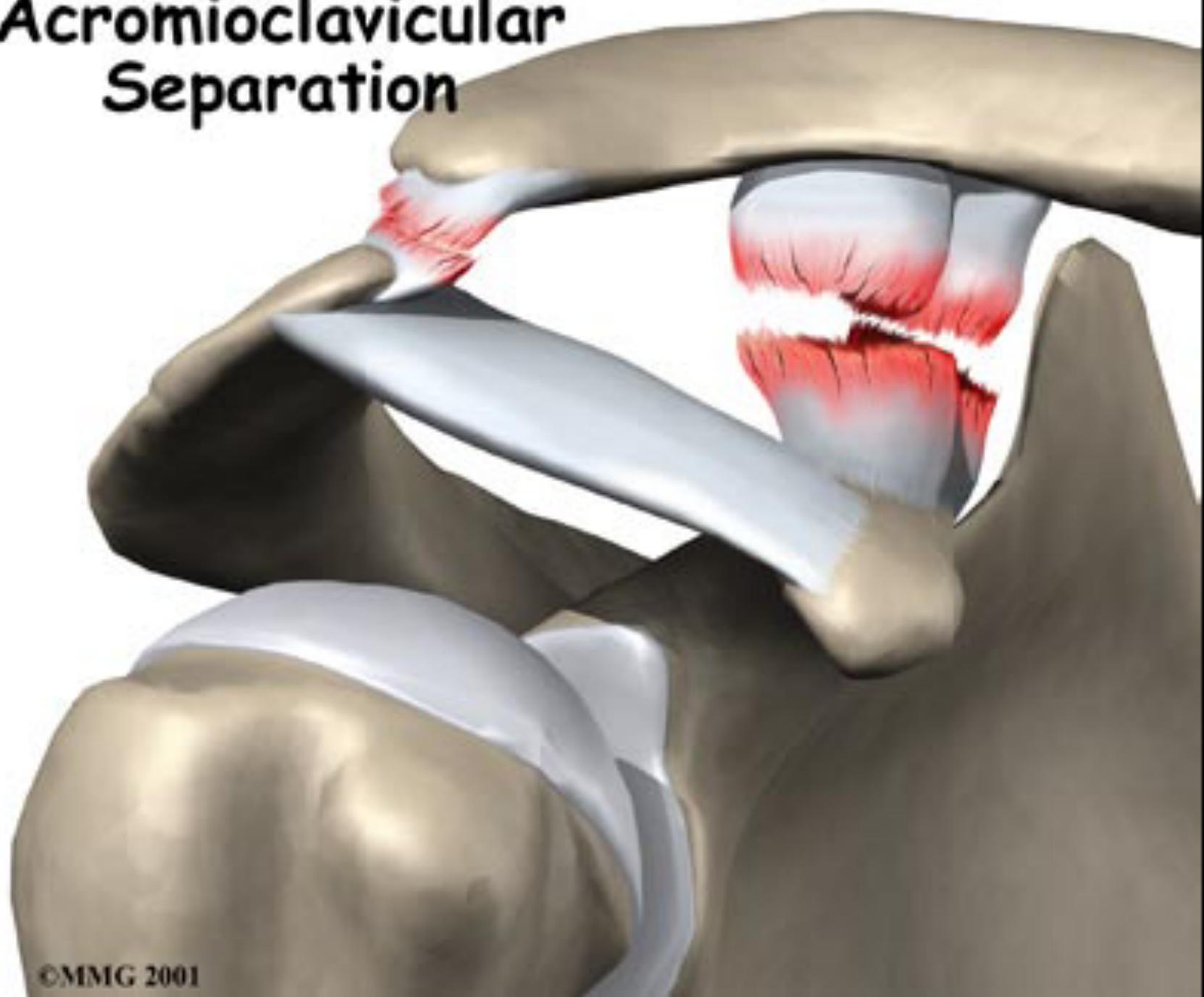


# Shoulder Pathologies

# Acromioclavicular Separation



# Acromioclavicular Joint

Acromio-clavicular ligament

Clavicle

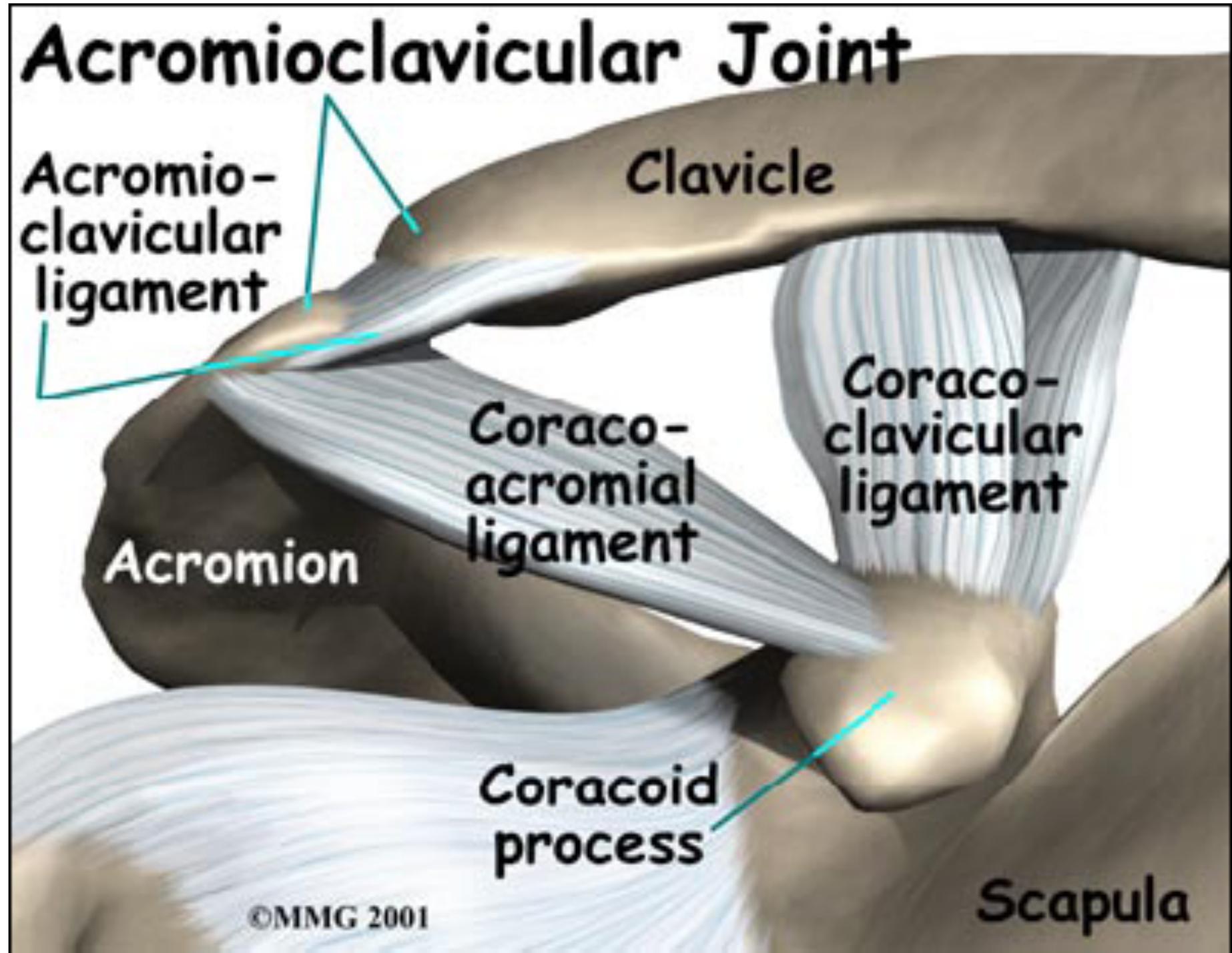
Coraco-clavicular ligament

Coraco-acromial ligament

Acromion

Coracoid process

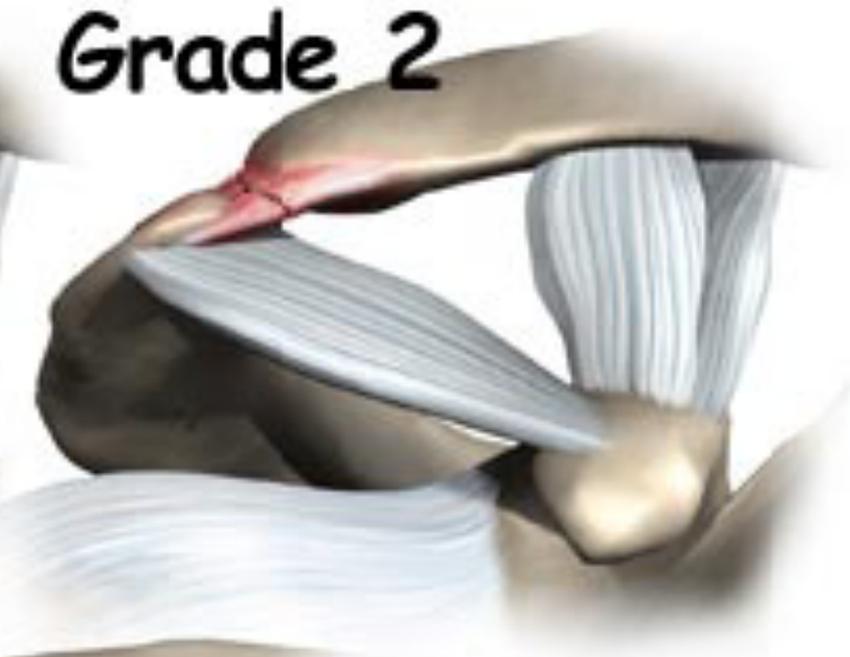
Scapula



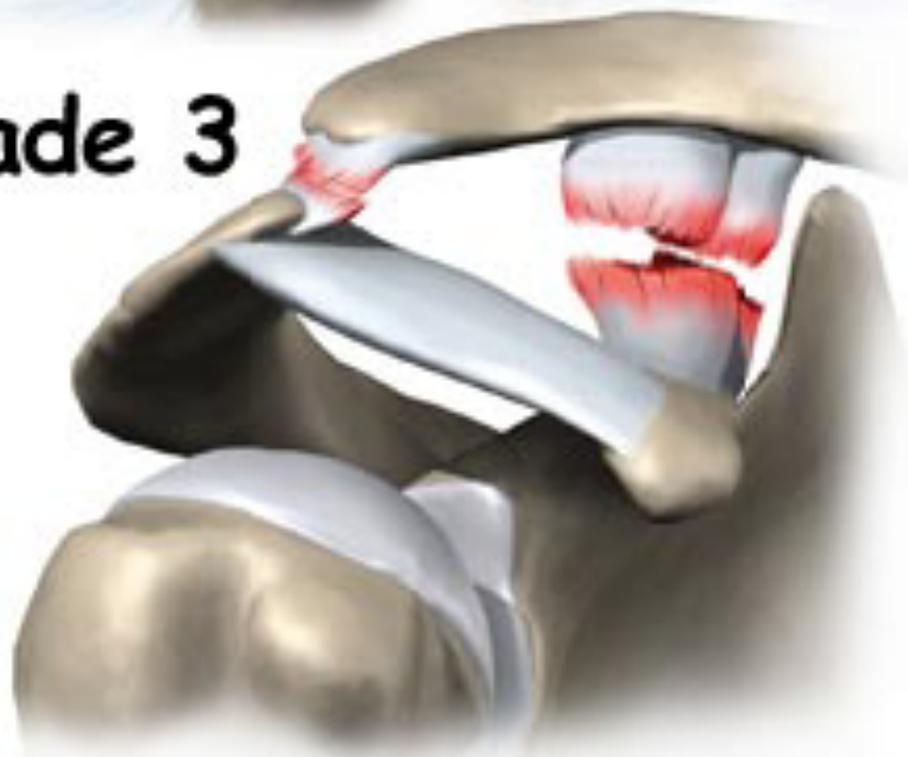
**Grade 1**

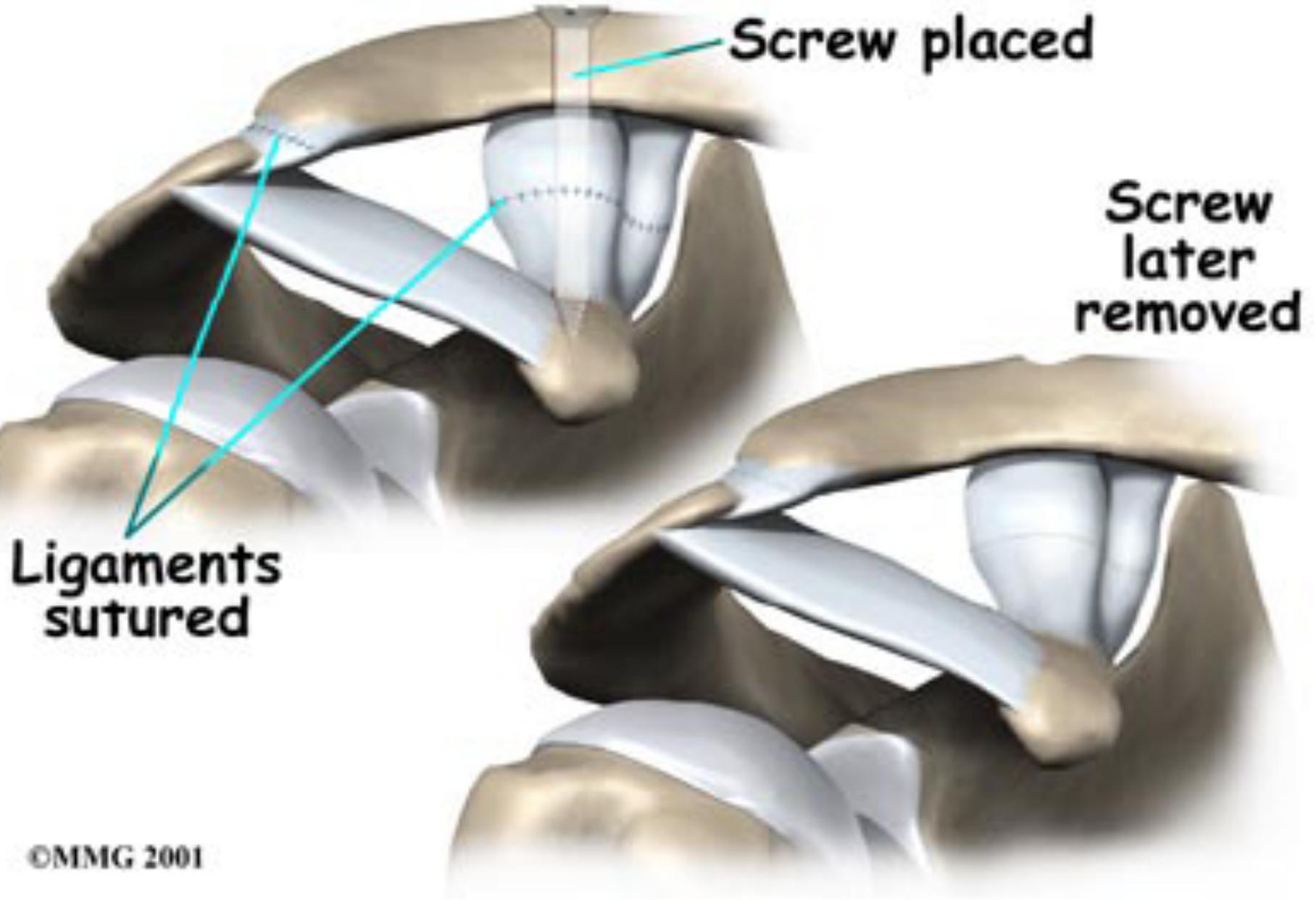


**Grade 2**



**Grade 3**



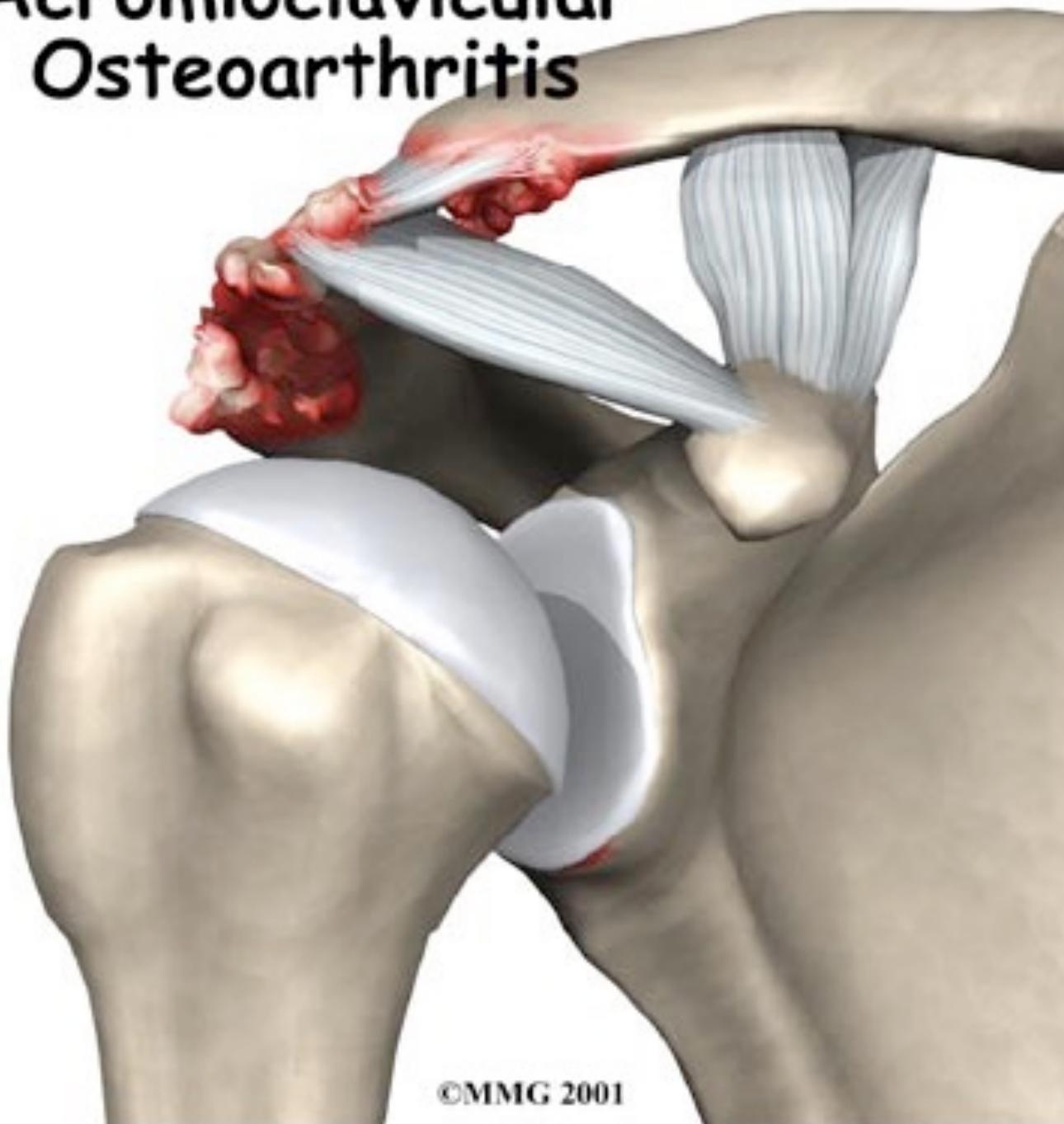


**Screw placed**

**Screw  
later  
removed**

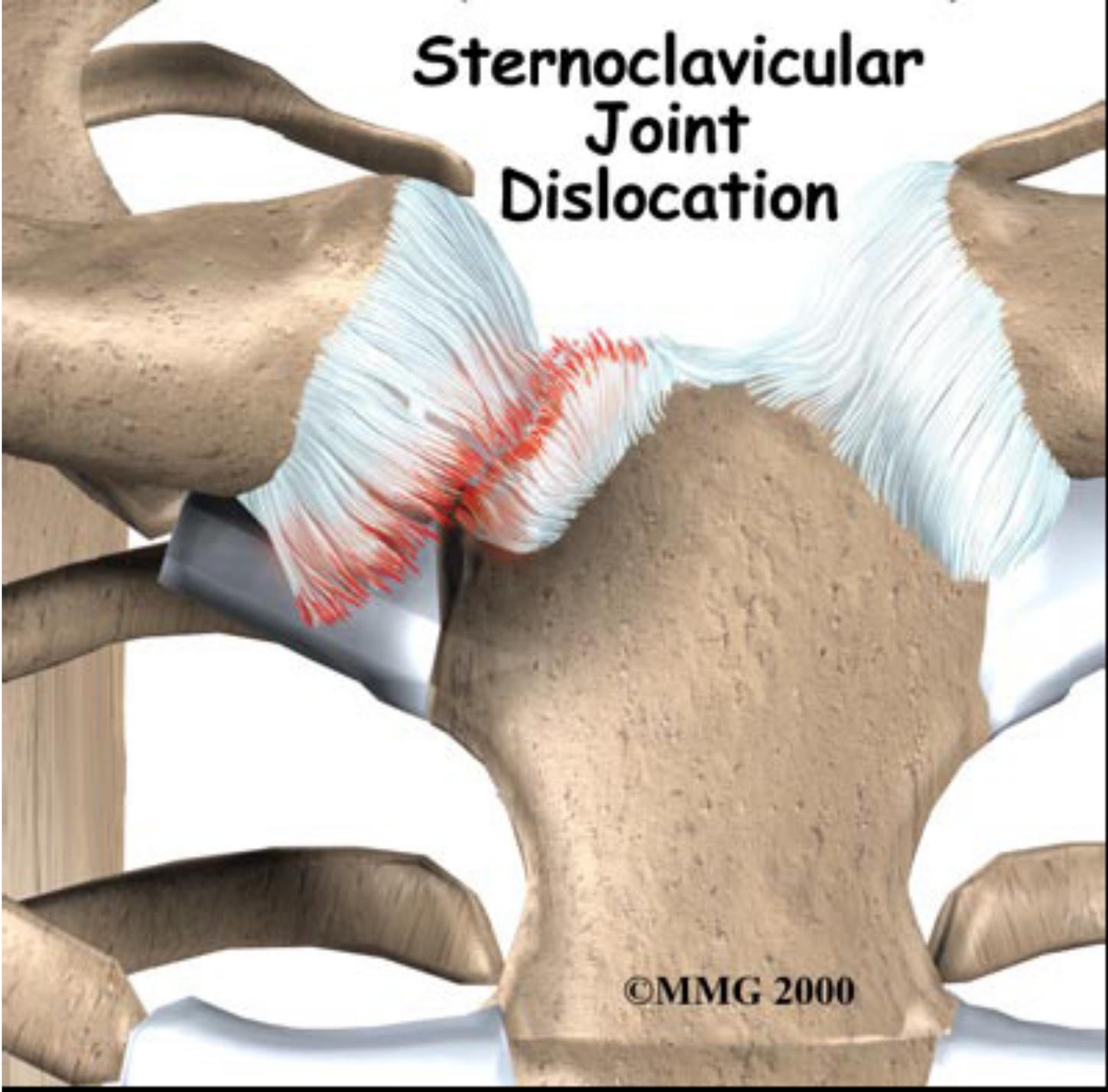
**Ligaments  
sutured**

