

#### **Disclosure**

No planner, presenter or content expert has a conflicting interest affecting the delivery of this continuing education activity. Optum does not receive any commercial advantage nor financial remittance through the provided continuing education activities.

#### Medical disclaimer

Medicine is an ever-changing science. As new research and clinical experience broaden our knowledge, new treatment options and approaches are developed. The authors have checked with sources believed to be reliable in their efforts to provide information that is complete and generally in accord with the standards accepted at time of publication.

However, in view of the possibility of human error or changes in medical sciences, neither Optum nor any other party involved in the preparation or publication of this work warrants the information contained herein is in every respect accurate or complete, and are not responsible for errors or omissions or for the results obtained from the use of such information. Readers are encouraged to confirm the information contained herein with other sources.

This educational activity may contain discussion of published and/or investigational uses of agents that are not approved by the Food and Drug Administration (FDA). We do not promote the use of any agent outside of approved labeling. Statements made in this presentation have not been evaluated by the FDA.

#### **Disclaimer**

The display or graphic representation of any product or description of any product or service within this presentation shall not be construed as an endorsement of that product by the presenter or any accrediting body. Rather, from time to time, it may facilitate the learning process to include/use such products or services as a teaching example.

Accreditation of this continuing education activity refers to recognition of the educational activity only and does not imply endorsement or approval of those products and/or services by any accrediting body.

CE credits for this course are administered by the CEU Institute. If you have any issues or questions regarding your credits, please contact rosters@ceuinstitute.net.



### **Presenters**



**Dr. Kathleen Fink**Consulting Physician



Kelly Kaufman, R.Ph Clinical Pharmacist Liaison



### **Discussion topics**

#### ANATOMY AND TERMINOLOGY

- General terminology
- Spine, upper extremity, lower extremity
- Structure and common pathology

#### **DECIPHERING MEDICAL RECORDS**

- Abbreviations
- History
- Physical Exam

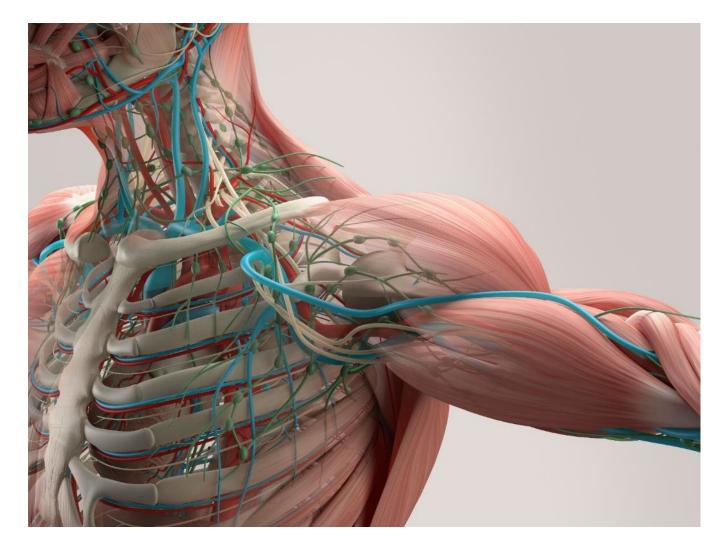




# **Anatomy**

### **Anatomy**

- Anatomic position
- Bones
- Joints
- Cartilage
- Ligaments
- Tendons
- Muscle
- Nerves





### General terminology and their meanings

-itis -opathy -algia -ectomy
Inflammation of of of of removal of

-lysis -Lithesis SpondyloBreaking To slip Pertaining to the spine

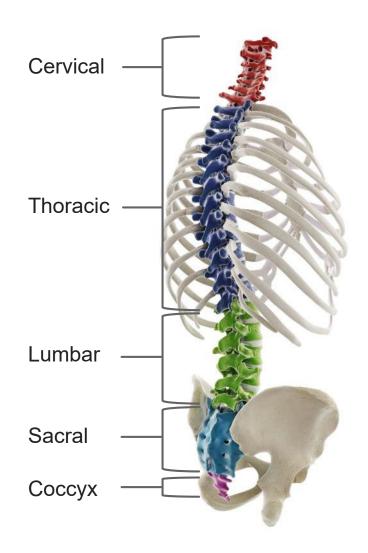
Radic-Latin work for root



### **Anatomy of the Spine**



Occiput



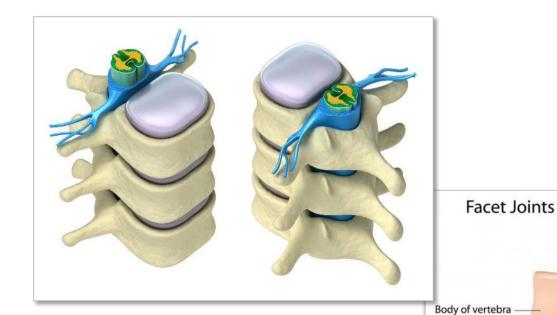


Sacroiliac



### **Functional anatomy**

- Ligaments
- Columns
- Annulus
- Nucleus pulposis
- Facets
- Tripod structure
- Movement on flex/ext





