



# Osteopathic Manipulation in Acute Care Medicine

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# No Disclosures

Special Thanks to:

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Steven Kisiel, DO

Andrew Goldman, DO

# Objectives

- ▶ Review the difficulties and benefits of treating in the hospital
- ▶ Discuss the Body as a Unit
- ▶ Explore the Structure and Function relationship for common hospital problems
- ▶ Practice simple and effective techniques to address the common hospital problems.

# Difficulties of Treating in the hospital

- ▶ Patients are not very mobile.
- ▶ The best position to treat is typically supine
- ▶ Medical equipment ALWAYS gets in the way
- ▶ Time is always limited
- ▶ Most treatments should be limited to indirect due to the distress the patients' system is undergoing.

# Benefits of treating in the hospital

- ▶ The patient is held hostage...
- ▶ Staff are very curious and education for both staff and patient can be done during treatment
- ▶ Patients are very appreciative (most of the time)
- ▶ Many times you can see a change quickly



What can be treated in the  
hospital???

EVERYTHING

# Autonomics

- A good indicator of Autonomic activity is Heart Rate Variability
  - Good HRV = increased parasympathetic tone
  - Decreased HRV = Increased sympathetic tone
- Decreased HRV linked to increased morbidity and mortality in most disease processes
- OMM helps to increase HRV (Guevarra, JAOA 2016)

# Case Study

- ▶ 67 yo man with a history of COPD and Non Small Cell Lung Cancer was found to have a resectable lesion in the RUL. Osteopathic team was consulted to assist with post surgical complications. Post RUL resection, Patient was requiring 2L oxygen. He had significant pain in the posterior right thorax.
  - ▶ Exam Post surgically
    - ▶ Swelling in right shoulder and neck
    - ▶ Decreased expansion of thorax on inhalation
    - ▶ Right lung sounds diminished, Left lung sounds normal
    - ▶ Right posterior thorax surgical site clean and dressed
    - ▶ NSR
    - ▶ Abdomen benign



# Osteopathic findings

- ▶ OA compressed, decreased motion bilaterally
- ▶ C7-T5 Rr SI
- ▶ Thoracic inlet rotated right with boggy feeling to tissues in supraclavicular area
- ▶ Upper and mid sternum tender to palpation
- ▶ Rib 11-12 exhaled

# Cardiovascular studies

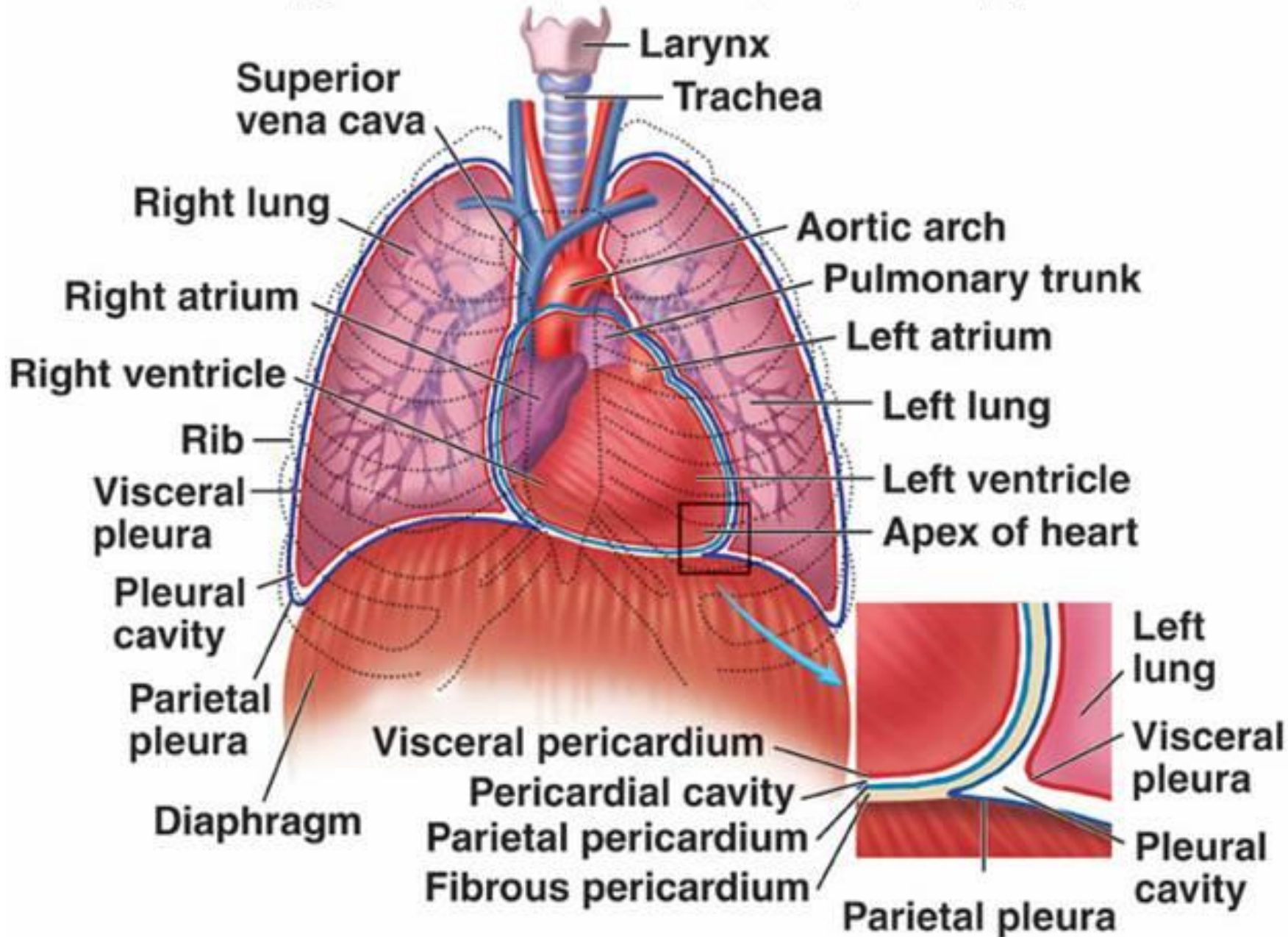
- **OMM post CABG→(O-Yurvati, JAOA 2005)**
  - increased peripheral blood flow and decreased resistance
- **OMM for Diastolic Heart Failure→ (McCombs, JAOA 2008)**
  - Balance autonomics
  - Increased lymphatics (Knott, JAOA 2005)
- **OMM for Hypertension→(Cerritelli, J Bodyw Mov Ther. 2011)**
  - Decreased intima media thickness
  - Decreased Systolic Blood pressure



"All channels to and from the heart must be cleared from all hinderance. No nerve can do its part unless it be well nourished. If not it will fail to execute its part for want of power-for by it all blood must move."

