

Orthopaedic Management of Shoulder Dysfunction



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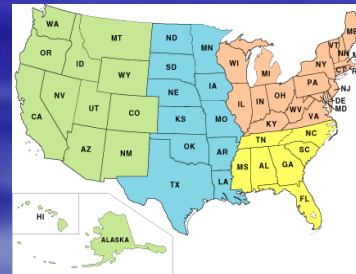
Introduction

- Shoulder has largest range of motion of all joints in the body
- Most physical work, hobbies and sport activities involve use of upper extremity
- Places shoulder at risk
- Traumatic and overuse injuries



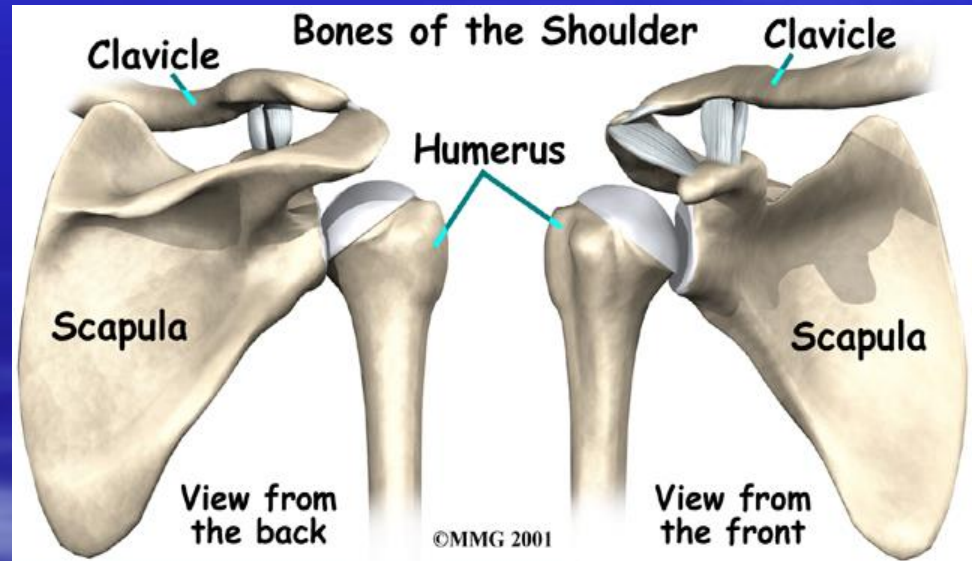
Introduction

- Plan for today is to discuss management of shoulder aches and pains
- As we get older, much shoulder pain is related to tendon and muscle strains
- Realize there are differences among how different health care professionals manage these issues
- Be sure to communicate with your health care professional in regards to their preferences



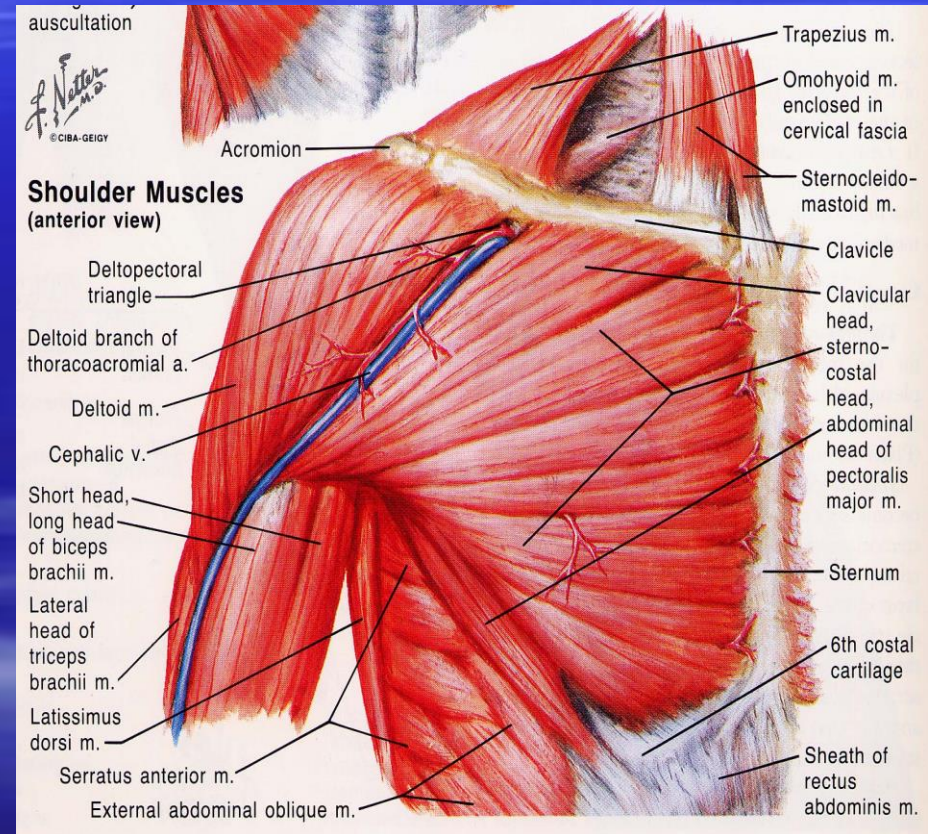
Anatomy

- The Bones
 - Provide structure and support
 - Humerus
 - Clavicle
 - Scapula



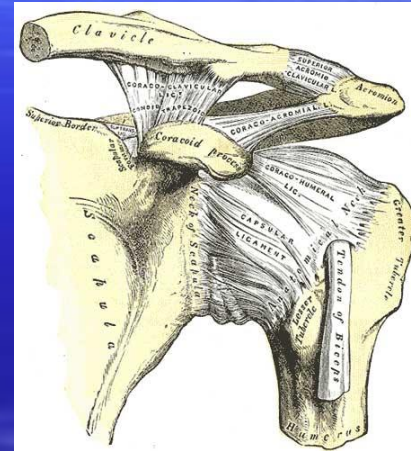
Anatomy

- Superficial Muscles
 - Move bones in space by pulling on tendons that connect to bone
 - Deltoid
 - Pectoralis Major
 - Trapezius
 - Latissimus Dorsi



