



An Osteopathic Approach to the Athlete

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Objectives

- ✦ Demonstrate the application of the four principles of osteopathic medicine toward the athlete
- ✦ Apply these principles toward various athletic injuries
- ✦ Use the 5 models of osteopathic care to develop an effective treatment plan
- ✦ Understand when OMT may be contraindicated in the athletic setting



Introduction

- ✦ OMT is a distinctive feature of an osteopathic physician
- ✦ All DOs are trained in OMT, few actually use it
- ✦ Post-graduate training has greatest influence of usage



Background & Significance

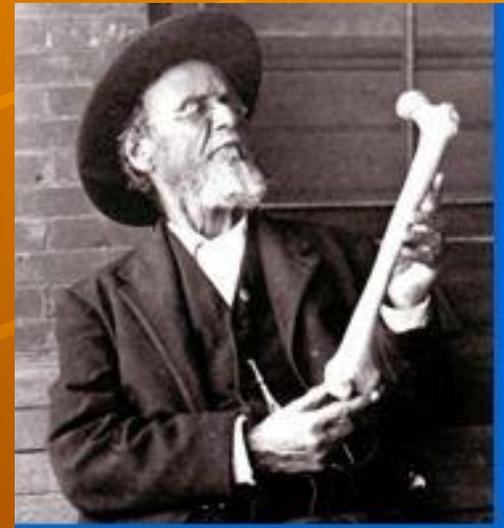
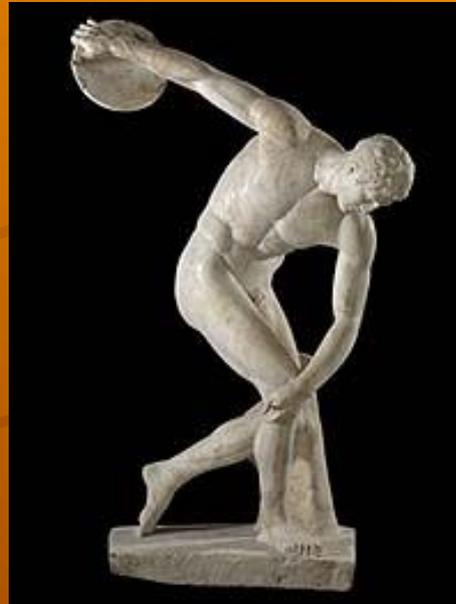
◆ OMT in Sports Medicine & Primary Care

– Use of manipulation for athletes dates back to Hippocrates

– A.T. Still

◆ Provided relief of sprains, strains, and dislocations

◆ A pioneer in sports medicine



Philosophy

- ◆ Our philosophic approach is patient oriented, not disease oriented.
- ◆ This philosophic approach lends itself to this population, because athletic patients are generally healthy and motivated to return to better health.
- ◆ A.T. Still also saw the body as a machine where each working part had to be free of structural restriction or impediment to perform at its optimal levels.

Palpatory Skills

- ◆ Palpatory skills provide osteopathic physicians with a distinct advantage in determining the location, extent, and associated manifestations of athletic injury.
- ◆ Osteopathic physicians, who effectively utilize OMT, have another “tool in the tool box” in which to treat an important component of athletic injury - somatic dysfunction.



Background & Significance

- ◆ OMT in Sports Medicine & Primary Care
 - Use all clinical tools available to treat the injured athlete
 - Expertise in treating musculoskeletal disorders
 - OMT, difference between success & failure in therapy



Background & Significance

◆ OMT has been shown to be beneficial in:

- Tx acute & chronic pain and/or illness
- Decreasing amt of pain meds used
- Improving overall well-being
- Enhancing athletic performance
- Decreasing return to play/rehab time
- Increasing ROM after injury
- Decreasing swelling and edema
- Decreasing the use of PT

◆ Athletic injuries effectively Tx with OMT:

