

**Journey Through the**

**Brachial  
Plexus**

A Layperson's Collection of Recovery Exercises

**CHRIS HONG** and **KURT KOHLSTEDT**



## **Guide to Increasing Reps & Weight**

Start with 1 pound ...

1. 5-10 reps x 1 until mastered, then ...
2. 10 reps x 1 and then ...
3. 10 reps x 2 etc ...
4. 10 reps x 3
5. 15 reps x 3

Add 1 pound, then repeat the 5 steps above.

For gravity-eliminated (horizontal) exercises:  
Repeat above until able to do 15 reps x 8 pounds  
Then return to conventional (vertical) format

## **About This Document**

Created by Chris Hong and Kurt Kohlstedt

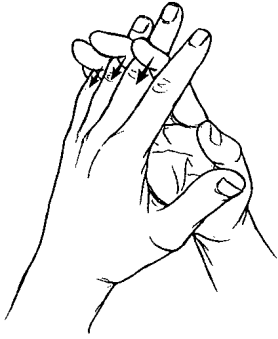
Collected, scanned, combined, and condensed from  
100+ pages of stretches and exercises

Sources include:

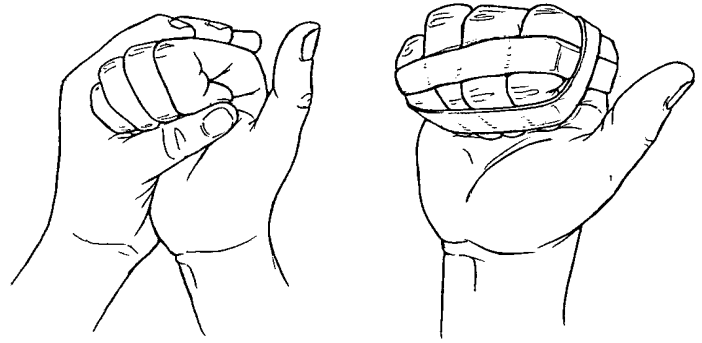
- The Mayo Clinic
- Allina Health
- Courage Kenny Rehabilitation Institute
- Trauma Brachial Plexus Injuries Institute

This document does not contain medical advice.  
Consult your doctor or physical therapist!

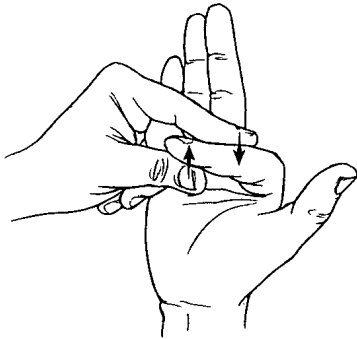
**Stretching the web spaces of the fingers**



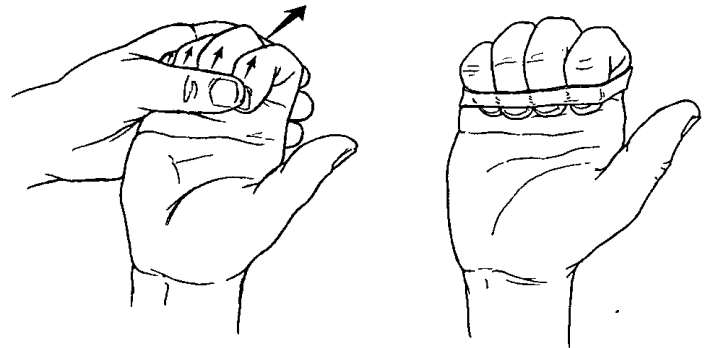
**Bending the base, middle, and end joints**



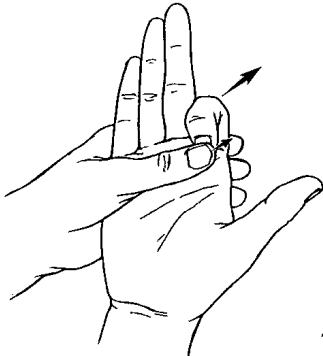
**Straightening the middle and end joints**



