

THE
SHOULDER
BOOK



Your shoulders,
your health,
your choice.

The Shoulder Book is a patient resource for individuals with shoulder injuries to help them better understand their injury.

A team of experts specializing in shoulder injuries and medical management collaborated on this project:

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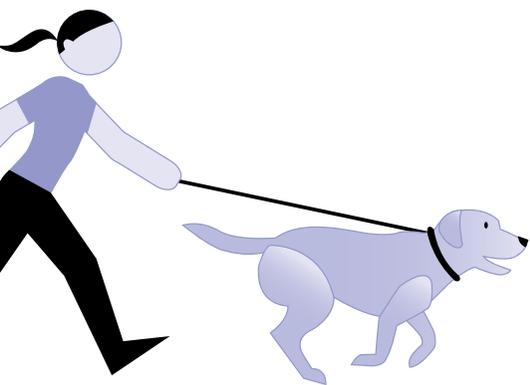
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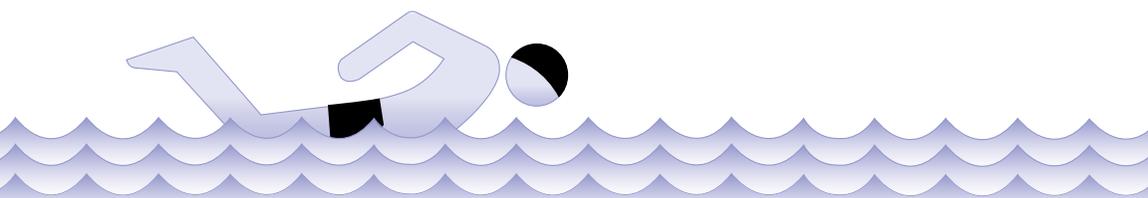
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[INTRODUCTION]

Every time you move your arm you use your shoulder, so it's important to keep your shoulders in good shape. Shoulder pain is very common, and although shoulder pain can be alarming, serious or permanent damage to the shoulder is uncommon. We are learning new things about shoulder treatment every year, and the way we think about treating shoulder injuries and shoulder pain continues to change. This booklet was created to help you get to know your shoulders better, and is based on the latest research on how to best treat shoulder injuries and pain. This booklet will help explain how the shoulder is put together and why shoulder pain and dysfunction occur; provide you with ways of coping with pain; and explain when you may want to see your doctor or physical therapist for your shoulder.

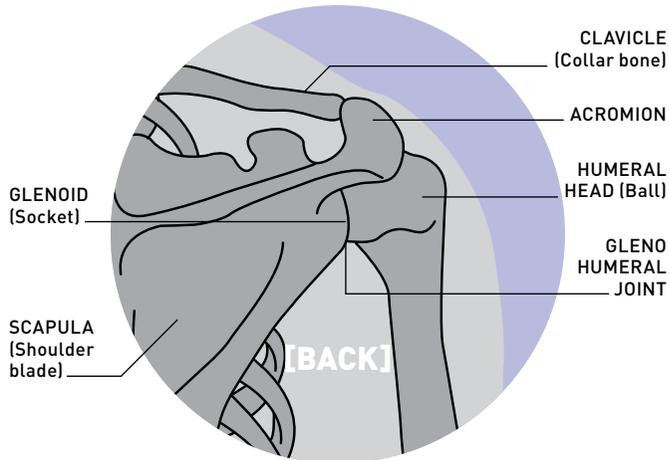
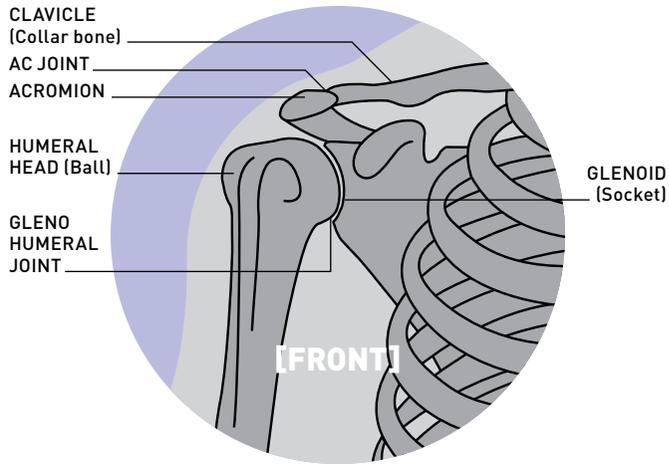
It is important to stay active despite the presence of shoulder pain. It is important to engage in exercise, take a walk, and stretch from time to time. Most people don't realize this, but blood flow is one of the critical elements in rapid recovery for injuries such as ligaments, muscles and tendons, and this increases with exercise. Studies show that activity is vital to recovery and long-term shoulder health. While it may be uncomfortable at times, physical activity can actually relieve pain and even stop it from coming back.