# Acromioclavicular Osteoarthritis

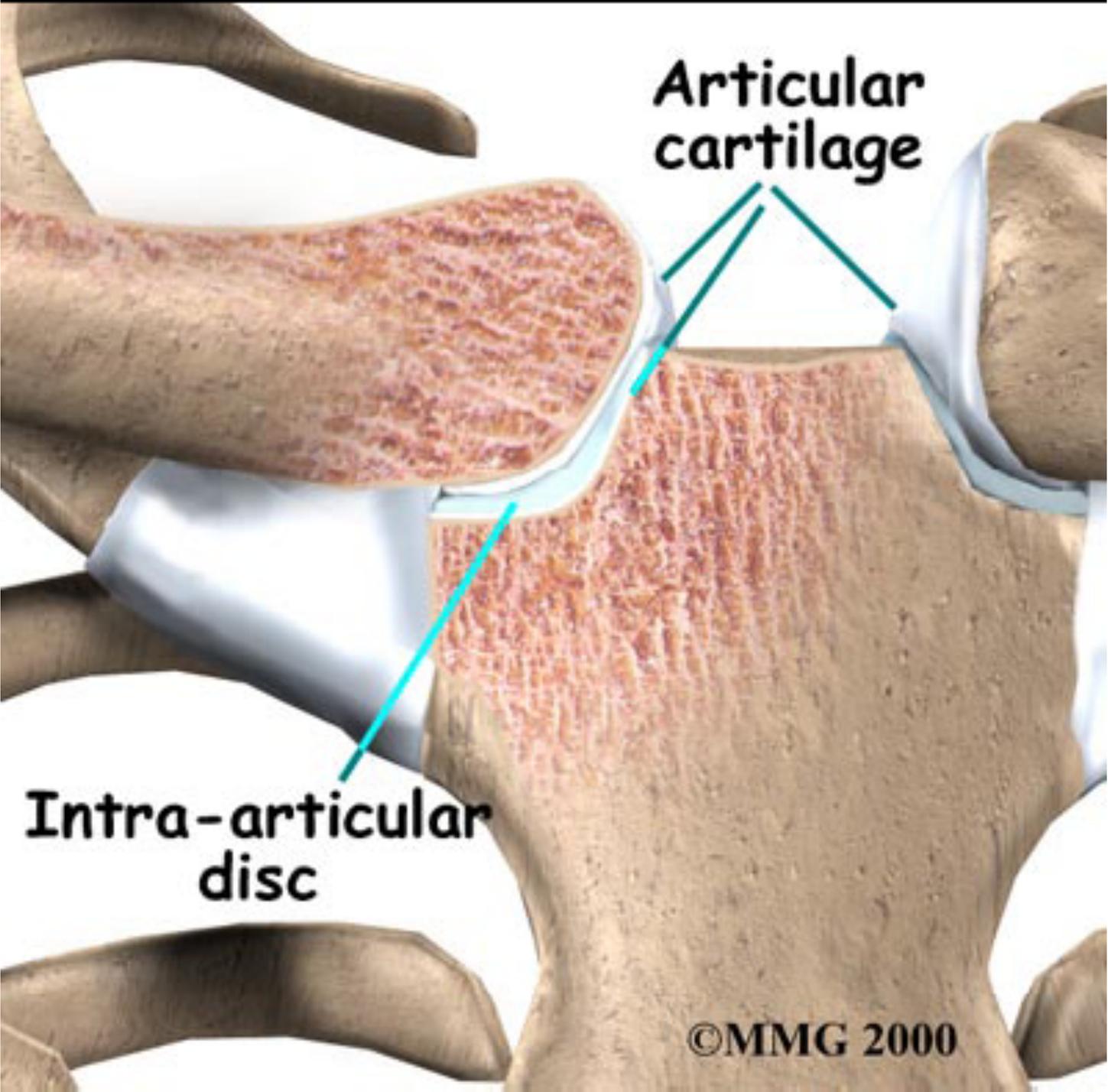


- In its early stages, AC joint osteoarthritis usually causes pain and tenderness in the front of the shoulder around the joint.
- The pain is often worse when the arm is brought across the chest, since this motion compresses the joint.
- The pain is vague and may spread to include the shoulder, the front of the chest, and the neck.
- If the joint has been injured in the past, there may be a bigger bump over the joint on the affected shoulder than on the unaffected shoulder. The joint may also click or snap as it moves.

