

Shoulder Problems in Polio Survivors

Dr. William DeMayo, MD

[DeMayo's Q & A Clinic](https://www.papolionetwork.org/demayo-articles.html)

<https://www.papolionetwork.org/demayo-articles.html>

Question:

I am now 86 and contracted polio when I was three. The polio left me with paralysis in my left arm, the muscles of my stomach and I have a slight curvature of the spine. Over the years I have been doing fine and even bore 5 children.

About two years ago I developed horrible pain in the upper part of my right arm. I am allergic to NSAIDs so I use Tylenol which gives me occasional partial relief. I also use creams such as Blue Emu and have had therapy. Also, occasionally I use Icy hot electrodes. The pain is with me daily however it does not interfere with my sleep. I am able to be fully responsible in my daily requirements but with pain. I am truly blessed that I am not dealing with worse.

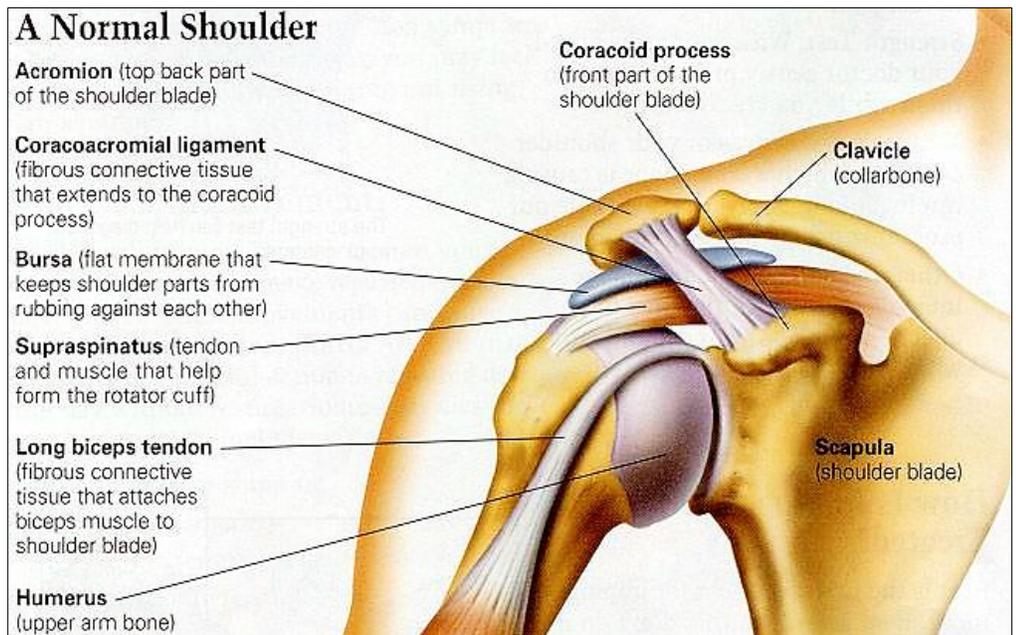
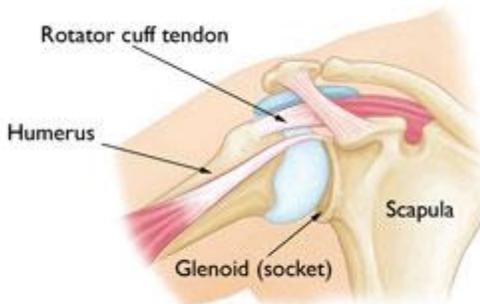
I was curious if you may have any recommendation so that I can make the pain leave. I have also been told I have arthritis in the area.

Reply:

Shoulder problems in the elderly can be very difficult to rehabilitate and this is especially true in the polio population. A comprehensive review of shoulder problems is well beyond the scope of this article, but I will share some perspectives that may be helpful.

First, it is important to remember that the shoulder joint is inherently unstable without muscular support. Polio survivors with weakness

of shoulder muscles can learn to substitute but are clearly at much higher risk for subsequent problems such as arthritis, shoulder impingement, bursitis, and tendinitis because the shoulder simply cannot function as it was originally designed. In order to understand this fully, a basic knowledge of shoulder anatomy is essential (see above). One only has to glance at the shallow “cup” (socket) of the shoulder blade which articulates with the humeral head in order to appreciate the importance that soft tissues play in stabilizing the joint during normal use.



of shoulder muscles can learn to substitute but are clearly at much higher risk for subsequent problems such as arthritis, shoulder impingement, bursitis, and tendinitis because the shoulder simply cannot function as it was originally designed. In order to understand this fully, a basic knowledge of shoulder anatomy is essential (see above). One only has to glance at the shallow “cup” (socket) of the shoulder blade which articulates with the humeral head in order to appreciate the importance that soft tissues play in stabilizing the joint during normal use.

Without normal muscle strength, the ball simply does not move normally within the socket. When the ball does not move normally within the socket, other muscles are overused, adding to possible muscle and tendon problems. Many polio survivors with leg weakness rely on their arms and shoulders to get up from a sitting position, to bear weight on crutches/walkers, or to push a wheelchair. The shoulder is simply not designed for this kind of regular weight bearing function.

