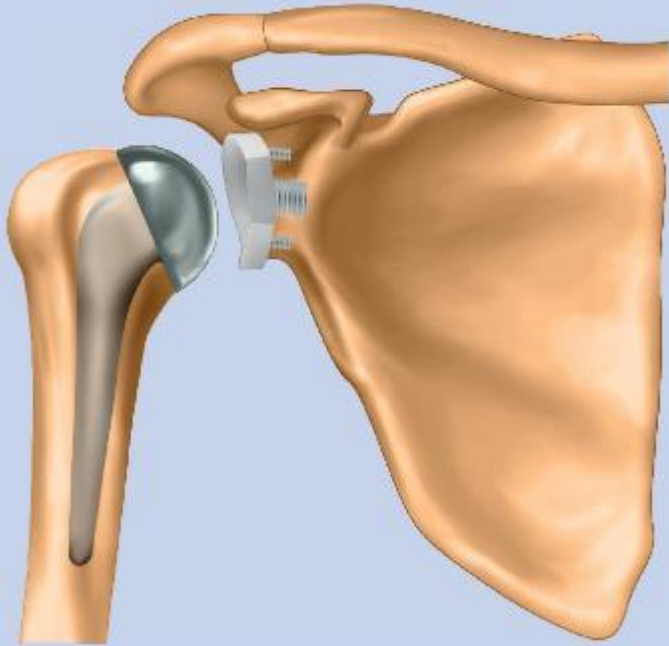


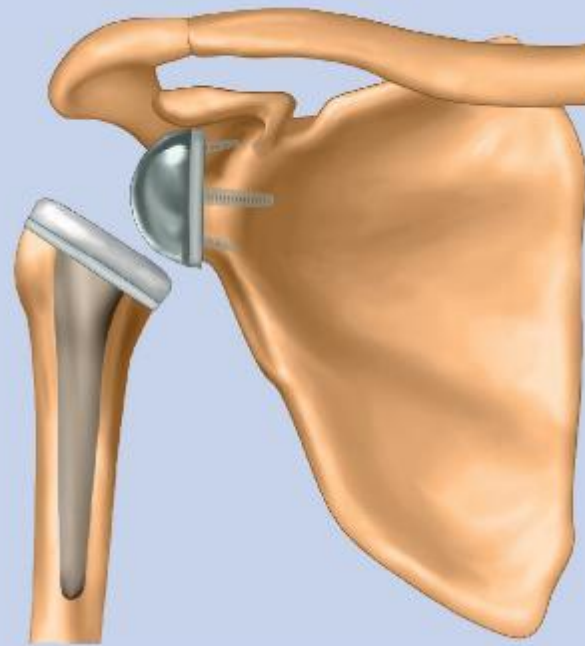
Rehabilitation and Expectations Following Shoulder Arthroplasty

ReeAnn Sadowsky, DPT

Anatomical total shoulder replacement



Reverse total shoulder replacement



Incidence of Shoulder Arthroplasty

- *Incidence of TSA has significantly increased in the last 10 years across all ages and sexes in the US*