# Sternoclavicular Joint Dislocation

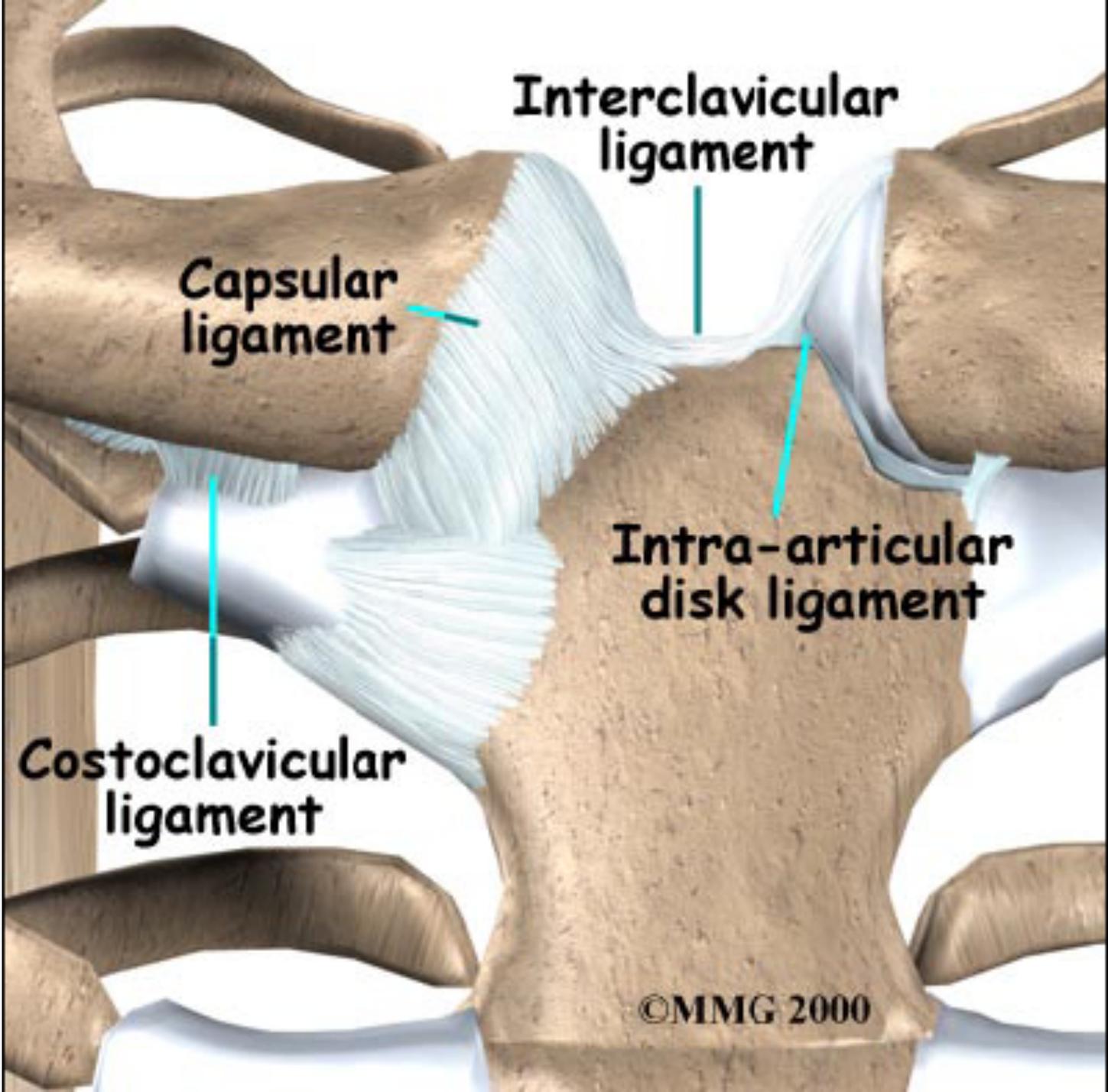


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**Articular  
cartilage**

**Intra-articular  
disc**



**Interclavicular  
ligament**

**Capsular  
ligament**

**Intra-articular  
disk ligament**

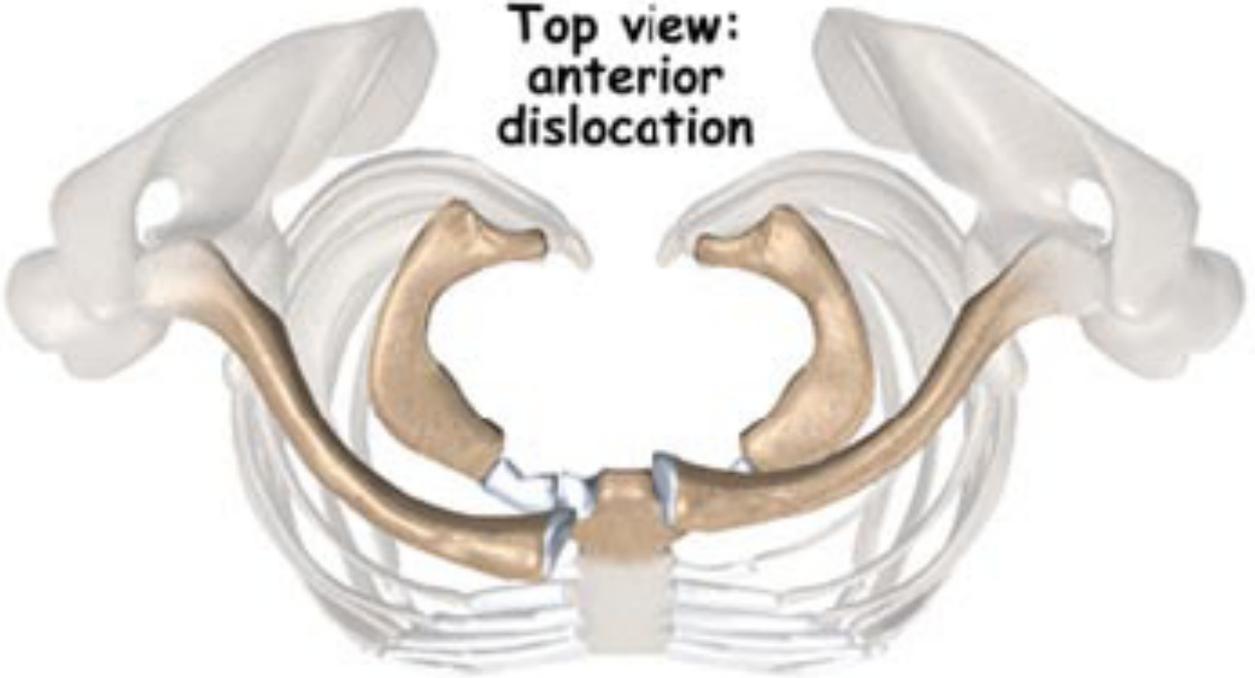
**Costoclavicular  
ligament**

# Symptoms of SC Dysfunctions:

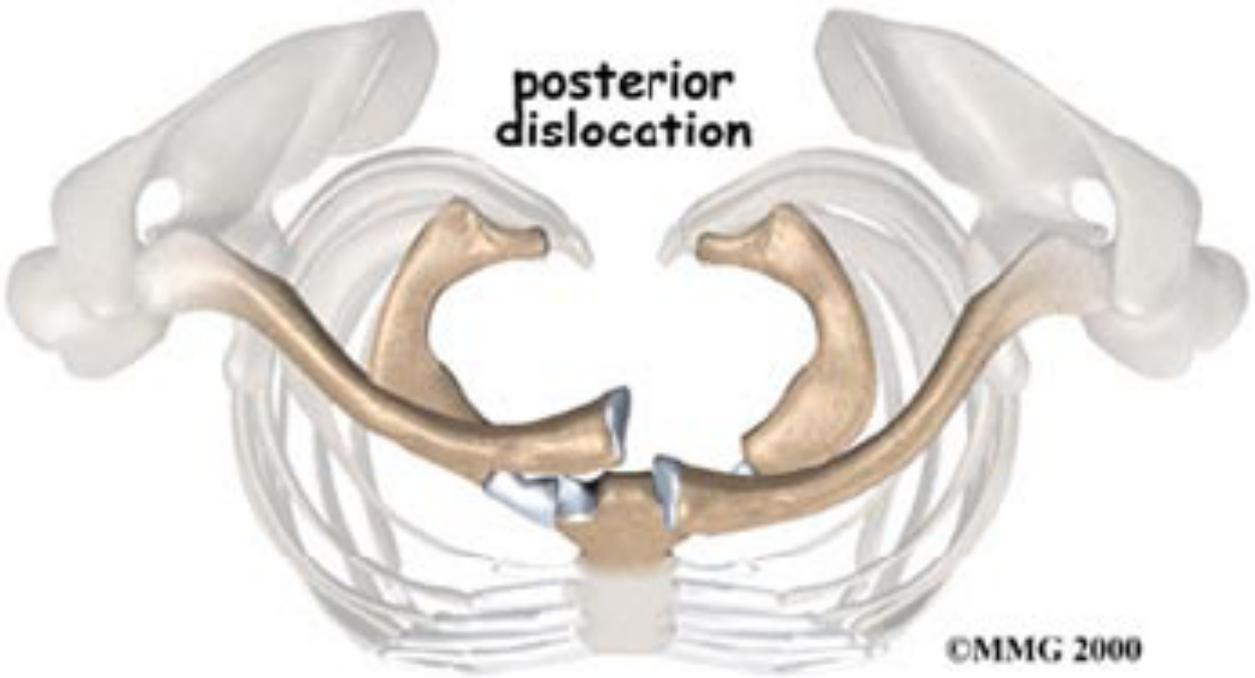
**Dislocation** – though rare - you will know immediately if your SC joint has dislocated. Dislocation causes severe pain that gets worse with any arm movements.

- In an anterior dislocation, the end of the clavicle juts out near the sternum. This causes a hard bump in the middle of the chest.
- In posterior dislocation, which is very rare, a bump is usually not obvious. Good palpatory skills are needed. Posterior dislocations can cause difficulty breathing, shortness of breath, or a feeling of choking.
- Some patients have trouble swallowing or have a tight feeling in their throats.

**Top view:  
anterior  
dislocation**



**posterior  
dislocation**



- After closed reduction for a dislocation, your SC joint will need to be held perfectly still. Moving the SC joint will cause pain and may even dislocate the joint again.
- A doctor will probably recommend that they take pain medication and wear a figure-eight strap for at least six weeks.

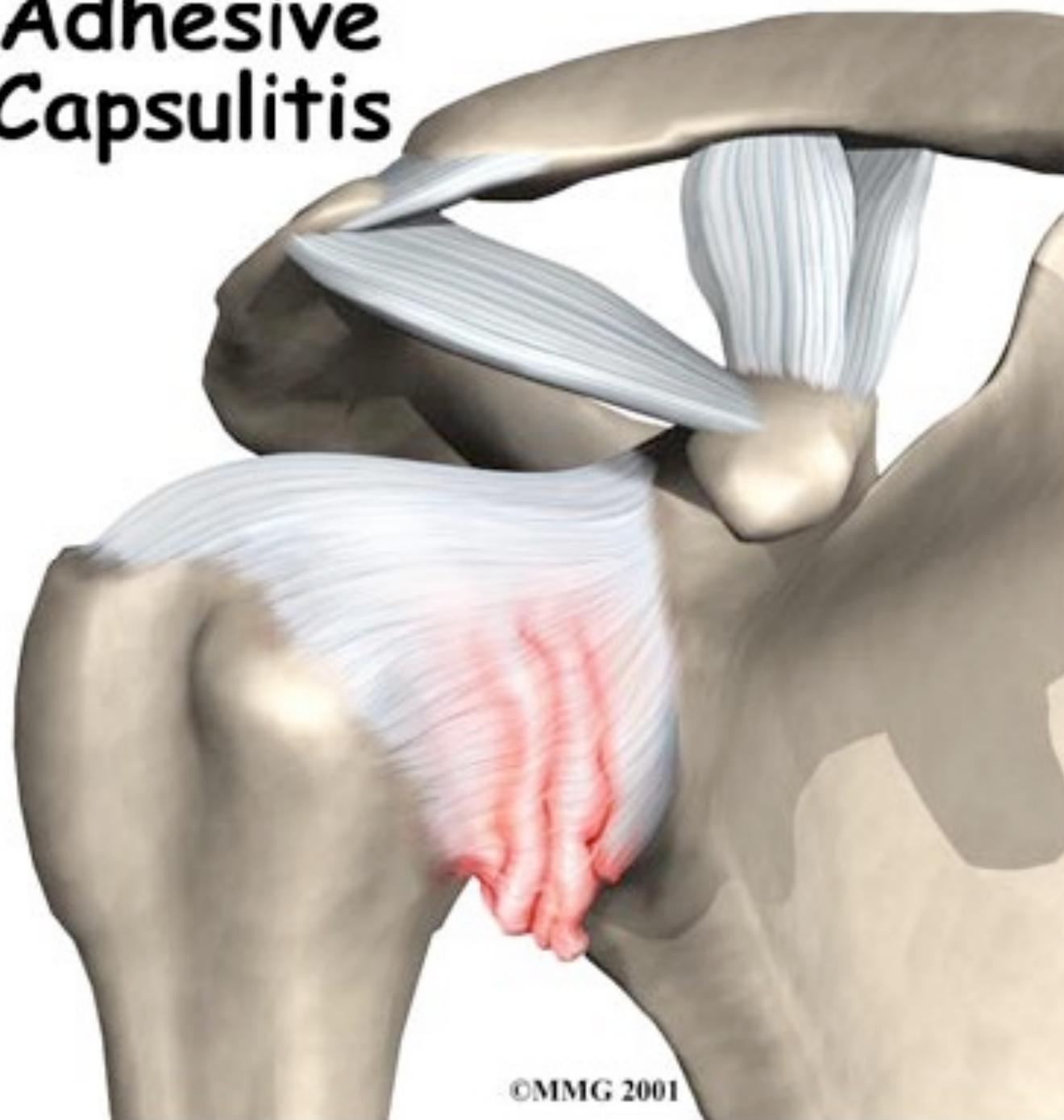
**Sprains** – even in mild sprains the joint is painful.

- In moderate sprains the joint can be unstable.

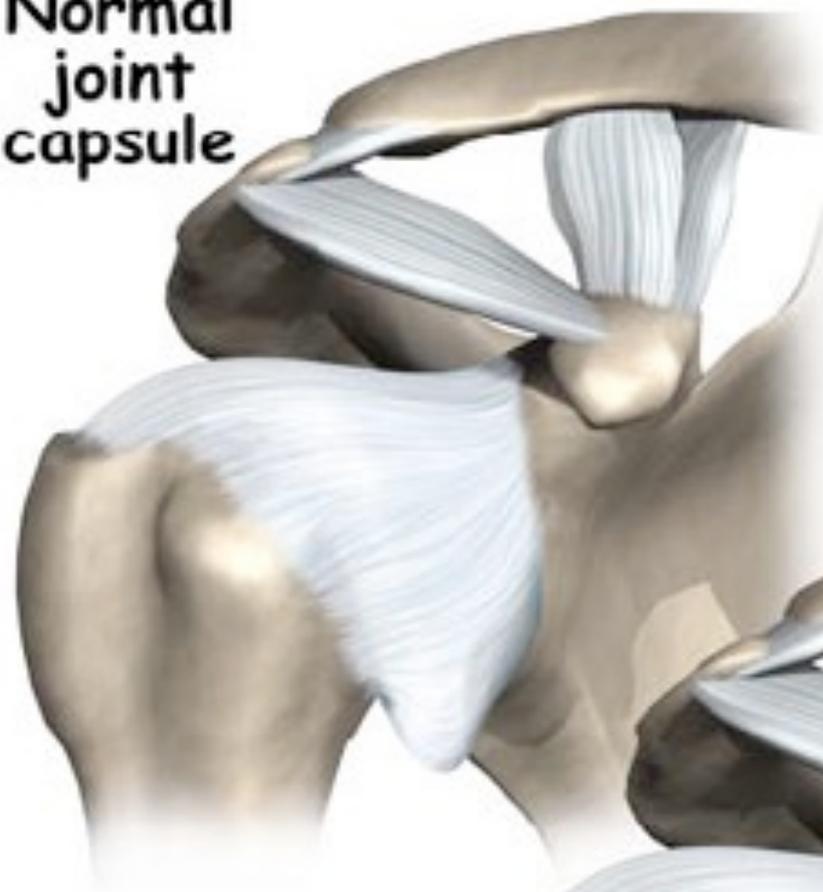
**Ligament Injury** - In rare cases, patients have a stable joint but a painful clicking, grating, or popping feeling. *This indicates an injury to the intra-articular disc ligament.* This type of injury causes pain and problems moving the SC joint.