Intervertebral disk

Joint capsule

Joint cavity

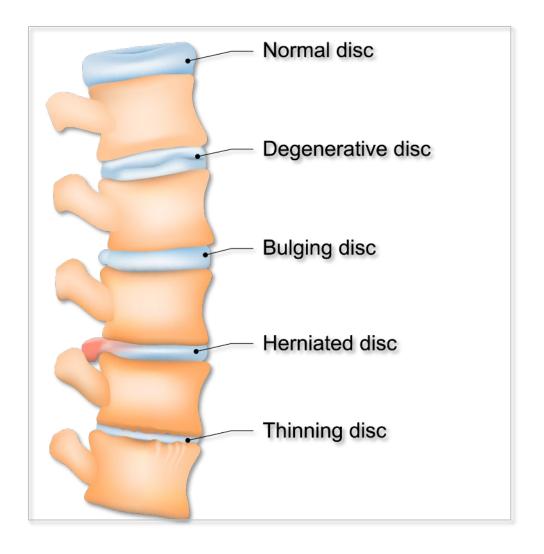
Facet joint

Facet joint

Spinous process

### **Disc Pathology**

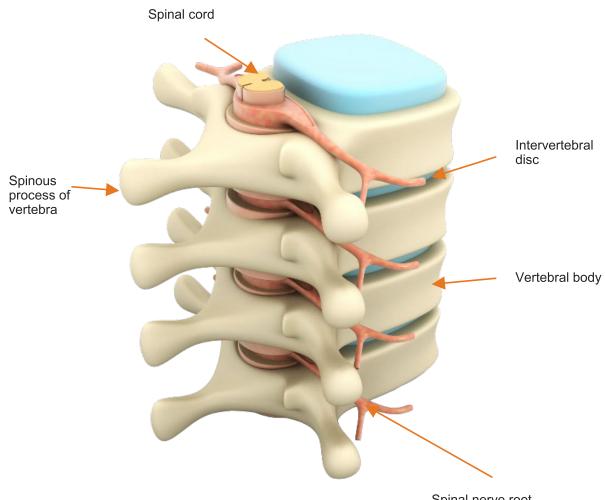
- Annular Tear
- Bulge
- Protrusion
- Extrusion
- Radiculopathy





### **Other Spinal Pathology**

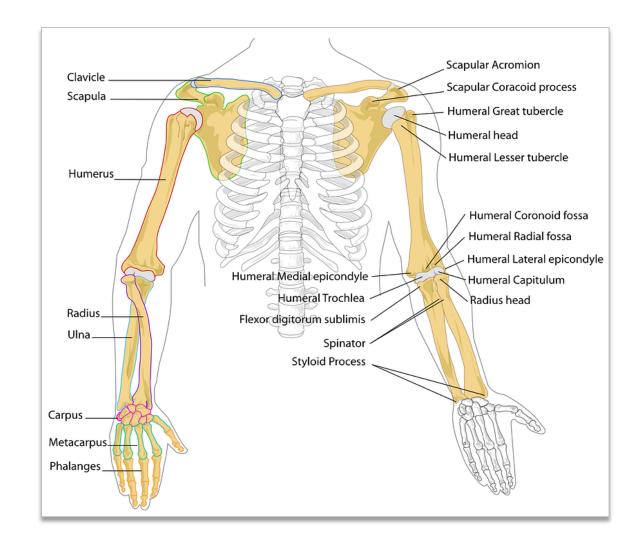
- Facet arthropathy
- Stenosis
- Compression
  - -Fracture
  - -Nerve/cord





### **Upper Extremity**

- Clavicle
- Scapula
- Humerus
- Radius
- Ulna
- Carpal Bones
- Hand

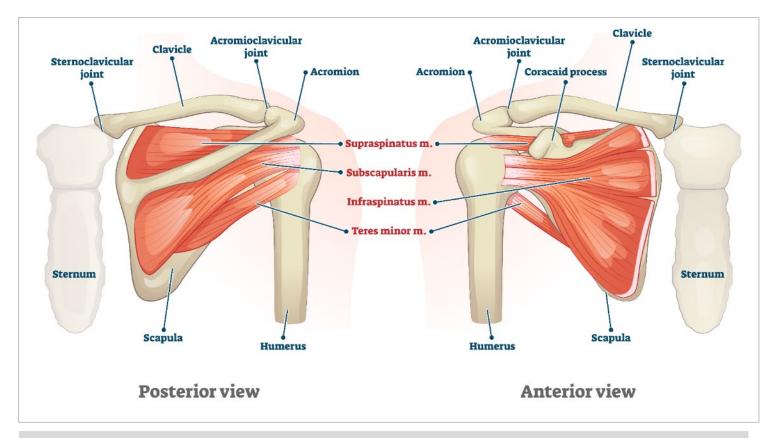




### Shoulder

#### STRUCTURE

- Joint and Range
- Neural Plexus
- Scapula and Acromium
- Importance of the "Cuff"