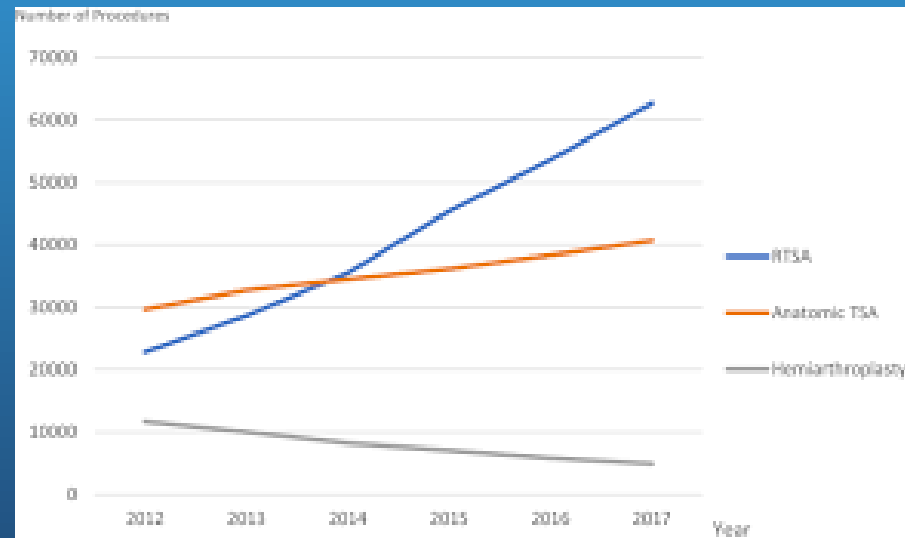
- *Best et. al*

- TSA

- 2012: 29,685
- 2017: 40,665

- RTSA

- 2012: 22,835
- 2017: 62,705

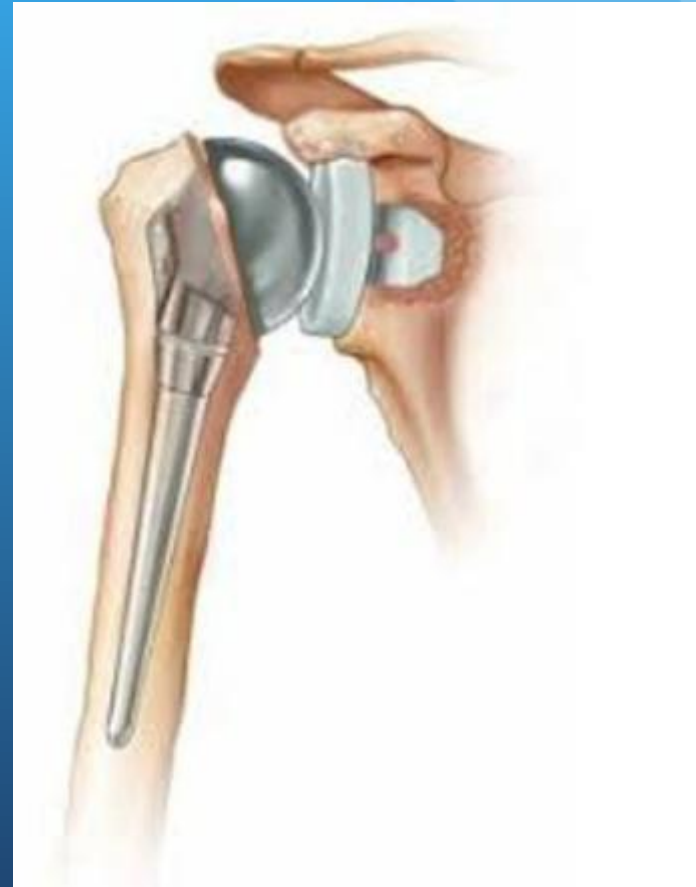


TOTAL SHOULDER ARTHROPLASTY (TSA)

TSA INDICATIONS


- Osteoarthritis
- Osteonecrosis
- Rheumatoid arthritis
- Post-traumatic arthritis
- Proximal humerus fractures
- Cuff deficiency/arthropathy

Requires an intact or reparable rotator cuff



TSA GOALS

- Reduce pain
- Return to moderate functional activities around 3-4 months
- Return to higher level activities around 4-6 months
- ROM goals:
 - FLEXION- 140-160°
 - ER- 60-80°
 - FUNCTIONAL IR- L1

The background is a blue gradient with several overlapping, semi-transparent circular shapes of varying shades of blue, creating a layered effect.