Anatomy

- Ligaments
 - Connect **bone to bone**



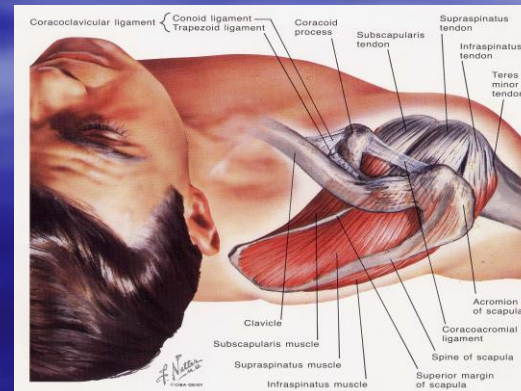
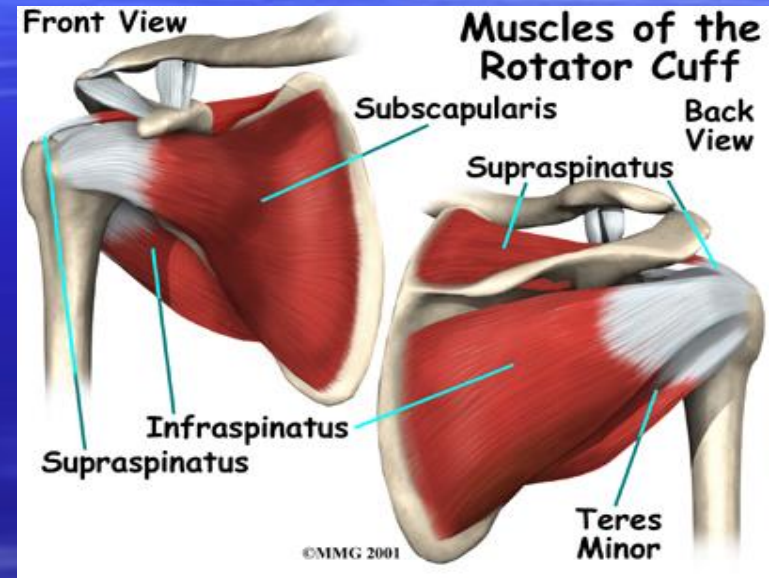
- Tendons
 - Connect **muscles to bone**



Anatomy

- Rotator Cuff
 - **Tendons** of four separate muscles
 - Assists in raising arm
 - Keeps the ball tightly in the socket

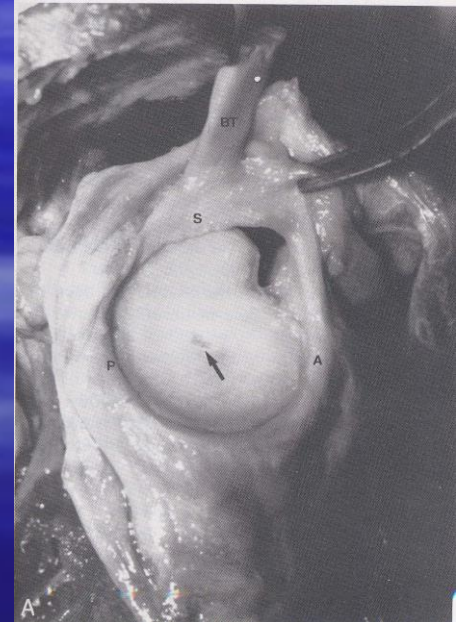
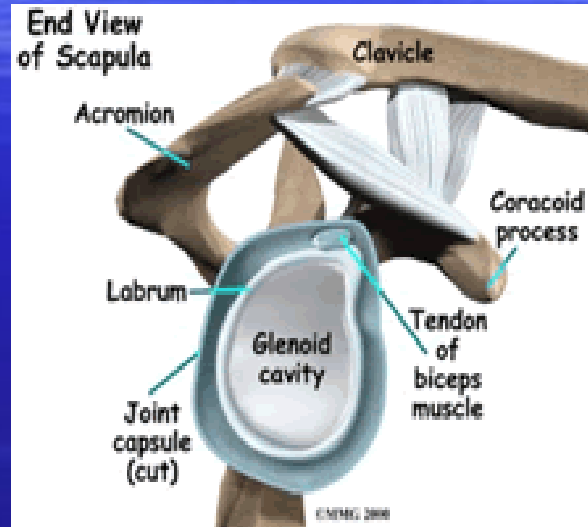
- **Supraspinatus**
- Infraspinatus
- Subscapularis
- Teres Minor