- Ligament tears and instability
- Bursitis
- Impingement

- Rotator cuff tears (partial and full)
- Arthritis
- Thoracic Outlet



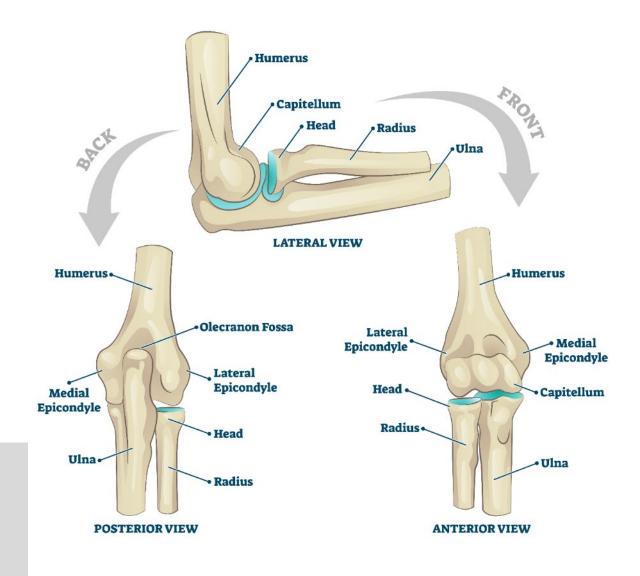
### **Elbow**

#### STRUCTURE

- Humerus
- Olecranon
- Radius
- Ulna
- Joint and Range Supination/Pronation

- Bursitis
- Epicondylitis
- Ulnar neuropathy/ Cubital tunnel

- Other Neuropathies
- Radial nerve
- Supinator syndrome
- Pronator syndrome





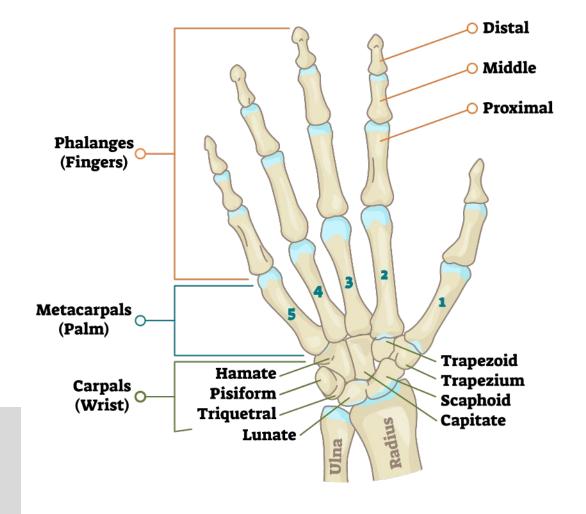
### Wrist/Hand

#### STRUCTURE

- Carpal bones
- Joints and Range
- Function
  - Supination/Pronation
  - Flexion/Extension
- Metacarpal/Phalanges
- Nerves

- Ligament injuries
- TFC cartilage
- Arthritis

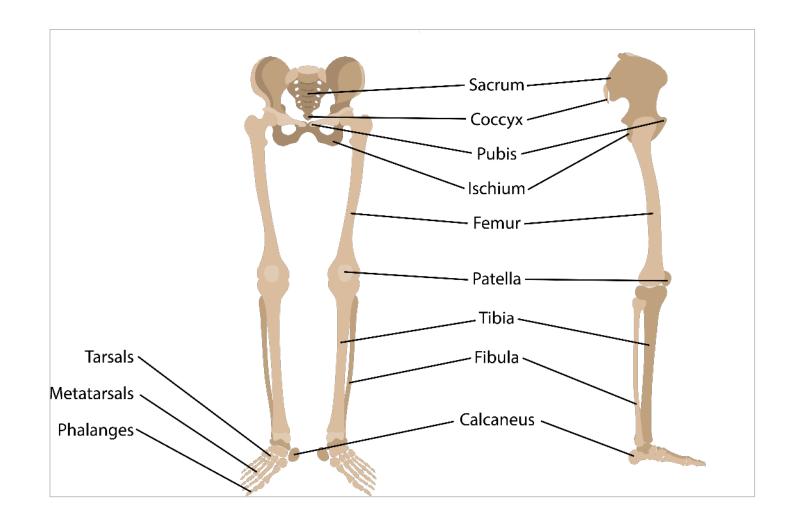
- Tenosynovitis
  - DeQuervains
- Trigger finger
- Carpal Tunnel
- Ulnar Nerve