Total Shoulder Arthroplasty Rehabilitation

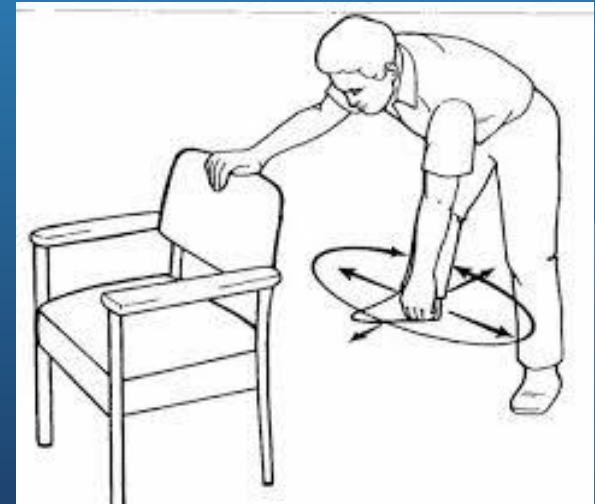
TSA Precautions

- Immobilizer x 4-6 weeks
- **Protect the subscapularis**
 - Avoid resisted IR x 8-10 weeks
 - Caution with ER and Extension ROM
- Be aware of concomitant soft tissue/bony involvement

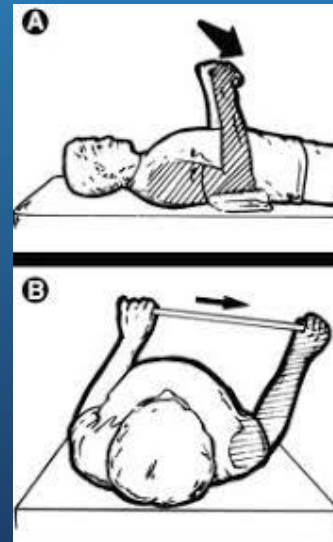
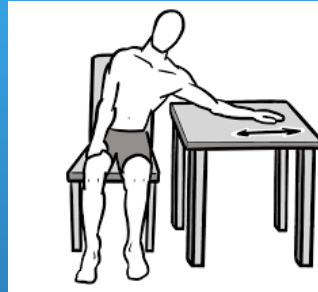
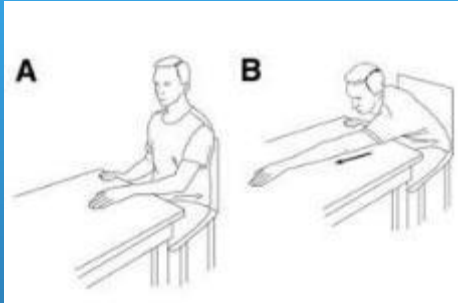


TSA 0-1 Week

- PROM 5-6x/day
 - Flexion and abduction to 90°
 - ER to neutral
- Active elbow, wrist, and hand exercises
- Pain/edema reduction

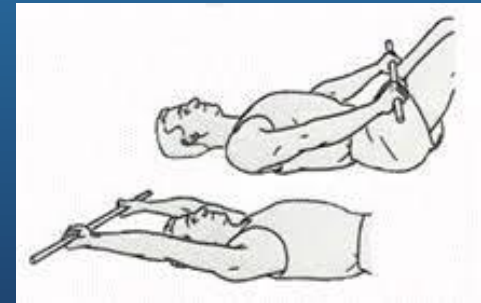


TSA 0-1 Week



TSA 1-4 weeks

- Continue PROM
- Limit ER to around 30°
 - Slowly progress ER in abducted position
 - 1-2 weeks: 0° abduction
 - 2-4 weeks: 30-45° abduction
- Isometrics: 3 weeks
 - *Caution with IR*
- AAROM: 4 weeks
 - Supine cane assisted flexion
 - Pulley

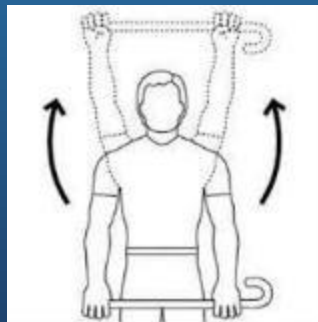


4 Week Goals

- 120° passive forward flexion
- ER to at least 30° in the scaption plane
- 90° abduction