Anatomy

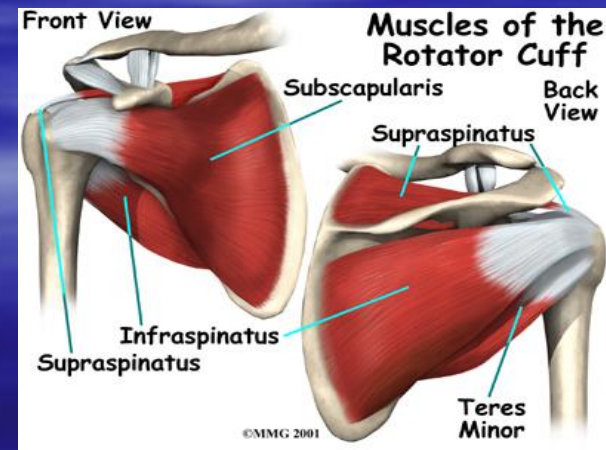
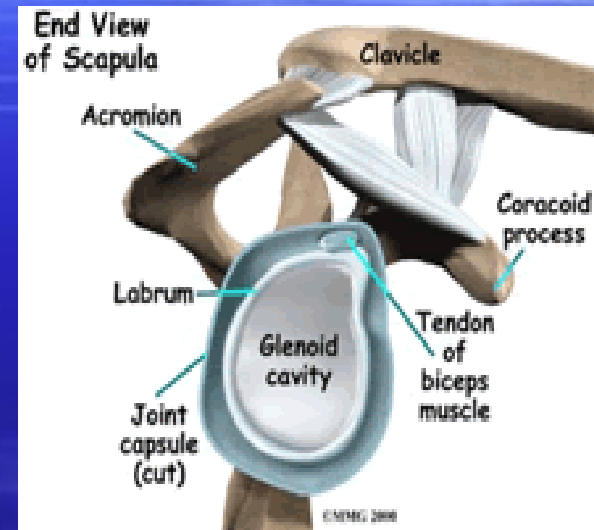
- The Supporting Soft Tissues

- Cartilage
 - Labrum
 - Joint surfaces
- Joint Capsule
 - Ligaments connecting ball to socket
- Biceps Brachii
 - Long head



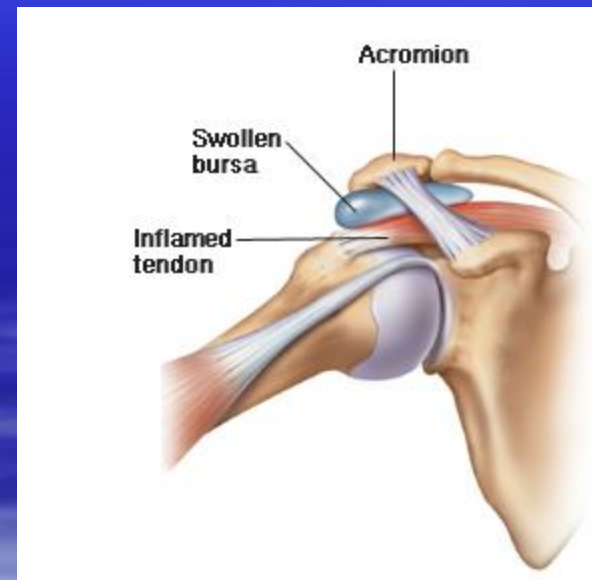
Anatomy

- Arch overlying the rotator cuff
 - Protects structures
 - Contribute to pain
 - Acromion (top of shoulder blade)
 - Ligaments
 - Clavicle (collar bone)



Anatomy

- Bursa
 - Lubricated sac of tissue
 - Cuts down on the friction between the acromion and the rotator cuff



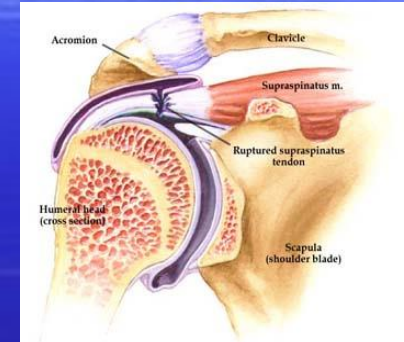
Mechanism of Injury

- **Traumatic**
 - Fall
 - Catching something
 - Throwing/pulling
 - Lifting
- **Repetitive** activities
 - Cleaning
 - Painting
 - Waxing car
 - Overhead sports
 - Physical work
- **Direct** injury
- **Indirect** injury



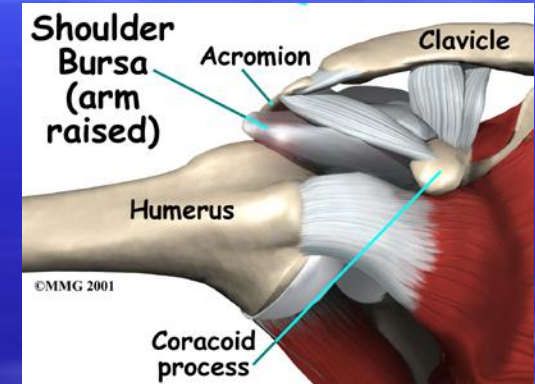
Pathology

- **Strain**
 - Injury to muscle or tendon
- **Sprain**
 - Injury to **ligament**
- Inflammation from over use → Over stretching → Partial tearing → Complete tearing



