BMJ Best Practice

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Rotator cuff injury

A rotator cuff injury is any kind of damage to the group of tendons and muscles that surround and support the bones in the shoulder. These injuries can be painful and you may need treatment, and possibly surgery, to help you recover.

We have brought together the best and most up-to-date research on rotator cuff injury. You can use our information to talk to your doctor about what treatments are best for you.

What is rotator cuff injury?

The rotator cuff is a group of muscles and tendons around the shoulder joint. The rotator cuff keeps the shoulder stable while allowing it to move. Tendons are flexible chords a bit like strong rubber bands that connect muscles to bones.

A rotator cuff injury is an injury of any kind to the tissues that make up the rotator cuff. You may also hear it called "rotator cuff syndrome.

There are several types of rotator cuff injury:

- **Tendonitis** happens when an injury or strain causes inflammation (swelling) of a tendon.
- **Bursitis** is inflammation of a fluid-filled sac called a bursa. This sac sits under the skin above the shoulder joint, forming a protective buffer between tendons and bones. Some injuries can cause bursitis and tendonitis at the same time.
- **Tears** can happen to the muscles and tendons in the rotator cuff. This usually causes severe pain and difficulty moving. Muscle tears are more common the older we get.

The causes of rotator cuff injuries include:

- Constant use of the shoulder joint, especially in an overhead movement: for example, if you have a job that involves a lot of repetitive overhead shoulder movements, such as painting, or if you play a sport that involves throwing something
- A sudden strain on the shoulder: for example, from pulling or pushing something heavy
- Being involved in an accident where the shoulder is stretched, jarred, or dislocated

• Damage from gradual wear and tear. Rotator cuff injuries are more common in people over 40.

What are the symptoms?

Although some people can have a rotator cuff injury that doesn't cause symptoms, most people will have pain and weakness when moving the shoulder in some ways. You may also have pain at night. People with severe injuries may have trouble moving their shoulder at all.

Your doctor will ask you questions about your symptoms, including how long you have had them, how the pain started (for example, was there an injury or event that triggered it), and what types of movement cause you pain.

He or she will probably ask you to gently move your arm in certain ways. This helps establish what type of injury you have.

You may also need an x-ray or other imaging test, such as ultrasound or magnetic resonance imaging (MRI).

What treatments work?

Minor strains that don't cause you too much discomfort sometimes get better by themselves in a few weeks. But if you are in severe pain, or if you don't seem to be improving, you should see your doctor.

There are several treatments that can help with rotator cuff injury. The treatments your doctor suggests will depend on whether your injury is caused by bursitis, tendonitis, or a tear.

Treatments for tendonitis and bursitis

If you have a rotator cuff injury caused by **tendonitis** your doctor will probably suggest treatments to reduce the swelling, beginning with ice.

To ice a swollen shoulder, wrap some ice or a bag of frozen peas in a thin cloth and place it on the shoulder for no more than 30 minutes. You can do this several times a day for several days. You shouldn't put ice directly onto the skin as it can cause ice "burns.

Your doctor may also suggest nonsteroidal anti-inflammatory drugs (NSAIDs) to reduce the swelling. Ones you may have heard of include ibuprofen and naproxen. Your doctor should explain the possible side effects of taking these medications for more than a short time, which include stomach problems.

People who have heart problems should not take an NSAID called diclofenac.

If these measures don't work, or if your swelling or pain is severe, your doctor might suggest a steroid injection (the full name is corticosteroid) in the shoulder. These drugs are powerful anti-inflammatories.

For **bursitis** you may just need to rest the shoulder as much as possible until your symptoms improve. But if your pain is severe and doesn't go away with rest your doctor may suggest NSAIDs or a steroid injection.

Treatments for acute (recent) tears

Acute" is a medical term for something that has happened recently or suddenly. An acute rotator cuff tear means a tear that has happened in the last six weeks.

Tears can happen in either the muscles or tendons in the rotator cuff, but the treatments for both are similar. The main decision for you and your doctor is whether you should have surgery to repair a tear.

Whether you need surgery will depend on several things, including:

- The size of the tear
- Your age surgery is more likely to be successful the younger you are
- How long ago the tear happened it's easier to repair a more recent tear
- Whether you use your shoulder a lot: for example, if you play a lot of sport or have a very physical job
- The amount of damage to the tissue around the tear
- How much your movement is affected by your injury, and
- Whether other treatments have helped.

Small tears

If you have a very small muscle or tendon tear there is a chance that your symptoms improve a lot with the same treatments used to relieve swelling.

Doctors are more likely to recommend this nonsurgical approach if you are older, as surgery tends to have better results in younger people. But most people with an acute tear are likely to need an operation.

If you choose not to have surgery you'll need to rest your shoulder for about four weeks before you can start exercising your shoulder to strengthen it. Your doctor should refer you to a physical therapist who can show you the best exercises to help you get stronger without injuring yourself.

If you still don't feel better after these treatments your doctor may suggest surgery to repair the tear. Everyone who has surgery should have physical therapy afterward, to help them strengthen and recover the movement in their shoulder.

Larger tears

Larger tears are more likely to need an operation to repair them, in order to make your shoulder stronger and relieve your pain. But if you are older and you don't do a lot of physical work or sports, your doctor may recommend that you try nonsurgical treatments first.

Tears that can't be repaired

If you have a tear that can't be repaired with normal surgical methods there are other operations that can help. For example, you could have a muscle transfer, where the surgeon transplants some muscle from another part of your body onto the rotator cuff to strengthen it.

Your surgeon may also suggest debridement. This means cutting away damaged tissue to help the healthy tissue move more freely. This should also reduce your pain.

Treatment for chronic (older) tears

Chronic" is a medical term that means long lasting. So your doctor may refer to a tear that happened more than six weeks ago as chronic.

The longer you have had a tear the harder it is to repair surgically. So your doctor is likely to recommend treating a chronic tear in some of the same ways that you would treat a rotator cuff injury that's caused by inflammation.

To begin with that means ice and NSAIDs. But your doctor or physical therapist might also recommend some regular gentle stretching of the shoulder to help loosen up the muscles and tendons so that they don't feel so tight and painful. Your physical therapist should show you the correct way to do this without hurting yourself. He or she may also show you some exercises to help strengthen the rotator cuff.

If these treatments don't help, your doctor may suggest a steroid injection to reduce swelling in the area.

If you are still in severe pain or unable to move well after trying all the treatments mentioned above, you may be able to have debridement to remove some of the damaged tissue. Some people with severe chronic tears need an operation to replace part of the shoulder joint.

What will happen to me?

Surgery to repair a rotator cuff tear works well in most people. But it can take between six months and a year for your mobility to get back to normal.

Even if you don't have surgery, strengthening and stretching exercises give positive results for about two-thirds of people. There are various exercise and rehabilitation programs. Some people see a physical therapist regularly while others have one or two sessions with the therapist, then continue their exercises at home by themselves.

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