The key is to find smart ways to move, stretch and exercise your way to healthy shoulders.

[SHOULDER FACTS]

1. Shouldering the load

If you think of the shoulder in layers, the deepest layer is bone, then the joint capsule and ligaments, followed by the tendons and muscles on top. Nerves and blood vessels supply the muscles and bones of the shoulder. Nerves carry signals from the brain to the muscles to move the shoulder and carry signals from the muscles back to the brain about pain, pressure and temperature. Here is a breakdown of the various parts of the shoulder:



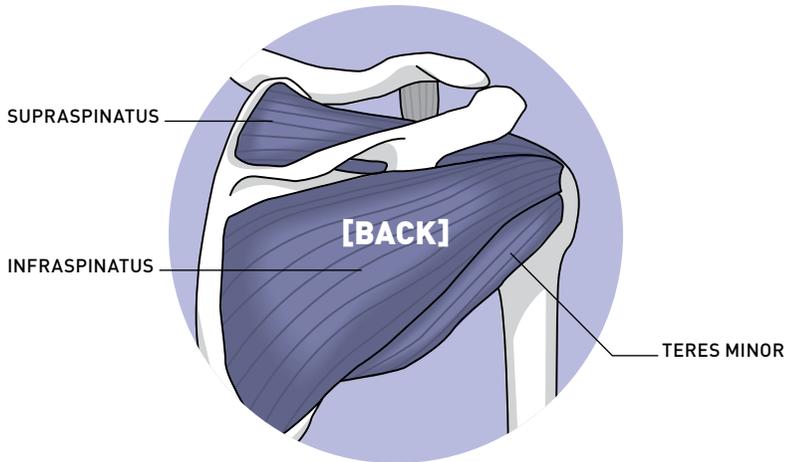
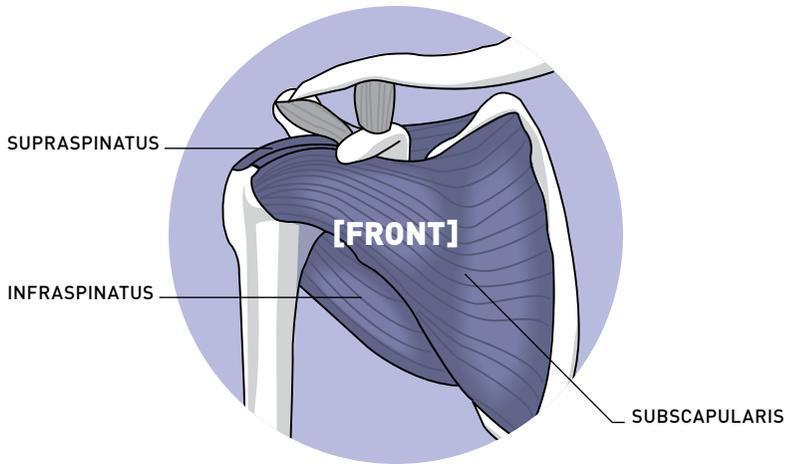
BONES AND JOINTS – The shoulder is actually made up of three bones and three joints. What we think of as the shoulder joint is also called the glenohumeral joint, and it is the ball and socket that we think of as the shoulder. The ball, or humeral head, is much bigger than the socket, or glenoid. This joint allows the shoulder to move more than any other joint in the body. The socket, or glenoid, is part of the shoulder blade, or scapula. The shoulder blade forms a joint with the rib cage that is also called the scapulothoracic joint. Total shoulder movement is made up of the movement from both the glenohumeral joint and scapulothoracic