### **Lower Extremity**

- Pelvis
- Hip
- Femur
- Tibia
- Fibula
- Ankle
- Foot





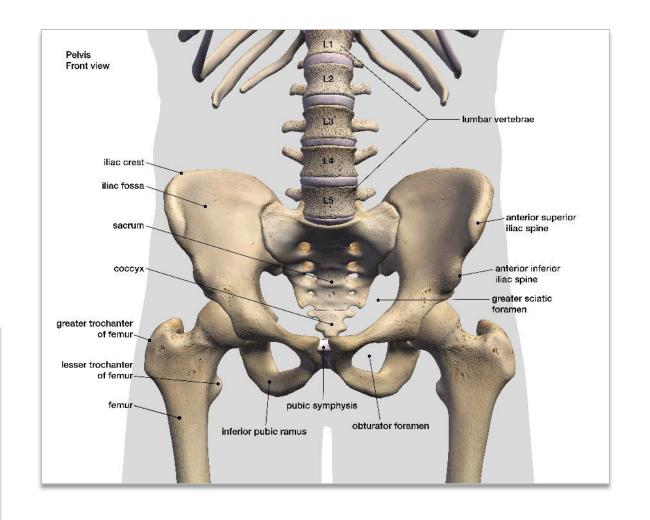
### Pelvis/Hip

#### STRUCTURE

- Sacroiliac
- Piriformis
- Acetabulum
- Labrum
- Femur Head/Neck/Trochanter

- Sacroilitis
- Bursitis Ischium, trochanteric
- Muscle sprain/strains HF, add, HS, ITB

- Piriformis Syndrome
- Labral tears/FAI
- Fractures

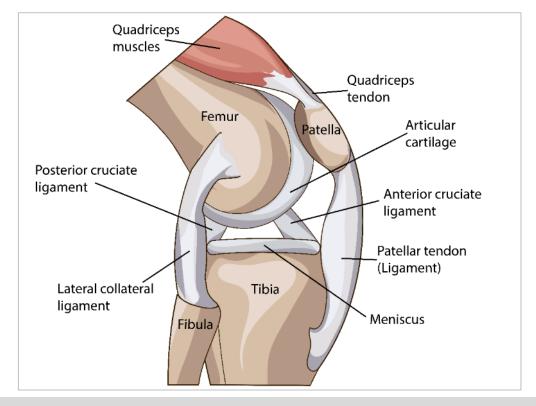




### Knee

#### STRUCTURE

- Femoral Condyles
- Patella
- Tibial plateau
- Joint Three compartments
- Fibular head
- Ligaments
- Meniscus



- Bursitis
- Bakers cyst
- DVT
- Patello femoral syndrome

- Patello femoral syndrome
- Patella tendonitis
- Tibial plateau fracture

- Ligament strains/tears
- Meniscal Tears
- Arthritis
- Peroneal nerve injury



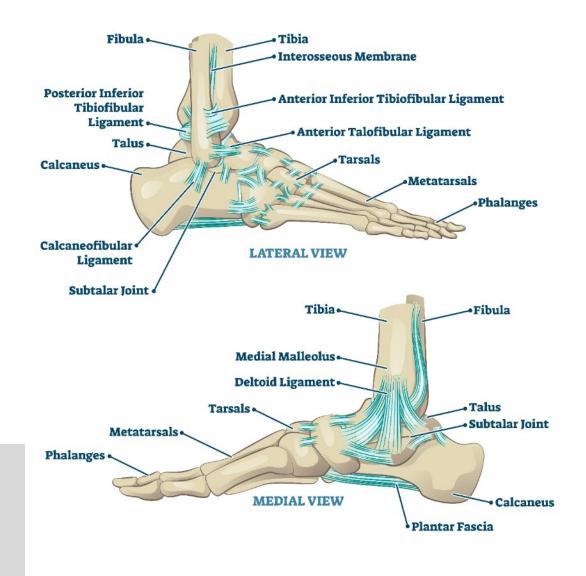
### **Ankle/Foot**

#### **STRUCTURE**

- Talar dome
- Navicular
- Calcaneus
- Plantar fascia
- Metatarsals
- Post tibial nerve