- Sacroiliac joint dysfunction
- Neck & back pain
- Spondylolysis
- Muscle spasms
- Effusions
- Knee injuries
- Rotator cuff injuries
- Ankle sprains
- Brachial plexus injuries
- Achilles tendonitis
- IT band friction syndrome
- Epicondylitis
- Concussion
- Muscle cramps
- SOMATIC DYSFUNCTION

Case Presentation

- ◆ **CC:** Right shoulder pain
- ◆ **HPI:** JF is a 47-year-old RHD male who presents with progressively worsening right shoulder pain and stiffness x 3 weeks.
- ◆ He believes his symptoms started after playing catch with his son. He was trying to show off his old “heater” (he was a previous high school pitcher). The shoulder was painful on many of his pitches, and he may have felt a “pop” after one of his throws.
- ◆ He reports the pain as a diffuse, achy pain of the shoulder, rating it as 6/10. He has tried using heat and ice along with NSAIDS at home with minimal relief. He denies any history of shoulder trauma.

Case Presentation (cont'd)

- ◆ **Ortho/SM HX:** left ankle fx @ 14yo, right tennis elbow Tx last year
- ◆ **PMFSHX:** Significant for treated HTN. He does not smoke and drinks a glass of wine nightly. He is an accountant at a large corporation.
- ◆ **Patient Goals:** to be able to throw with his son again
- ◆ **PE:** Upon physical examination of the shoulder you find no deformity or atrophy, TTP along the greater tuberosity of the humerus, and a decreased range of motion in terminal flexion, IR, and abduction. Provocative testing is significant for a positive empty/open can, Hawkin's, Neer's, and equivocal drop-arm test. Right scapular dyskinesis is noted. Neurovascular exam is WNL.
- ◆ **XR:** negative for fx or deformity. High riding humeral head.

Differential Diagnosis

- ◆ RC Strain
- ◆ RC Tear
- ◆ RC Impingement
- ◆ Bicipital Tendonitis/
Tenosynovitis
- ◆ Subacromial Bursitis
- ◆ Adhesive Capsulitis
- ◆ Scapular dyskinesia
- ◆ GH subluxation/
dislocation
- ◆ Labral tear
- ◆ Shoulder OA (GH, AC)
- ◆ Somatic dysfunction
- ◆ Thoracic outlet syndrome
- ◆ Corticosteroid
arthropathy
- ◆ Cervical radiculopathy
- ◆ Multidirectional
Instability (MDI)
- ◆ Suprascapular nerve
entrapment
- ◆ Parsonage Turner
Syndrome
- ◆ Pancoast tumor

Brief Epidemiology

- ◆ Shoulder pain: a common complaint in primary care
 - 2nd only to knee pain for specialist referrals
 - Most common causes in adults (peak ages 40-60)
 - ◆ Subacromial impingement syndrome
 - ◆ Rotator cuff problems
- ◆ Athletic injuries
 - Shoulder: 8-13% of all athletic injuries



History

◆ **OLD CARTS:**

- Onset
- Location
- Duration
- Characterization
- Aggravating and Alleviating Factors
- Radiation
- Timing and Treatments attempted
- Severity and Symptoms associated

◆ **OPQRST + AF:**

- Onset of the event
- Provocation or Palliation
- Quality of the pain
- Region and Radiation
- Severity
- Time (history)
- ADLs
- Functional capacities

Sports Medicine History

- ◆ Age
- ◆ Hand dominance
- ◆ Activities affected
- ◆ Onset (acute, subacute, chronic)
- ◆ MOI (ie: abduction, ext rotation)
- ◆ Symptoms:
 - Pain, instability, stiffness, locking, catching, swelling
- ◆ Past and present activity level
- ◆ Any changes in activity level or training
 - Over the past days, weeks, or months?
- ◆ Recreational versus competitive activity
- ◆ Current and past treatments for chief complaint
- ◆ Past orthopedic problems or injuries, surgeries
 - ie: fxs/stress fxs, sprains/strains, dislocat/sublux
- ◆ Hx of injury to that area
- ◆ Social history
 - Identify other habits, risk factors
 - Hobbies / ADLs
- ◆ Menstruation information
 - Regarding onset and cycle characteristics
- ◆ Patient's current concerns and goals