joint. The final joint is the connection between the collarbone, or clavicle, and the acromion (part of the shoulder blade) known as the acromioclavicular joint. This joint has a small amount of movement, but is important as the joint acts as a pivot point. A shoulder “separation” involves an injury of this joint.

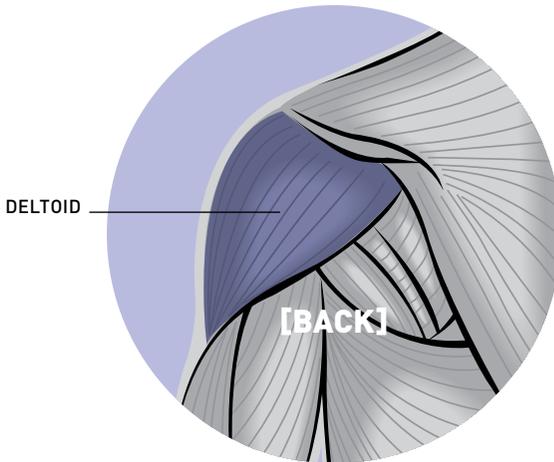
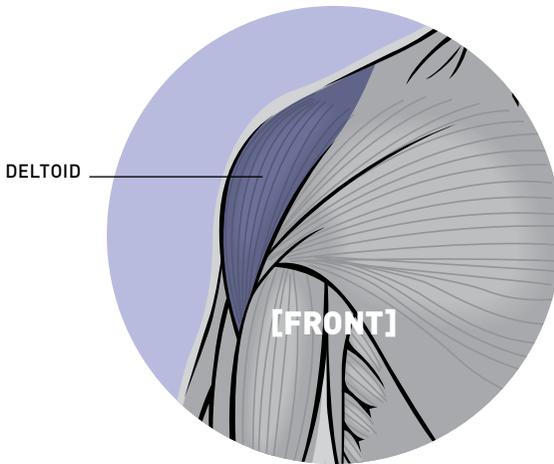
CAPSULE – The capsule is the deepest layer of soft tissue and acts as a cover for the shoulder joint. The capsule’s function is to keep the lubrication fluid in the joint and to help support the joint. There are ligaments in the capsule that are thicker parts of the capsule. The ball and socket joint, or glenohumeral joint, and the acromioclavicular joint both have a joint capsule. The joint between the shoulder blade and rib cage, or scapulothoracic joint, does not have a joint capsule.

LIGAMENTS – Ligaments, together with the capsule, act to hold the bones of the shoulder together. There are ligaments between the ball and socket, known as the glenohumeral ligaments, between the collarbone and acromion (part of the shoulder blade), known as the acromioclavicular ligaments, and between the collarbone and the coracoid (part of the shoulder blade), known as the coracoclavicular ligaments. All of these ligaments function to keep the bones in place as the shoulder moves during activity.

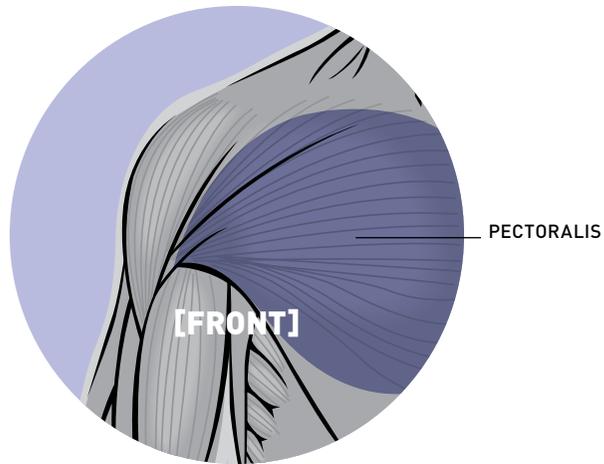
TENDONS AND MUSCLES – Tendons are made up of elastic and soft connective tissue and they attach muscles to bones. Muscles move the bones by pulling on the tendons. When a muscle is activated or contracts, the tendon pulls on the bone, causing the bone to move. Together, the tendon and muscle form a unit called a muscle-tendon unit. In the shoulder, there is a deep layer of tendons and muscles known as the rotator cuff, and a more superficial layer, made up of the deltoid, pectoralis major, and a number of other muscles of the shoulder, chest, upper back and neck, that all assist with shoulder motion.