**Osteoarthritis** brings with it slow growing ache that can worsen with time.

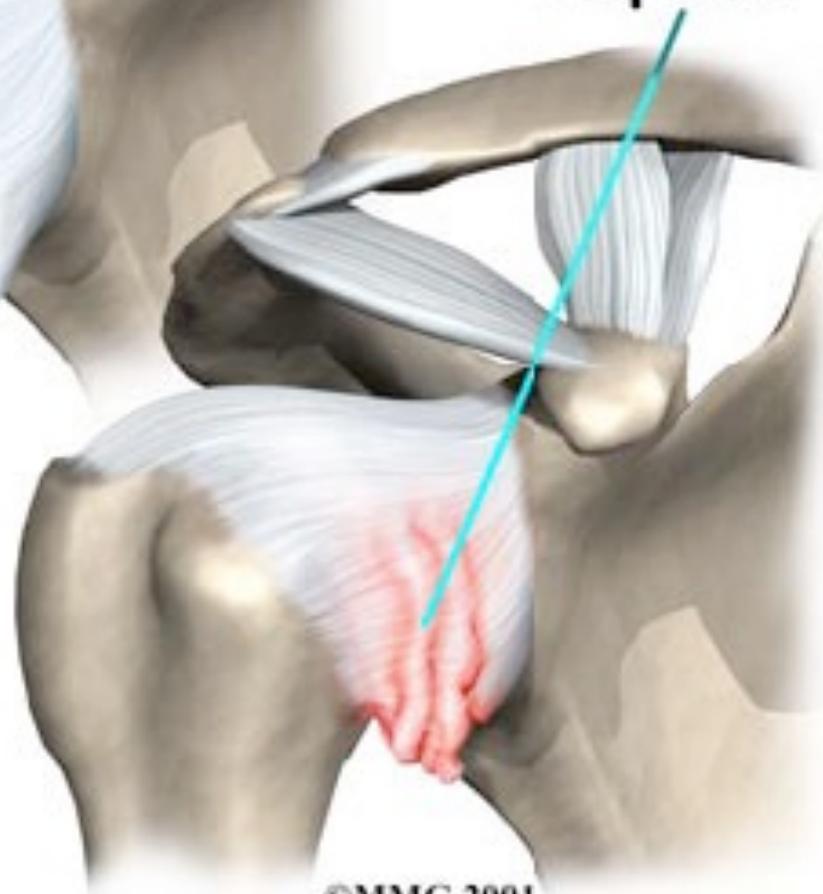
# Adhesive Capsulitis



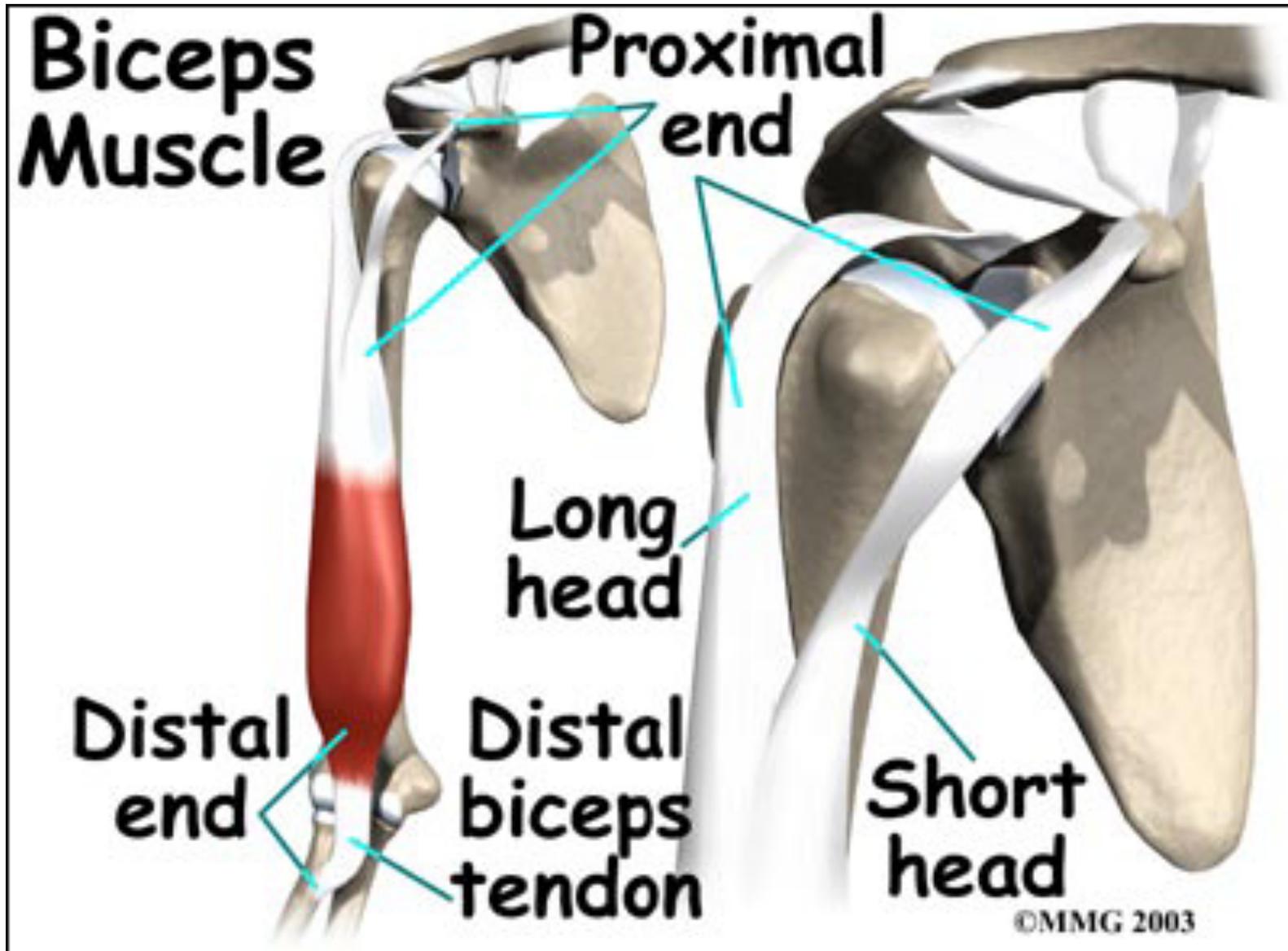
**Normal  
joint  
capsule**



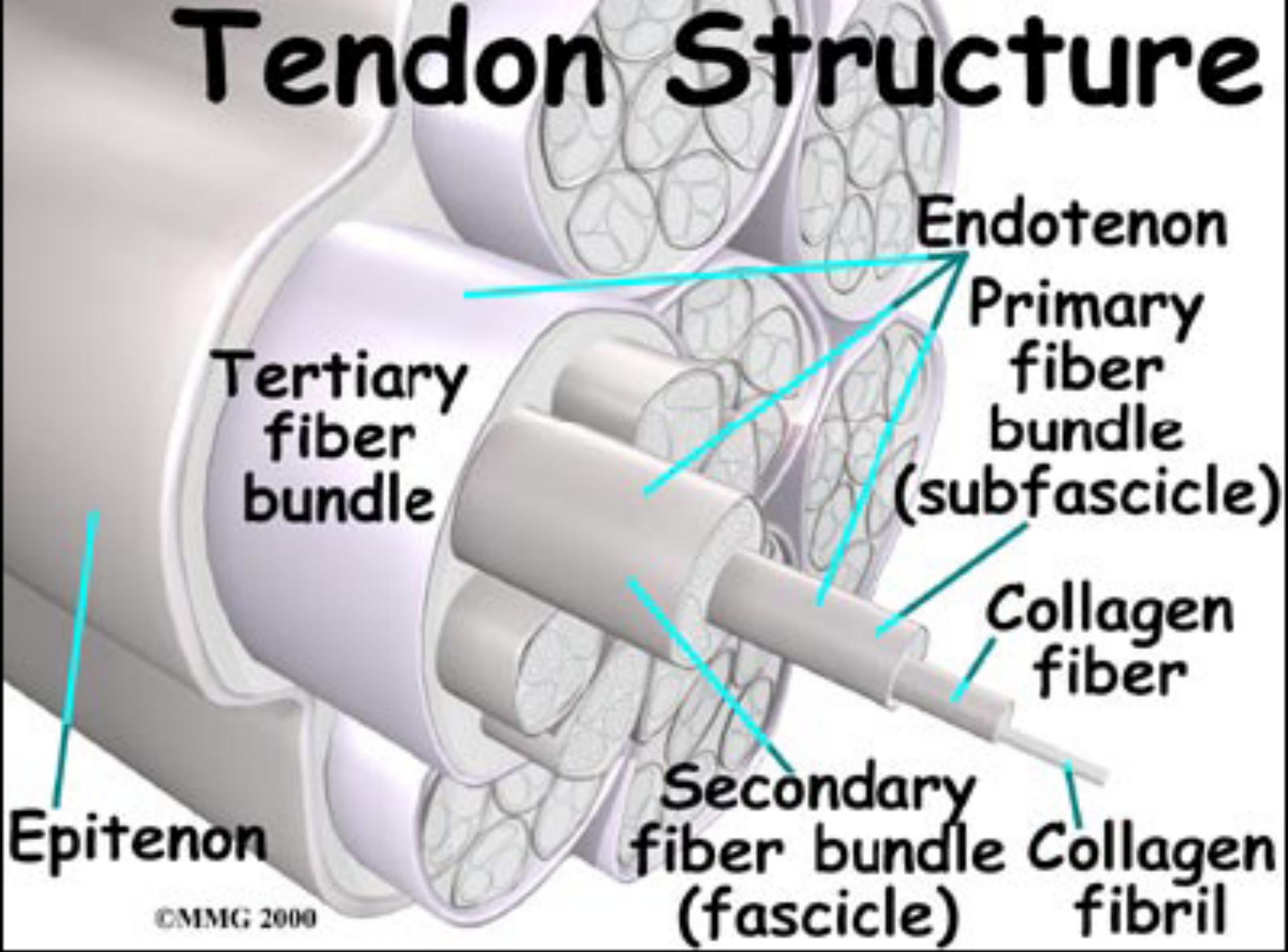
**Adhesions/  
scarring  
of  
joint  
capsule**