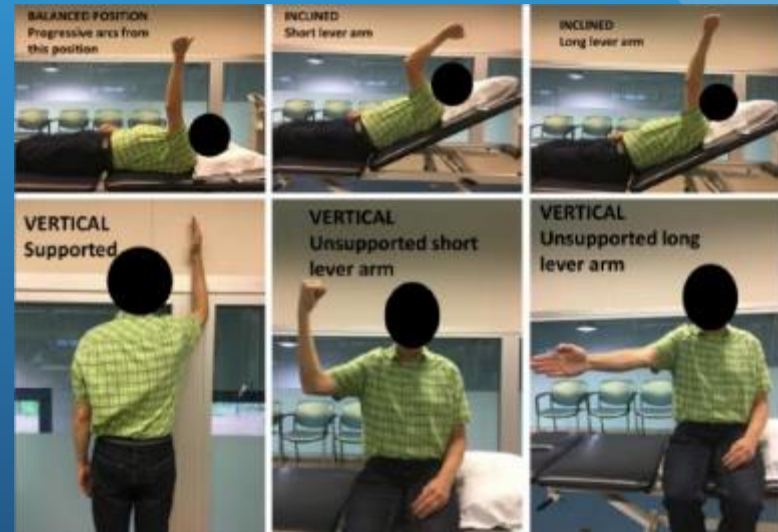
TSA 4-6 Weeks

- Continue with PROM
- Progress ER ROM slowly
- AAROM moving to seated/standing position
 - Gravity assisted → Gravity resisted
- Rhythmic stabilization drills



TSA 6-8 Weeks

- Begin AROM
 - Supine/side-lying → Sitting/standing
 - Don't push through “shrug sign”
- 8 Weeks: Begin light isotonic strengthening
 - External rotators
 - Deltoid
 - Scapular stabilizers
 - Caution with IR

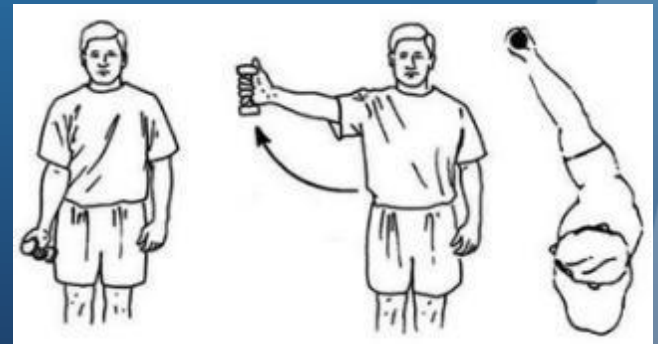
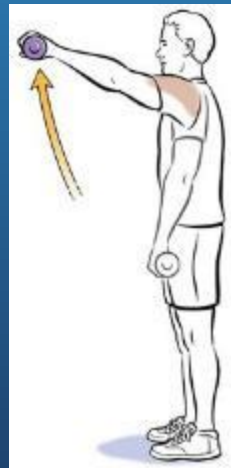


8 Week Goals

- 140-160° passive forward flexion
- 60° ER in scaption plane
- Active elevation to at least shoulder height without shrug sign

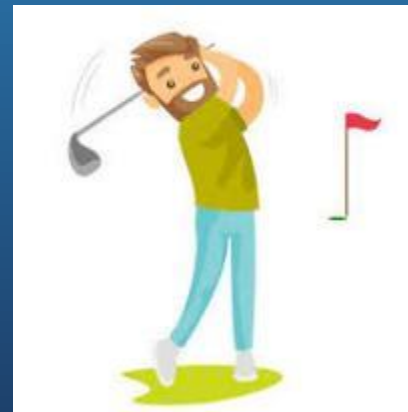
TSA 10-12+ Weeks

- Restore full PROM
- Continue to progress AROM and dynamic strength program
- Discharge with HEP



