

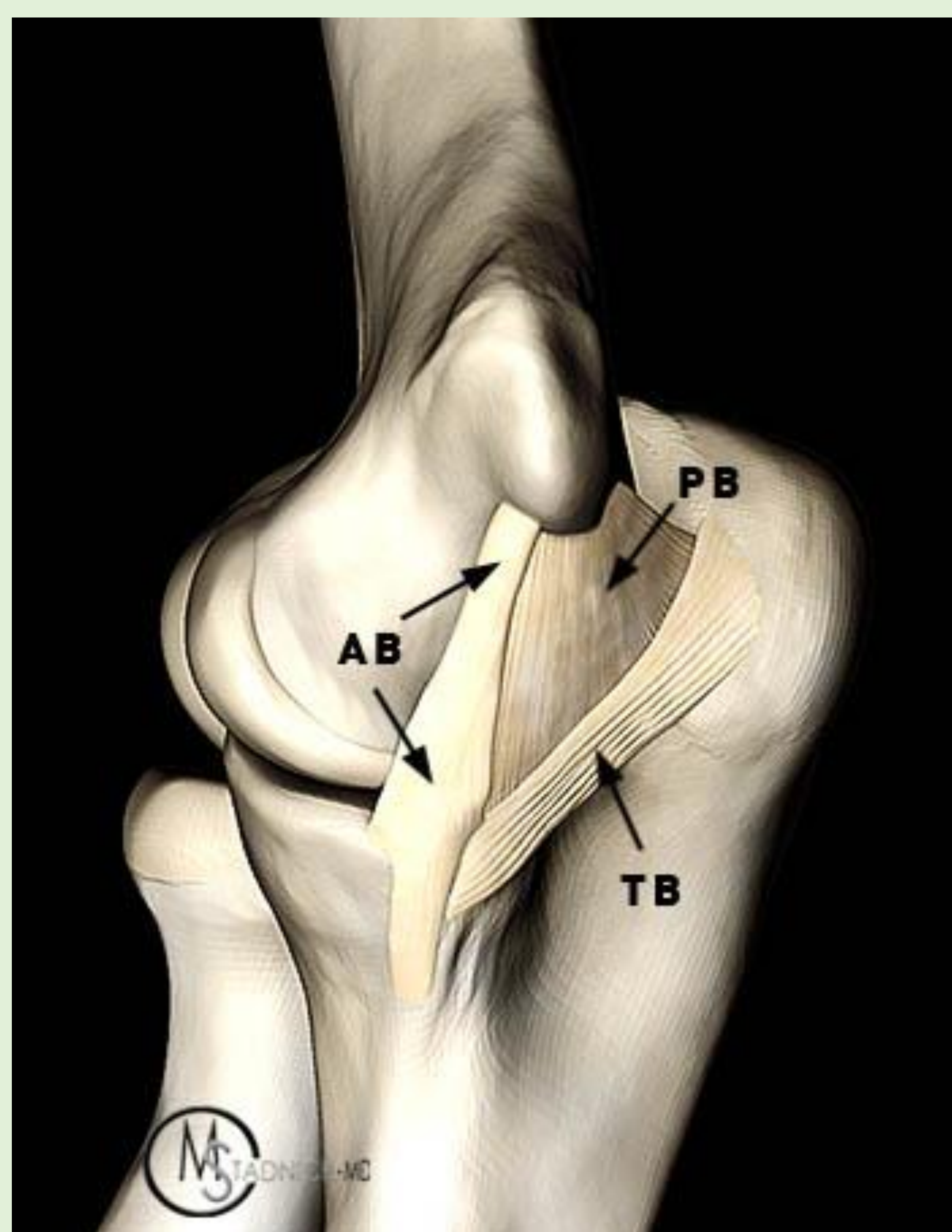
# S40 Medical Imaging Used to Diagnose and Treat Ulnar

## Objectives

- Define an Ulnar Collateral Ligament tear and how imaging can help diagnose.
- Describe treatment associated with Ulnar Collateral Ligament Tears.

## Anatomy of Ulnar Collateral Ligament (UCL)

The UCL is located on the inside of the elbow, and it attaches the humerus to the ulna. The UCL consists of three bands: anterior, posterior, and transverse bands. The anterior band is the most important for stability of the elbow.



## Injury to UCL

You can damage your UCL through overuse which can stretch, inflame, and tear the ligament fibers. Athletes who repeatedly use overhead or throwing motions are at the highest risk. Sudden injury can also occur from falling on an outstretched arm or from strong force to your elbow.

## UCL Tears Classified into Three Stages:

1. Grade 1 UCL Sprain: Ligament is stretched but not torn
2. Grade 2 UCL Sprain: Ligament is stretched and partially torn
3. Grade 3 UCL Tear: Ligament is completely torn

## Collateral Ligament Tears



## Imaging Used for Diagnosis

**X-Ray:** Radiographs are taken of the elbow to rule out any possible stress fractures or other injury to the bone. With a chronic injury of the UCL, loose bodies, calcifications and ossifications may be visualized.

**Ultrasound:** Stress ultrasounds can better visualize partial tears of the UCL. Moving Valgus Stress Tests (MVST) is used to measure joint gapping in both elbows and compares for difference. An increased joint gapping of more than 1.5 mm between a stressed and unstressed elbow typically suggest injury.

**MRI:** Injury to the UCL may be visualized on MRI as loose, irregular, poorly defined, and with increased signal intensity within the ligament and its adjacent structures due to hemorrhage and edema.