Osteopathic Clinical Joint Exam

1. Inspection / Observation
2. Range of motion
3. PALPATION
4. Strength testing
5. Neurovascular status
6. Special provocative tests



Osteopathic considerations considered as part of each component

PALPATION purposely put in all caps as this should be the hallmark part of our exam, especially as osteopathic physicians

Mnemonic: "OPeRaMaN Proves"

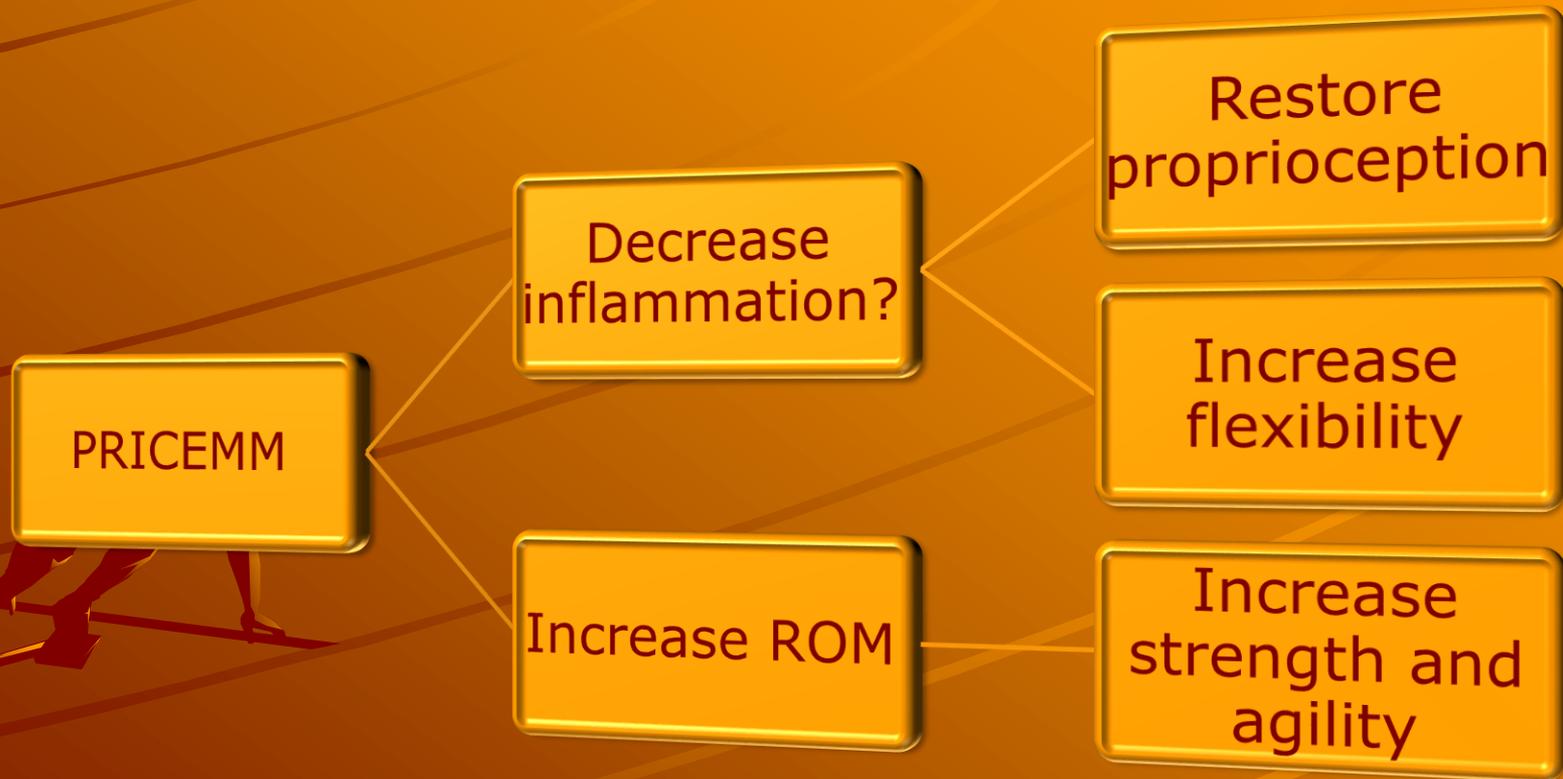
- Observe, Palpate, ROM, MMT, NV, Provocative testing