AT Still in *Philosophy of Osteopathy*

Photo taken from Textbook Osteopathy  
(courtesy of the Michalides Collection)



## Heart In Relation to the Diaphragm

[http://www.rci.rutgers.edu/~uzwiak/AnatPhys/Cardiovascular\\_System\\_files/image002.jpg](http://www.rci.rutgers.edu/~uzwiak/AnatPhys/Cardiovascular_System_files/image002.jpg)



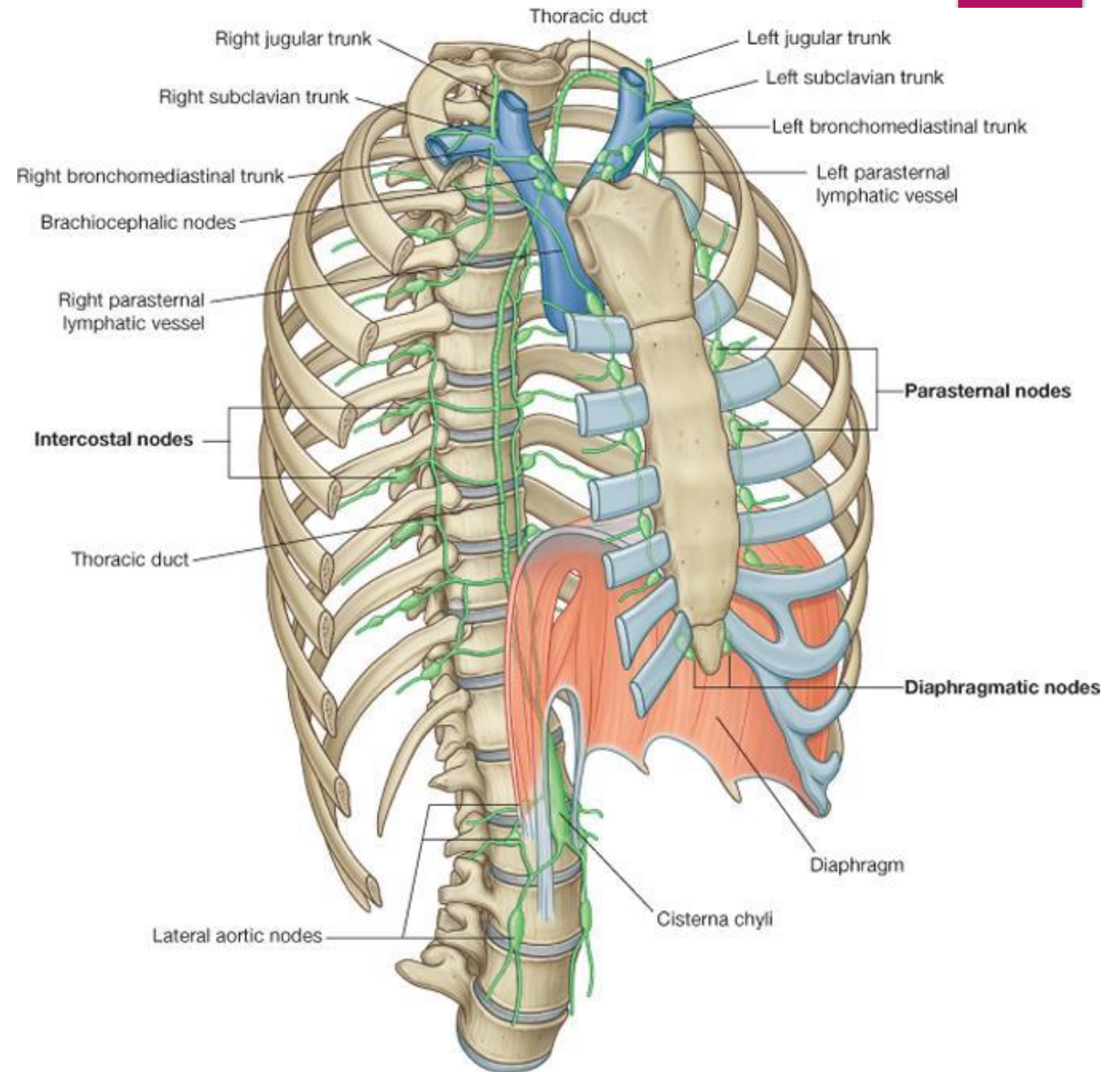
# Lymphatics

**Cisterna Chyli: Aquaduct for the lymph below the diaphragm**

→ **Feeds into the left thoracic duct**

**Left Thoracic duct: drains head, left chest and arm and lower body**

**Right Thoracic duct: drains right chest and arm**

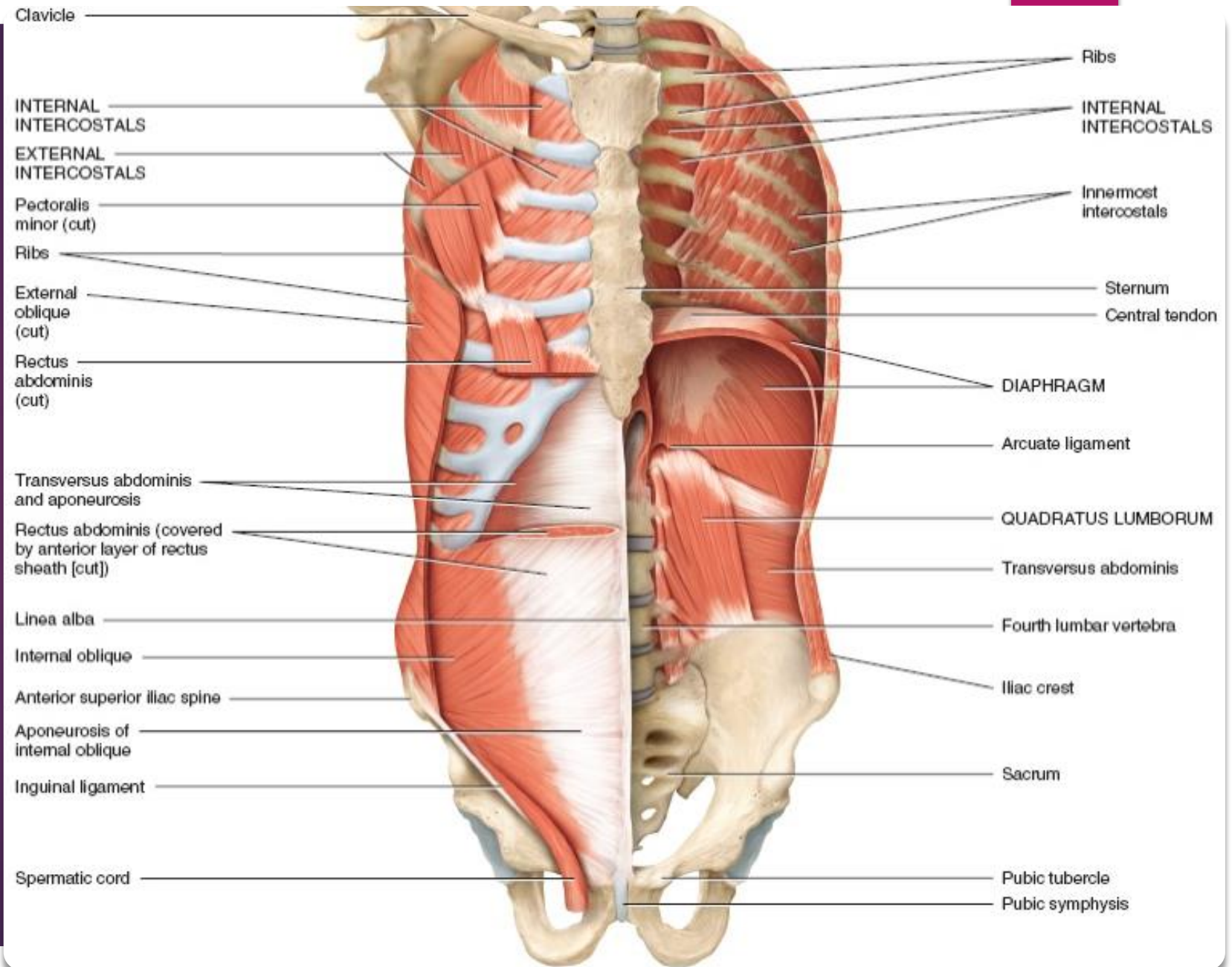


# Pulmonary Studies

- **OMM and COPD→ (Zanotti, Compl Ther Med 2012)**
  - Improved 6 min walk test
  - Decreased RV
- **OMM and Pneumonia→ (Noll, 2016)**
  - Decreased LOS of 1 day over light touch
  - Mortality decreased by 8% over light touch

# Connect the Dots

Every Muscle in the Abdomen and Thorax connect directly with the Diaphragm