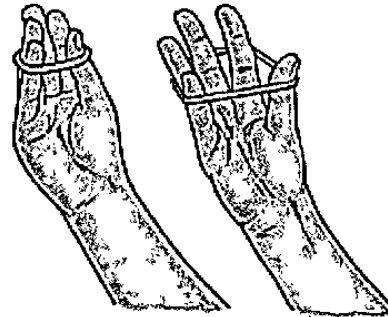
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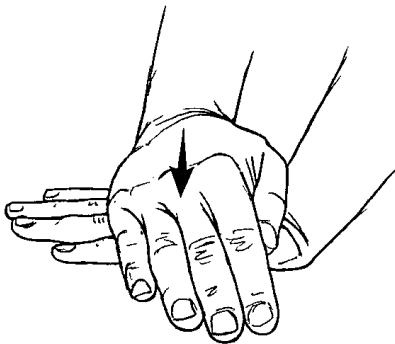
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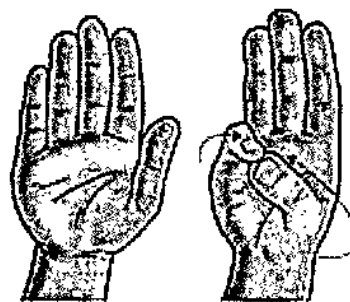
**Finger Spring with Rubber Bands**



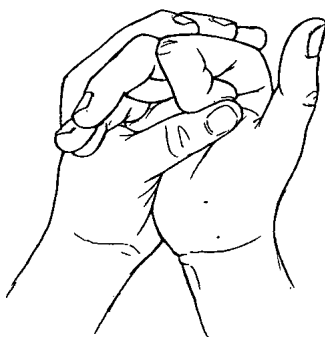
**Straightening the base, middle, and end joints**



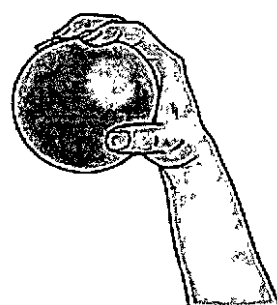
**Opposition Stretch (Pinching)**



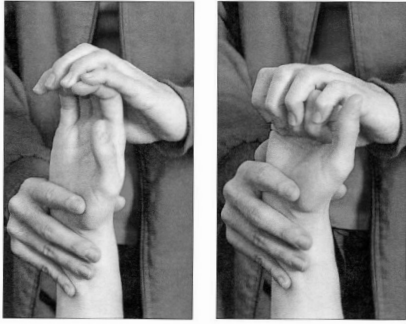
**Bending the base, middle, and end joints**



**Grip Strengthening with Ball**



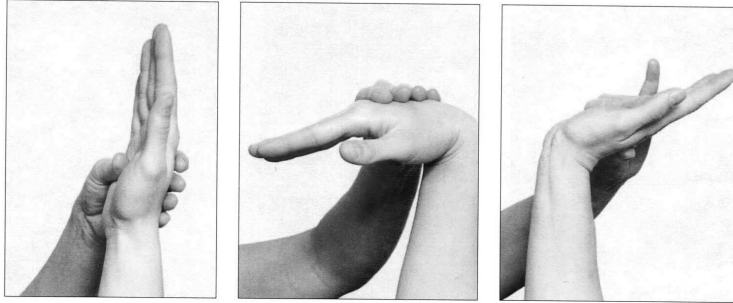
### **Finger Flexion and Extension (Passive)**



A

B

### **Wrist Flexion and Extension (Passive)**



A

B

C

### **Supination Stretch without Hammer**

- Bending your elbow at 90°. Keep your elbow at your side.
- Hold your right wrist with your left hand.

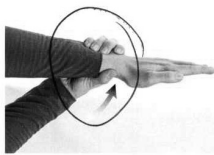


Figure 6a

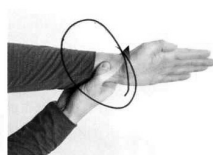


Figure 6b



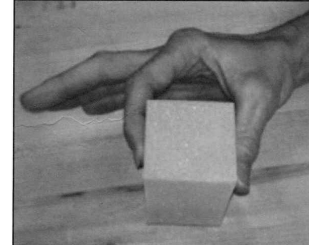
Figure 6d

### **Ulnar Glides**

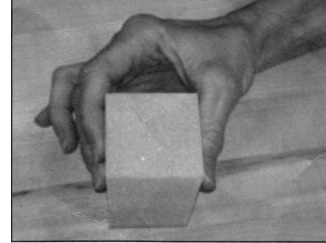
- Position palms together, centered under your chin.
- Gently slide to the right as far as your ear.