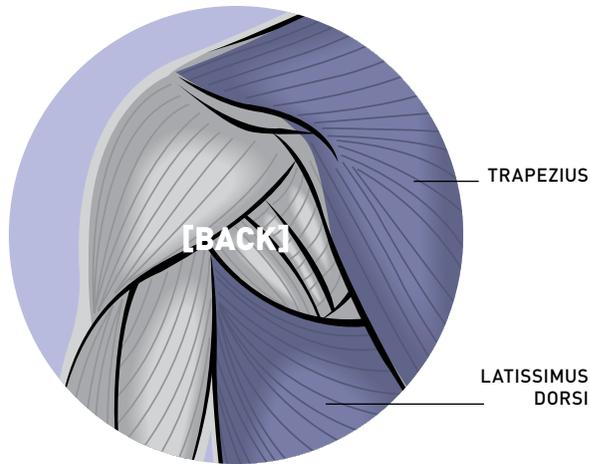
THE ROTATOR CUFF – The rotator cuff consists of four muscle-tendon units that originate on the shoulder blade, or scapula, and attach to the tuberosities (bumps of bone) on the ball of the humerus. The role of the rotator cuff is to keep the ball of the humerus centred in the shoulder socket as the shoulder moves through its range of motion and helps to start the movement of the shoulder when raising the arm. The rotator cuff is the primary stabilizer during movement of the ball and socket, or glenohumeral joint. Overuse and traumatic injuries to the rotator cuff are among the most common problems in the shoulder.



THE DELTOID MUSCLE – The deltoid is the big muscle that forms a large part of the superficial, or outer layer of the shoulder. It has three parts — the front (anterior), middle and back (posterior). The deltoid helps to lift the shoulder out sideways (abduction). The front part helps to lift the arm up forwards (flexion) and the back part helps to lift the arm up backwards (extension).



THE PECTORALIS MAJOR MUSCLE – The pectoralis major is a large and strong muscle covering a large portion of the chest, crossing over the shoulder joint, and attaching to the collarbone and humerus. It is part of the superficial, or outer layer of the muscles around the shoulder. Its fan-like structure separates into three parts, all of which have fibers running in different directions. The pectoralis major helps with shoulder rotation and flexion, and also helps with posture.



THE SCAPULAR STABILIZERS – The scapular or shoulder blade stabilizers consist of muscles around the shoulder blade. The two major muscles are the trapezius and the serratus anterior. Smaller muscles include the rhomboids, the levator scapulae and the latissimus dorsi. The function of these muscles is to stabilize and support the shoulder blade against the rib cage and control its movement. Abnormalities in the movement and rhythm of the shoulder blade are referred to as scapular dyskinesis. These abnormalities may contribute to shoulder pain and are most commonly helped by an active exercise or rehabilitation program that strengthens the scapular or shoulder blade stabilizers.

2. Common shoulder injury types

Shoulder pain is a common problem that affects 10 per cent of the population at some point in their lives. Shoulder stability requires proper function of the rotator cuff and surrounding muscles that attach the arm to the rest of the body. A properly functioning shoulder balances movement with stability when pushing, pulling or reaching overhead. Injury to the shoulder may cause pain and limit movement with activities. Types of shoulder injuries include:

SUDDEN (ACUTE) INJURY

This occurs from a specific injury and can be the result of over rotation of the shoulder, a fall onto the shoulder or an outstretched hand, or a direct or indirect blow to the shoulder. Pain may be instant and intense, and you may have bruising and swelling that follows soon after the injury.