Treatment

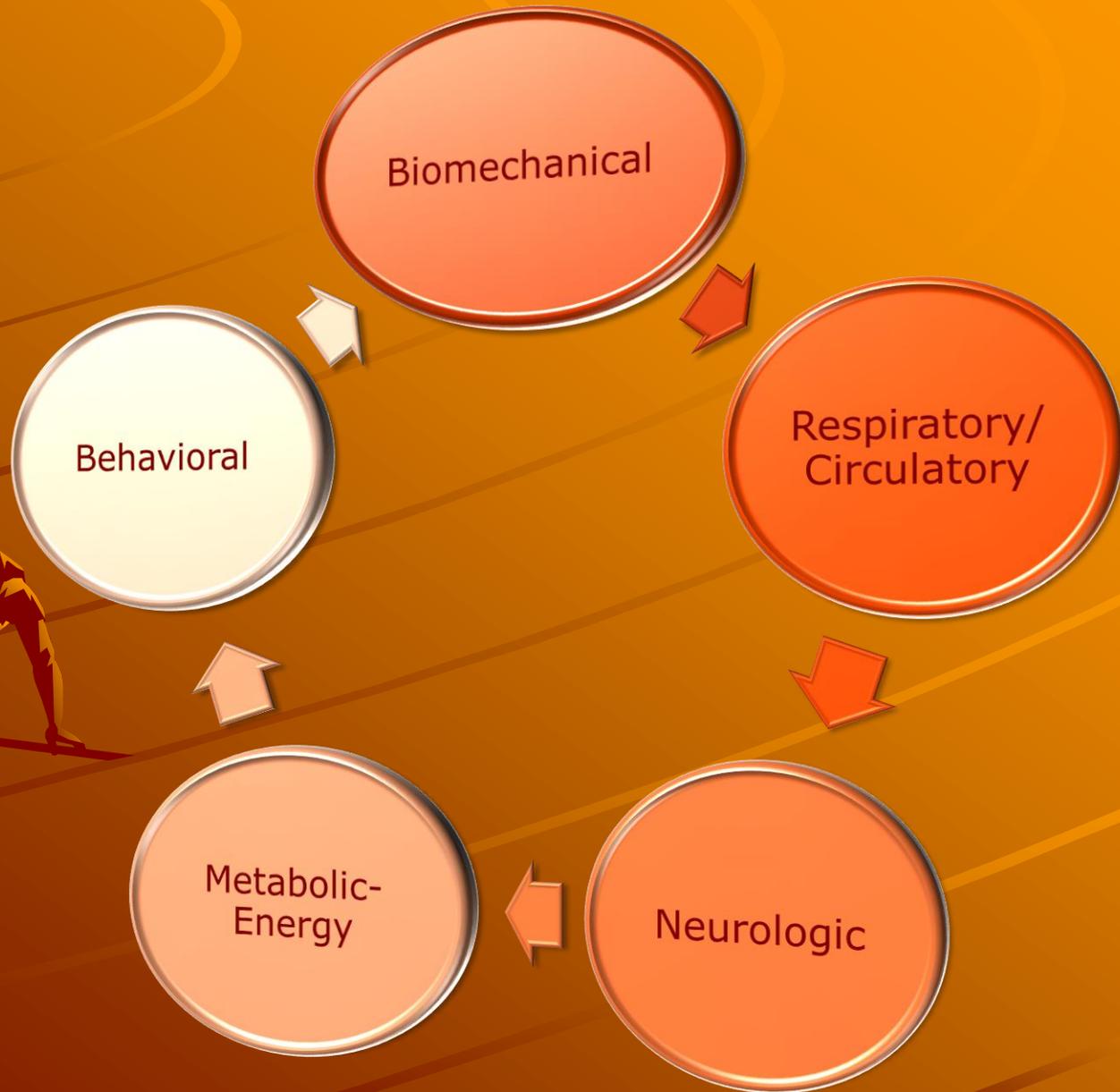
- ◆ PRICEMM
 - ◆ Protect, Rest, Ice, Compression, Elevation, Motion, Medicine
- ◆ Mother nature & father time
- ◆ APAP > NSAIDs
- ◆ Activity modification/avoidance
- ◆ Physical therapy
- ◆ Injections
 - CS, RIT, visco
- ◆ ECSW
- ◆ NTG patches
- ◆ Surgery
- ◆ Kiss from mom
- ◆ Anything else?...