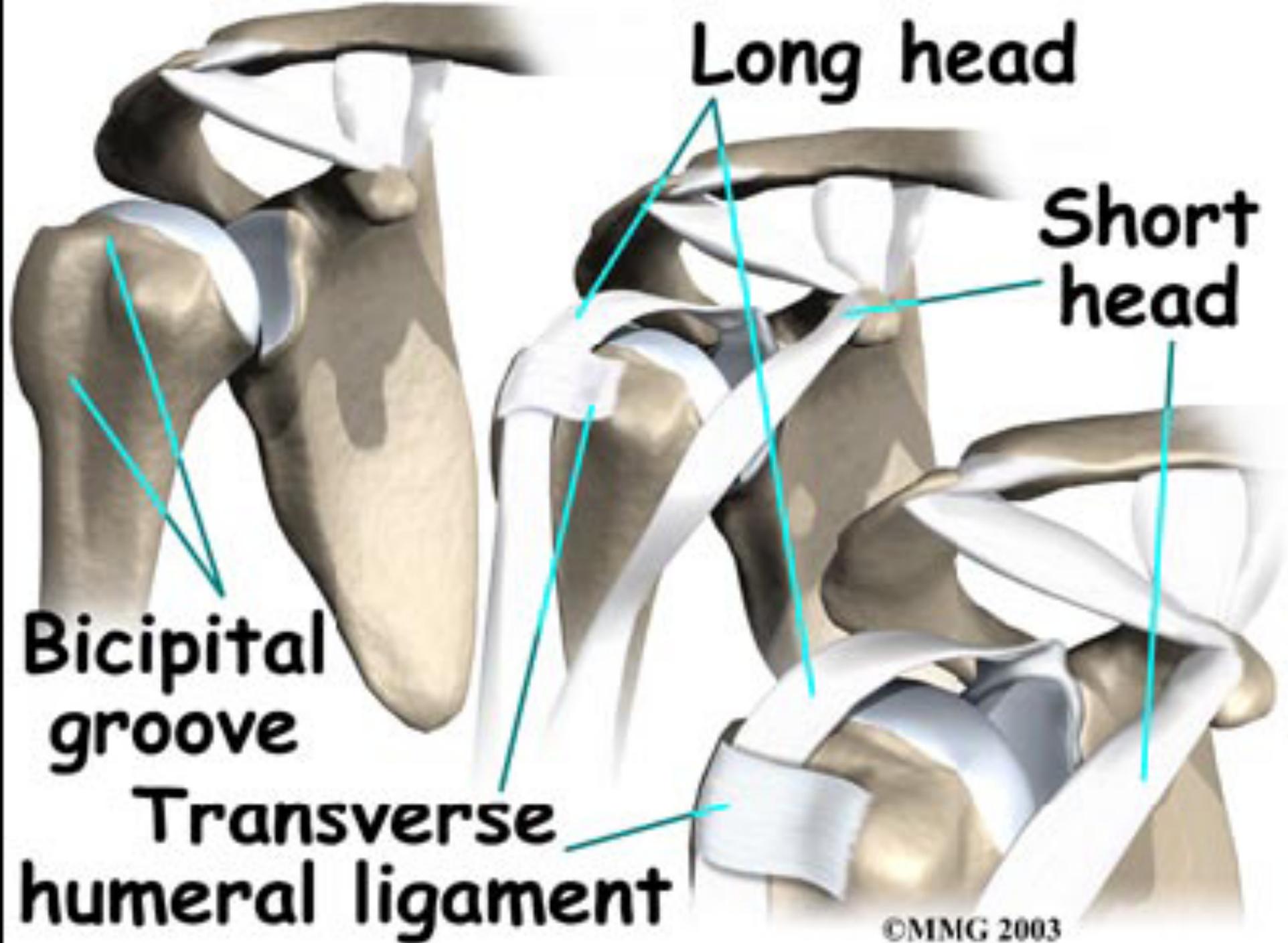


# Bicipital Tendonitis



# Tendon Structure

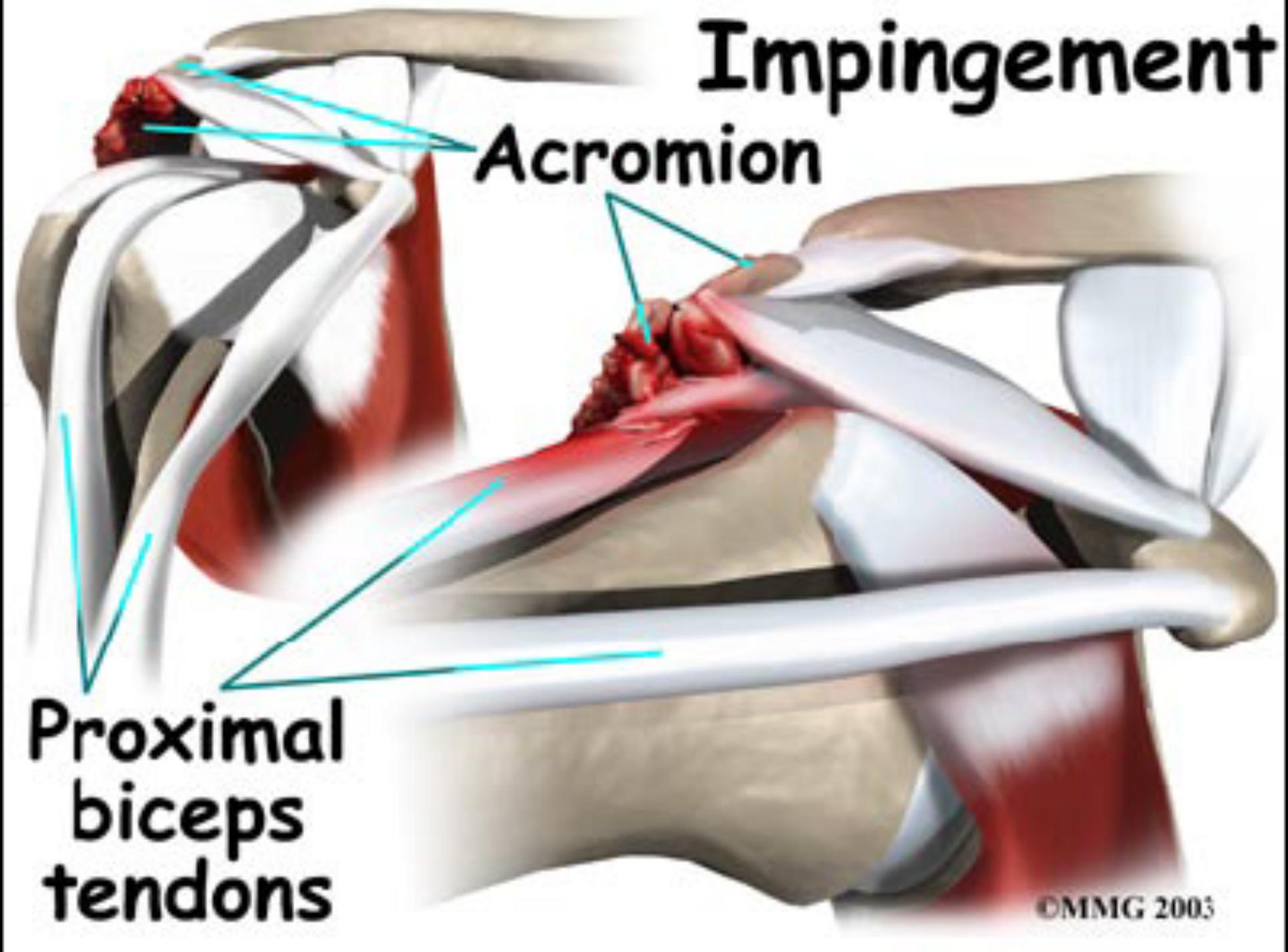


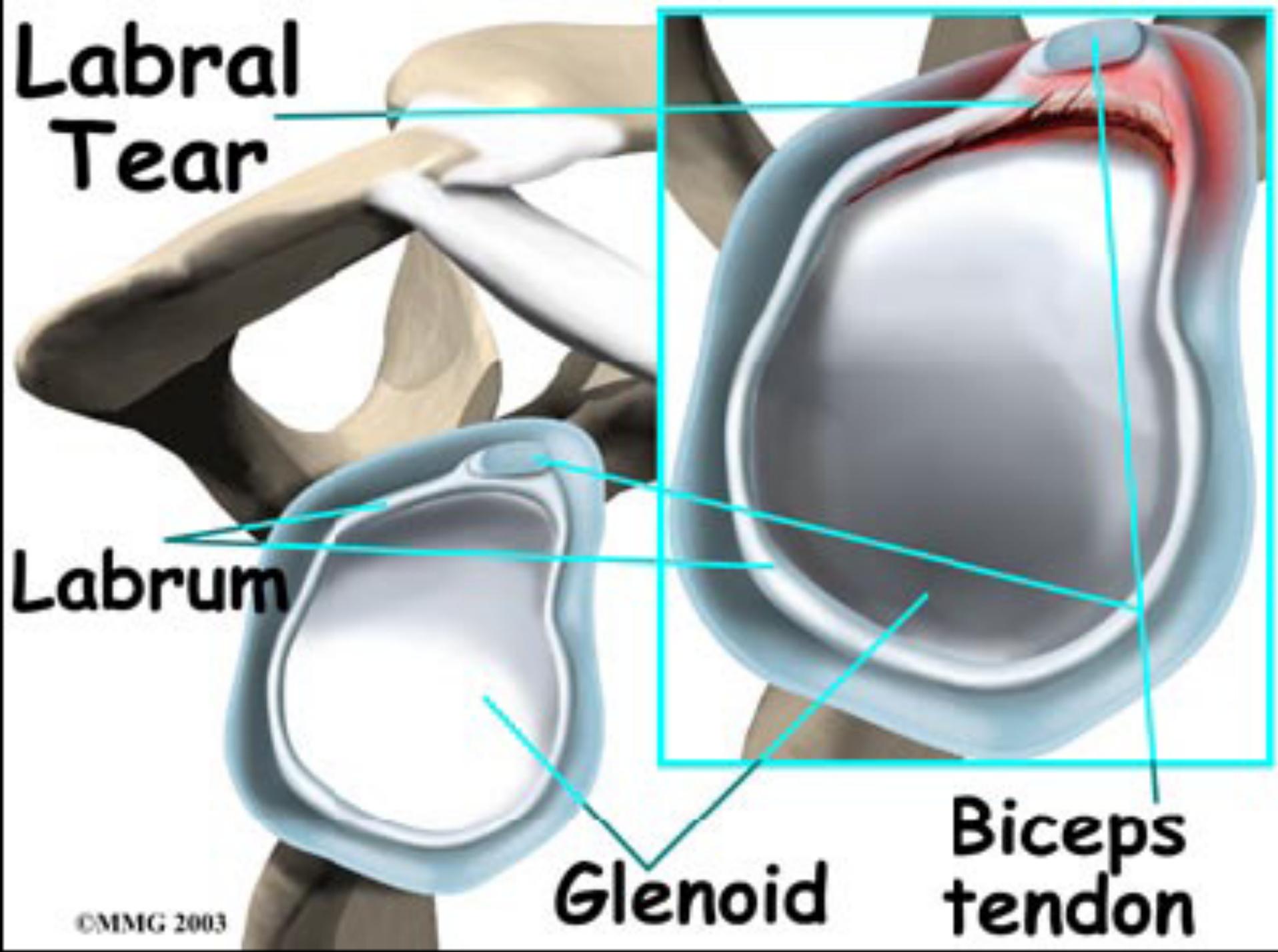


# Impingement

Acromion

Proximal  
biceps  
tendons





# Biceps Rupture

---

**Shoulder  
Biceps  
Rupture  
Symptoms**

**"Balled up"  
muscle  
with  
bruising**



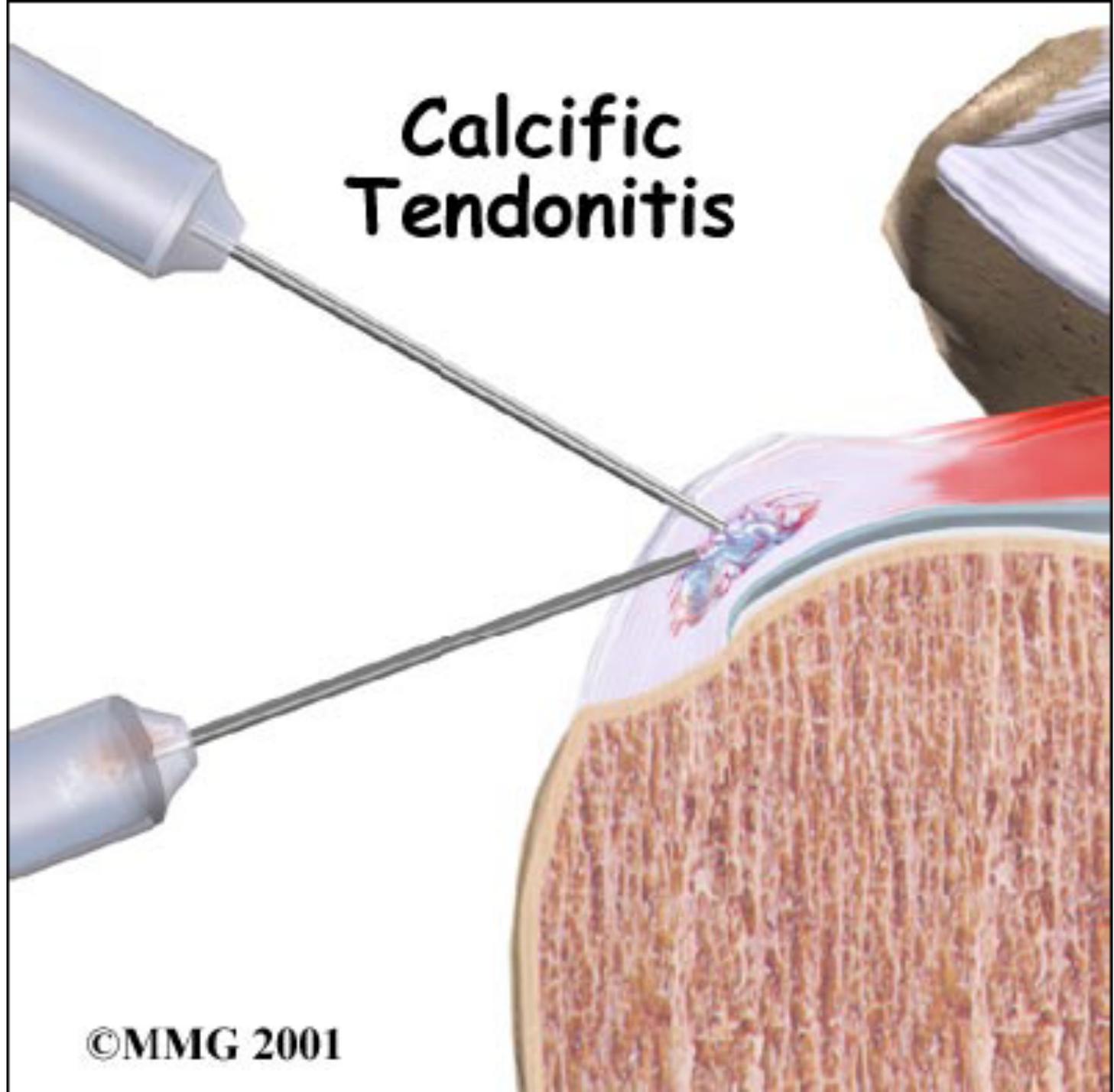
**Shoulder  
and  
arm  
weakness**

# Weakened supination



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# Calcific Tendonitis



There are two different types of calcific tendonitis of the shoulder: ***degenerative calcification*** and ***reactive calcification***. The wear and tear of aging is the primary cause of **degenerative calcification**. Due to the wear and tear as we use our shoulder the fibres of the tendons begin to fray and tear. Calcium deposits form in the damaged tendons as a part of the healing process.

**Reactive calcification** is different. Why it occurs is not clear. It doesn't seem to be related to degeneration, though it is more likely to cause shoulder pain than degenerative calcification.

Doctors think of reactive calcification in three stages.

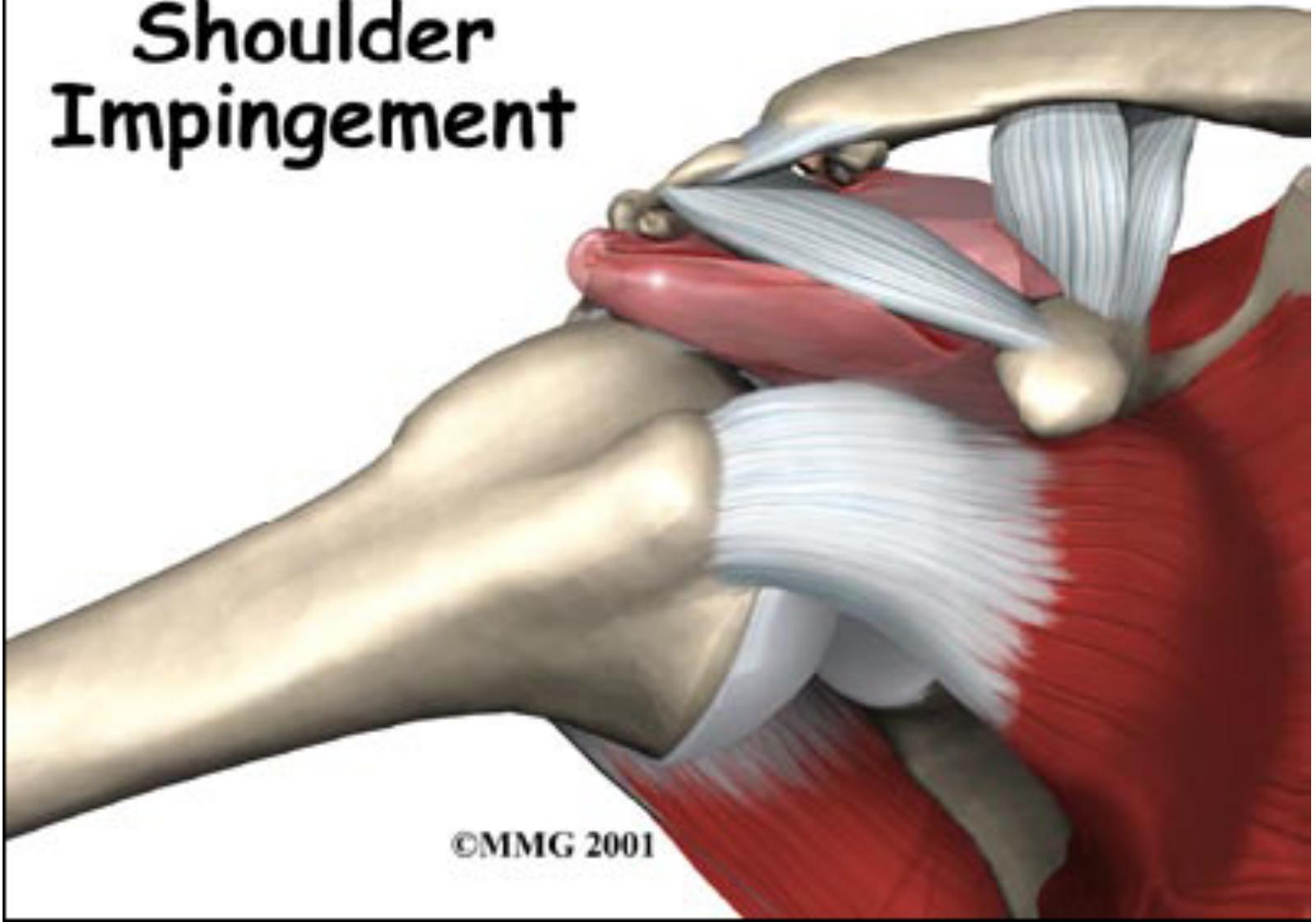
1. In the *pre-calcific stage*, the tendon changes in ways that make calcium deposits more likely to form.
2. In the *calcific stage*, calcium crystals are deposited in the tendons. Then they begin to disappear. The body simply reabsorbs the calcium deposits. It is during this stage that pain is most likely to occur.
3. In the *post-calcific stage*, the body heals the tendon, and the tendon is remodeled with new tissue.