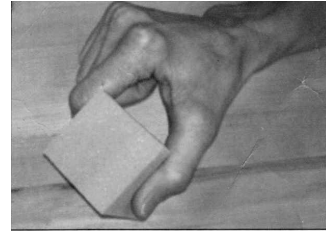
### **Pad-to-pad Pinch**



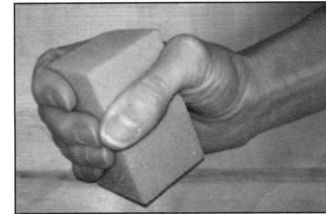
### **Three-finger Pinch**



### **Key Pinch**



### **Grip Strengthening**



### **Tip Grip**

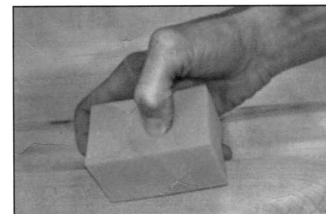


### **Cross Body (Golfer's) Stretch**

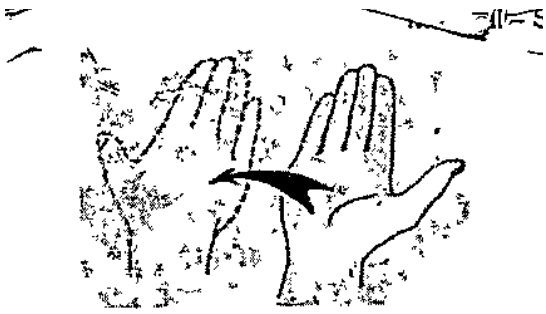
- Pull elbow across your body. Don't let shoulder blade move around rib cage.



### **Thumb Bending**

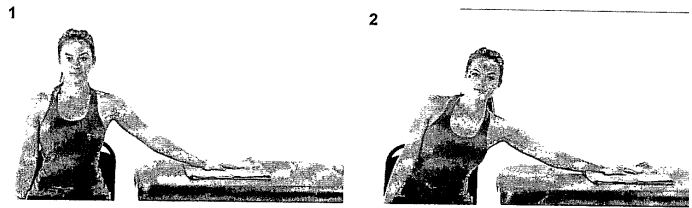


**Assist wrist rotation. Keep elbow stationary.**

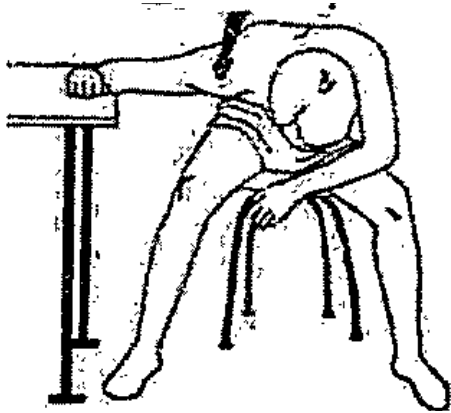


**Seated Shoulder Abduction Towel Slide at Table**

- Slowly bend sideways, pushing the towel across the table.

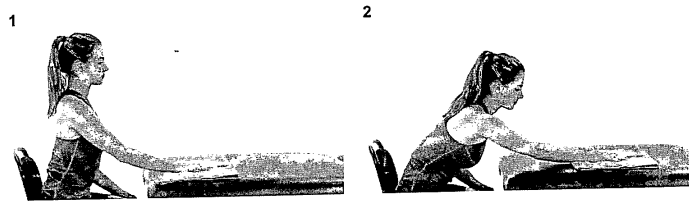


**Forearm on table. Lean forward.**



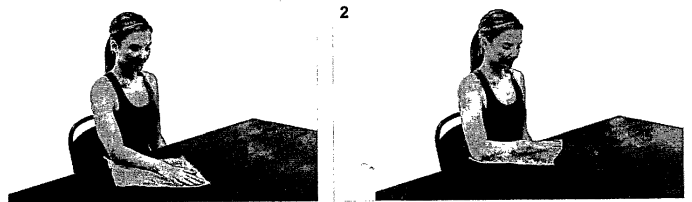
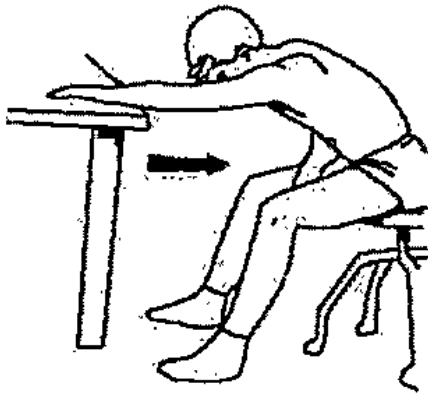
**Seated Shoulder Flexion Towel Slide at Table**

- Slowly lean forward to slide your hand and towel across the table.



