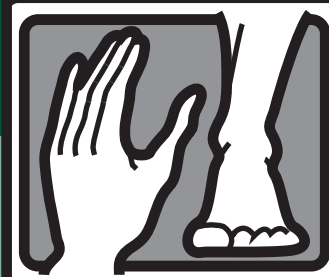


MAY 2013  
**TREATMENT NEWS**

FROM **HUMBOLDT HAND AND FOOT THERAPY,  
 TOTAL BODY REHABILITATION**

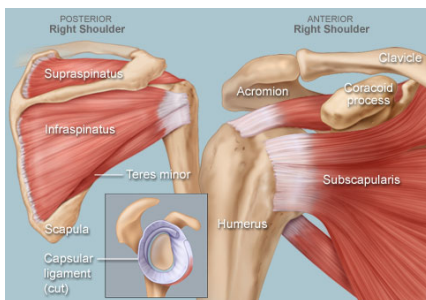
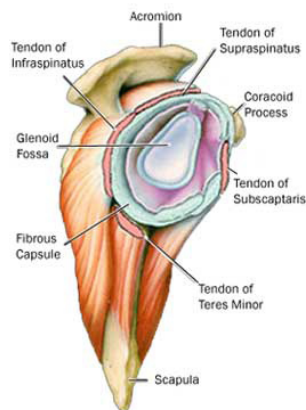
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## SHOULDER JOINT PAIN

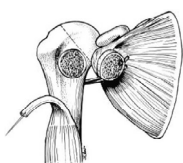
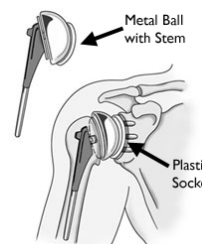
Two Shoulder Replacement Procedures that we commonly treat in the clinic are: the **Total Shoulder Arthroplasty (TSA)** and the **Reverse Total Shoulder Arthroplasty (rTSA)**. The primary reason for either surgery is PAIN. The common etiologies for severe shoulder pain are Osteoarthritis, Rheumatoid Arthritis, Severe Rotator Cuff Pathology, Osteonecrosis (When blood supply to the bone is limited and the bone cells die) and Fracture of the Humeral Head. When conservative therapeutic rehabilitation measures are exhausted, shoulder replacement surgery is considered. The TSA and the rTSA are surgical procedures that can improve the quality of life for those who have severe pain with activities of daily living and sleeping. Surgical outcomes for these procedures are moderate to complete relief with restored functional range of motion. The goal of these surgeries is to replace the shoulder joint or glenohumeral joint with a prosthesis, to create a stable fulcrum of rotation.

The Shoulder is made up of three bones the Humerus, Scapula and the Clavicle. The Rotator Cuff is made up of four primary muscle; Supraspinatus, Infraspinatus, Teres Minor, and Subscapularis. The rotator cuff is the primary stabilizer for the shoulder joint.



### The Total Shoulder Arthroplasty (TSA):

The TSA replaces the glenohumeral joint with a prosthesis consisting of a metal ball with a stem and a polyethylene cemented component (plastic socket).



The TSA was first introduced to the medical community by Dr. Charles Neer in the early 1950's to treat severely displaced fractures and dislocations of the proximal humeral head. There are approximately 53,000 shoulder replacements performed each year in the United States. The TSA is considered, when the patient **does not have** severe rotator cuff pathology.



The most common approach of access to the glenohumeral joint is through the anterior aspect of the shoulder (deltopectoral approach). In this approach it is necessary to alter the position of the subscapularis. This can be done in two ways:

- 1. A Subscapularis Tenotomy-** The Subscapularis tendon is cut and later repaired after the shoulder prosthetic is placed.
- 2. Lesser Tuberosity Osteotomy** -the location of the insertion of the subscapularis (which is the Lesser Tuberosity) is removed with the subscapularis tendon attached. Following the placement of the shoulder prosthetic, the lesser tuberosity is reduced to the humerus and sutured to secure into place.

The Rehabilitation protocols differs in regard to internal rotation depending on the approach. **General Guidelines** are as follows for TSA rehabilitation protocol:

- **Subscapularis Tenotomy with repair:** no resisted internal rotation until 4 ½ months post surgery.
- **Lesser Tuberosity Osteotomy:** no resisted internal rotation until 3 months post surgery and x-ray to confirm Lesser Tuberosity healing

## Humboldt Hand and Foot Therapy, Total Body Rehab

### Services Offered:

- Total Body Rehab
- Evaluation
- Custom Splint
- Custom Orthotics
- Personal Training
- Balance Programs/ Fall Prevention
- Light Therapy
- Sympathetic Therapy System

### Frequently Seen Diagnoses:

- Tendon and Nerve Lacerations
- Fractures
- Arthritis
- Cumulative Trauma
- Crush Injuries
- Amputation
- Tendon Transfers
- Joint Replacements
- Fusions
- Balance Training
- Conditioning
- Strengthening
- Rotator Cuff Injury
- Frozen Shoulder
- Plantar Fasciitis
- Tendonitis of the ankle
- Peripheral Neuropathy
- Back and Neck Pain
- Foot and Ankle Pain
- Post operative Knee
- Post operative Shoulder
- Hip Pain

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- Post operative sling
- Maintain surgical motion without pushing beyond end point.
- Strengthen surrounding musculature under the supervision of a outpatient therapist for 12-18 weeks



## The Reverse Total Shoulder Arthroplasty(rTSA):

The rTSA prosthesis reverses the orientation of the shoulder joint by replacing the glenoid fossa( the concave portion of the shoulder joint) with a glenoid base plate and a glenosphere and the humeral head with a shaft and concave cup. Paul Grammont from Dijon France was successful in designing prosthesis for the rTSA that were used in Europe in 1992 and approved in the United States by FDA in 2004. Grammont's rTSA prosthesis was designed for patients with rotator cuff deficient shoulders and failed TSA. In patients with deficient rotator cuff, the shoulder joint (or the fulcrum of motion) is unstable and the humeral head migrates anterior (forward) and superiorly (upward) to the outer rim of the glenoid fossa creating insufficiency of the deltoid muscle and significantly limited motion. Grammont's prosthesis changes the rotation of the shoulder joint or placement of the fulcrum to be more medially (toward midline) and inferiorly (downward). As a result, the mechanical advantage of the deltoid is maximized. The deltoid compensates for the deficient rotator cuff and becomes the primary elevator for the shoulder. In patients without external rotation from a non-functioning Teres minor prior to surgery the Latissimus dorsi (a strong internal rotation muscle) is used as a tendon transfer to assist in external rotation. This allows the patient, who previously was unable to feed themselves or apply deodorant, more functional use.

### General Guidelines for the Reverse Total Shoulder Arthroplasty Rehabilitation Protocol:

Joint Protection: rTSA has a higher risk for internal rotation dislocation.

- Avoid such motions as extension past neutral and a combination of adduction and internal rotation for 12 weeks (such as tucking in your shirt or performing bathroom duties/ personal hygiene.)
- Maintain elbow in your visual spectrum
- In a sling post-operatively
- Outpatient therapy begins at 6 weeks post surgery and continues for 6-8weeks
- Deltoid functions is emphasized to secure stability and mobility of the shoulder joint.



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