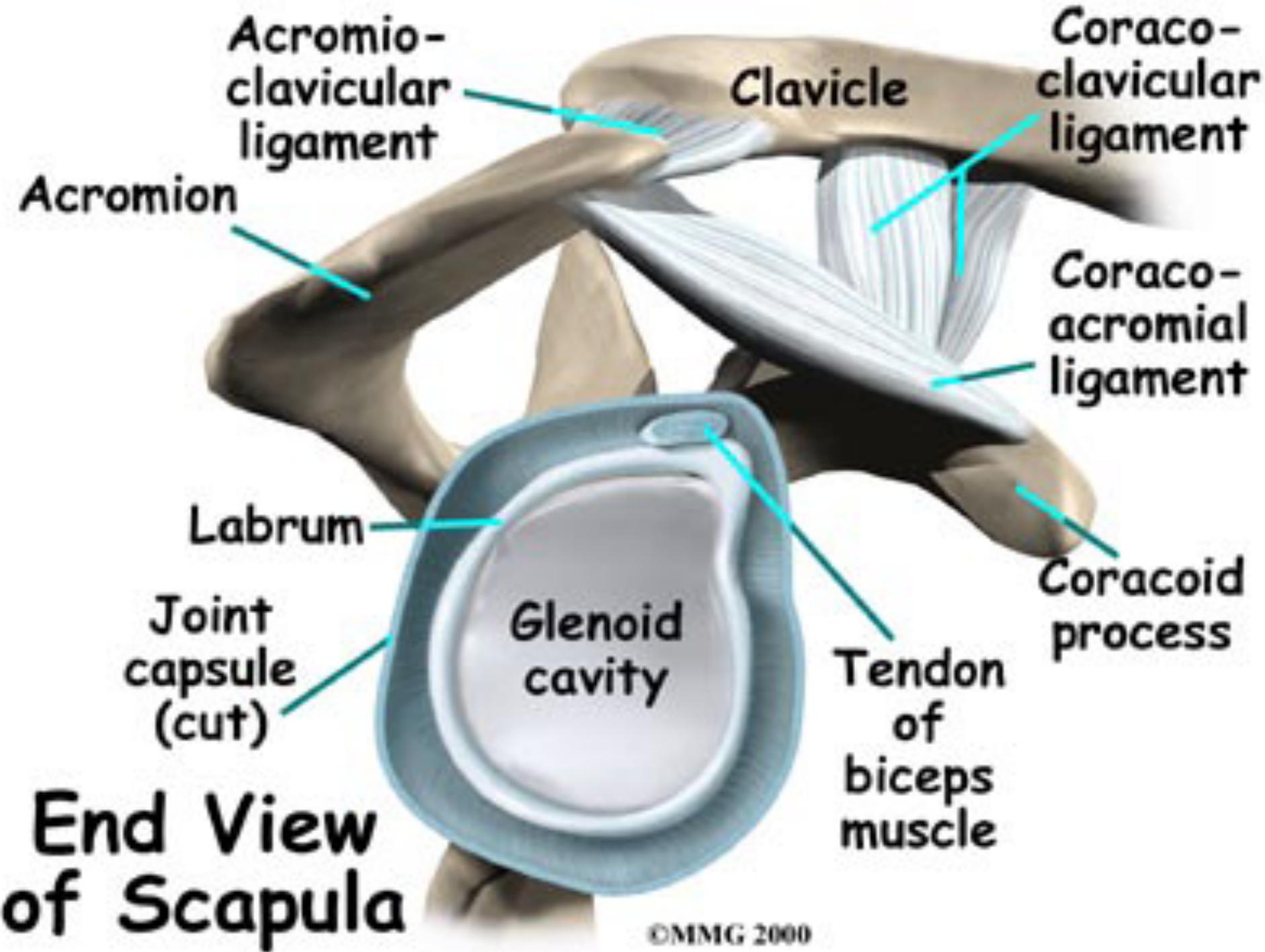
# Reactive calcification



# Impingement Syndrome

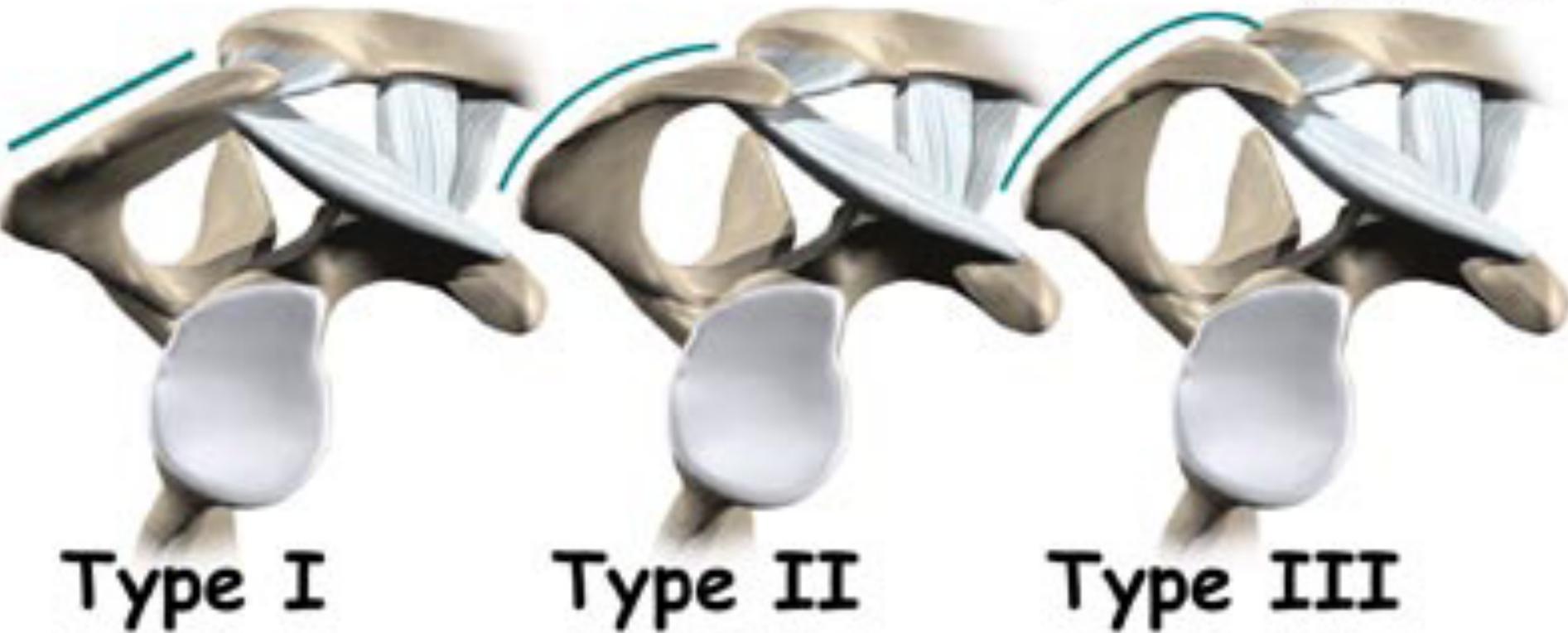
## Shoulder Impingement





# Variations in Acromion Shape

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**Type I**

**Type II**

**Type III**

**Shoulder  
Bursa  
(arm  
raised)**

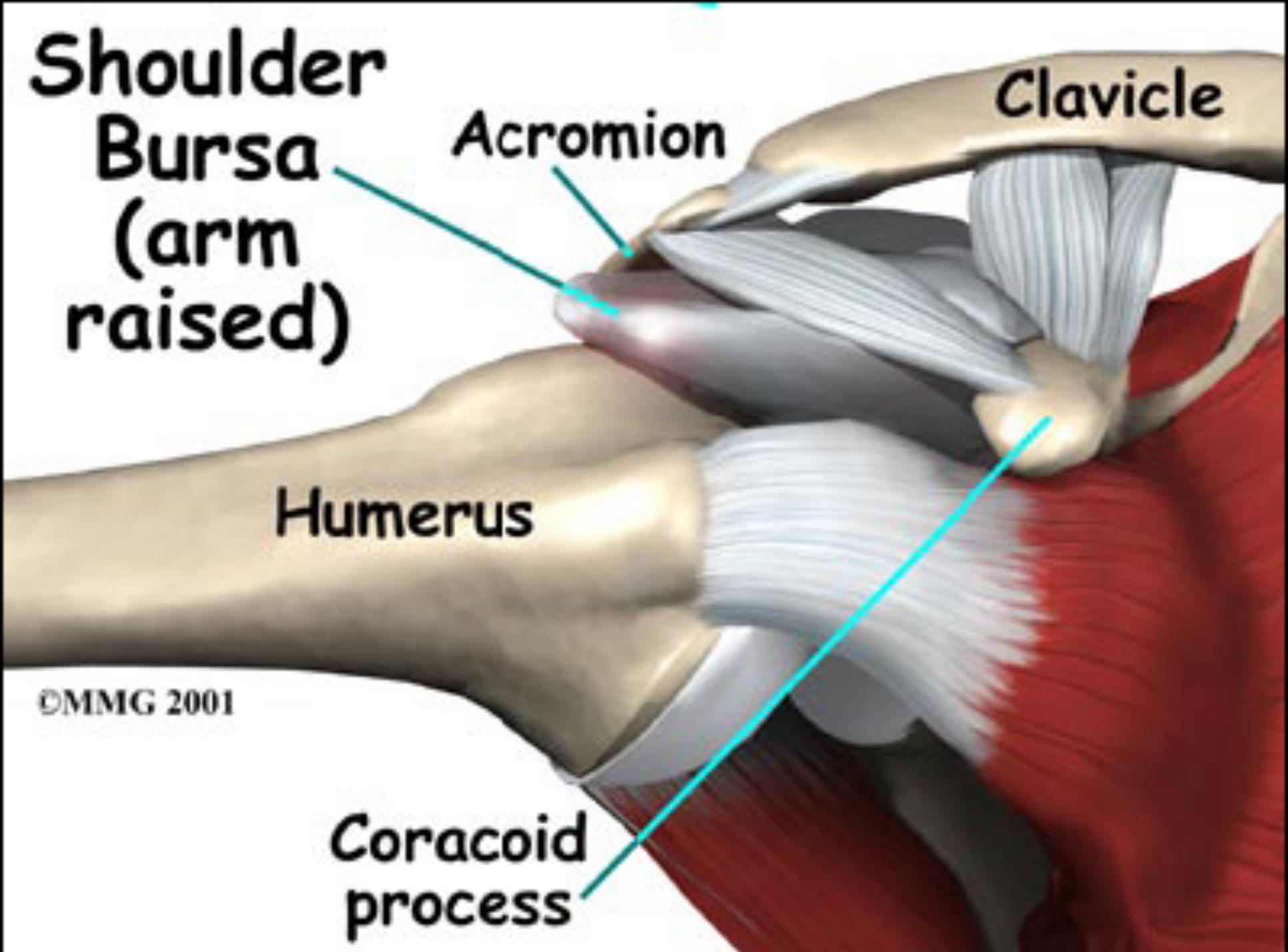
**Acromion**

**Clavicle**

**Humerus**

**Coracoid  
process**

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**Acromioclavicular joint**

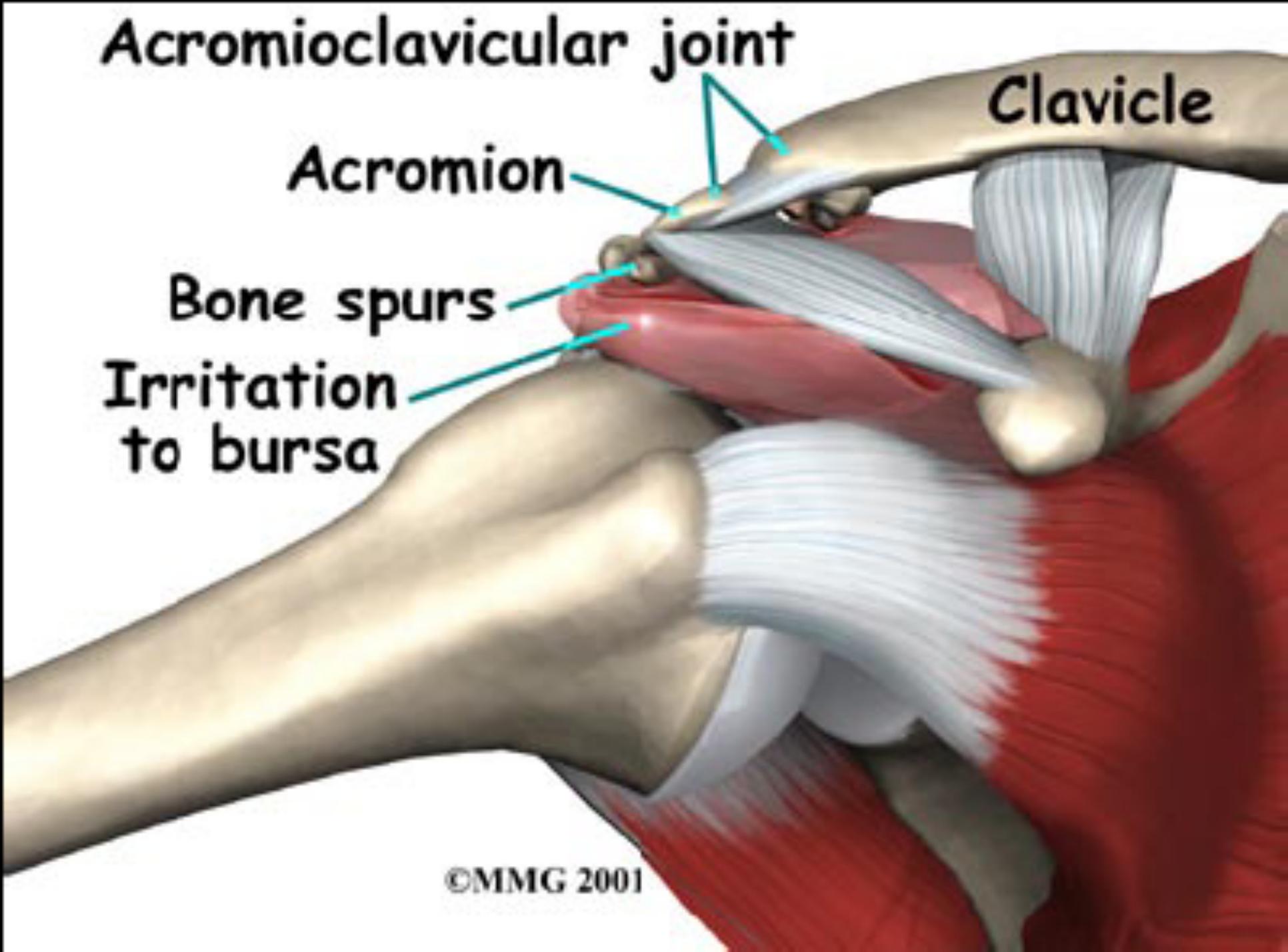
**Clavicle**

**Acromion**

**Bone spurs**

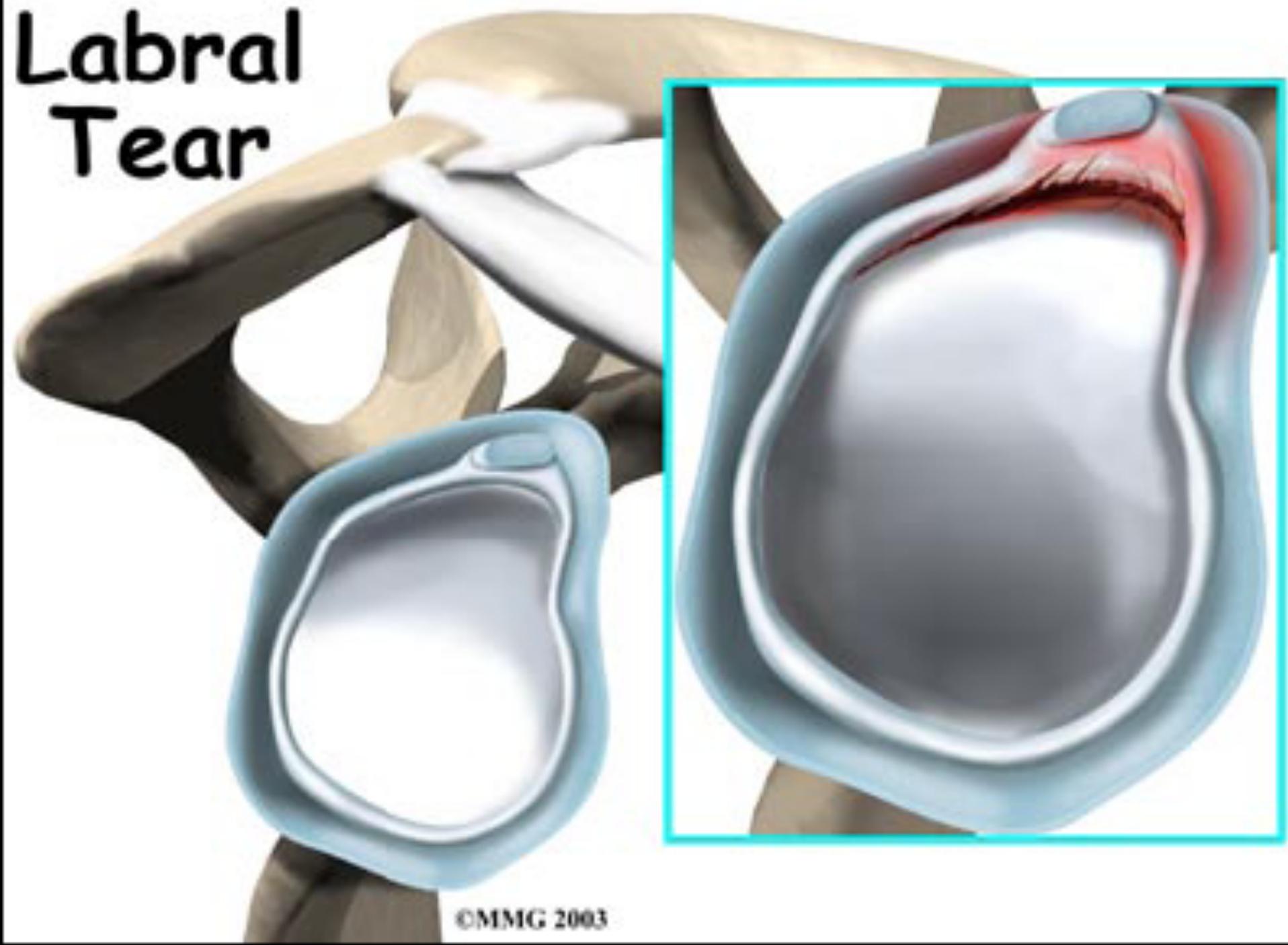
**Irritation  
to bursa**

©MMG 2001