Phases of Rehabilitation



5 Models of Osteopathic Patient Care



The body is a unit; the person is a unit of body, mind, and spirit

The body is capable of self-regulation, self-healing, and health maintenance

4 Principles of Osteopathy

Structure and function are reciprocally interrelated

Rational treatment is based upon an understanding of the basic principles of body unity, self-regulation, and the interrelationship of structure and function

Biomechanical Model

◆ Kinetic chain

- Sequencing of individual body segments & joints to accomplish a task

◆ Disruption can lead to:

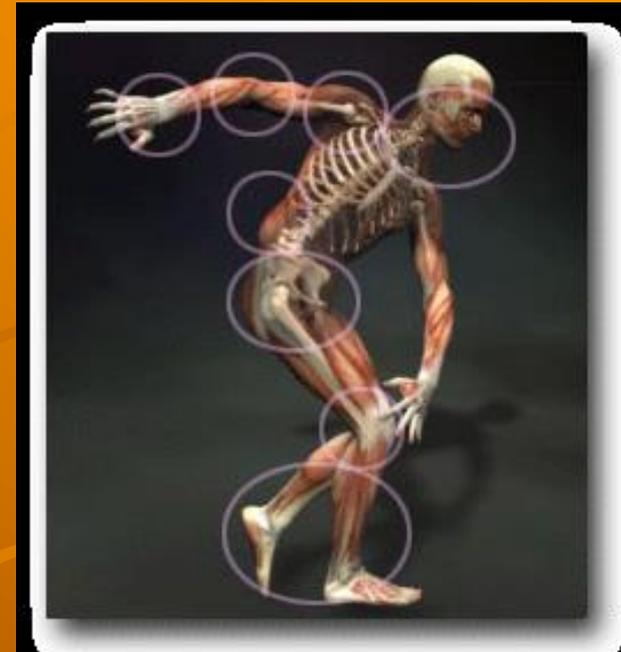
- Altered muscle firing patterns
- Overload of connective tissue and joints

◆ “The Core”

- Weakness of the abdominals, glutes, scapular stabilizers
- Tightness of the psoas, hamstrings, lats, upper traps

◆ Impingement syndrome

- Protracted shoulders, weak lower traps, tight upper traps



Biomechanical Model

◆ Shoulder impingement syndrome

- Tension in lats cause IR and adduction → impinges greater tuberosity under acromion
- Weak abs → inc lumbar lordosis & thoracic kyphosis → slumped posture “functional thoracic kyphosis” → scapular dyskinesis → RC mm failure