Pathology

- **Impingement Syndrome**
 - “Impingement, bursitis, tendonitis, spurs”
 - Rotator cuff & bursa subject to repeated mechanical trauma by the overlying bones and ligaments with elevation of the arm
 - Inflamed “. . . itis”
 - Spur or hook off shoulder blade
 - Spurs off end of collar bone from arthritis



Pathology

- Rotator Cuff problems
a spectrum of disease

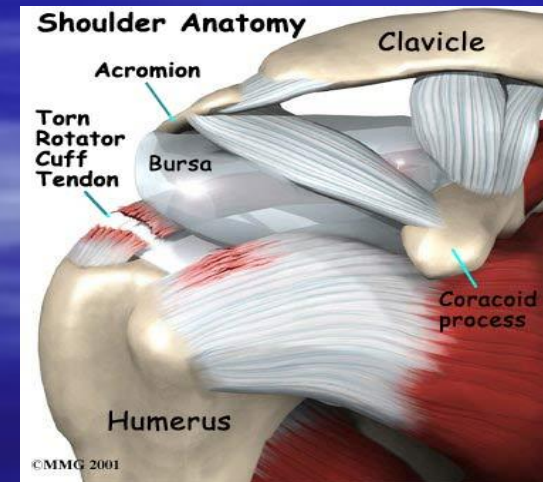
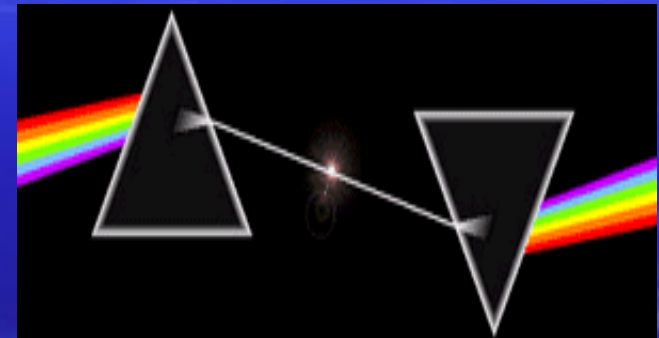
Inflammation →

Degeneration →

Partial tear →

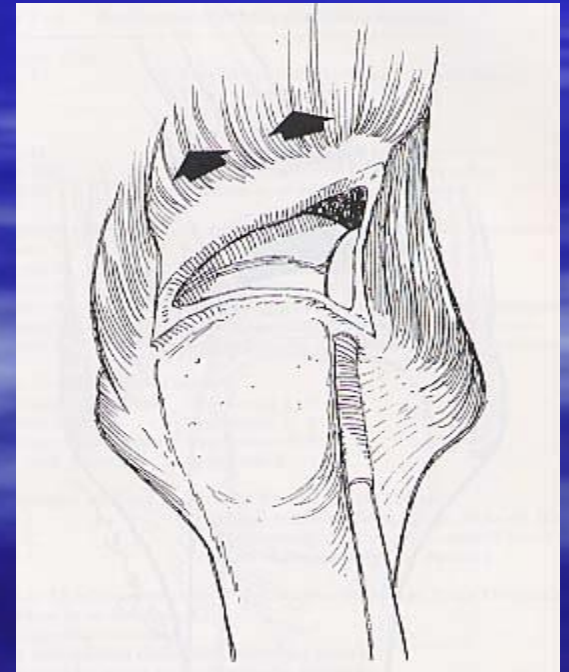
Full thickness tear →

Massive tear



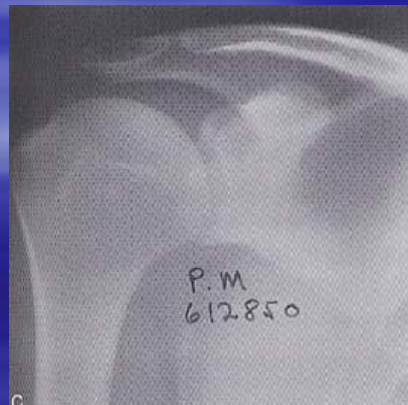
Pathology

- Healing of tear does not occur
 - Fibers retract (pull away from bone)
 - Poor vascularity (blood supply) (needed for healing)
- Disuse muscle atrophy
- Don't wait too long to repair if symptomatic



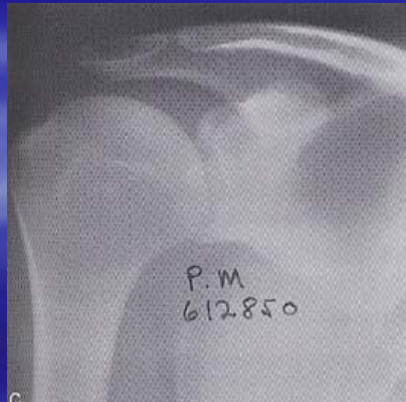
Pathology

- Shoulder **Dislocation**
 - Ball and socket
 - Fall onto forward elevated hand
 - Sliding or diving
 - Fall on ice, grabbing railing