- Sinus tarsi
- Dropped navicular
- Plantar fasciitis

- Metatarsalgia
- Tarsal tunnel
- Stress fractures







# Tips and tricks to understanding medications in medical records

### **Medications**

### DOSING FREQUENCIES

QD

Every day

QOD

Every other day

BID

2X per day TID

3X per day QID

4X per day PRN

As needed

MED

Morphine Equivalent Dose

MME

Morphine Milligram Equivalents

**PDMP** 

Prescription Drug
Monitoring Program
(state-drug data base)



### Medications in medical records



- Medications are often listed at end of medical record under "Medications", "Plan" section, or history sections.
- Duplicate entries possible in electronic records (brand entries and generic entries common)
- Medications may also be referenced in notes from the prescriber visit
- Group health medications may also be listed with workers' compensation or Auto injury prescriptions
- Medications from other providers may be listed



### Prescription detail may differ from provider to provider

Current medications Ibuprofen, Amrix, Horizant

Treatment Plan: 1 The patient will continue on with physical therapy. He does report that he has had his initial evaluation with this physical therapist and is scheduled to start physical therapy next week.

I will refill the patient's medication as listed above.

#### Medications Reviewed

#### Home Medications

- multivitamin (Multiple Vitamins oral capsule) 1 cap(s) Oral Daily Prescriptions
- busPiRone (BuSpar 5 mg oral tablet) 1 tab(s) Oral BID 90 day(s)
- clom:PRAMINE (Anafranti 75 mg oral capsule) 150 mg = 2 cap(s) Oral Nightly (bedtime) 90 day(s)
- eletriptan (Relpax 40 mg oral tablet) 40 mg = 1 tab(s) Oral Daily (std) PRN (| for migrame headache) 90 day(s) may repeat dose once in 2 hours
- escitalopram (Lexapro 20 mg oral tablet) 20 mg = 1 tab(s) Oral Daily (std) 90 day(s)
- lamoTRigine (LaMiCtal 25 mg oral tablet) 12 5 mg = 0 5 tab(s) Oral Daily 90 day(s) take 100mg tablet + 1/2 of the 25 mg tablet every day
- lamoTRIgine (LaMICtal 100 mg oral tablet) 100 mg = 1 tab(s) Oral Daily 90 day(s)
- topiramate (topiramate 50 mg oral tablet) 50 mg = 1 tab(s) Oral BID 90 day(s)

Dates/days listed may reference:

- Duration of therapy
- Quantity written on Rx
- Date range until next follow-up visit



### Notes can provide clues to how medications should be used

```
rfa:
will refill meds today:
hydrocodone 10/325, i tab tid, prn for breakthrough pain, no. 60
follow up in 4 weeks.
```

ankle in an industrial accident five days later. He has undergone surgical intervention previously in his cervical spine many years ago but has had no intervention at all for the lower back. There is no recent imaging that is earlier than 4 years.

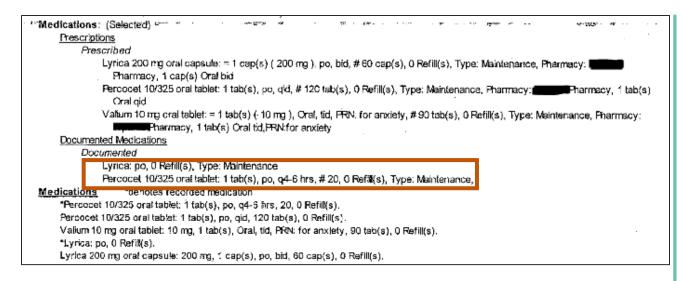
#### PLAN

-oxycontin 60mg, i tab bid, no. 60 -hydrocodone 10/325, i tab bid, prn for pain, no. 60

| Reviewed Medications   |                    |
|--|--------------------|
| amLODIPine 10 mg tablet 10 mg., start 12/17/2020   | 12/17/20 started   |
| amLODIPine 10 mg-benazepriL 40 mg capsule  | 01/04/21 entered   |
| ascorbic acid (vitamin C) 500 mg tablet 500 mg., start 12/17/2020  | 12/17/20 started   |
| celecoxib 200 mg capsule 200 mg., start 12/23/2020   | 12/23/20 started   |
| Colace 100 mg capsule 100 mg., start 12/23/2020  | 12/23/20 started   |
| <b>diclofenac 1.5 % topical drops</b><br>APPLY 40 DROPS TO THE AFFECTED KNEE(S) BY TOPICAL ROUTE 4 TIMES PER DAY | 01/04/21 prescribe |
| fenofibrate 160 mg tablet  | 01/04/21 entered   |
| fenofibrate micronized 160 mg tablet 1 1., start 08/30/2010  | 08/30/10 started   |
| gabapentin 300 mg capsule<br>Take 1 capsule(s) 3 times a day by oral route for 90 days.                          | 01/04/21 prescribs |
| <b>Keflex 500 mg capsule</b><br>Take 1 capsule(s) every 6 hours by oral route for 10 days.                       | 01/04/21 prescribe |
| levot hyroxine 25 mcg tablet<br>TAKE 1 TABLET BY MOUTH EVERY MORNING EN AYUNA                                    | 01/20/21 filled    |
| olmesartan 40 mg tablet 40 mg., start 12/17/2020   | 12/17/20 started   |
| omega-3 acid ethyl esters 1 gram capsule   | 01/04/21 entered   |
| omeprazole 20 mg capsule,delayed release<br>Take 1 capsule(s) every day by oral route as needed for 90 days.     | 01/04/21 prescribe |