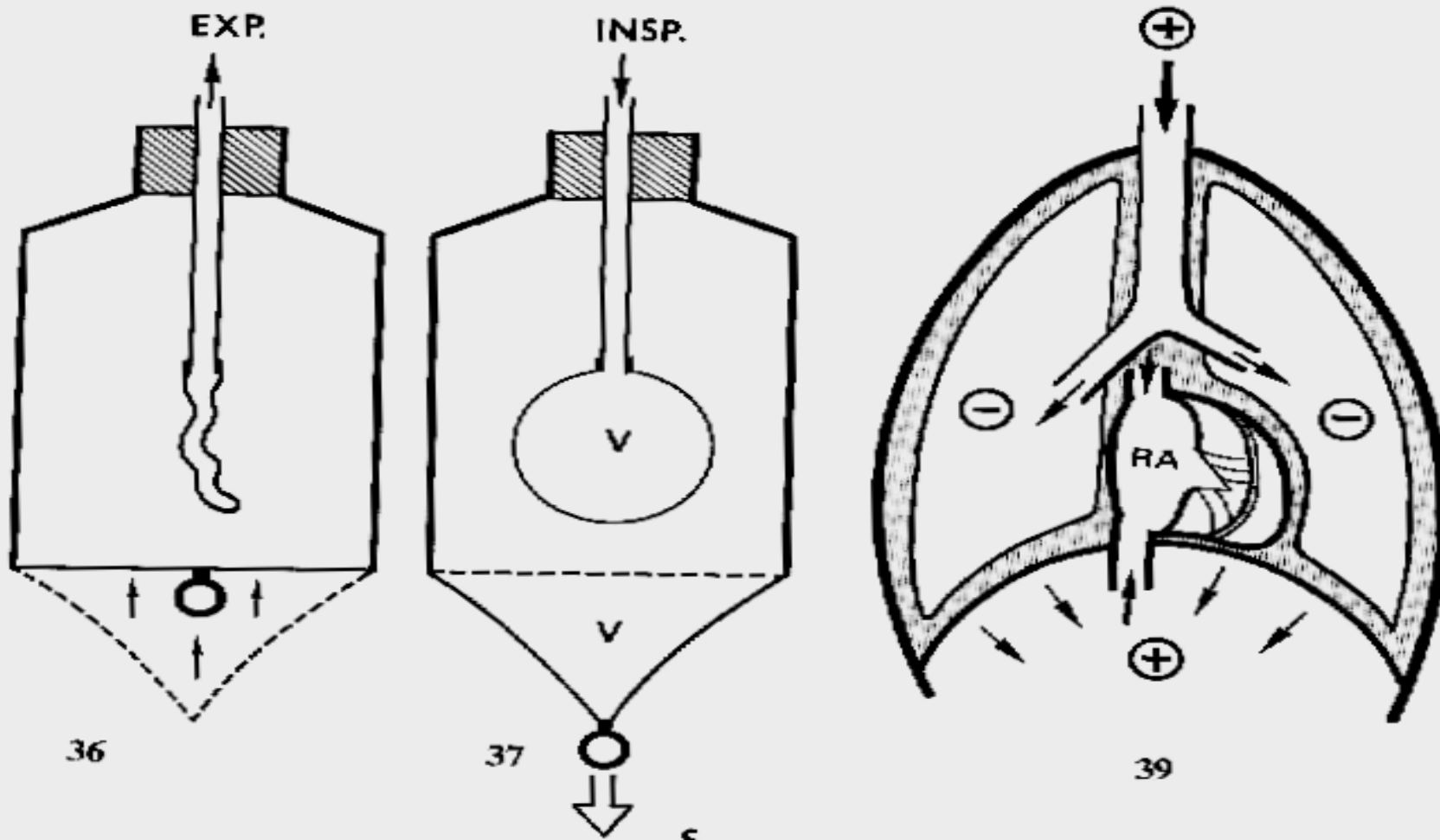




"Your breathing test results would be normal ...  
if you were 3'8" and 150 years old."



# Respiratory Dynamics



# Osteopathic Treatment

**OA release**

**Thoracic Inlet**

**Rib raising**

**Stills technique to C7-T5**

**Diaphragm release**

**Rib 11-12 distraction**

# Outcome

Patient had a increased need of oxygen to 9L overnight.  
Chest xray showed Large pleural effusion of right thorax.  
Thoracentesis planned for AM.

In the morning, the patient was back to 2L oxygen. Chest xray was checked again and fluid seen in xray previously was now a small effusion and not worth doing a thoracentesis.

# Rib raising for COPD



[https://www.researchgate.net/figure/262418087\\_fig10\\_Figure-10-This-figure-demonstrates-the-positional-set-up-for-Rib-Raising-Technique](https://www.researchgate.net/figure/262418087_fig10_Figure-10-This-figure-demonstrates-the-positional-set-up-for-Rib-Raising-Technique)