**Hands on table. Lean forward; push chair away. Seated Elbow Flexion Shoulder Internal Rotation**

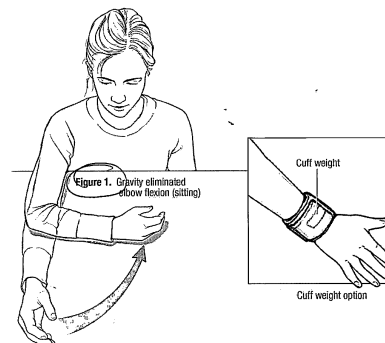
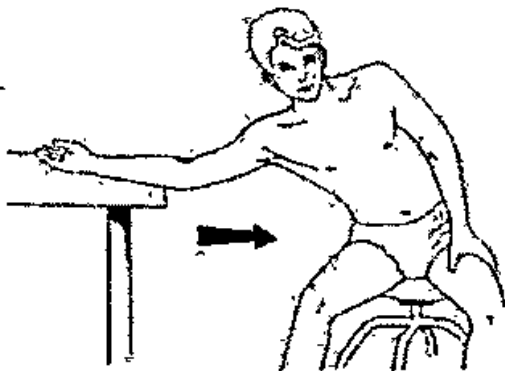
- Bend your elbow, bringing your arm in toward your body.



**Forearm on table. Lean away; push chair away.**

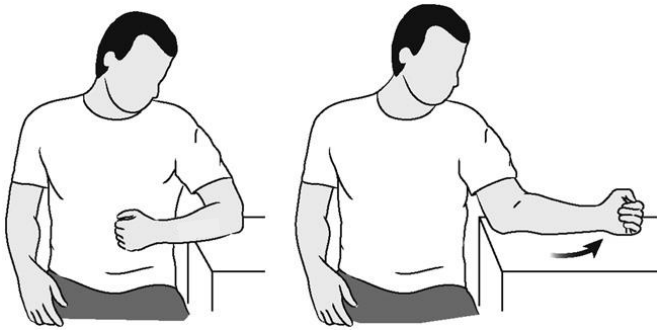
**Gravity Eliminated Elbow Flexion (Bending)**

- Use weight and/or skateboard. Bend your elbow through a full arc.



### **Shoulder External Rotation**

- Add weight. Hold elbow at 90°. Rotate forearm away from body.



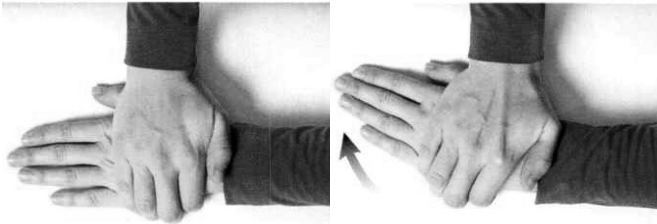
### **Supported Elbow Flexion Extension PROM**

- Gently bend elbow upward, hold, then slowly return to starting position.



### **Radial Deviation**

- Gently pull your hand toward your body, bending at the wrist.



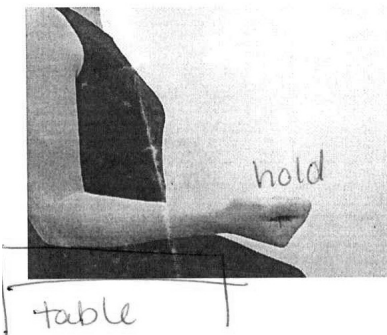
### **Ulnar Deviation**

- Gently push your hand away from your body, bending at the wrist.



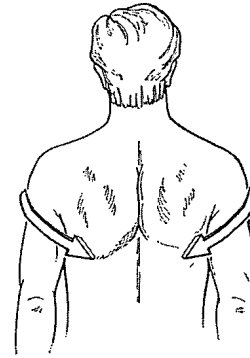
### **Supination-Pronation**

- Keep elbow at 90°. Turn palm up and hold for 10 seconds.



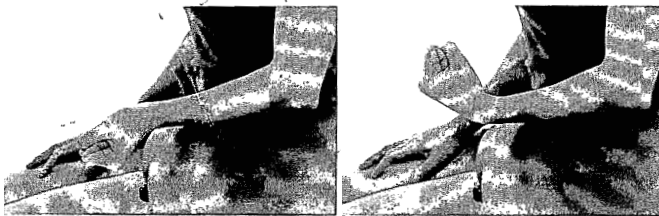
### **Shoulder Retraction**

- Pull your shoulder blades down and together behind you.