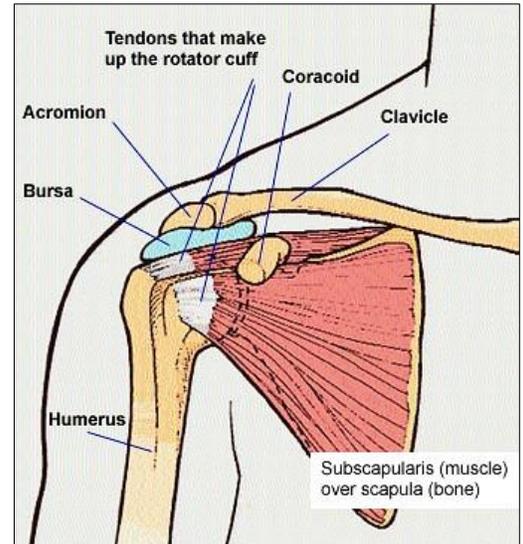
Given the history and location of your pain, arthritis of the humeral head and “cup” (a.k.a. glenoid fossa) is a likely component of the problem you described. Other possible contributing sources of pain, however, should always be evaluated. Although not likely in this case, polio survivors should always be aware of other diagnoses to consider when you have a complaint of

shoulder pain.

- A pinched nerve of the cervical spine (neck) can radiate pain to the shoulder.
- Myofascial pain (chronic muscular pain) can develop in the [periscapular](#) muscles around the shoulder.
- If falls have occurred then traumatic injuries such as a [humerus](#) fracture or shoulder separation (torn or partially torn ligaments between bones in the shoulder) should be considered.

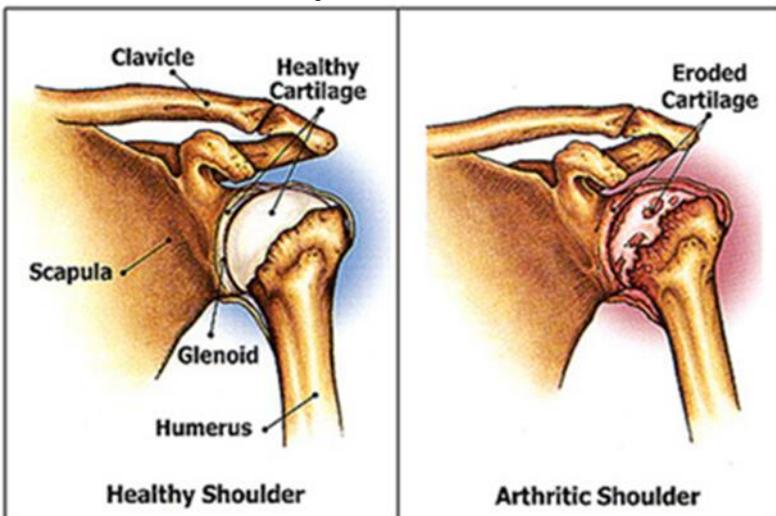
Additionally, there are multiple chronic inflammatory problems that occur frequently in the shoulders of polio survivors. These can lead to abnormal [shoulder biomechanics](#) (abnormal movement within the shoulder) that over time can contribute to arthritis. It can be important to treat these inflammatory problems early rather than simply endure the pain because problems can snowball as one gets older. Some of these inflammatory problems include:

- Bicipital Tendinitis (inflammation of the biceps tendon-see large photo previous page)-often presents with anterior shoulder pain and tenderness.
- Bursitis (inflammation of the fluid-filled sac depicted here) is often associated with other problems. It is more common in individuals with shoulder weakness or abnormal biomechanics.
- Rotator Cuff Tendinitis (inflammation of the tendon portion of the rotator cuff muscles that stabilize the shoulder joint) -left untreated this can progress to partial or complete rotator cuff tear resulting in inability to raise one's arm or rotate the arm outward. Impingement (pinching) of the rotator cuff tendon is sometimes due to a bony spur on the under service of acromion. If present, this bony spur can often be removed quite easily with arthroscopic surgery and is a good example of early minor surgical intervention that can prevent significant disability later.



Some of these inflammatory problems can be responsive to oral/topical anti-inflammatories, injected anti-inflammatories (avoid multiple) and ultrasound/physical therapy. Additionally, stretching and strengthening exercises can often help restore more normal biomechanics relieving pain and preventing further problems. Most rehabilitation physicians and physical therapists are well-versed in shoulder biomechanics and treatment.

Once severe arthritis has developed within the shoulder joint, pain can be quite difficult to treat. The choices you have made are reasonable to continue if they provide some relief. Oral



or injected steroids can also be very helpful but should not be overused. The results can be variable with improvement in pain for days, weeks or months. Although you mentioned that you are “allergic” to nonsteroidal anti-inflammatory medications (NSAIDs), it is important to distinguish this from intolerance. An allergic response typically produces a rash. Intolerance can often be avoided by protecting the stomach or using a different class of NSAID. Topical NSAIDs are also now available.

Surgical replacement of the shoulder has

significantly improved in recent years. Polio survivors pose an extra challenge however, due to weakness of the muscles stabilizing the shoulder and osteoporotic bones. In severely arthritic shoulders, replacement surgery can provide a dramatic reduction in pain but risks need to be assessed carefully and I would always recommend more than one orthopedic opinion.

Lastly, it is important to be aware of adhesive capsulitis (frozen shoulder). With any of the above shoulder problems, reduction in shoulder range of motion over a significant period of time can lead to restriction in the shoulder capsule. This sets up an inflammatory cycle whereby more pain is produced, leading to less range of motion that leads to even further tightness and more pain. Maintaining shoulder range of motion is essential and can be achieved through relatively simple home exercises taught by most physical therapists.

I hope this information helps. I encourage you to see a shoulder specialist to discuss your particular shoulder issue. Bringing a friend or loved one can help you to be sure questions get answered. Don't hesitate to say you will think about their suggestions if you need time to consider them (especially if surgery is recommended).

Don't be surprised if you feel you need to see more than one specialist to find one that you feel confident in. It will likely be worth the investment of time and energy.

[Dr. William DeMayo, MD.](#)

February, 2017