch and walk around.
- **Strengthen core and back muscles:** these muscles support your spine and maintain posture.
- **Stay mindful:** Be aware of your posture throughout the day and correct as needed.

Ergonomics tips for daily activities

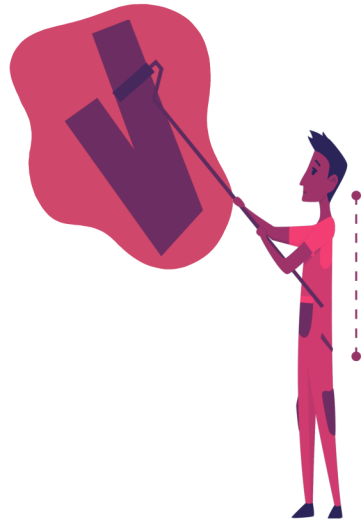
The way that we move affects how strong we are, how fast we can move, and how easily we get tired, but can also lead to pain and injuries. These effects can be reduced if using good form and moving in a way that reduces demand on the body:



- **Keep things close:** Perform work close to and in front of your body. Move your body or arrange your work set-up to avoid stretching, leaning or twisting. Keep common items and tasks close to your body in your work area.
- **Use the handles:** If an object has handles, use them! Reduce the load until you can comfortably lift, carry or move the load with the handles. Grab objects with both hands evenly.
 - **Avoid** moving or using objects that are awkward shapes with no handles; change the container if you can!
- **Store things off the floor:** Keep objects between knee and shoulder level to minimize bending and stooping. Use tables, work benches, stands or shelves.
- **Lighten Loads:** Move fewer objects at once. Don't load buckets or bags heavily to reduce the number of trips. Ask for help with lifting or carrying heavy objects.



- **Hands below head:** If the work you need to perform is above shoulder height, use a ladder, platform, or stable stool whenever possible to bring your body up and make the work below shoulder height. Use handle extenders when possible and consider using lightweight tools to reduce overall loads.



Exercise



There is still plenty of research being conducted to address arm and shoulder problems and secondary injuries that are interfering with the daily life of individuals who have been treated for breast cancer.

Current recommendations suggest beginning a shoulder mobility routine shortly after treatment, meaning to get your arm moving to try to regain as much range of motion as possible.

If you are later in your recovery, a shoulder stretching routine focused on the chest may help to ease your symptoms, as well as a progressive shoulder strengthening routine focused on returning strength to the muscles around your shoulder to regain functional abilities.

General increases in activity, such as increasing step count or increasing how often you do physical activity, may help to mitigate problems and combat fatigue. As you increase activity, it is suggested that you seek advice from a licensed physiotherapist or exercise therapist for more detailed treatment programs.



Resources



Scan the QR code to access all of the breast cancer resources below!

Finding a Physiotherapist:

Consult the Saskatchewan Physiotherapy Association directory: <https://saskphysio.org/for-the-public/find-a-physiotherapist/>

In Select Category, scroll down and select “women’s health.”

You can also ask your doctor for a referral or talk to other women who have had breast cancer.



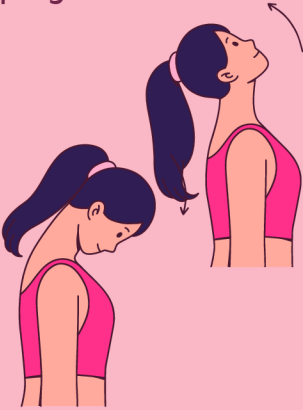
Finding an Occupational Therapist:

Learn more about Occupational Therapy and Cancer Care: <https://caot.ca/document/8385/Cancer%20Care%20EN.pdf>

Consult the Canadian Occupational Therapy Association directory: <https://caot.ca/site/about/ot/FOT/TermsOfUse>

Exercise

Follow these links to find suggestions for exercises and programs:



- <https://myhealth.alberta.ca/breast-cancer-surgery/at-home/arm-shoulder-exercises>
- <https://www.cancerrehabpt.com/blog/shoulder-pain-after-breast-cancer#:~:text=Shoulder%20issues%20after%20breast%20cancer,or%20perform%20regular%20daily%20activities>

Further information:

<https://cancer.ca/en/cancer-information/resources/publications/exercises-after-breast-surgery>

More Resources



Canadian Cancer Society:

- <https://cancer.ca/en/cancer-information/cancer-types/breast/supportive-care>
- Call toll-free at [1-888-939-3333](tel:1-888-939-3333) or email at info@cancer.ca

Saskatchewan Cancer Society:

- <https://saskcancer.ca/services-resources/supportive-care-services>



Online support groups:



- Breast Cancer Support Saskatoon
- InPower Regina - Breast Friends



Talk to other women who have had breast cancer for recommendations.



For more information, please contact:

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November 2024

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