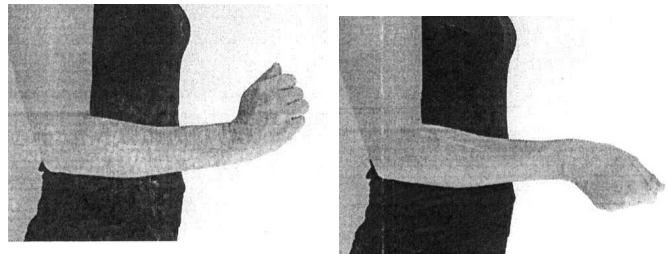
### **Wrist Flexion AROM**

- Elbow bent, palm facing up. Slowly bend wrist upward.



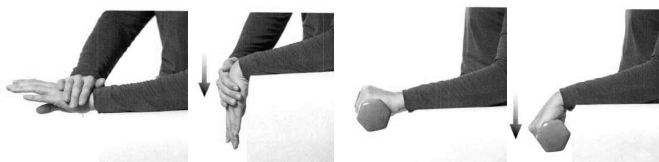
### **Radial-Ulnar Deviation**

- Keep elbow at 90°. Tip wrist up and down as if casting a fishing rod.



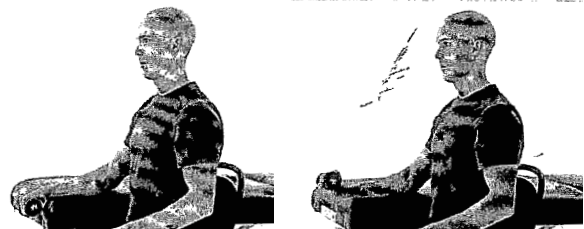
### **Wrist Flexion**

- Add weight. Keep forearm on the table. Slowly push hand downward.



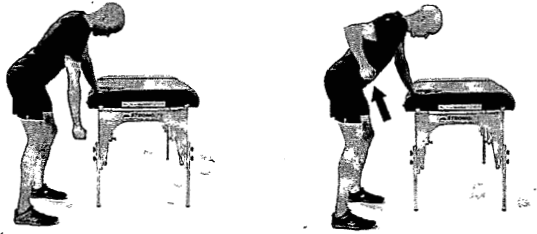
### **Seated Wrist Extension with Dumbbell**

- Hold dumbbell with palm facing down. Bend wrist up and back.



### **Standing Bent Over Single Arm Scapular Row**

- Bend your arm, pull up elbow upward, making a sawing motion.



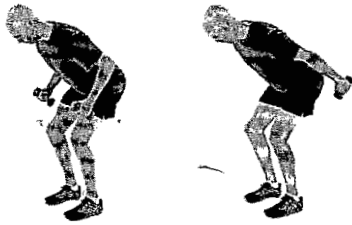
### **Standing Shoulder Extension AAROM with Dowel**

- Slowly press dowel backward while keeping right arm straight.



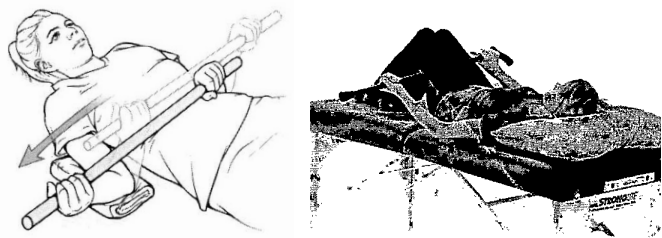
### **Standing Bent Over Triceps Extension**

- Add weight. Begin with elbows bent at 90°, then slowly straighten.



### **Supine Shoulder Rotation AAROM with Dowel**

- Elbows at 90 degrees. Slowly rotate outward, keeping elbows close.
- Ideally: left hand on top and right hand under.
- Palm neutral (vertical) at end of dowel, with tennis ball as grip



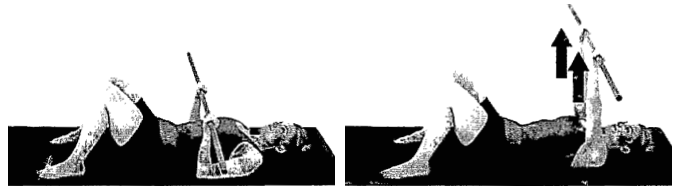
### **Isometric Shoulder Abduction at Wall**

- Elbow bent at 90°, towel as cushion, push arm sideways into wall.