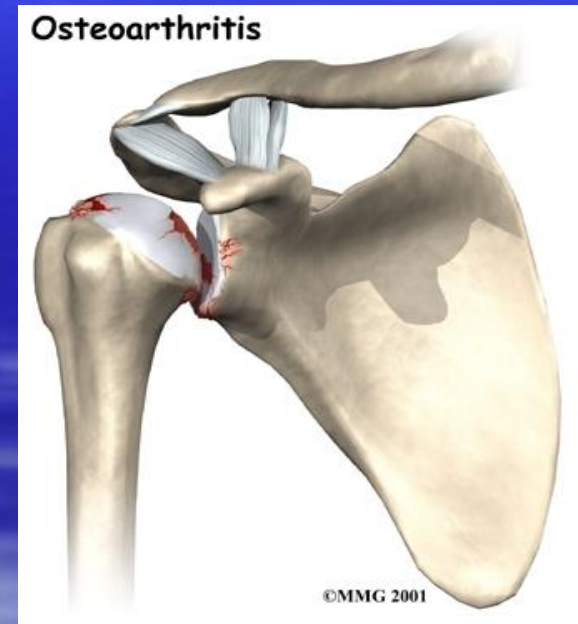
Pathology

- Shoulder **Separation**
 - Collar bone from shoulder blade
 - Falling onto top of shoulder
 - Checking in hockey



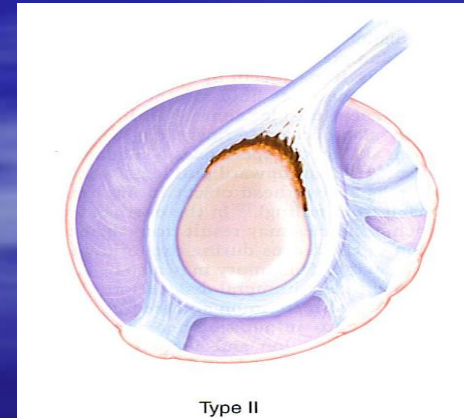
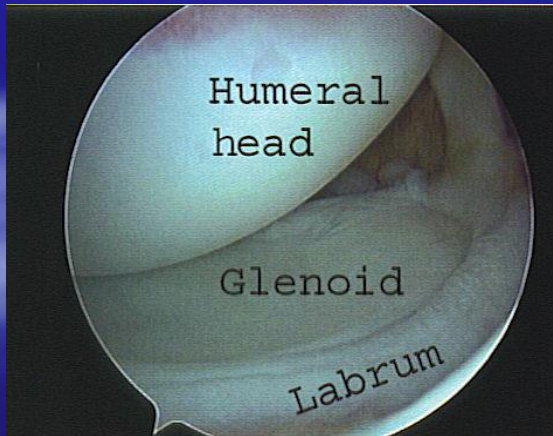
Pathology

- Shoulder **Arthritis**
 - Wearing away of surface cartilage on ball and socket
 - Post injury
 - Lots of “miles” with wear and tear
 - Can be asymptomatic



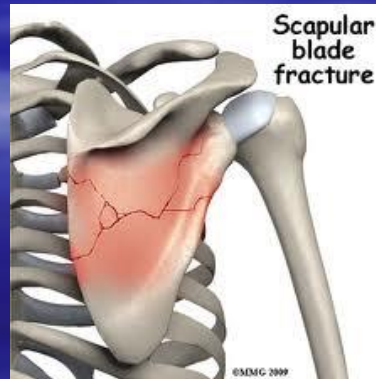
Pathology

- Shoulder cartilage tear
 - Labral tear
 - Bankart, SLAP



Pathology

- Shoulder Fracture



History

- Where **doctor talks to the patient**
- Learn about patient
 - Issue at hand
 - Details of injury/symptoms
 - Past history
 - Medical
 - Surgical
 - Medication list
 - Allergies
 - How has the problem been addressed so far
 - **There may be questions you think are unrelated but may have relevance**



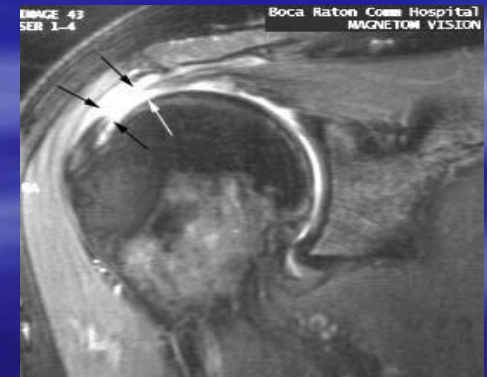
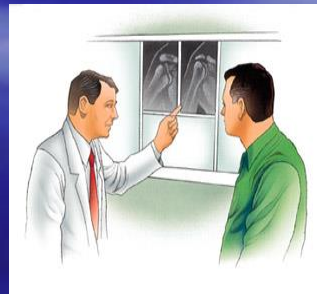
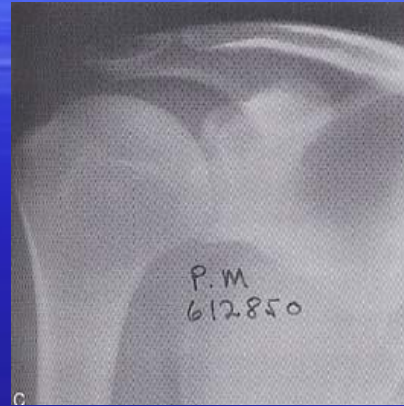
Physical Exam

- **Physician actually touches the patient** to evaluate their symptoms
- Attempt to reproduce symptoms
- No reason to cause terrible pain!