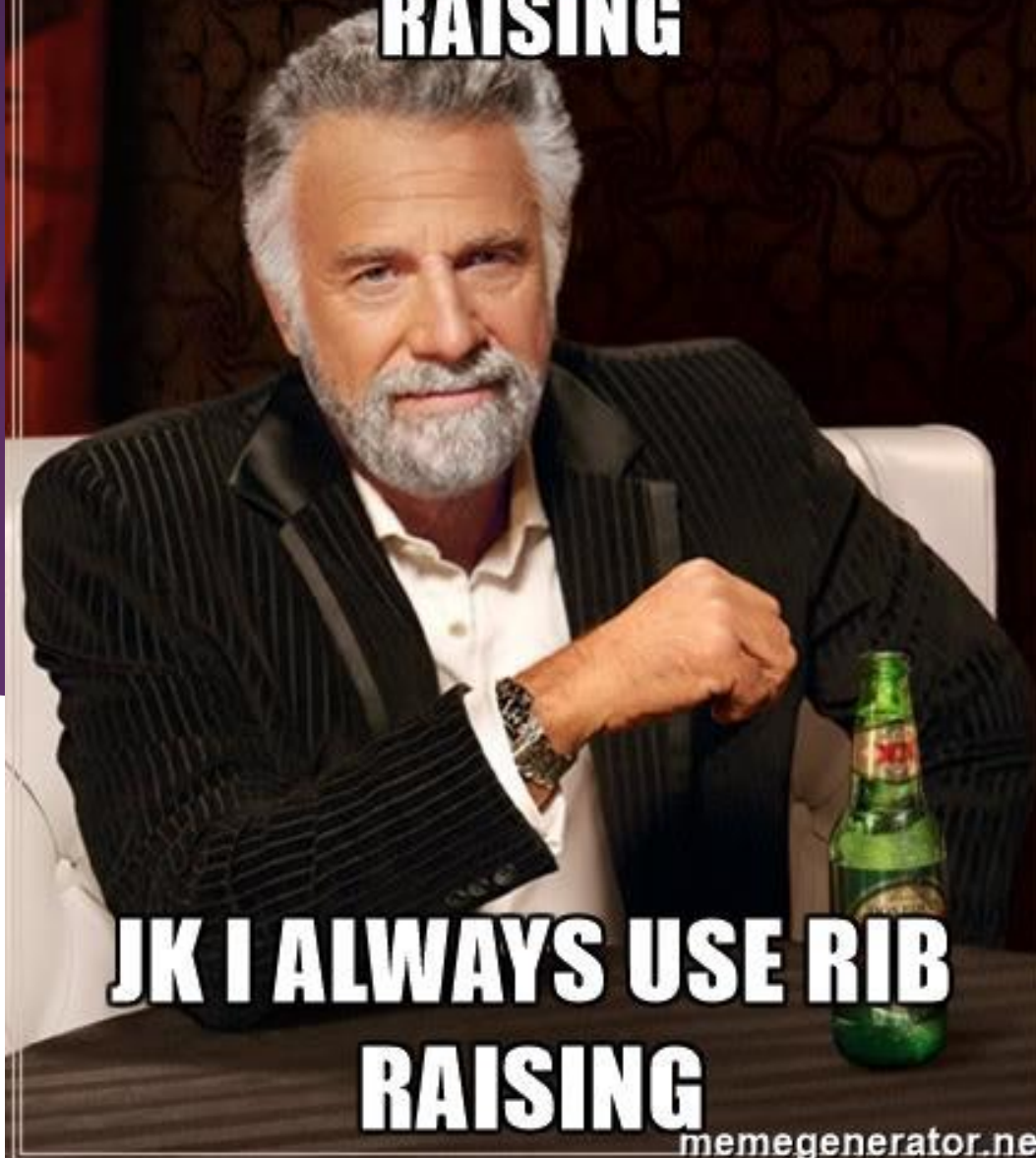
# Rib raising and Pneumonia



The physician places the finger tip pads on the rib heads and applies an anterior (toward the ceiling), lateral, and cephalad force until a release of myofascial tension is felt.

<https://www.ahcmedia.com/articles/85236-an-overview-of-osteopathic-medicine-principles-and-practice>

**I DON'T ALWAYS USE RIB  
RAISING**



**JK I ALWAYS USE RIB  
RAISING**

# Ileus Case Study

- **45 yo female patient**
  - **History of Dysmenorrhea and Hypertension**
  - **Laparoscopic Hysterectomy done 8 days previously.**
  - **No Bowel Movement post surgically**
  - **Gynecologic Surgery at wits end and decided to try Osteopathic Manipulative Medicine Team**

# Case Findings

- **Bowel Sounds Diminished, Abdomen mildly tender in all quadrants**
- **OA Side shifted to right**
- **T10-12 Restricted Bilaterally**
- **Left Diaphragm restricted to inhalation**
- **Left on Left Sacral Torsion**
- **Inominant Posterior on Right**



# Gastrointestinal studies

- **OMM and Ileus→ (Baltazar, JAOA 2013)**
  - **Decreased LOS of 5 days for patients receiving OMM**
- **OMM and IBS→ (Muller, JAOA 2014)**
  - **Short term improvement with abdominal pain, constipation, diarrhea and general wellbeing.**
- **OMM and Pancreatitis→ (Radjieski, JAOA 2008)**
  - **Pilot Study showing 3 days decrease in Length of stay**

# Anatomy of the Female Body



# Abdominal Plexus

## ➤ Celiac Ganglion

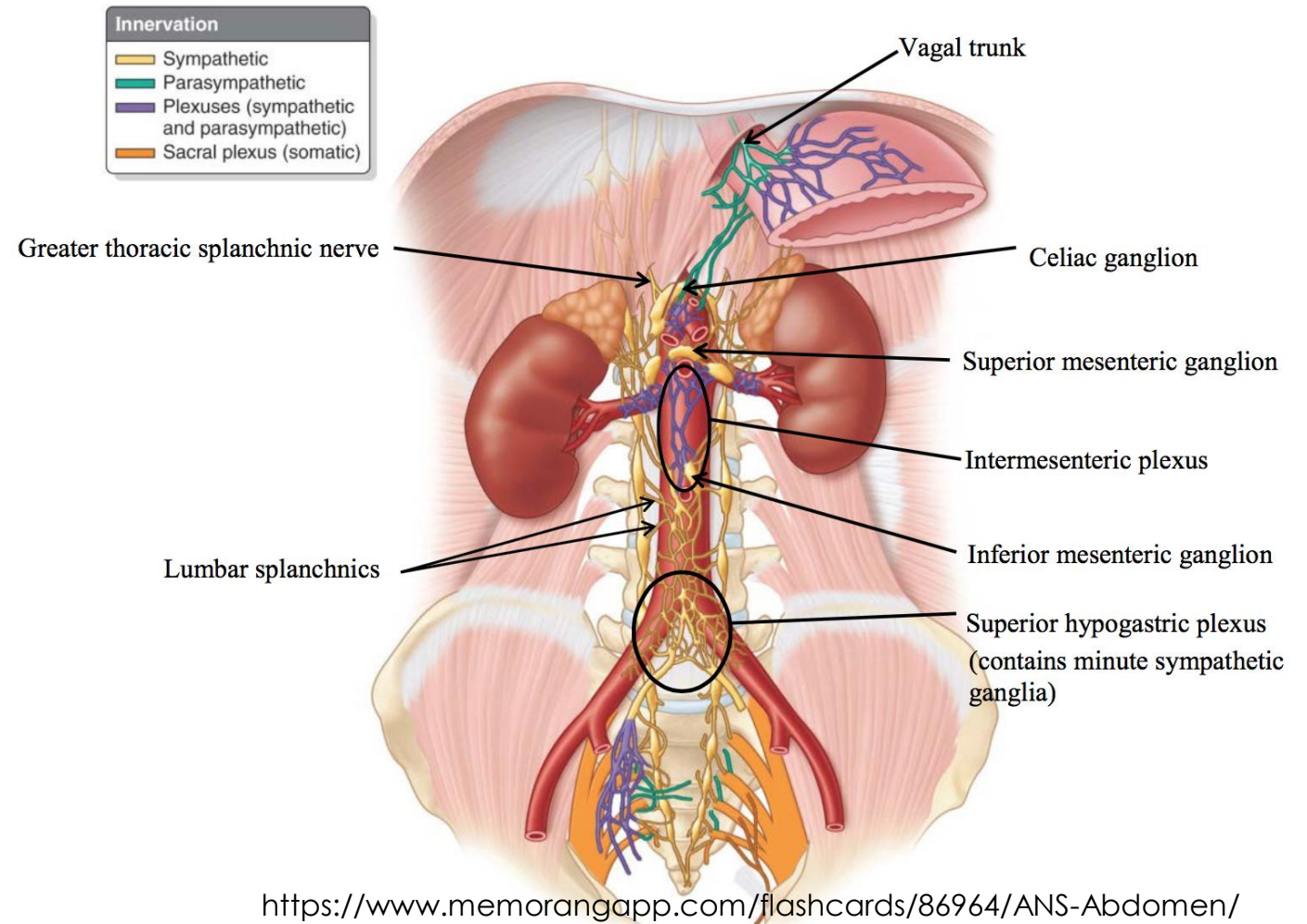
- Approximately 1 inch below xiphoid
- Distal Esophagus → proximal duodenum