- Though pain certainly occurs during abduction of the shoulder, it is also very common with internal rotation – placing one's hand behind their back.
- This syndrome can lead to others, such as those already discussed, or can arise from some of them, or from other problems.
- Often a symptom of 'wear & tear': pre- OA, rotator cuff problems, labrum 'fraying'...

# Labral Tear



# What does a labral tear feel like?

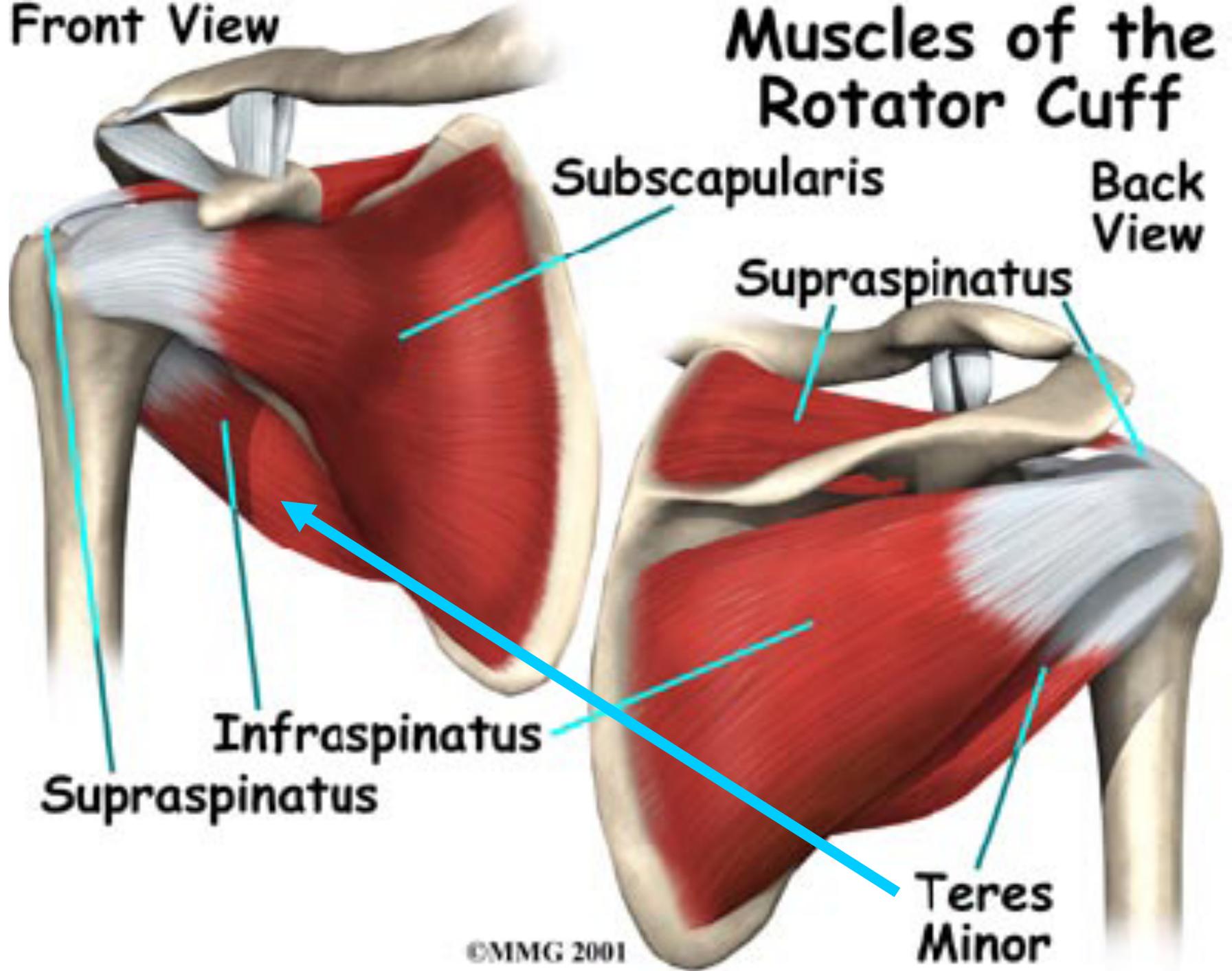
- The main symptom caused by a labral tear is a sharp pop or catching sensation in the shoulder during certain movements.
- This may be followed by a vague aching for several hours. At other times, the tear may not cause any pain.
- Shoulder instability from a damaged labrum may cause the shoulder to feel loose, as though it slips with certain movements.

