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# Shoulder Rehabilitation Techniques

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## FINANCIAL DISCLOSURE

Mr. Manuel C. Sanchez, PT, MPT, ATC, LAT has no relevant financial relationships with commercial interests to disclose.

# OVERVIEW

- Objectives
- Anatomy of the Shoulder Complex
- Therapeutic Physical Agents
- Taping & Bracing
- Manual Therapy Techniques
- Aerobic Conditioning
- Therapeutic Exercises: ROM, Flexibility & Strength
- Neuromuscular Re-Education Exercises
- Plyometric Exercises
- Conclusion
- References

# OBJECTIVES

- To recall the anatomy of the shoulder complex in order to formulate and implement an appropriate and effective shoulder rehabilitation program
- To attain the knowledge that a comprehensive shoulder rehabilitation program is vital and crucial to prevent injury and maximize function

# Basic Principles of Rehabilitation

(Andrews and Wilk 1994)

- The effects of immobility must be minimized.
- Healing tissue should never be overstressed.
- Rehabilitation protocol must be based on scientific and clinical research.
- The patient must fulfill specific criteria to progress from one stage of rehabilitation to the next (criteria based progression).
- The rehabilitation program must be adaptable to each patient, allowing for the desired goals of each patient.
- The rehabilitation process is a team effort with the physician, therapist, trainer, coach, patient and family.

## Anatomy of the Shoulder Complex

- Primary purpose is to position the hand in space
- 3 Bones: Humerus, Clavicle, Scapula
- 4 Joints: Glenohumeral, Acromioclavicular, Sternoclavicular & Scapulothoracic
- 27 Muscles attach to the shoulder
- Designed for maximum mobility but inherently unstable
- Scapulohumeral Rhythm-Elevation of the arm distributed between GH & ST joints

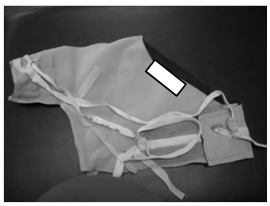
## Therapeutic Physical Agents

- Moist Hot Pack/Cold Pack
- Electrical Muscle Stimulation
- Ultrasound
- Iontophoresis

## Taping & Bracing

- Shoulder Stabilizers
- Shoulder Skeleton
- AC joint tape with orthoplast pad
- SC joint Kinesio Tape

## Taping and Bracing



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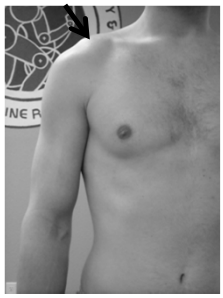

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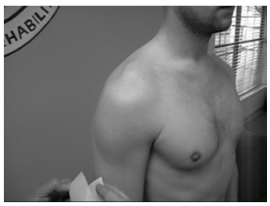


## Manual Therapy Techniques

- Soft Tissue Mobilization
- Axilla Release
- Cervical Distraction
- Scapula Mobilizations
- GH Joint Mobilizations

  Open Pack Position: 30 degrees of flexion, 55 of abduction

  Long Axis Traction

  Anterior Glides

  Posterior Glides

  Inferior Glides

## Aerobic Conditioning

- UBE
- Airdyne Bicycle
- Elliptical Trainer
- Total Gym Pull Downs

## Therapeutic Exercises: ROM, Flexibility & Strength

- ROM EXERCISES
  - Stick Exercises X 5
  - Pulley Exercises X 3
  - Pendulum X 4
  - Table Top X 3
  - Finger Ladder X 2

## Therapeutic Exercises: ROM, Flexibility & Strength

- FLEXIBILITY EXERCISES
  - Horizontal Adduction
  - IR with strap
  - ER at doorway, 0 and 90 degrees
  - Forward flexion at doorway
  - Upper Trapezius
  - Levator Scapula
  - Sternocleidomastoid
  - Scalenes

## Therapeutic Exercises: ROM, Flexibility & Strength

- STRENGTH EXERCISES
  - Isometrics X 8
  - Theraband X 8
  - Isokinetic
  - Free Weights
  - Don't forget to strengthening the joints above and below the shoulder…bicep curls, triceps extensions, cervical spine

## STRENGTH EXERCISES

- Glenohumeral Joint
  - Flexion: Supraspinatus, Infraspinatus, Subscapularis, Anterior & Middle Deltoid
  - Abduction: Supraspinatus, Infraspinatus, Subscapularis, Anterior Deltoid
  - Scaption in IR: Supraspinatus, Subscapularis, Anterior & Middle Deltoid,
  - Scaption in ER: Anterior & Middle Deltoid
  - Prone Horizontal Abduction at 100 degrees ABD: Supraspinatus
  - Prone Horizontal Abduction in ER: Infraspinatus, Teres Minor, Middle & Posterior Deltoid

## STRENGTH EXERCISES

- Glenohumeral Joint
  - Prone Horizontal Abduction in Neutral: Infraspinatus, Teres Minor, Middle & Posterior Deltoid
  - Military Press with Dumbbell: Supraspinatus, Subscapularis, Anterior Deltoid
  - External Rotation in Side Lying: Infraspinatus, Teres Minor, Posterior Deltoid
  - Prone Extension: Posterior Deltoid
  - Rowing: Posterior Deltoid
  - Press Up: Pectoralis Major, Latissimus Dorsi
  - Push Up with Hands Apart: Pectoralis Major

## Strength Exercises


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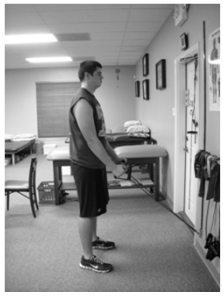


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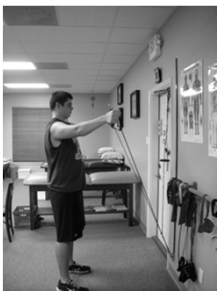

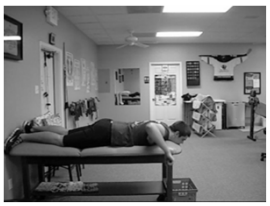

## Strength Exercises

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## Neuromuscular Re-Education Exercises


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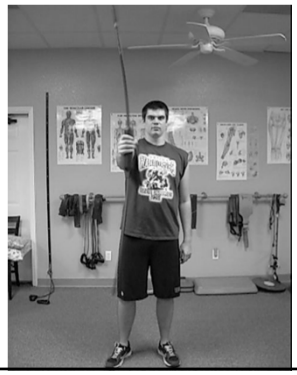

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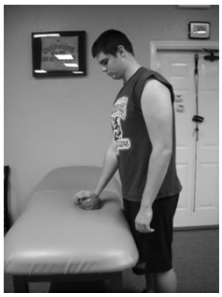
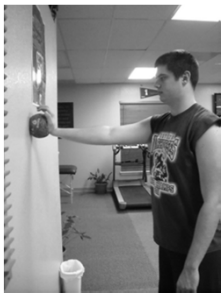
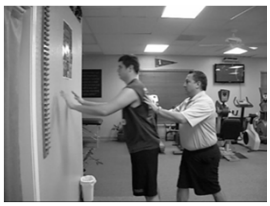



## Plyometric Exercises




## Plyometric Exercises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## Conclusion

- The shoulder complex is one of the most challenging joints to rehabilitate. The goal of a comprehensive rehabilitation program should be to return the patient or athlete to their previous level of function, if not at an improved state.
- By incorporating the physical therapist's and athletic trainer's overall knowledge of the shoulder complex, the patient/athlete will be provided with a comprehensive program that will not only lead to a high level of function but also a prevention of further injury.

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