## ➤ Superior Mesenteric

- Approx 1 inch above umbilicus
- Distal Duodenum → 2/3 of prox colon

## ➤ Inferior Mesenteric

- Approx 1 inch below umbilicus
- Distal Colon → Rectum



# Parasympathetic release

## ➤ Vagus Nerve

- Extends into the peripheral system at the OA joint
- PNS for everything in the thorax and abdomen to the proximal 2/3 colon
- Occipital release

## ➤ Sacral Splanchnics

- Distal Colon, Sigmoid, Rectum
- Must be treated for constipation and helpful for Ileus



# Case Treatment

**OA Release**

**T10-12 coupled with diaphragm release**

**Sacral Rocking**

**Stills Technique to Inominants**

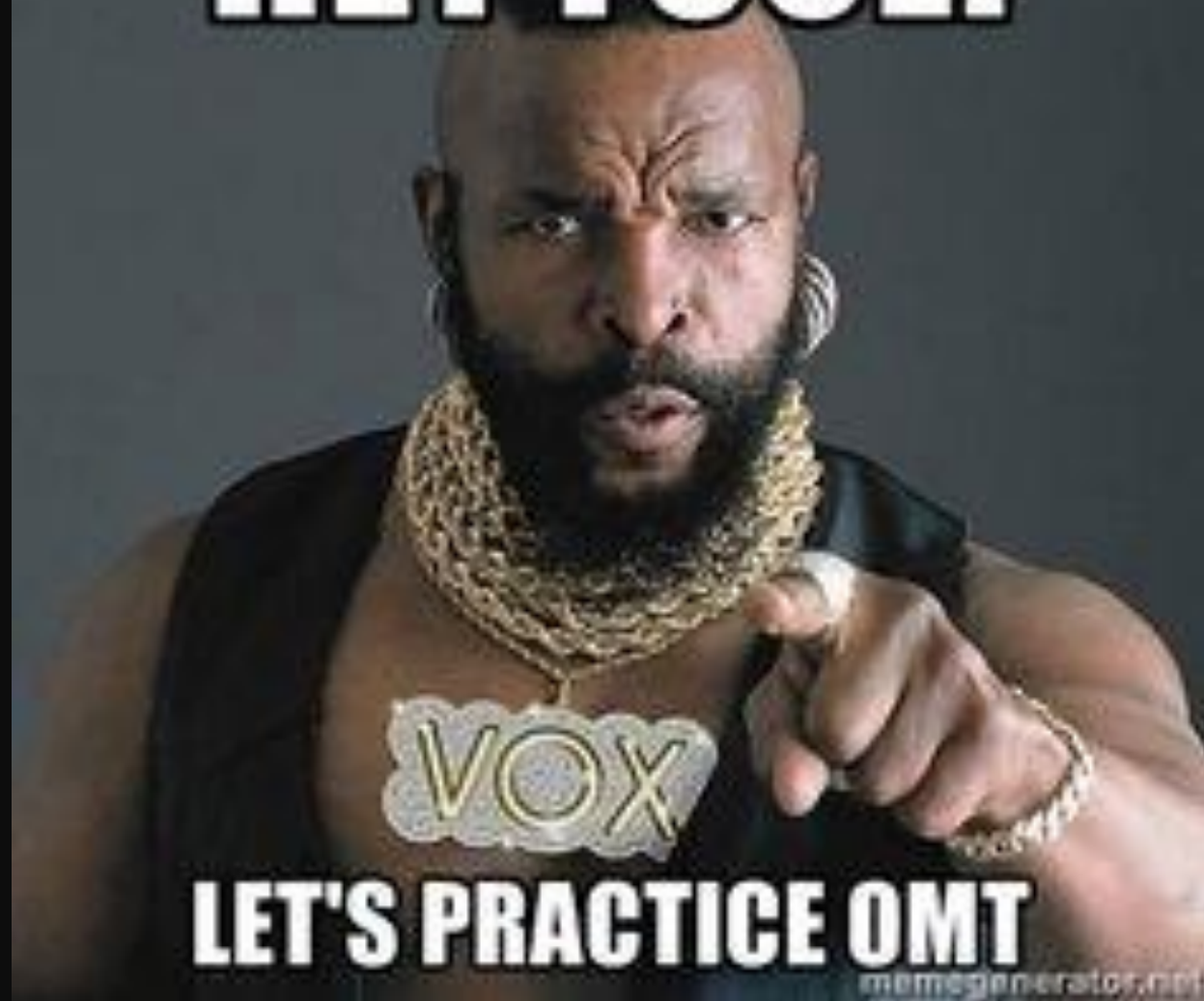