OVERUSE INJURIES

This type of shoulder injury is gradual and something you notice over time. Overuse injuries tend to be the result of repeated stress on the joint and occur due to repetitive motion, overdoing a certain movement, poor posture and even muscle tension. Overuse injuries commonly present as inflammation of the joint that may lead to pain and loss of movement.

Regardless of your type of shoulder injury, it is wise to consult your doctor or physical therapist if you experience severe pain that gets worse over a week, or if your shoulder pain is significantly affecting your general health or activities of daily living.

3. Treatment options

There are several types of treatment for shoulder pain.

These include:

- Physical therapy (methods such as supervised exercise used to promote healing)
- Activity modification
- Pain killers
- Anti-inflammatories (both oral and topical)
- Surgery (in a small number of cases)

In addition, there are alternative therapies such as therapeutic massage, acupuncture or acupressure, and meditation. Make sure you talk to your doctor before starting any new therapies or activities.

The treatment that you have may depend on the cause of your shoulder pain and your symptoms. In most cases, physical therapy is the centre of any treatment program. It is important to understand that in almost all cases, even though the pain may increase with physical therapy, the risk of further injury to your shoulder is rare when participating in a supervised physical therapy program.

[MANAGING SHOULDER PAIN]

Though you can deal with most shoulder pain yourself, sometimes you just want to be sure. Doctors can reassure you about your pain and suggest ways to deal with it. However, you CAN manage shoulder pain yourself in a number of ways. Here are a few tips that will help you:

1. Get moving...



It's key to remember that exercise should make up the majority of any physiotherapy program.

Physical therapy involves activities or exercises you can do to restore your shoulder's mobility and reduce pain. A physical therapist will assess your shoulder and put together a personal treatment program. The aim of physical therapy is to reduce your symptoms and restore function. The approach taken will depend on whether you have a short-term (acute) problem or a more long-standing (chronic) condition.

Almost everyone will benefit from a physical therapy program, which might include some or all of the following:

- Exercises to ease or prevent stiffness and increase the range of joint movement
- Exercises to strengthen weakened muscles and improve function
- Exercises to improve the position of the shoulder blade
- Advice on improving shoulder, neck and spine posture
- Ultrasound treatments and/or heat/cold therapy to ease pain
- Other treatments to help reduce pain and increase muscle strength

2. Light exercise...



This may seem like the last thing you want to do to a sore shoulder but it helps a great deal.

If you have overcome initial inflammation and pain with rest and hot/cold packs, you can start doing some exercise. This may seem like the last thing you want to do to a sore shoulder but it helps a great deal. Stretching and resistance exercises help strengthen the surrounding muscles that can atrophy (become weaker) and make shoulder stability worse. You should be stretching to the edge of discomfort. Pushing to this limit will slowly tell the body where to heal and what to lengthen to improve mobility. Each injury may require a different set of exercises.

3. Heat and cold...



Best used in the first 48 hours, try both and decide which works best for you.

Heat and cold can be used for short-term pain relief and to relax muscle tension. Best used in the first 48 hours, try both and decide which works best for you; try a hot-water bottle, bath or shower, or perhaps a bag of ice, frozen peas, or ice-pack on the sore area for 5–10 minutes at a time.

4. Pain killers...



Do not take Aspirin or ibuprofen if you are pregnant, have asthma, indigestion or an ulcer.

Pain killers such as acetaminophen, Aspirin and ibuprofen are often the most effective. Using pain killers can help you overcome the initial pain so you can get active and help your muscles heal. Remember to take the recommended dose at the recommended interval so you keep your pain under control — don't let it control you.