Imaging

- **X-ray**
 - Most patients need
- **Ultrasound**
- **MRI**
 - Not always necessary
- **MRI Arthrogram**
- **CT scan**



Imaging

- Not all images are made equal
 - Closed vs. open MRI
 - Power of magnet
 - May still need X-ray even if have MRI



Treatment

- Rest/immobilization
 - Avoid painful activities
 - Sling



Treatment

- Modalities

- Heat

- To loosen up prior to activity



- Ice

- For the acute injury
 - After painful activity



Treatment

- Cold devices
 - Ice packs
 - Static ice machines
 - Cold compression devices



Treatment

- Pain Medication
 - Oral
 - OTC
 - Tylenol (acetaminophen)
 - Ibuprofen (advil, motrin)
 - Alieve
 - Prescription
 - NSAIDS
 - Medrol Dose Pack
 - Narcotics
 - Typically not needed
 - I avoid in this setting



Treatment

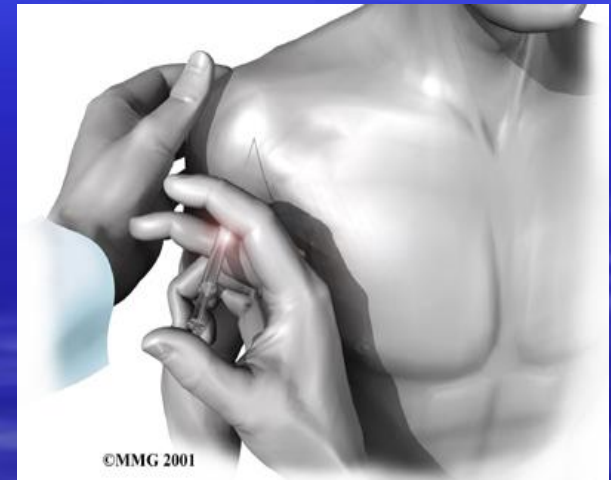
- Injections of Corticosteroids

- The Myths

- Bad for you
- Can only get so many in a lifetime
- Destroy your bones
- Painful

- The Truth

- They help
- The meds stay and work locally
- How many you can get depends where and why
- Needle hurts not the medicine (MD dependant)
- Don't destroy, they decrease inflammation → decrease pain



Treatment

- Injections of Corticosteroids
 - Complications/Long term consequences
 - Joint infection
 - Nerve damage
 - Thinning of skin and soft tissues
 - Tendon weakening/rupture
 - Thinning of nearby bone (osteoporosis)
 - Whitening of skin
 - Temporary increase in blood sugar



Treatment

■ Physical Therapy

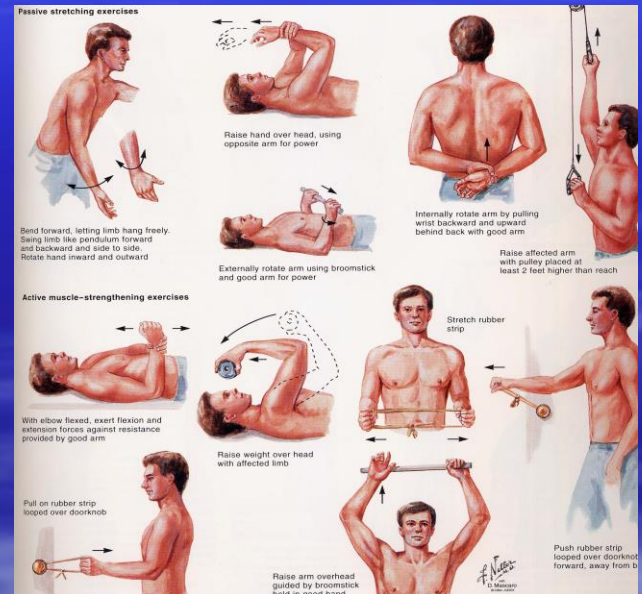
– Purpose

- Education
- Treatment
- Motivation
- Home program

– Methods

- Decrease inflammation
- Improve motion
- Increase strength and health of shoulder

– Should not be extremely painful



Treatment

- Activity modification
 - Decrease inciting activities
 - Raise level of Chair
 - Use a ladder
 - Decrease weight of item being lifted
 - Be more aware of lifting technique
 - Use two hands or opposite side
 - Typically overhead and behind the back are the worst



Surgical Treatment

- Patients who are **compliant** with nonsurgical treatment, but **remain symptomatic**



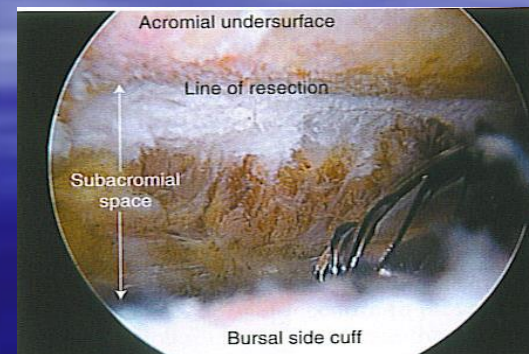
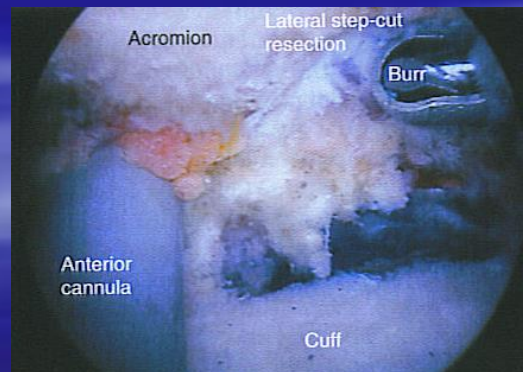
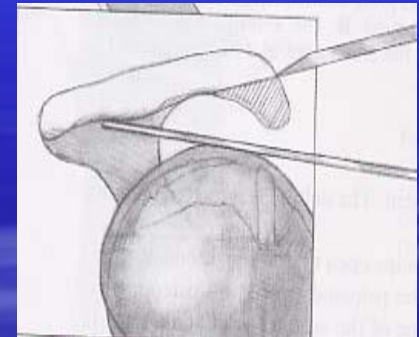
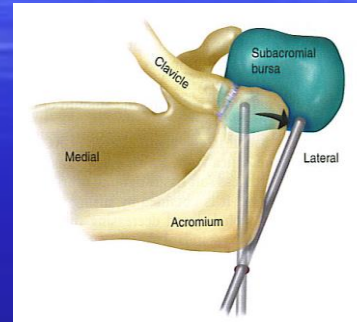
Surgical Treatment