**Colonic Lift**



# Case Outcome

**PATIENT HAD A BOWEL  
MOVEMENT TWO HOURS AFTER  
TREATMENT, TOLERATED A  
CLEAR LIQUID DIET, THEN  
DISCHARGED HOME.**

**HEY FOOL!**



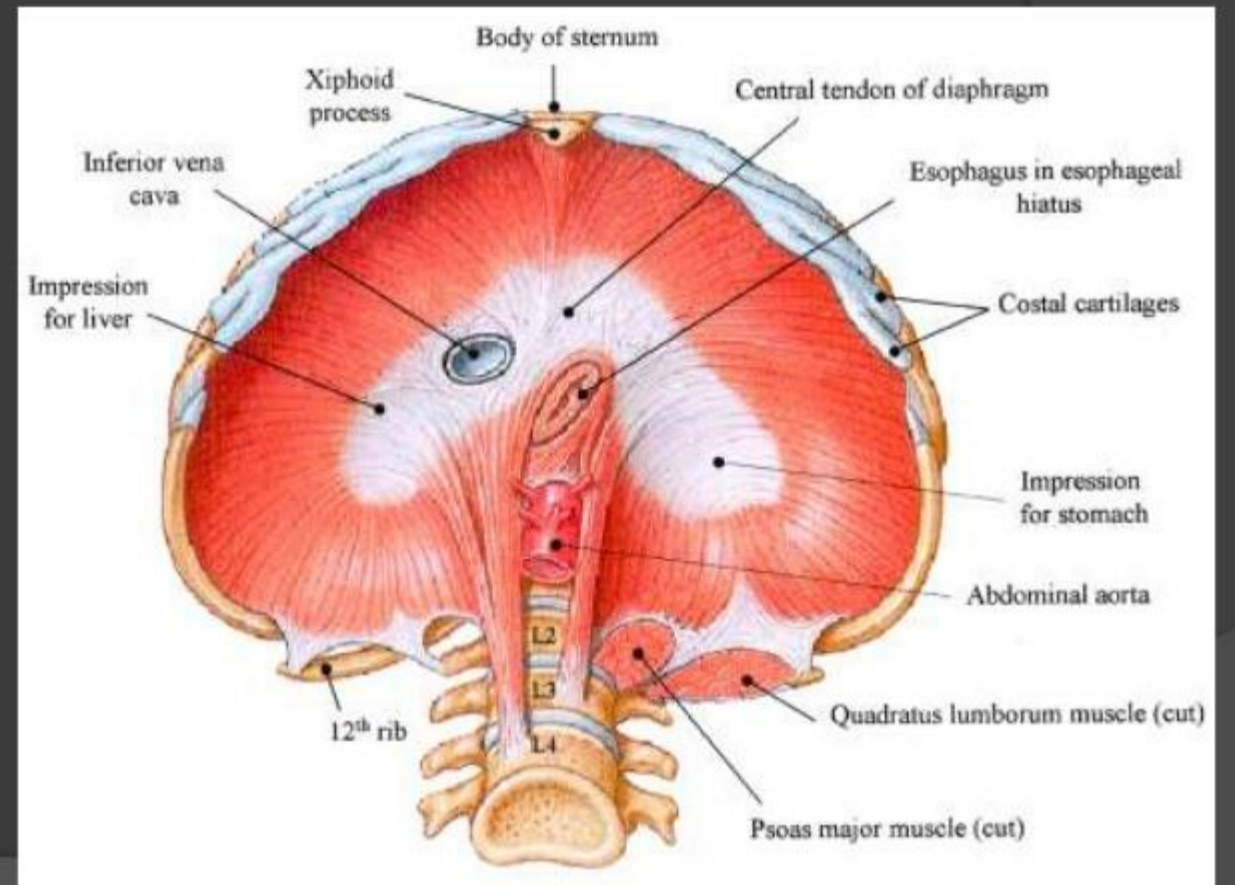
**LET'S PRACTICE OMT**

memegenerator.net

# Diaphragm Didactic

## Balancing the Diaphragm

- ▶ Bottom hand cupping spine at diaphragm insertion T10-L2
- ▶ Top hand resting over the lower sternum/epigastrium/lower anterior ribs
- ▶ “Listen” and feel the natural breathing
- ▶ Take into preferred position of ease
- ▶ Spinal inhibition can be used but not necessary



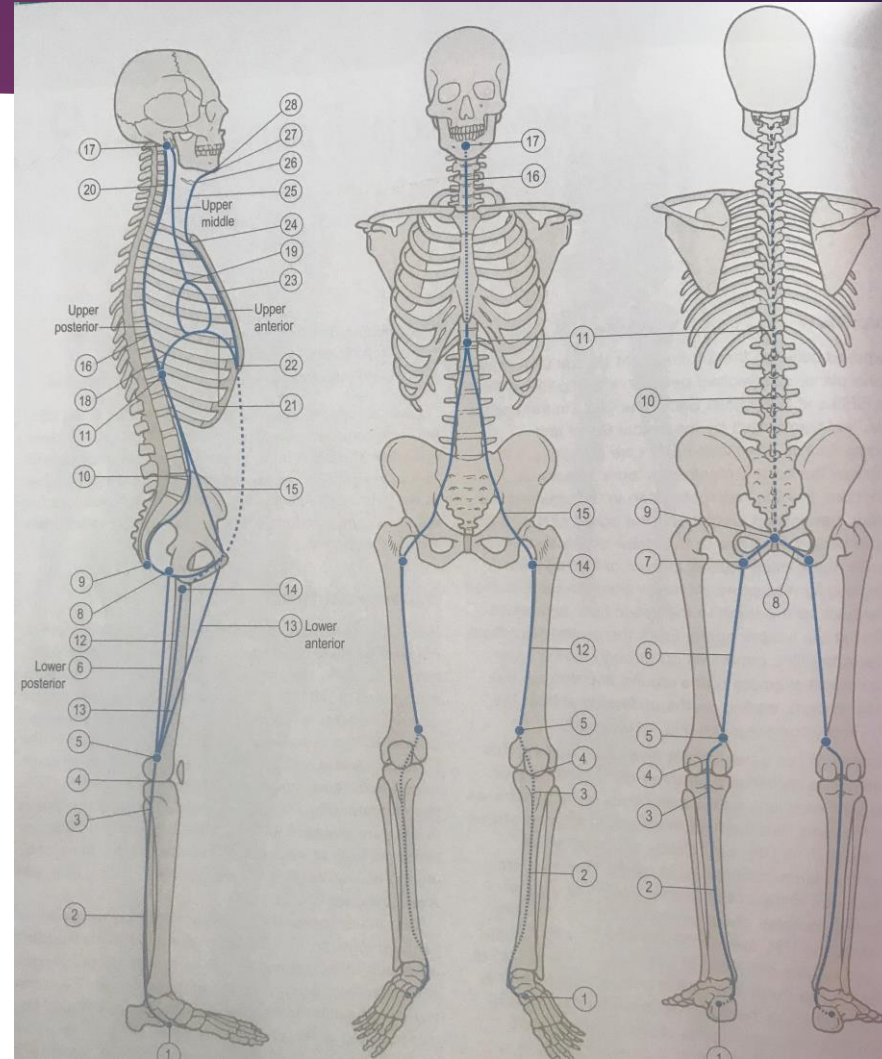




All roads may lead to Rome  
but...