◆ Restore structural alignment

- Tx lumbar s/d, tight psoas, sacral s/d → optimize GRF
- Tx thoracolumbar s/d → dec diaphragmatic and lat tension
- Tx upper thoracics → fix scapular dyskinesis



Respiratory/Circulatory Model

◆ Address S/D:

- Fascial restrictions of thoracic inlet, pectoral fascia
- Anterior & middle scalenes
- Upper thoracics
- Upper ribs
- Clavicles
- UE fascia



Neurologic Model

◆ Address S/D:

- Viscerosomatic reflexes

 - ◆ T2-8

- Peripheral fascial restrictions

- Thoracic outlet

 - ◆ Anterior & middle scalenes

 - ◆ Pec minor



Metabolic/Energy Model

◆ The “Quantum Athlete”

– Systems working synergistically:

◆ Cardiac

◆ Respiratory

◆ Neurological

◆ Psychological

◆ “Court Sense” or “Being in the Zone”

– Systems in balance



Behavioral Model



Psychosocial
Cultural
Behavioral
Spiritual



Interpersonal Relationships
Social Interactions
School Performance
Work Performance





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"It's not his knee. It appears his feelings are hurt and the team psychologist is rushing out onto the field."

OMT for Shoulder Pain

◆ Indications:

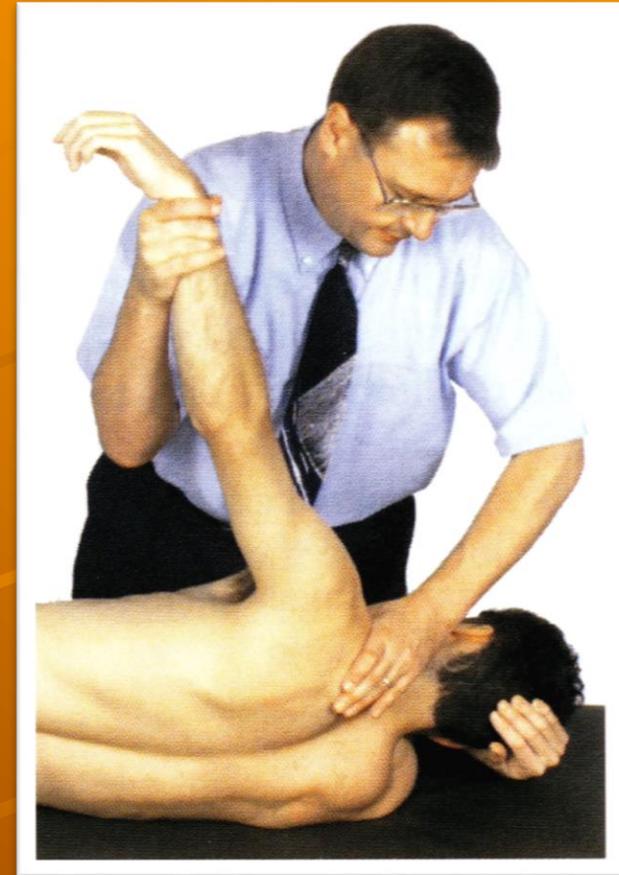
- Somatic dysfunction of the shoulder and structures contributing to its pathology

◆ Goals:

- Increase ROM
- Strengthen weak muscles
- Lyse adhesions
- Decrease pain

◆ Benefits:

- Accelerate recovery
- Reduce severity



OMT for Shoulder Pain

◆ Areas I commonly Tx:

◆ "Upper Quarter"

