

# Madigan Army Medical Center

## Musculoskeletal Treatment Guidelines

### FINGER AND THUMB SPRAINS

#### Diagnosis/Definition

- Sprains of the fingers and thumbs are common injuries. Most are relatively minor injuries and heal uneventfully. Early recognition and treatment may prevent chronic disability. Sprains are caused by either excessive lateral angulation at the joint, thereby stretching the collateral ligaments or by hyperextension causing injury to the volar plate.
  - Grade I – pain at the joint with minimal swelling and no instability.
  - Grade II – increased pain and swelling at the joint with mild laxity; complete instability is not present.
  - Grade III – complete instability of the joint is present with complete disruption of the supporting ligaments.

#### Initial Diagnosis and Management

- History and physical examination.
  - Vascular examination (capillary refill)
  - Neurologic examination (should be performed distal to the injury)
  - Radiographic examination
- Test and record active and passive ROM
- Flexibility and strength testing
  - Lateral stress should be applied to the joint in full extension and 45 degree flexion to determine collateral ligament stability.
- Appropriate restrictions of activity.
- Ice compression if needed

#### Ongoing Management and Objectives

- For Grade I sprains, buddy taping is usually sufficient
- For Grade II sprains, immobilization in a dorsal aluminum splint for 7-10 days in slight flexion is indicated.
  - Buddy taping with ROM may start thereafter
  - Flexion should not exceed 90 degrees
  - Buddy taping should continue until healed
- For Grade III sprains, treat as in Grade II, however a full finger splint should be used in place of buddy taping.

#### Indication a profile is needed

- Any limitations that affect strength, range of motion, and general efficiency of arms.
-

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- Slightly limited mobility of joints, muscular weakness, or other musculo-skeletal defects that may prevent hand-to-hand fighting and disqualifies for prolonged effort.
- Defects or impairments that require significant restriction of use

### **Specifications for the profile**

- Week 1-4
  - No PT requiring grasping and pulling with affected hands(s)
  - Self-limited grasping and pulling with affected hand(s) on duty
  - No rifle/pistol use
  - Caution when driving motor vehicle

### **Patient/Soldier Education or Self care Information**

- See attached sheet
- Demonstrate deficits that exist
  - Describe/show soldier his/her limitations
- Explain injury and treatment methods
  - Use diagram attached to describe injury, location and treatment.
- Instruct and demonstrate rehab techniques
  - Demonstrate rehab exercises as shown in attached guide
  - Warm up before any sports activity
  - Participate in a conditioning program to build muscle strength
  - Do stretching exercises daily
- Ask the patient to demonstrate newly learned techniques and repeat any other instructions.
- Fine tune patient technique
- Correct any incorrect ROM/stretching demonstrations or instructions by repeating and demonstrating information or exercise correctly.
- Encourage questions
  - Ask soldier if he or she has any questions
- Give supplements such as handouts
- Schedule follow up visit
  - If pain persists
  - The pain does not improve as expected
  - Patient is having difficulty after three days of injury
  - Increased pain or swelling after the first three days
  - Patient has any questions regarding care

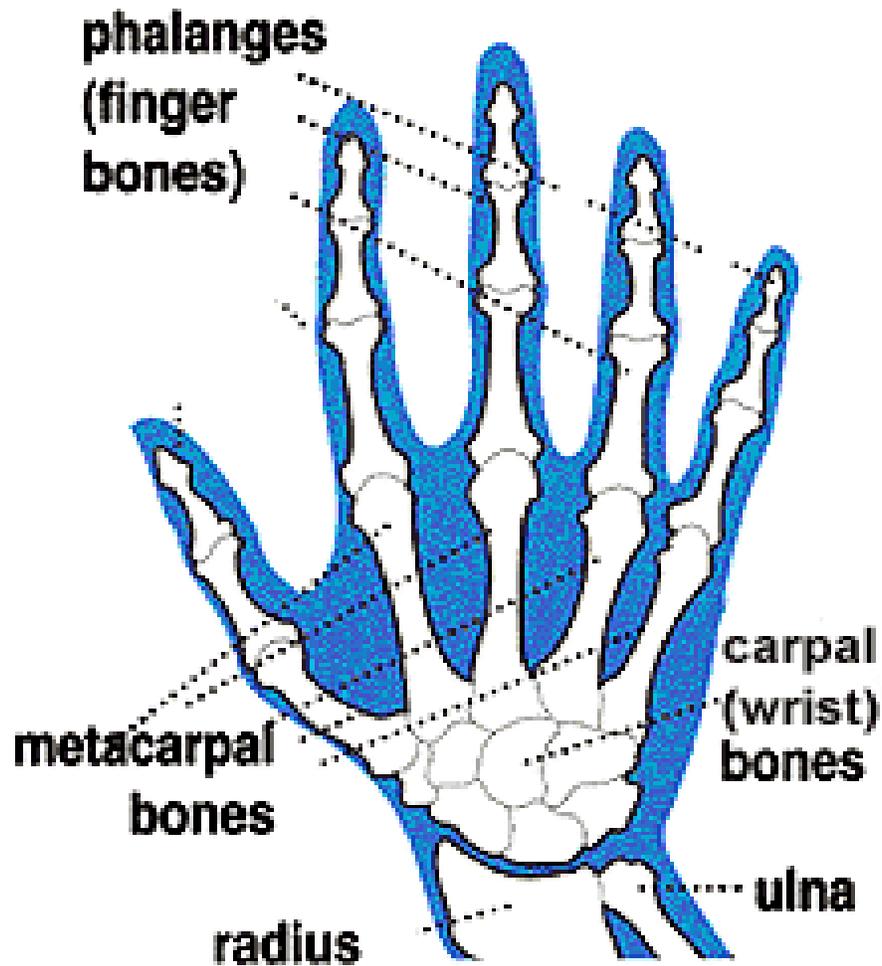
### **Indications for referral to Specialty Care**