# Rotator Cuff Tears



**Front View**

# Muscles of the Rotator Cuff



**Subscapularis**

**Back View**

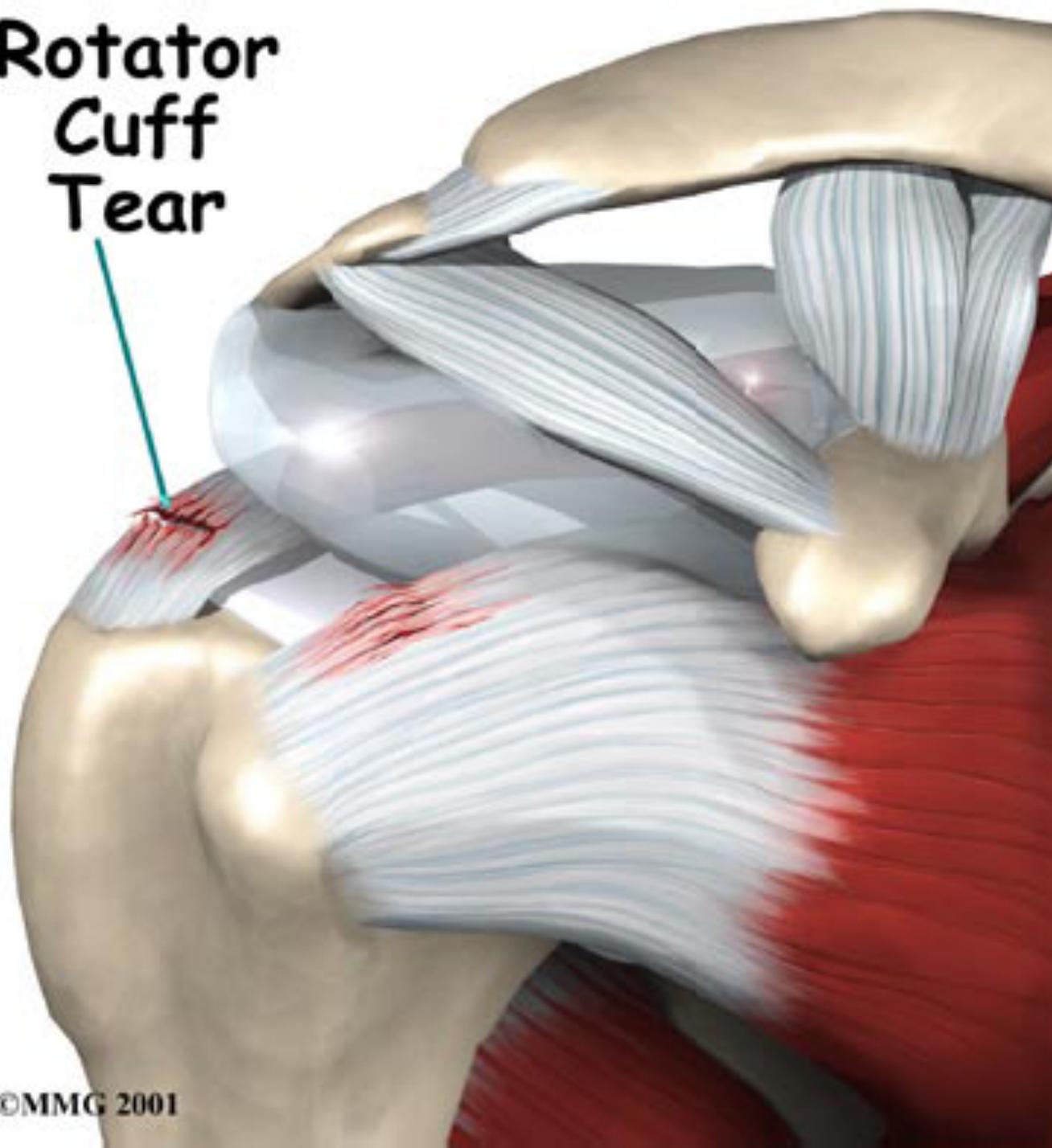
**Supraspinatus**

**Infraspinatus**

**Supraspinatus**

**Teres Minor**

# Rotator Cuff Tear

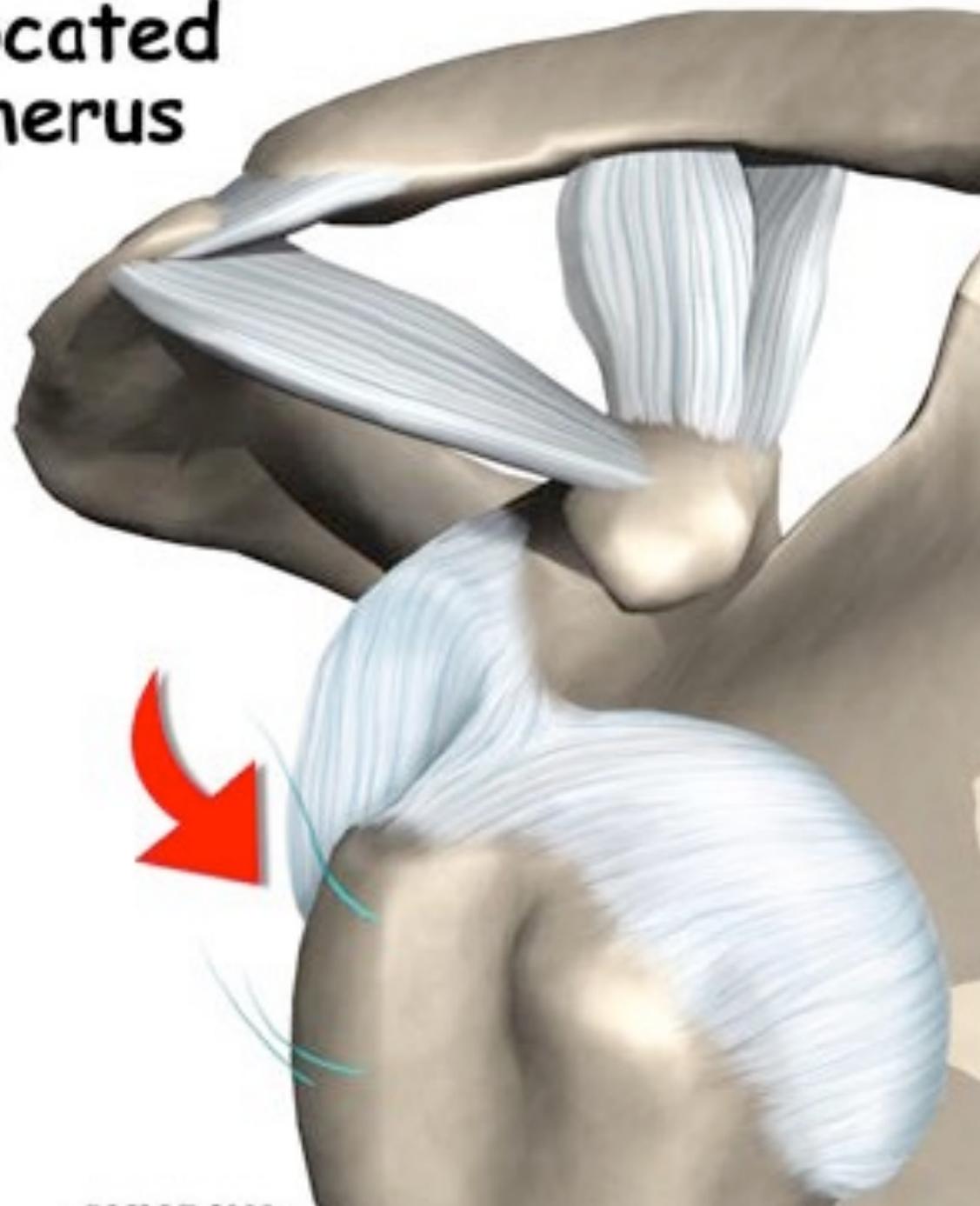


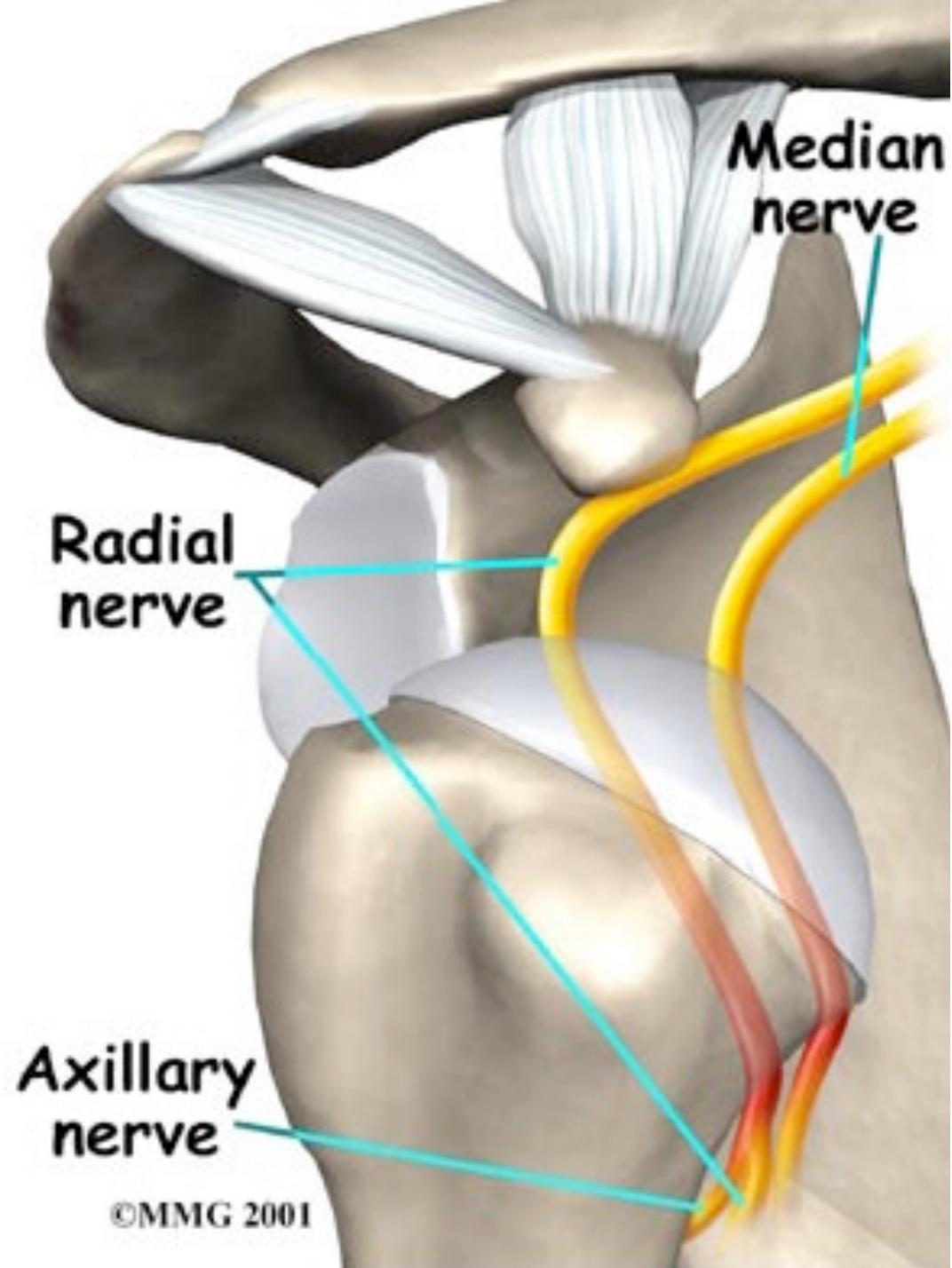
# Symptoms

## **Pain & weakness:**

- A mild tear may be painful, but you can still move the arm in a normal range of motion.
- In general, the larger the tear, the more weakness it causes.
- In other cases, the rotator cuff tendons completely rupture. A complete tear makes it impossible to move the arm in a normal range of motion. It is usually impossible to raise the arm away from your side by yourself.
- Most rotator cuff tears cause a vague pain in the shoulder area. They may also cause a catching sensation when you move your arm.
- Most people say they can't sleep on the affected side due to the pain.

# Dislocated Humerus

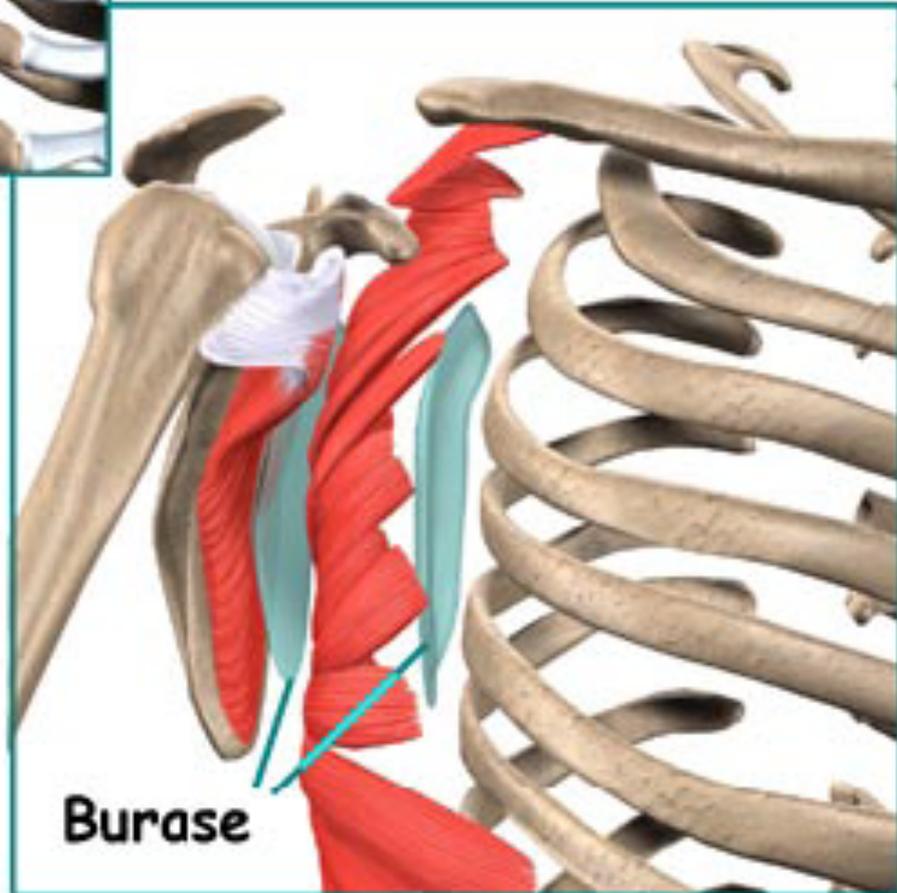


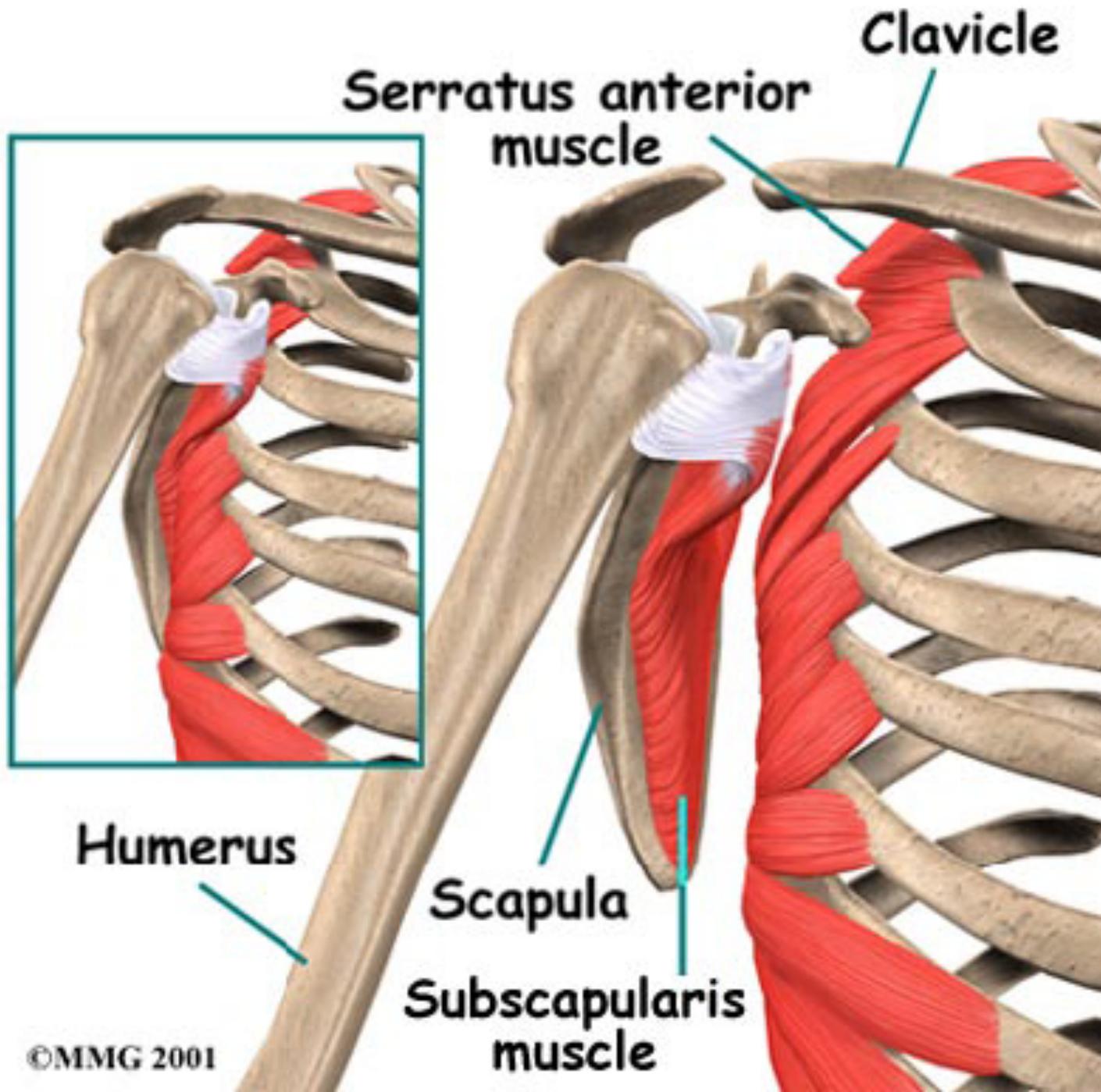


# An Unstable Shoulder

- What makes a shoulder become unstable? Shoulder instability often follows an injury that caused the shoulder to dislocate.
- This initial injury is usually fairly significant, and the shoulder must be *reduced*. To reduce a shoulder means it must be manually put back into the socket.
- The shoulder may seem to return to normal, but the joint often remains unstable. The ligaments that hold the shoulder in the socket, along with the labrum (the cartilage rim around the glenoid), may have become stretched or torn. This makes them too loose to keep the shoulder in the socket when it moves in certain positions.
- An unstable shoulder can result in repeated episodes of dislocation, even during normal activities. Instability can also follow less severe shoulder injuries.

# Snapping Scapula





Clavicle

Serratus anterior muscle

Humerus

Scapula

Subscapularis muscle

Healing out  
of alignment  
causes a  
bumpy ridge

Fractured  
scapula

Fractured  
rib