◆ UE

◆ Thoracics

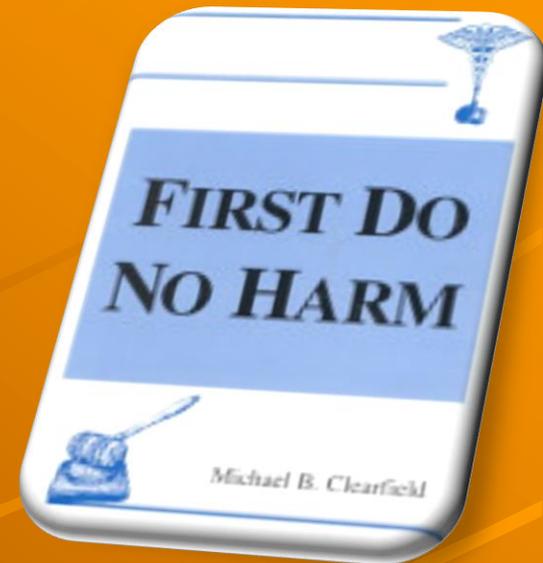
◆ Ribs

◆ Cervicals



Contraindications to OMT

- ◆ Case-by-case basis, *First DO No Harm*
- ◆ Fracture
- ◆ Dislocation
- ◆ Tumor
- ◆ Infection
 - Septic arthritis and/or osteomyelitis
- ◆ Age
 - Non-fused growth plates
 - No parental consent
- ◆ Patient unwillingness
- ◆ Careful consideration:
 - Down Syndrome, RA, pregnancy, acute inflammatory situations, anatomic instability, hypermobility, & joint prosthesis

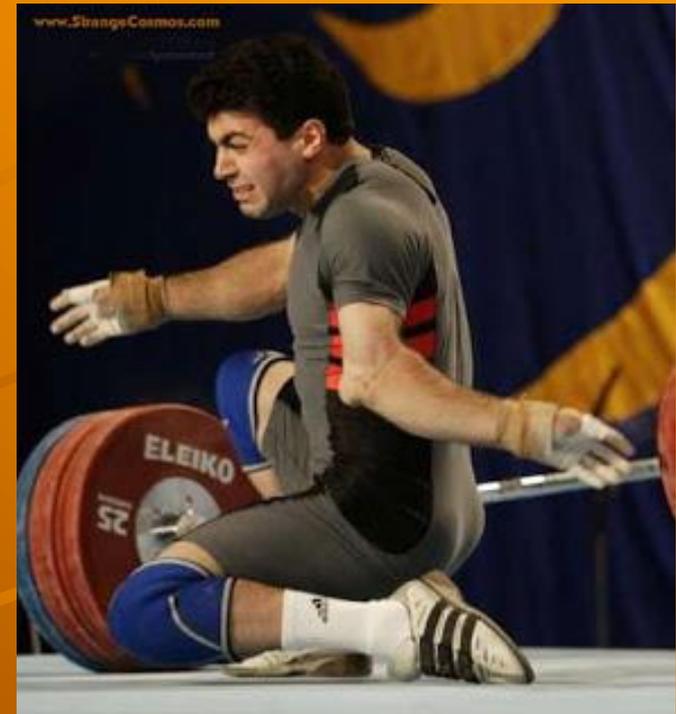


Cases



Elbow Dislocation in a Wrestler

- ◆ 16yo varsity wrestler dislocates his elbow during a tournament.
- ◆ Vascular compromise present, immediate reduction performed and athlete monitored after with serial NV checks
- ◆ F/U as outpatient, progresses through rehab
- ◆ Still has some residual contracture
- ◆ What now?...



Ankle Instability in a Pro Golfer

- ◆ 26yo RHD male PGA tour member presents with chronic left lateral ankle instability
- ◆ Has notable laxity on talar tilt and subtalar tilt on his left ankle when compared to right
- ◆ Has very locked posteromedial fibular head s/d
 - On purpose!