- To Orthopedic or hand surgeon for acute ruptures or gross instability.

# Madigan Army Medical Center Musculoskeletal Treatment Guidelines

## Referral criteria for Return to Primary Care

- Completed specialty care.



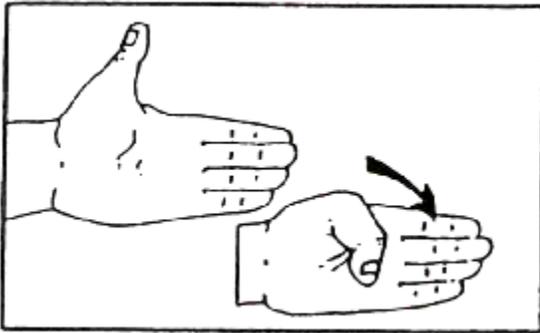
**Madigan Army Medical Center  
Musculoskeletal Treatment Guidelines**

## **Thumb Exercises**

All exercises should be done slowly and smoothly. Maintain the desired position for 3-5 second before relaxing.

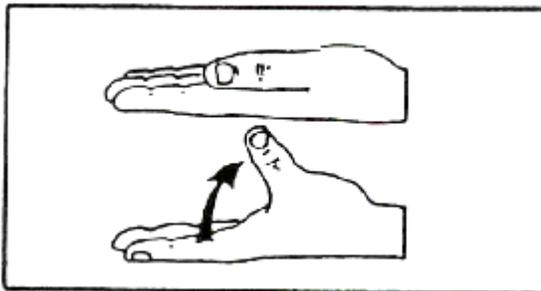
**Perform** \_\_\_\_ repetitions \_\_\_\_ x day

### **Thumb Flexion**



- Place the small finger side of your hand on the table so that the thumb points up.
- Flex (bend) the thumb across the palm toward your small finger, Be sure to bend both joints.
- Return to the starting position, making sure both joints are straight.

### **Palmar Abduction**



- Place the dorsum (back) of the hand flat on the table with the thumb resting in the palm.
- Raise the thumb (abduction) towards the ceiling.

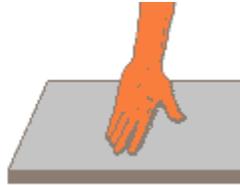
### **Tip Pinch**



- Touch the tip of your thumb to the tip of each finger.

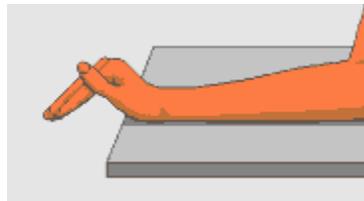
# Madigan Army Medical Center Musculoskeletal Treatment Guidelines

## *Left Finger Thumb Flex*



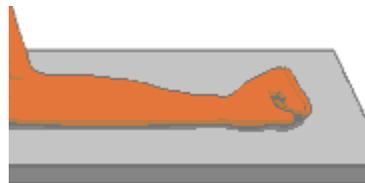
Move left thumb to little finger.  
Hold n counts.  
Move thumb to side and hold.  
Repeat n times.

## *Right Hand Bend*



Bend right hand at knuckle joint.  
Keep fingers straight.  
Hold n counts.  
Repeat n times.

## *Left Fist*



Make a fist  
Hold n counts  
Relax. Repeat n times.

Computer work around the home and office begins with our fingers. Above are samples of ergonomic exercises designed to reduce the potential of injury caused by repetitive motion of the hands and fingers.