### **Supine Shoulder Chest Press with Dowel**

- Add weight. Elbows at 90 degrees to start -- then straight up.



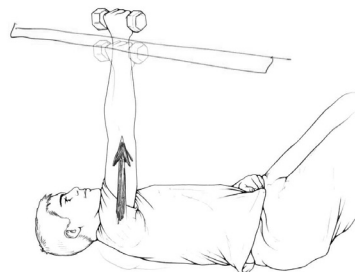
### **Ulnar Nerve/Median Glide - Low Level**

- Heels together, toes outward. Spread fingers; bend wrist back.



### **Scapular Protraction**

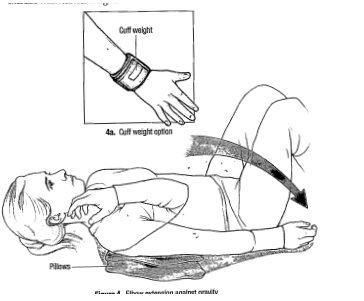
- Start at top of chest press. Push up beyond by lifting shoulders.





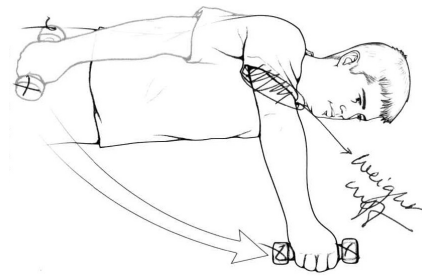
## Elbow Extension (Straightening)

- Prop shoulder, hand by ear, then straighten elbow for full arc.



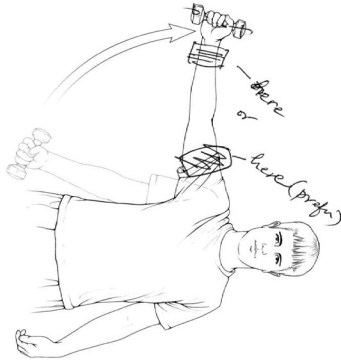
## Shoulder Flexion

- Lay on left side with upper arm weight. Slide (elbow straight).

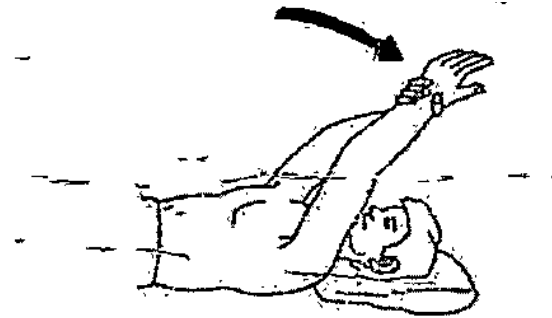


## Shoulder Abduction

- Lay on back with upper arm weight. Slide (elbow straight)

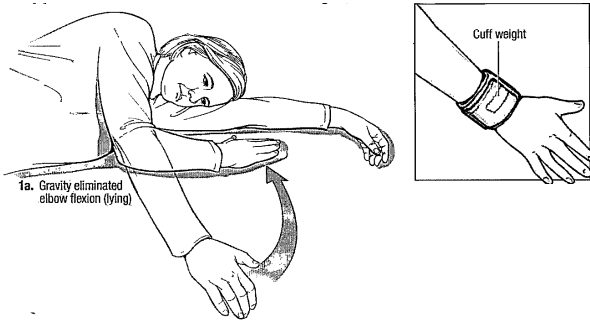


## Lying down, bring hand up above head.

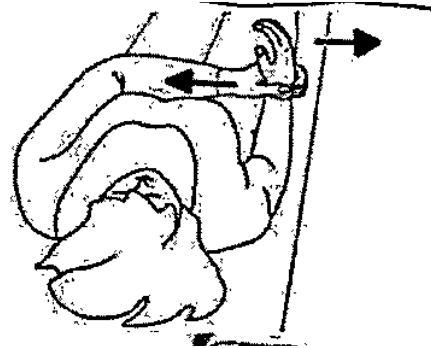


## Gravity Eliminated Elbow Flexion (Bending)

- Use weight and/or skateboard. Bend elbow through a full arc.