### Reconcile medications with Rx fill histories or invoices



- eRx Change oxyCODONE-Acetaminophen 5/325 mg Tab 1 tablet orally twice daily, as needed #60 tablet RFx0 Instr: Worker's Compensation Fill Date:12/12/2019 (to start on: 12/12/2019)
- eRx Change oxyCODONE-Acetaminophen 5/325 mg Tab 1 tablet orally once daily, as needed #30 tablet RFx0 Instr: Worker's Compensation Fill Date:01/11/2020 (to start on: 01/11/2020)
- Medications: Continue gabapentin, tizanidine, duloxetine, Voltaren gel, and lidocaine ointment. These
  continue to be helpful. May consider Lyrica and topical lidocaine as these have been helpful in the past.
  Continue a slow controlled opioid tapering program. This month decrease to Percocet 5mg twice daily
  and the following month Percocet 5mg once daily, and the following month stop. He is in agreement
  with the plan.

- Not every Rx may be filled by injured person (adherence)
- Discontinued medications may be listed
- Short duration of use (i.e., antibiotics, corticosteroids) may not be removed
- References to Rxs that are prescribed by a different provider/physician in medication history not updated
- Medication listed may have directions that differ from visit notes



# Reviewing Rx history may clarify therapy / raise questions / identify potential problems

#### 1. Low back pain

- no surgeries
- Pain is in lower back on right side radiating into right lower extremity down to last 3 toes on his right foot.
- Stabbing pain, constant, interfering with sleep
- Pain is worse with prolonged sitting, standing, bending over, activity
- + numbness/tingling into calf muscle and into toes, No weakness or falls
- has done about nine sessions of PT with no relief so he asked to go to another facility and is pending further treatment
- He is s/p \$I Joint injection on 8/27/19 and a MBB 10/14/19 with no relief (both done at outside facility)
- MRI shows 1 mm broad disk buige at L4-5 not contacting neural structures and mild Bilateral facet arthropathy. Mild canal narrowing of 9.4 mm with epidural fat post fairly and no nerve root compression. moderate Bilateral facet arthropathy at L3-4 and mild ligamentum flavum redundancy. Central canal is borderline at 10.3 mm with epidural fat posteriorly and no nerve root compression.
- Has failed NSAIDS, PT, conservative therapy

#### Meds

Currently taking tramadol with minimal relief The norcos are temporary until patient can get injection.  $^{\rm ext}$  MC

- Refill: Norco 10 mg/325 mg, take 1 tab by mouth tid as needed for severe pain #60 EFD: 02/14/20 NRD: 03/16/20
- Refill: Naproxen 500 mg, take 1 tab by mouth bid for inflammation #60 EFD: 02/14/20
- Refill: Gabapentin 600 mg take 1 tab by mouth bid for nerve pain #60 EFD: 02/14/20

- Notes mention failing NSAIDs, however, naproxen was refilled?
- Meds listed tramadol current but only Norco was prescribed
- What if injured party has recently filled both tramadol (refill) and Norco (new)?





# Medical Abbreviations and Exams

Breaking the Code

### **Exams**

### **ROM: RANGE OF MOTION**

### **PROM**

### Passive Range Motion

A part of your body can move when someone or something is creating the movement, such as a massage or physical therapist.

### **AROM**

# Active Range of Motion

You move a part of your body by using your muscles without outside help

### **AAROM**

# Active Assisted Range of Motion

You need to build up flexibility or strength in a particular body part – often in physical therapy



### **Exams**

### WFL

#### Within functional limits

A person's ability is outside of the normal range, but is sufficient for daily activities.

### WNL

#### Within normal limits

A person's ability as compared to peers' ability is the normal ability of that skill.

### **MMT**

### Manual muscle testing

Ability to move through any range of motion only with gravity eliminated.

### **DTR**

### Deep Tendon Reflex

The quick stretch of the muscle-tendon unit stimulates the muscle spindle receptors.