- Surgical goals
 - Pain relief
 - Regain full motion
 - Management of all problem areas
 - Reproduce **close** to normal anatomy
 - Immediate strength of repair
 - Efficient/effective outpatient surgery
 - Return patient to preinjury level of activity
 - Give reproducible results



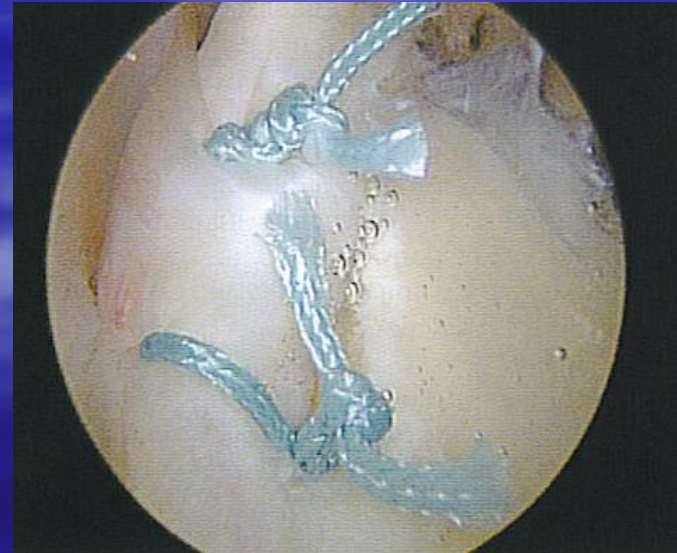
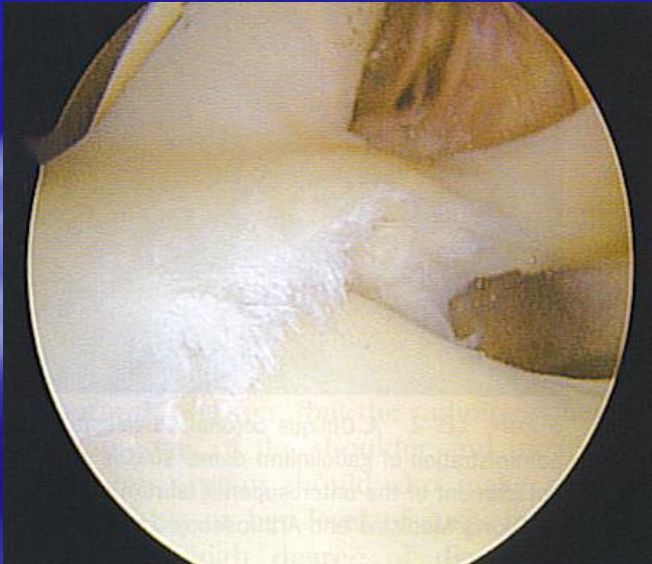
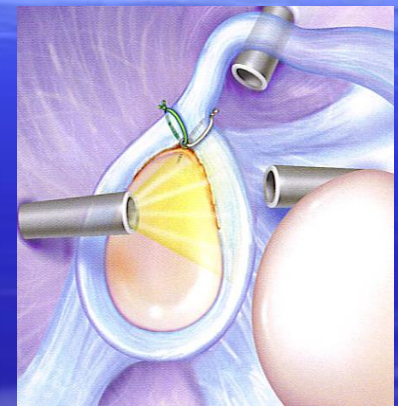
Surgical Treatment