MR Arthrograms with the use of contrast help visualize fiber disruption of the ligament and the possibility of extravasation with a ruptured UCL.

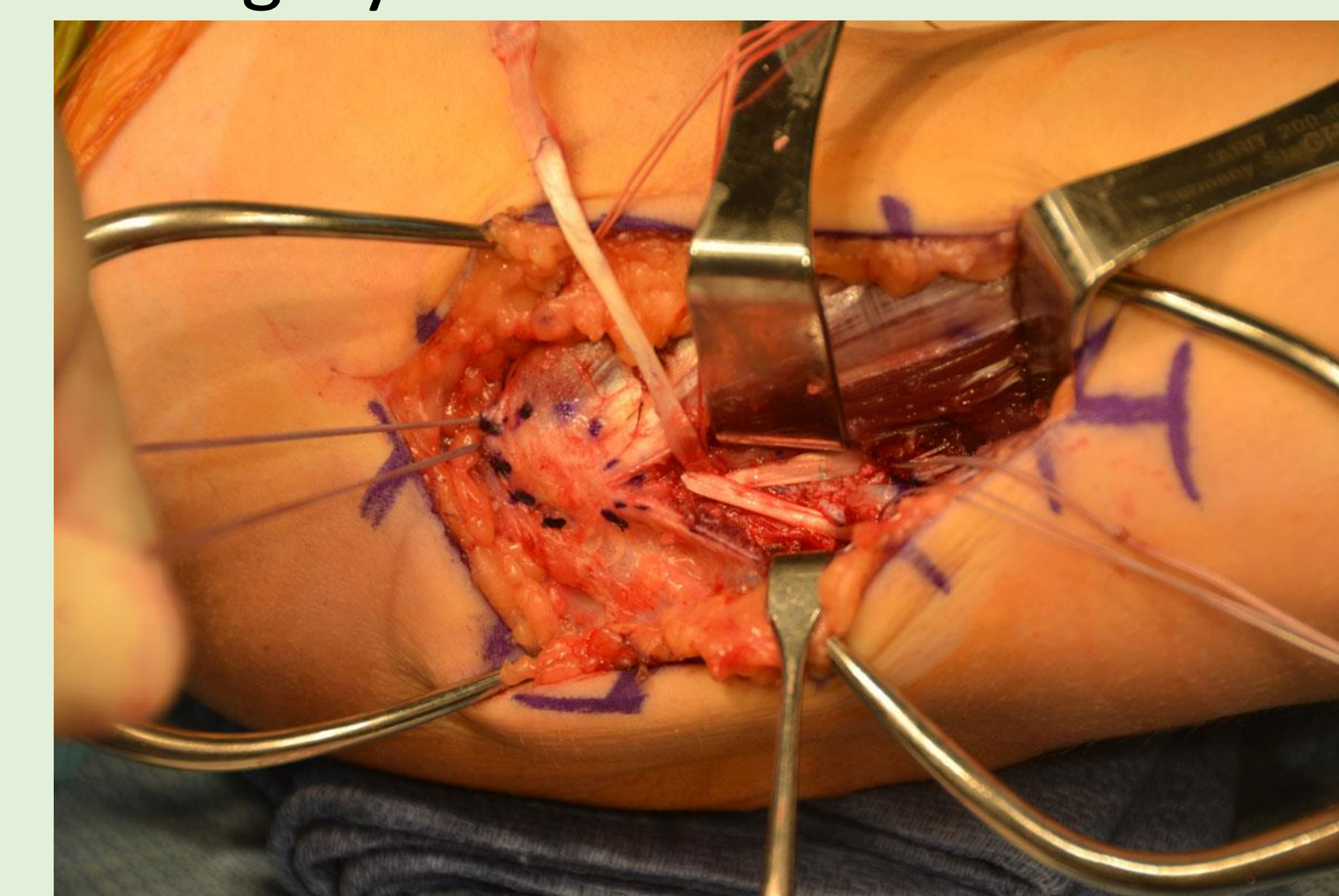


## Treatment of UCL Tears

**Nonsurgical:** Resting, icing, and physical therapy. Most common with grade one sprain. Platelet-rich plasma is a treatment that can accelerate and improve the quality of healing.

**UCL Repair:** Can be repaired if adequate amount of UCL remains. Most often seen with avulsion injury of the bone where there is less damage to the ligament. Recovery time is around 6 months.

**UCL Reconstruction:** Procedure known as “Tommy John” surgery. Reconstruction is performed using a tendon graft and tensioning it between the medial humeral epicondyle and sublime tubercle of the ulna. Recovery time is 12-18 months post surgery.



## Conclusion

An Ulnar Collateral Ligament tear is a stretched or torn ligament that attaches the humerus to the ulna. X-Ray, Ultrasound and MRI are used in diagnosing. MRI is the best imaging modality in finding UCL tears as images demonstrate good resolution of the ligament and soft tissue surrounding. MR Arthrograms are done if the MRI is inconclusive to visualize the ligament with the use of contrast.

Treatment for UCL tears vary depending on the severity of the injury. If the UCL is stretched but not torn it can be treated by resting and icing. A partial tear of the UCL can be treated by surgical repair. Complete and significant tears of the UCL require Tommy John surgery to repair. Tommy John surgery requires a tendon graft. This is the common choice for most acute and chronic UCL injuries.