TSA OUTCOMES

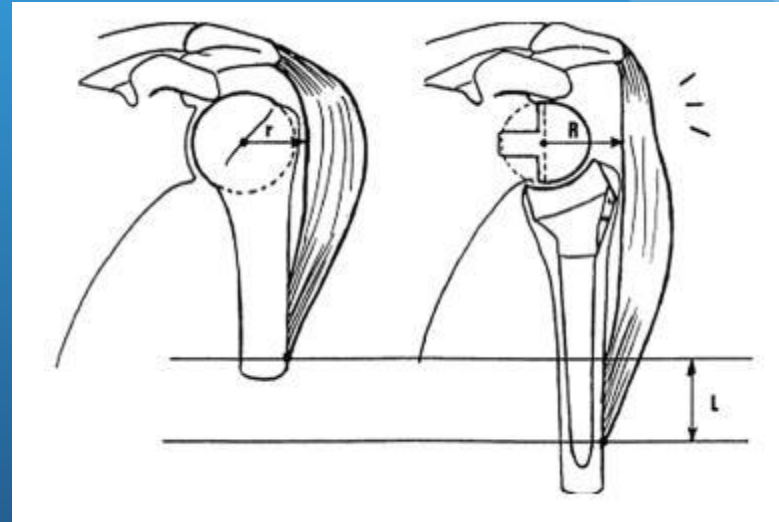
- Dependent on underlying pathology and prior level of function
 - Patient satisfaction rate around 90-95%
- 75-90% reported a return to sport activities
 - Fishing
 - Swimming
 - Golf
 - Bowling
 - Softball



Reverse Total Shoulder Arthroplasty (RTSA)

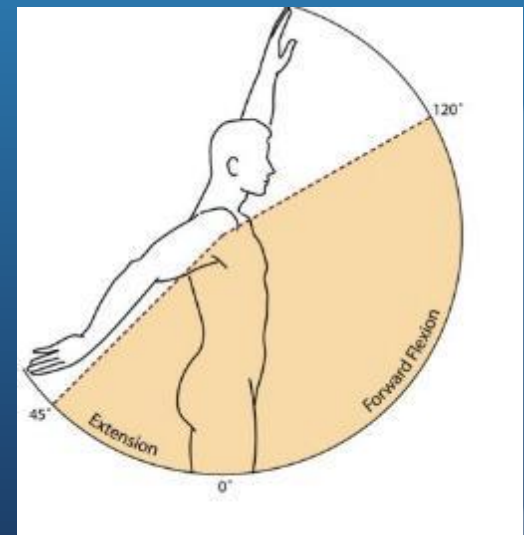
RTSA INDICATIONS

- Utilized when the rotator cuff is irreparable or inadequate
- Osteoarthritis
- Irreparable rotator cuff damage
- Complex fractures
- Revision of a previously failed conventional TSA



RTSA GOALS

- Reduce pain
- Restore functional ROM for light to moderate activities
- ROM:
 - Flexion- 120-130°
 - ER- 30-45° in scaption plane
 - Functional IR- L5