[WHEN TO SEE A DOCTOR]

Chronic pain

Shoulder pain is defined as chronic when it has been present for longer than six months. Common conditions that can result in chronic shoulder pain include rotator cuff disorders, adhesive capsulitis (also known as frozen shoulder), shoulder instability and shoulder arthritis. Rotator cuff disorders include tendinopathies, partial tears and complete tears. Talk to your doctor about treatment options to get you moving.

Magnetic resonance imaging (MRI) and ultrasound (US)

An important procedure that you and your physician will likely discuss is magnetic resonance imaging (MRI) or ultrasound (US). Both tests create pictures of the shoulder — using a magnetic field and pulses of radio wave energy with an MRI and sound waves with an US. Muscles, ligaments, cartilage and other joint structures can be seen with both MRI and US. In some cases MRI and US give information about structures in the body that cannot be seen as well with an X-ray.

It is important to remember that MRI and US are not perfect in diagnosing problems in the shoulder, and depend on an interpretation

of the pictures by the radiologist. We do know from research performed on both tests that what is found on the images may not always be the cause of the symptoms in the shoulder. Your doctor will go over the results of the test with you and decide if the symptoms you are having fit with the picture provided by the MRI or US.

The final thing that we do know is that these types of tests, especially MRI, performed on people without any symptoms at all, are often abnormal, particularly as we get older. In some cases, ordering a test early may result in unnecessary surgery, as the symptoms may get better with time and physiotherapy. This is the reason that your doctor may not order one of these tests before starting an exercise program with you.

MAGNETIC RESONANCE IMAGING MACHINE



You do not need an MRI to start proactive shoulder treatment.

[STAY ACTIVE!]

Daily exercise and stretching are the only ways to keep your muscles strong and your shoulders healthy.

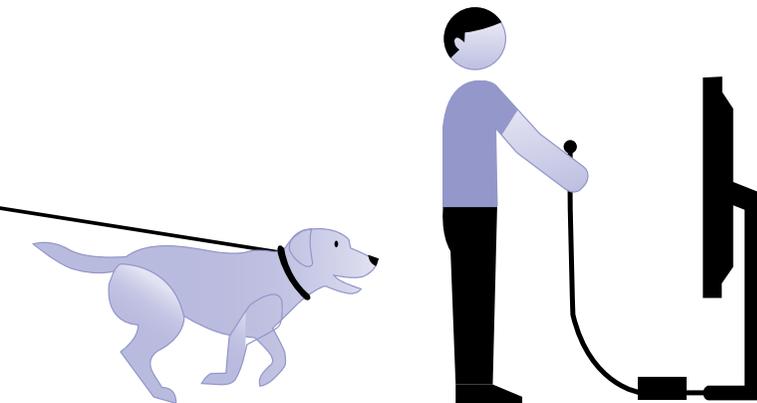
Pain or mobility issues (along with your age and existing physical condition) may limit your activity level, but it's important to participate at whatever level you can. Activity will not only aid your recovery through strength, flexibility and conditioning work, but also lift your mood, raise your energy level and reduce stress.



Ways to Get Active:

- Modified work activities at your present job
- Yoga, tai chi, meditation, breathing exercises
- Housework
- Interactive video games (Wii, etc.)
- Stretches (both seated and standing)
- Mall walking
- Swimming

The faster you get active and get moving, the sooner you will see improvement in your shoulder pain.



Remember
to gently
warm up
before doing
any exercise.

[A HEALTHY YOU]

Remember, there are numerous resources and support systems available to you, all wanting to help you get moving and get better. Friends, family, your employer, your medical providers, WCB — we all want to see you healthy.

Your shoulders provide you with the mobility and strength to enjoy an active lifestyle. Strive for healthy, balanced choices that improve your overall health and remember to keep moving to get better faster.

ADDITIONAL RESOURCES

<https://myhealth.alberta.ca/health/Pages/Conditions.aspx?hwid=shoul&#aa62697>

http://www.niams.nih.gov/Health_Info/Shoulder_Problems/shoulder_problems_ff.asp

<http://www.physioadvisor.com.au/8122150/shoulder-strengthening-exercises-shoulder-rehabi.htm>



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