

**STEVEN CHUDIK MD**  

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**SHOULDER, KNEE & SPORTS MEDICINE**

## **Avascular Necrosis (AVN) of the Shoulder**

In order for tissue to remain healthy and function normally, it requires a healthy blood (vascular) supply. Patients can develop a rare condition in a bone called avascular (“without blood”) necrosis (“death/dying”), or AVN, where the bone loses blood supply, dies, and then fractures and collapses. AVN usually affects bone just under the joint surface and can lead to arthritis.

There are two types of AVN: traumatic and atraumatic. Traumatic AVN may occur following an injury such as a dislocation, while atraumatic can happen with certain diseases, blood disorders, or taking medication such as corticosteroids. Occasionally, it can develop for no discernible reason.



AVN of the humeral head (as seen on MRI)



X-ray of a humeral head AVN



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630-324-0402 • [contactus@chudikmd.com](mailto:contactus@chudikmd.com)  
[stevenchudikmd.com](http://stevenchudikmd.com)



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### Frequent Signs and Symptoms

- Deep, throbbing, aching pain
- Pain becoming more consistent, begins to hurt at rest
- “Crepitus”- crunching or cracking sensation
- Range of motion decreases as disease progresses

### Etiology (Causes)

- An injury such as a dislocation or fracture
- Blood disorders or diseases
- Reaction to corticosteroids
- Alcoholism

### Risk Factors

- Contact or collision sports
- Activities with high risk of shoulder injury
- Taking prescription corticosteroids (which can damage bone)
- Sickle-cell disease, clotting disorders, etc.

### Prevention

- Maintain appropriate conditioning, including shoulder and arm flexibility, muscle strength, and endurance
- Maintain proper technique when exercising or using shoulder repetitively, and have a coach/professional correct improper technique
- Reduce glenohumeral dislocations and proximal humeral fractures as soon as possible

### Outcomes

The treatment priority is to re-vascularize the bone, protect it until it heals, maintain or restore the joint surface to prevent arthritis, and regain range of motion and function.

### Potential Complications

- Failure to save the bone with progressive fracture and collapse of the joint surface, leading to the development of arthritis and need for joint replacement surgery.
- Pain and inflammation of the shoulder joint may persist without treatment
- Weakness and de-conditioning of the shoulder because of pain and limitations
- Uncommon complications following surgery:
  - Persistent pain
  - Infection and bleeding



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### General Treatment Considerations

If detected early by MRI, some AVN lesions can heal with rest and activity restriction. Gentle physical therapy can help to maintain motion during the rest period and restore strength and motion once the injury is healed.

Often surgery is required to stimulate, re-vascularize, and repair the avascular necrosis. Dr. Chudik can perform arthroscopic surgery to evaluate the AVN lesion. The surgical method is determined by the size and condition of the AVN lesion. Small loose fragments can be simply removed, and the surface of the bone is stimulated to promote a healing response. Large lesions can be drilled, bone-grafted to stimulate healing, or replaced.

The surgery is performed under limited general anesthesia and interscalene block (local anesthetic that numbs the entire shoulder and arm and lasts for six to 12 hours after surgery). Patients may need to wear a sling for up to six weeks to allow healing. Physical therapy is begun two days following surgery to restore shoulder range of motion while protecting the healing bone of the shoulder. If AVN is severe, a shoulder replacement may be required.

### Possible Medications

Prescription pain relievers are usually not prescribed for this condition except for post- surgical pain control.

### Modalities (Cold Therapy)

Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every two to three hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage with a cloth between the ice and your skin to prevent burning /freezing your skin.

## Notify My Office If Symptoms Worsen

This information is provided by Dr. Steven Chudik. It is not to be used for diagnosis and treatment. For a proper evaluation and diagnosis, contact Dr. Chudik at [contactus@chudikmd.com](mailto:contactus@chudikmd.com), or 630-324-0402.



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