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<b>PHYSICAL PROFILE</b>																																
For use of this form, see AR 40-501, the proponent agency is the Office of The Surgeon General																																
1. MEDICAL CONDITION FINGER AND THUMB SPRAINS	2.	<table border="1" style="margin: auto;"> <tr> <td>P</td><td>U</td><td>L</td><td>H</td><td>E</td><td>S</td> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	P	U	L	H	E	S																								
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3. ASSIGNMENT LIMITATIONS ARE AS FOLLOWS WEEKS 1 -4 , NO PT REQUIRING GRASPING AND PULLING OF AFFECTED HANDS, SELF LIMITED GRASPING AND PULLING OF AFFECTED HANDS WHILE ON DUTY, NO RIFLE/PISTOL USE, CAUTION WHILE DRIVING A MOTOR VEHICLE.		CODES																														
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DA FORM 3349, MAY 86

REPLACES DA FORM 5302-R (TEST) DATED FEB 84 AND DA FORM 3349 DATED 1 JUN 80, WHICH ARE OBSOLETE

USAPPC V 1.00

**Madigan Army Medical Center**  
**Musculoskeletal Treatment Guidelines**  
**PATIENT INFORMATION**

**What is a finger sprain?**

A sprain is an injury to a joint that causes a stretch or tear in a ligament. Ligaments are strong bands of tissue that connect one bone to another.

**How does it occur?**

A sprain usually occurs when there is an accident. For example, a ball may hit the tip of your finger or you may fall forcefully onto your finger.

**What are the symptoms?**

You have pain, swelling, and tenderness in your finger.

**How is it diagnosed?**

Your health care provider will examine your finger. You may have an x-ray to be sure you have not broken any bones in your finger.

**How is it treated?**

Treatment may include:

- applying ice packs to your finger for 20 to 30 minutes every 3 to 4 hours for 2 or 3 days or until the pain goes away
- elevating your hand on a pillow while you are lying down or on the back of a chair or couch while you are sitting (to help reduce swelling)
- taking an anti-inflammatory or other pain medication prescribed by your health care provider
- doing exercises to strengthen your finger during the healing process.

Your health care provider will recommend that your sprained finger be splinted or "buddy taped" (taped to the finger next to it) for 1 to 4 weeks after your injury.

**How long will the effects last?**

Your finger may remain swollen with decreased flexibility and strength for many weeks.

**How I prevent a finger sprain?**

Finger sprains are usually the result of injuries that are not preventable.

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### **Sprained Thumb**

When people start to fall, they usually extend their arm to reduce the force of the impact when they hit the ground. If you try to break your fall on the palm of your hand or take a spill on the slopes with your hand strapped to a ski pole, your thumb may be injured. The main ligament (ulnar collateral), which supports pinch and grasp activities, may be torn (sprained). The ligament helps your hand to function properly, acting like a hinge to keep your thumb joint (metacarpophalangeal) stable.

When you have a sprained thumb, you lose some or all of your ability to grasp items between your thumb and index finger. It may or may not hurt right away. Other signs include bruising, tenderness and swelling. To make sure your injury won't cause long-term weakness, pain and instability, see your doctor for evaluation and treatment.

#### **Partial and complete tears**

Your thumb ligament may have a partial or complete tear. Your doctor will probably move your thumb joint to test its stability and take X-rays to make sure you don't also have a broken bone. You may also get a stress X-ray showing what the joint looks like when your ligament is tested. If it hurts to do this, a shot of local anesthetic may help. Your doctor will probably also X-ray your uninjured thumb to compare it.

If you have a partial tear, your doctor will probably immobilize your thumb joint with a splint or other bandage until it heals. You wear the splint for about three weeks straight, then start taking it off to do flexion and extension exercises with your thumb. Put the splint back on for protection when you are not doing the exercises. Keep doing this for another two or three weeks until your thumb's swelling and tenderness are gone. You may also put ice on your injury twice a day for 2-3 days after the fall.

If your thumb ligament is completely torn, you may need surgery. Fragments of bone that sometimes get pulled away when your ligament tears may be removed or put back in their correct positions. After surgery, you'll probably need to wear a short-arm cast or a splint to protect your thumb ligament for six to eight weeks while it heals.

# Madigan Army Medical Center

## Musculoskeletal Treatment Guidelines

### Input was provided by:

- Occupational Therapy Clinic
- Physical Therapy Clinic
- Orthopedic Clinic
- Family Practice Clinic
- Okubo Clinic
- 555 Engineers
- 1<sup>st</sup> Brigade
- 3<sup>rd</sup> Brigade
- 62<sup>nd</sup> Medical Brigade

### POC:

- Outcome Management

### References:

- Mellion, I., Morris B. (2002). Team Physician's Handbook, 3<sup>rd</sup> Edition. Hanley & Belfus, Inc: Philadelphia, PA.
- Lillegard, Rucker. (1999). The Handbook of Sports Medicine. A symptom-oriented approach, 2<sup>nd</sup> Edition. Butterworth-Heinemann Medical: Burlington, MA.
- Baechle, Thomas, Earle, Roger. (2000) Essentials of Strength Training and Conditioning, 2<sup>nd</sup> Edition. Human Kinetics Pub: Champaign, IL
- Schenck, Robert, Jr. et al. (1999). Athletic Training and Sports Medicine, 3<sup>rd</sup> Edition. American Academy of Orthopedics: Tucson, AZ.
- [http://orthoinfo.aaos.org/fact/thr\\_report.cfm?Thread\\_ID=186&topcategory=Hand](http://orthoinfo.aaos.org/fact/thr_report.cfm?Thread_ID=186&topcategory=Hand)