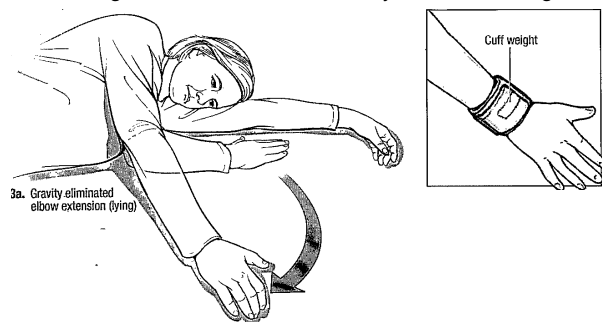


## Keep elbow anchored to bed. Push hand to side.



## Gravity Eliminated Elbow Extension (Straightening)

- Use weight and/or skateboard. Bend your elbow through a full arc.



## Weight and Rep Increments Per Mayo

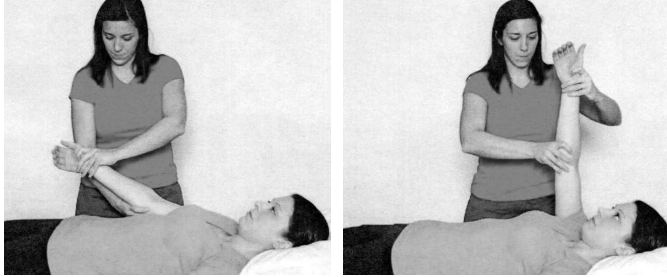
1 lb wt  
 5-10 Reps X 1  
 10 Reps X 1  
 10 Reps X 2  
 10 Reps X 3  
 15 Reps X 3  
 ↓  
 Add a lb

Gravity-eliminated until ~8lbs  
 1 set of 15 Reps

↓  
 Against gravity

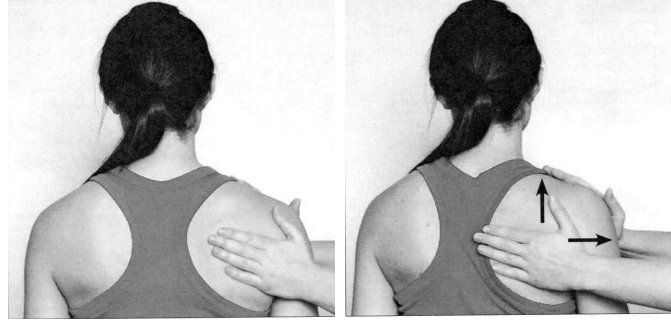
### **Shoulder Flexion (Passive)**

- Place one hand at the person's wrist and one at the elbow.
- Raise the person's arm over his or her head, keeping the person's thumb up and elbow straight.
- Hold at the height of the motion (where tight) for 5 counts.



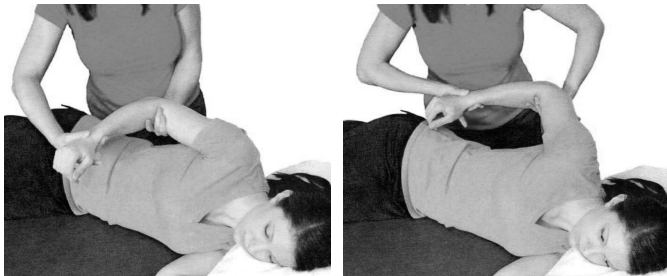
### **Scapular Elevation (Passive)**

- Place one hand over the lower half of the inside edge of shoulder blade. The other hand goes on front of shoulder or holds the elbow.
- Use your hand to slide shoulder blades forward away from the spine.
- Hold for 5 counts.



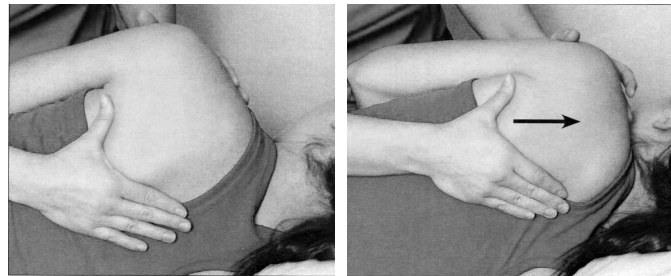
### **Shoulder Extension (Passive)**

- Put one hand at the person's elbow and one hand at the wrist.
- Move the arm backward while keeping the elbow bent.
- Hold at the height of the motion (where tight) for 5 counts.