Post-Concussion Syndrome in an MMA Fighter

- ◆ 24yo MMA fighter presents w/ chronic symptoms of HA, fatigue, difficulty concentrating after suffering a knockout 2 years prior
- ◆ Had been treated by other sports med for concussion and post-concussion syndrome
- ◆ On OSE found significant cranial and cervical dysfunction



OMT with USA Wrestling



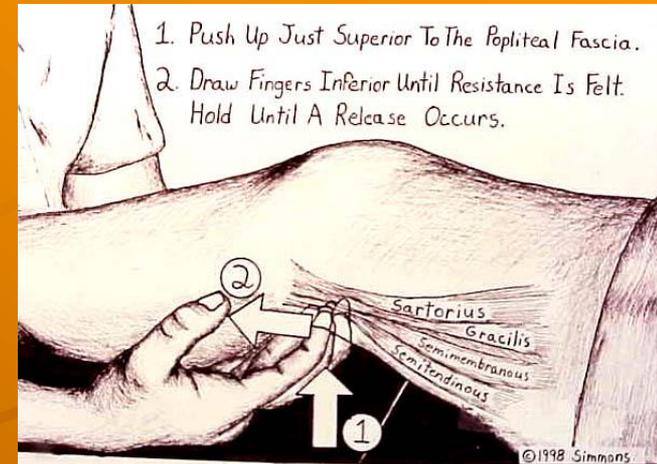
OMT on the Larger Athlete

- ◆ Proper setup goes a long way to minimize the amount of force needed
- ◆ Use levers and leverage
- ◆ MacGuyver it prn



OMT Cramping Protocol

- ◆ Hold cramped muscle in passive extension
- ◆ Apply MFR to cramped area
- ◆ Release diaphragm above affected muscle with MFR
 - Eg: calf cramp → release popliteal fossa
- ◆ Perform effleurage to the affected extremity
- ◆ Recheck cramped area, see if further MFR needed
- ◆ Allow patient to get up and ambulate/stretch/hydrate



Summary

- ◆ MSK injuries are common in athletics
- ◆ Proper diagnosis is achieved with appropriate Hx & OCJE
- ◆ Treat the whole patient
 - 5 models of osteopathic patient care
 - 4 principles of osteopathy
- ◆ Recognize and address conditions related to the primary diagnosis



The Path Toward Health



References

1. Brolinson, PG. "An Osteopathic Approach to Sports Medicine." *Foundations of Osteopathic Medicine, Second Edition*. Lippincott Williams & Wilkins: Philadelphia, PA. 2002: 534-550.
2. Brolinson PG. "Precompetition manipulation: placebo or performance enhancer?" *Clinical Journal of Sport Medicine*. 2003; 13(2):69-70.
3. Brolinson PG. Kozar AJ. Cibor G. Sacroiliac joint dysfunction in athletes. *Current Sports Medicine Reports*. 2(1):47-56, 2003 Feb.
4. Guernsey D, Leder A, Yao S. "Resolution of Concussion Symptoms after Osteopathic Manipulative Treatment: A Case Presentation." *Journal of the American Osteopathic Association*. 2016;1;116(3):1788-81.
5. Heinking K, Brolinson PG, & Thomas Goodwin. *Large Joint Injury in an Athlete*. Foundations of Osteopathic Medicine, 3rd Ed. 2011;61:946-951.
6. Hoppenfeld S. Physical Examination of the Spine and Extremities. 1976:134-141.

References

7. Karageanes, SJ. *Principles of Manual Sports Medicine*. Lippincott, Williams, and Wilkins: Philadelphia, PA: 1.
8. Kimberly P. Outline of Osteopathic Manipulative Procedures. Millennium Ed. 2000: 235-8.
9. Kuchera W, Kuchera M. Osteopathic Principles in Practice, 2nd edition. 1994: 333-336.
10. Simmons S. Simmons' Review for the OMM Boards. 2003.
11. Woodward TW, Best TM. The Painful Shoulder: Part 1. Clinical Evaluation. *American Family Physician*. 2000;61:3079-88.
12. UNTHSC-TCOM Department of OMM. *Upper Extremity: A Core Review*. 2003.



6 years old

Any questions?

Broken left leg



8 years old



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