# All roads start at the...

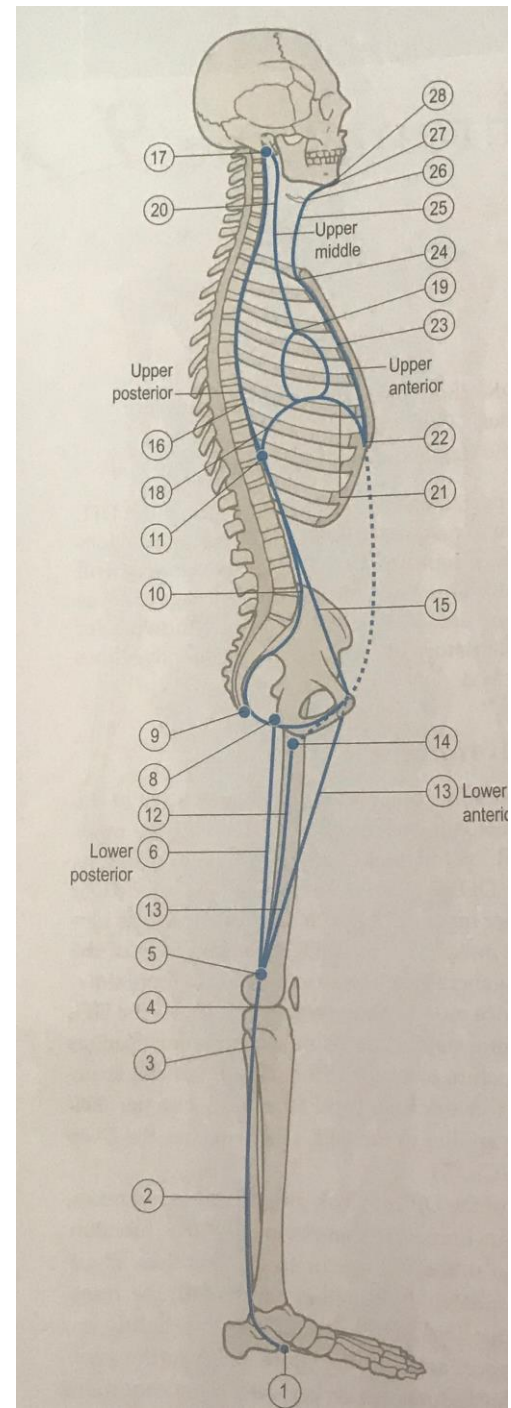
Myers, Thomas W. Anatomy Trains.  
Elsevier Ltd 2014. Pg 186



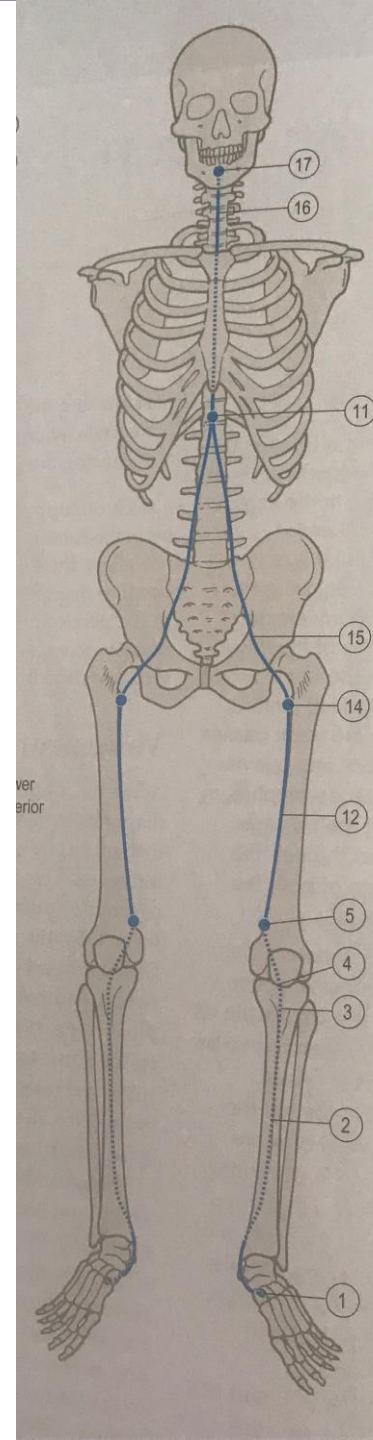
Ensure the Foundation is level and all will be well.—Andrew Taylor Still, MD



- Cuboid
- Fibularis and tibialis posterior
- IT band and Quadratus
- Inominant
- Quadratus Lumborum
- Latissimus Dorsi
- Diaphragm
- Chest wall and arm
- Scalenes and pretracheal fascia

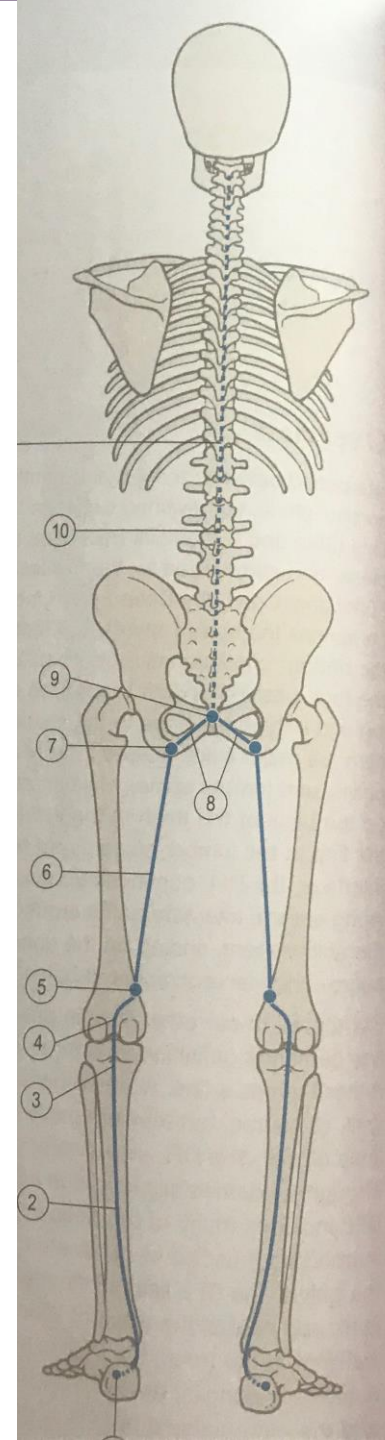


- Navicular
- Tibialis Anterior
- Adductors
- Pectineus
- Iliacus/Psoas
- Prevertebral fascia
- Occiput
- Note that where Psoas converge is that same area of the diaphragmatic Crura





- Calcaneus
- Soleus/Gastrocnemius
- Hamstrings
- Pelvic fascia/levator Ani
- Obturator Internus
- Coccyx
- Presacral fascia
- Anterior Longitudinal Ligament
- Basilar Portion of the Occiput