Reverse Total Shoulder Arthroplasty Rehabilitation

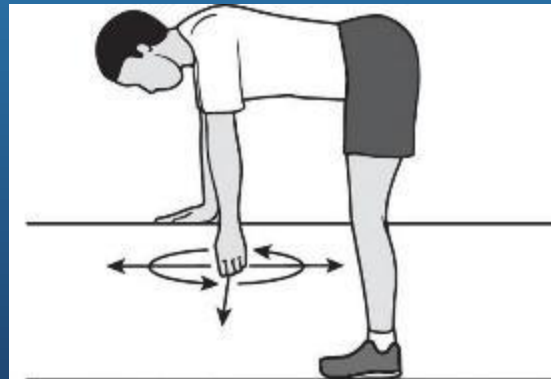
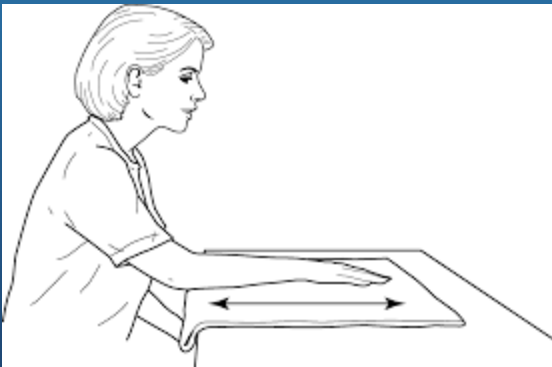
RTSA Precautions



- Immobilizer x 4 weeks
- Caution
 - Combined adduction, internal rotation, and extension X 6-8 weeks
 - Reaching behind the back
 - Extension
 - Combined ER, extension, and abduction
- Be aware of soft tissue and/or bony involvement
 - Deltoid or subscapularis repair?
- No weight bearing through arm x 6-8 weeks

RTSA 0-1 Week

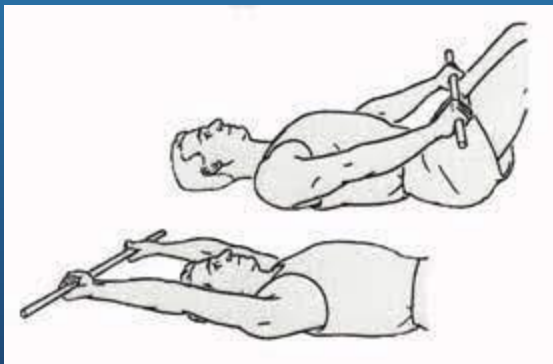
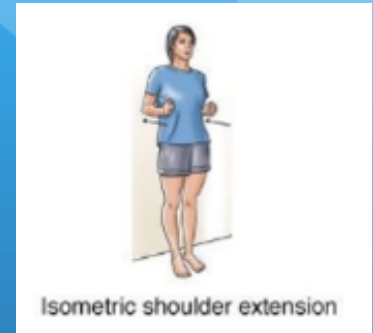
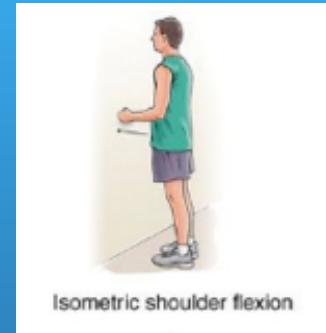
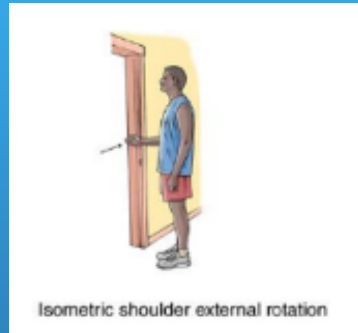
- PROM
 - Flexion and abduction to 90°
 - ER to neutral
 - AROM- elbow, hand, wrist, cervical spine



RTSA 1-4 Weeks

- Progress PROM as tolerated
 - ER no > than 20-30°
- 3 Weeks:
 - Begin supine AAROM
 - Pulley
 - Isometrics
 - Caution with deltoid or subscapularis repairs