### $\mathsf{TTP}$

# Tenderness to Palpatation

A physical examination finding development of pain with the application of light touch



### **Exams**



| <b>AMPUTAT</b> | <b>ION L</b> | EVEL | S |
|----------------|--------------|------|---|
|----------------|--------------|------|---|

**AE** Above elbow

**BE** Below elbow

### **AMPUTATION LEVELS**

**AKA** Above the knee

**BKA** Below the knee

**Trans** Transformational

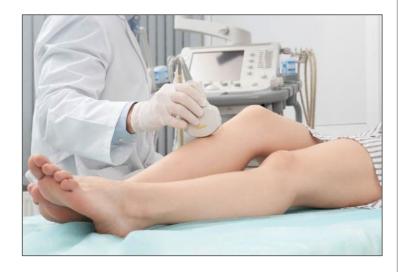




### **Diagnostics/Therapeutics**

US

Ultrasound



MFR
Myofascial release



TPI
Trigger point injection





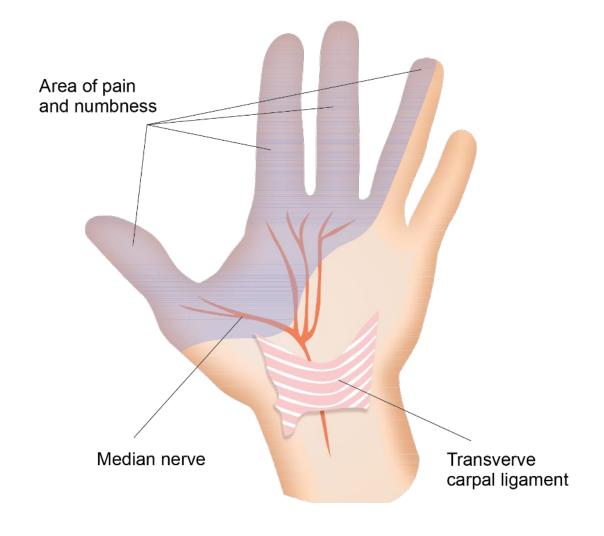
### **Diagnostics/Therapeutics**

**CTS** 

Carpal Tunnel Syndrome

**CTR** 

Carpal Tunnel Release





### **Durable Medical Equipment (DME)**

### **TENS**

Transcutaneous Electrical Neural Stimulation



AFO
Ankle Foot Orthosis



KAFO
Knee Ankle Foot Orthosis





### **Durable Medical Equipment (DME)**

LSO

**Lumbosacral Orthosis** 



**TLSO** 

Thoracolumbosacral Orthosis



**CTLSO** 

Scoliosis Orthosis



Ottobock CTO Cervical Thoracic Orthosis | Cervical Collars (healthproductsforyou.com)



### **History**

















### Physical examination

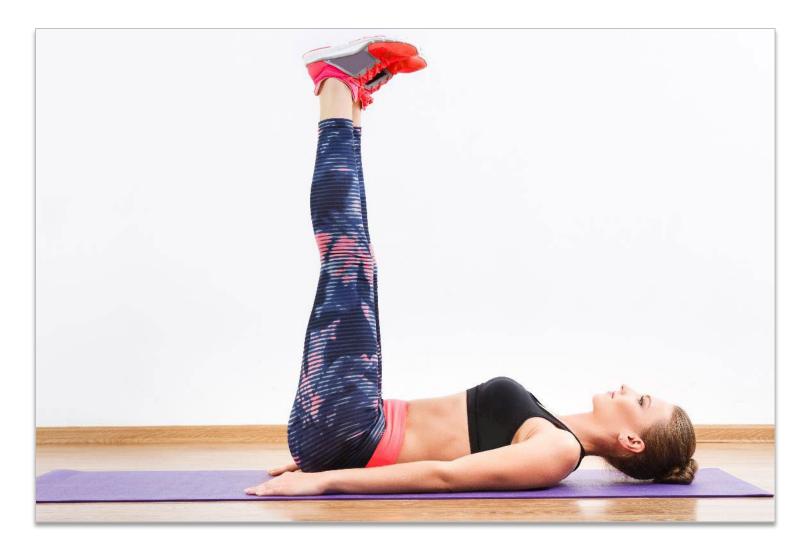
- Location, Location
- ROM
- MMT
- •DTR
- Neurovascular evaluation
- Maneuvers
  - Provocative
  - Pain relieving