- Decompression
 - Remove spur
 - Remove inflamed bursal tissue



Surgical Treatment

- Labrum (Cartilage) repair
 - Secure labrum and biceps to bone
 - SLAP/Bankart

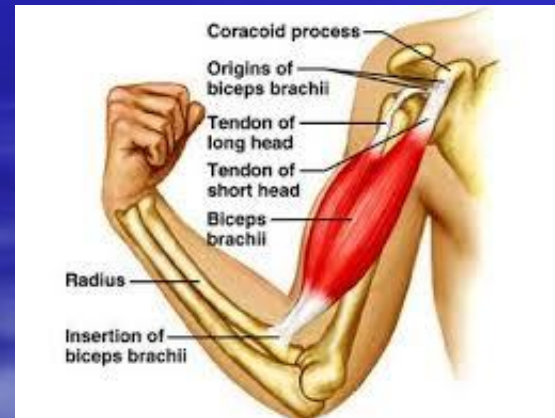


Surgical Treatment

- Biceps Tenotomy



- Biceps Tenodesis



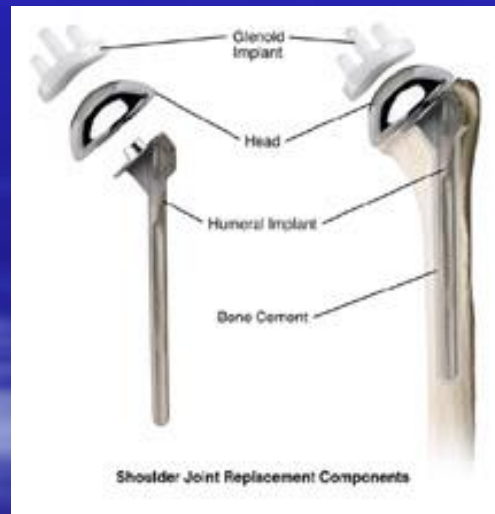
Surgical Treatment

- Rotator cuff repair
 - Close the hole
 - Repair tendon back to bone



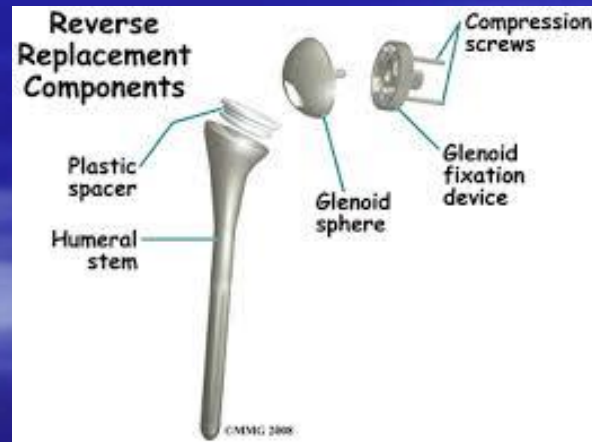
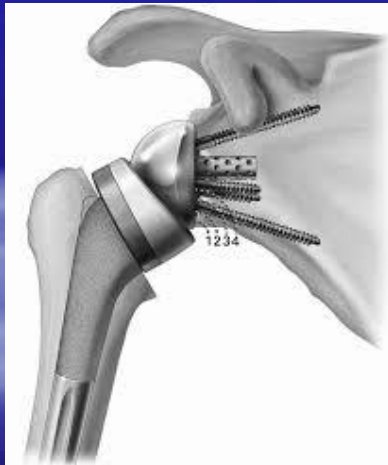
Surgical Treatment

- Anatomic shoulder replacement for arthritis



Surgical Treatment

- Reverse shoulder replacement
 - Rotator cuff arthropathy
 - Fractures



Surgical Treatment

- Fracture fixation

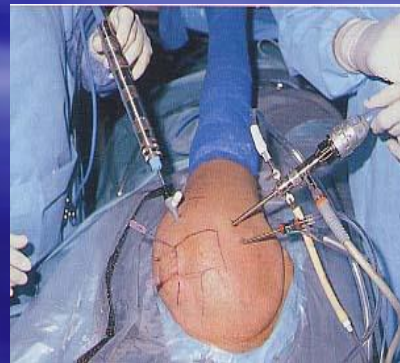


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Open vs. Arthroscopic

- Open Surgery
 - Open incision
 - Take deltoid off bone to get inside
- Mini open
 - Begin with scope
 - Split deltoid for cuff repair
- Arthroscopic
 - “Scope”
 - Though poke holes
 - Using fiber optics and video camera



Return to Work/Sports/Life

■ Variables

- Type of occupation/sport
 - Sedentary vs heavy labor
 - Ability to protect shoulder
 - One handed work available
 - Temporary change in position work or sport
- Pain control
 - Comfortable enough to work/play
 - Type of job where can work on pain meds
- Commute
 - Confidence in driving
 - Ability to protect self and others



Return to Work/Sports/Life

■ Variables

– Ultimate treatment outcome

■ Surgeon

- Skill level
- Involvement/guidance

■ Patient

- Pain tolerance
- Motivation
- compliance

■ Physical Therapist

- Skill level
- Ability to motivate

■ Biology

- Size of tear
- Quality of tissues



Return to Work/Sports/Life

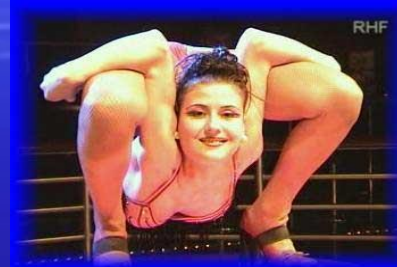
- Constants

- One to 2 wks off minimum
 - Due to pain control
- Brace for up to 6 wks
- Physical Therapy
 - Begins at 3 - 6 wks
 - Duration 2 – 3 months
- Driving
 - 8 – 12 wks before can use arm to drive
- MMI/Return to full activity 6 – 9 months
- +/- FCE & Work Conditioning



Prevention

- Things to do
 - Stretch/Maintain flexibility
 - Strengthen
 - High reps/low weights
 - Light weights or therabands
 - Maintain cardiovascular fitness
 - Core strengthening
 - Lift with two hands and legs, close to body



Prevention

- Things to avoid
 - Lifting behind the back
 - Heavy overhead lifting
 - Holding heavy objects away from the body
 - Repetitive overhead activities
 - Prolonged overhead work
 - Working through painful activities



Conclusion

- Many causes of shoulder pain
- **Most do not require surgery to make better**



????? QUESTIONS ?????