RTSA 1-4 Weeks



RTSA 4-6 Weeks

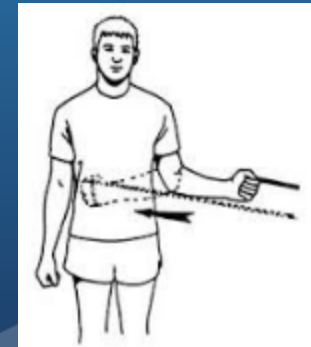
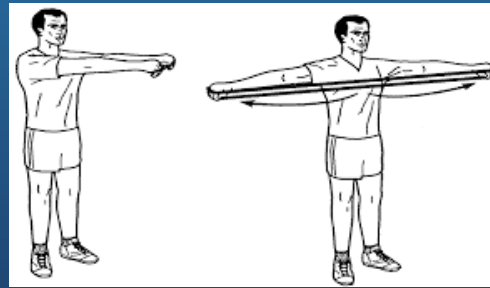
- Progress PROM and AAROM
 - AAROM moving to seated/standing position
- Begin resisted elbow and wrist exercises
- Rhythmic stabilization drills
- AROM
 - Be aware of soft tissue repairs
 - Supine → Standing

RTSA 6-8 Weeks

- Focus on achieving functional ROM
 - 120-130° forward flexion
 - 30-45° ER in scaption
 - 110-120° abduction/scaption
- Improve anti-gravity AROM
 - Reduce shrug sign
 - Enhance deltoid function and scapular mobility
- Initiate IR behind the back

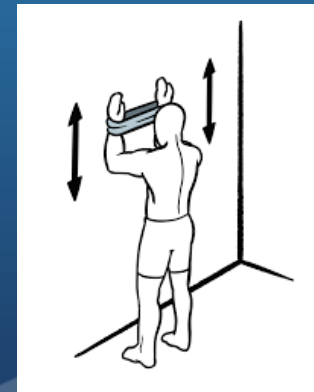
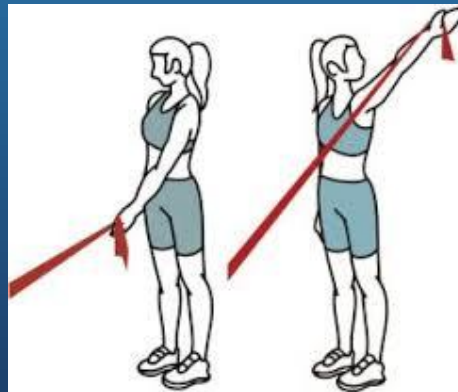
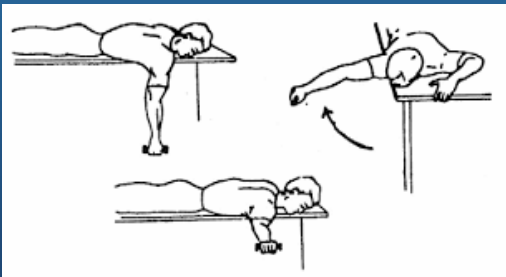
RTSA 8-10 Weeks

- Begin isotonic strengthening
 - Focus on deltoid, scapular stabilizers, and RC
 - Anterior, middle, and posterior deltoid
 - External rotation
 - Internal rotation
 - *Caution with subscapularis repair*



RTSA 10-12+ Weeks

- Gradual return to activities
- Continue to focus on dynamic strengthening and functional ROM
- Discharge with HEP
 - Continue for at least 1 year post-op



RTSA OUTCOMES

- Dependent on underlying pathology and prior level of function
 - Patient satisfaction rate around 90%
- Less ROM and functional scores as compared to TSA
 - 75-85% of patients reported a return to sport activities
 - Biking
 - Fishing
 - Dancing
 - Swimming
 - Golf



Conclusions

- Protect joint structures for the first 6 weeks
 - Gentle PROM → AAROM → AROM
- Read the operative report
 - Subscap repair?
 - Deltoid repair?
 - RC repair?
 - Fracture?
- Dynamic Strengthening around 8-10 weeks P/O
 - TSA: Focus is on RC + Deltoid + Scapular stabilizers
 - RTSA: Focus is on Deltoid + Scapular stabilizers + remaining RC
- **Know the expectations for each procedure**
 - **Patient expectations are directly correlated to reported satisfaction!**

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