### **Common Maneuvers – Spine**

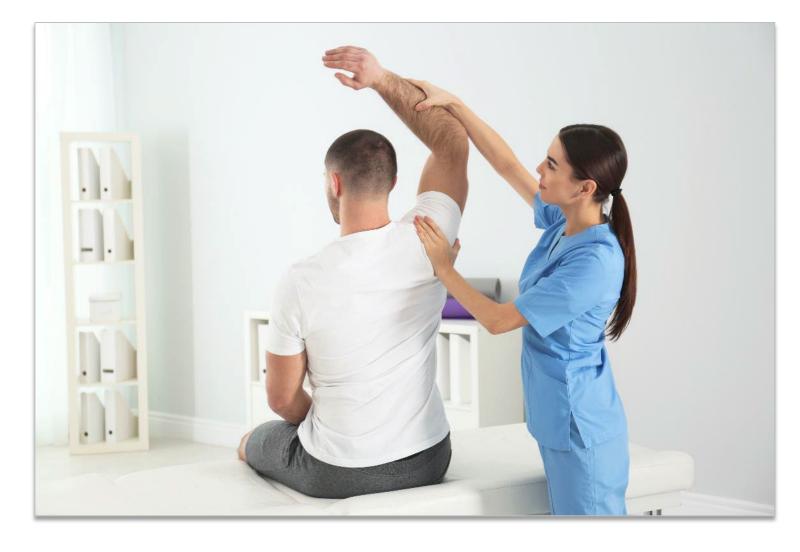
- Spurling's
- Lhermitte's
- Straight leg raise
- Slump sit
- Femoral stretch
- Ext/Rot
- Prone press
- •SIJ to be covered with LE





### **Common Maneuvers – Upper Extremity**

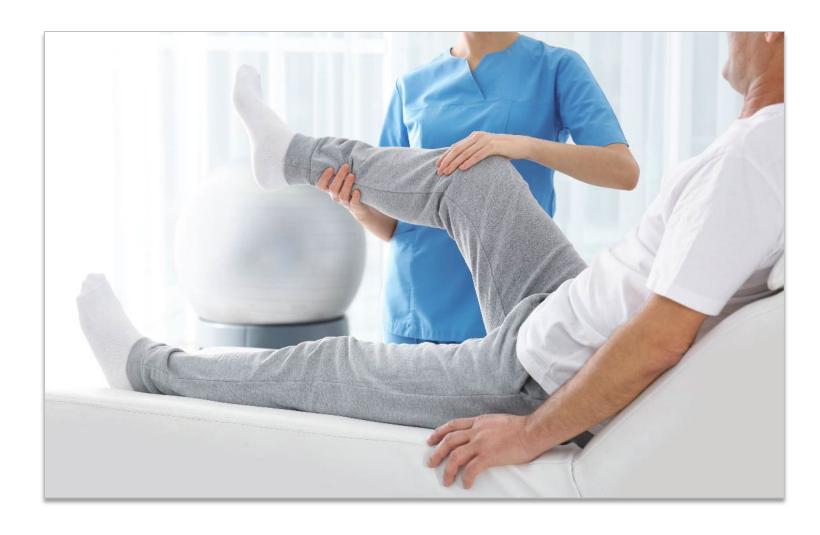
- Hawkins
- Neer
- Speeds
- Scarf
- Apprehension, Relocation
- Winging
- Tinels, Phalens
- Finkelsteins





### **Common Maneuvers – Lower Extremity**

- SIJ/Hip/Pelvis
  - Fortins
  - Compression
  - Thrust
  - Gaenslens
  - FABER, FADIR
- McMurrays
- Lachmans
- Gait
  - Trendelenberg or Lurch
  - Steppage





### Summary

Medical Terminology: Break it down to the prefix, anatomical structure and suffix

Anatomy: Think location, what structures are painful and common problems we see in each

body area

Medications: Remember the helpful tips and tricks

Abbreviations: Can be confusing, use this as a reference

Exam maneuvers: Help with clinical diagnoses

If you don't know ask!



### Thank you!

You will receive an email from the CEU Institute on our behalf within 48 hours after the webinar. This email will contain a link that you will use to submit for your CE credits. (Make sure you check your junk mail!)

You must complete this task within 72 hours.

### The 2022 Optum CE courses are now on our website!

http://www.workcompauto.optum.com/resources/continuing-education

CE credits for this course are administered by the CEU Institute. If you have any issues or questions regarding your credits, please contact rosters@ceuinstitute.net.





#### About Optum Worker's Comp and Auto No-fault Solutions

Optum Workers' Comp and Auto No-Fault Solutions collaborates with clients to lower costs while improving health outcomes for the injured persons we serve. Our comprehensive pharmacy, ancillary, medical services, and settlement solutions, combine data, analytics, and extensive clinical expertise with innovative technology to ensure injured persons receive safe, appropriate and cost-effective care throughout the lifecycle of a claim. For more information, email us at expectmore@optum.com.

© 2022 Optum, Inc. All Rights Reserved. All other brand or product names are trademarks or registered marks of their respective owners. Optum continuously improves our products and services and reserves the right to change specifications without prior notice.