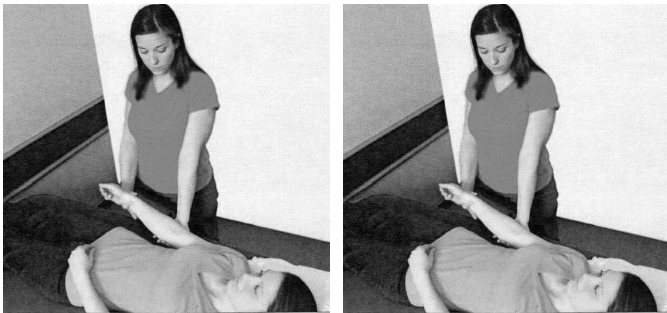
### **Scapular Elevation (Passive)**

- One hand on the shoulder; one hand cupping the shoulder blade.
- Apply pressure wards to help the person with "shrugging" the shoulder and hold for 5 counts.



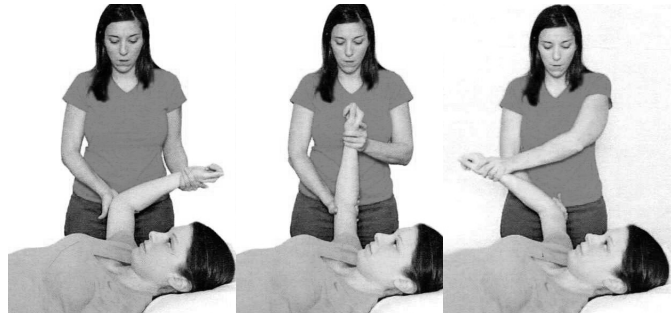
### **Shoulder Abduction and Adduction (Passive)**

- Put one hand at the person's elbow and one hand at the wrist.
- Slide the arm out to the side with thumb up and elbow straight.
- Hold for 5 counts at the end of the motion upwards



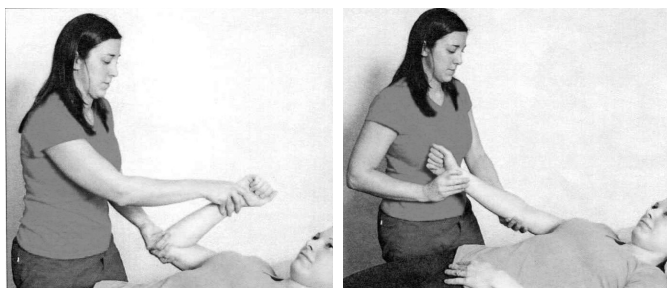
### **Shoulder Medial and Lateral Rotation (Passive)**

- Put one hand at the person's elbow and one hand at the wrist.
- Move the back of the hand toward the mat and hold for 5 counts.
- Move the palm toward the mat and hold for 5 counts.



### **Elbow Flexion and Extension (Passive)**

- Put one hand at the person's elbow and one hand at the wrist.
- Bend the elbow and hold for 5 counts where you sense tightness.
- Straighten the elbow and hold for 5 counts where you sense tightness with the elbow in a straight position.



### **Horizontal Shoulder Abduction and Adduction**

- Put one hand at the person's elbow and one hand at the wrist.
- Move the arm to the opposite shoulder.
- Hold at the end of the cross-body motion for 5 counts.
- Move the arm back out to the side and hold for 5 counts.



# Desensitization Program

## How to Help Your Hands or Feet

By having your hands or feet touch different objects, they can become less sensitive and less painful.

Use the following exercises as part of your physical therapy program.

### Massage

- Put some lotion on your affected area.
- With your hand, massage the area with light, slow pressure in small circles.
- Progress to a firmer pressure as you are able to tolerate it.
- Using the massage technique described above, rub the affected area with various textures. Progress from fine, smooth textures to rough, coarser textures:
  - feather
  - cotton ball
  - silk
  - corduroy
  - terry cloth
  - wool
  - Velcro®
  - sandpaper.
- Repeat 2 times a day for 5 minutes.

### Tapping

- Tap over your affected area with a cotton ball.
- Move to a pencil eraser.
- End by tapping the affected area on the table or floor with gradually increasing pressure.
- Repeat 2 times a day for 5 minutes.

### Particle Stimulation

- Put your hands or feet in a container filled with water, mud, sand, rice, beans or seeds.
- Search for objects hidden in the container (such as marbles, keys or coins) with your affected hands or feet.
- Repeat 2 times a day for 5 minutes.

### Contrast Baths

- Put your affected area in warm water (100 to 110 F) for 3 to 4 minutes.
- Move to cold water (60 to 70 F) for 1 minute.
- Repeat 5 times or for about 30 minutes.