**The human foot is a masterpiece of  
engineering and a work of art.**

Leonardo da Vinci



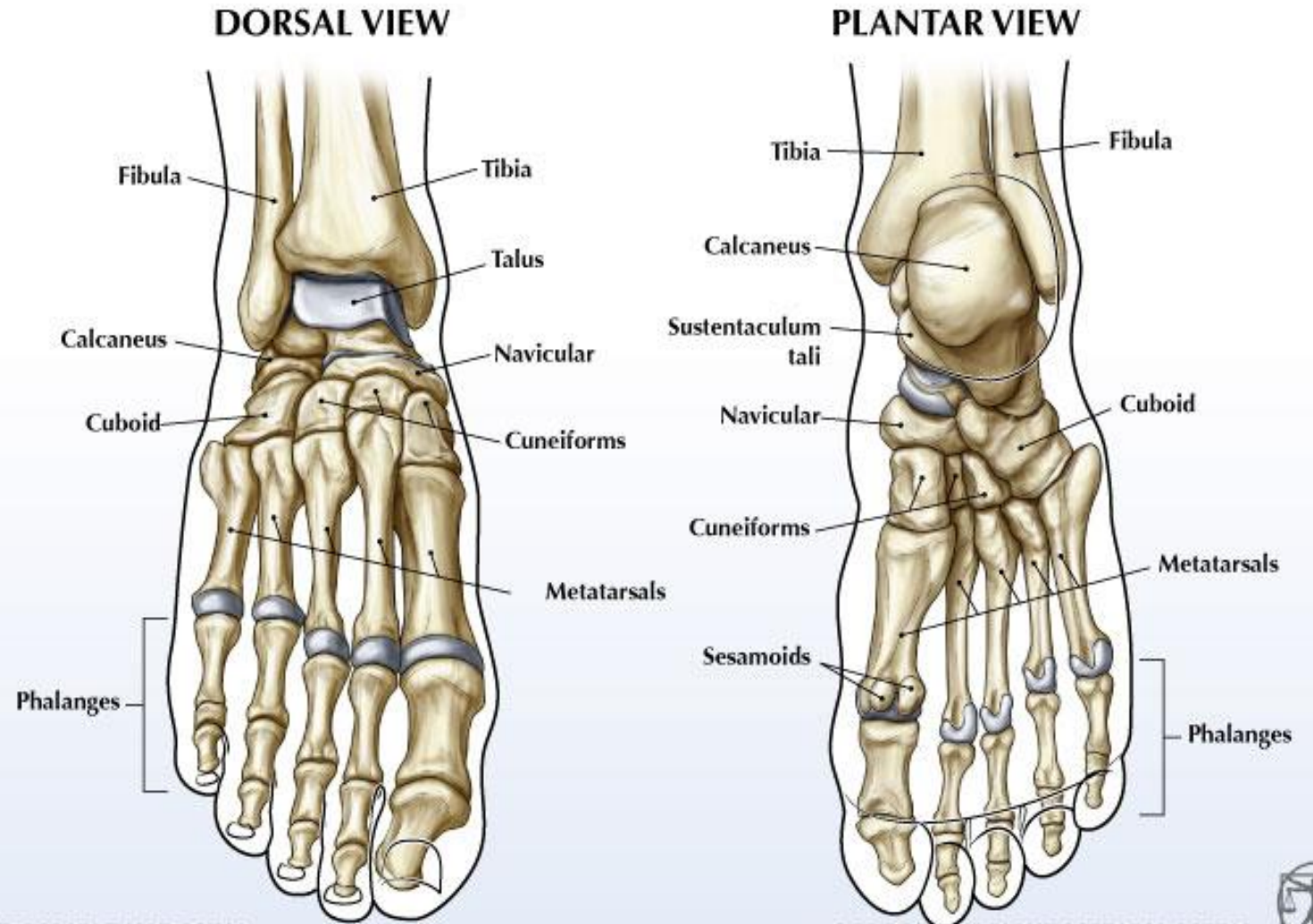
# The Point:

A little bit of fancy footwork  
can make all the difference!



# Balanced Ligamentous Tension for Cuboid

## BONES OF THE FOOT



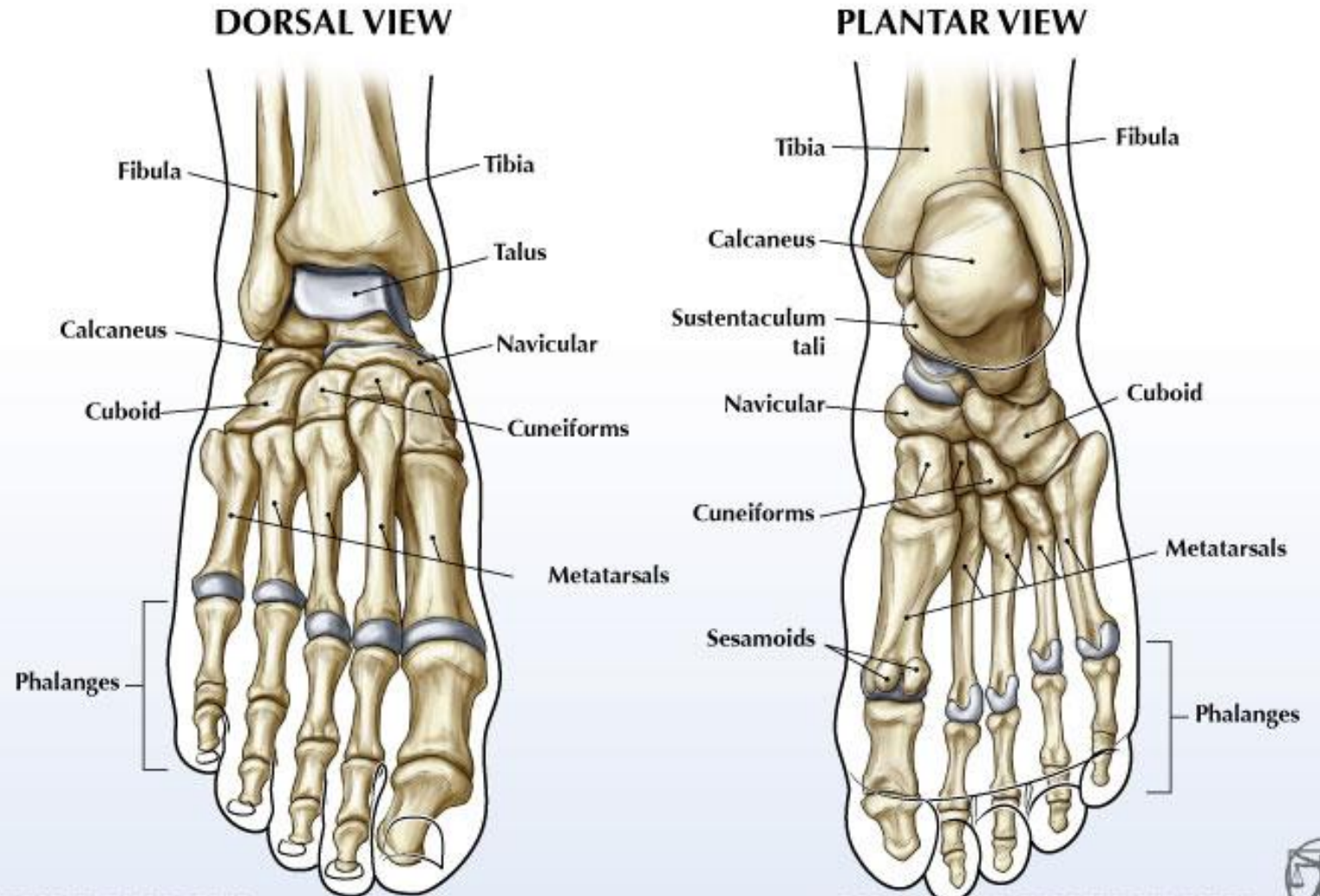
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# Stills Technique for Navicular

## BONES OF THE FOOT



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**"You only  
initiate treatment..."**

**...all the corrections are going to take place  
between now and the next time they  
come into your office"**

***Rollin E. Becker***

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