Together We Can

AOMA 43rd Annual Fall Seminar

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William H. Devine, DO

1

An Osteopathic Approach to the Immune System (Part Two)

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Director Osteopathic Principles and Methods for the Post Graduate Programs, Midwestern University, AZCOM

C- ONNM, C-FM OMT, Fellowship in Osteopathic Research

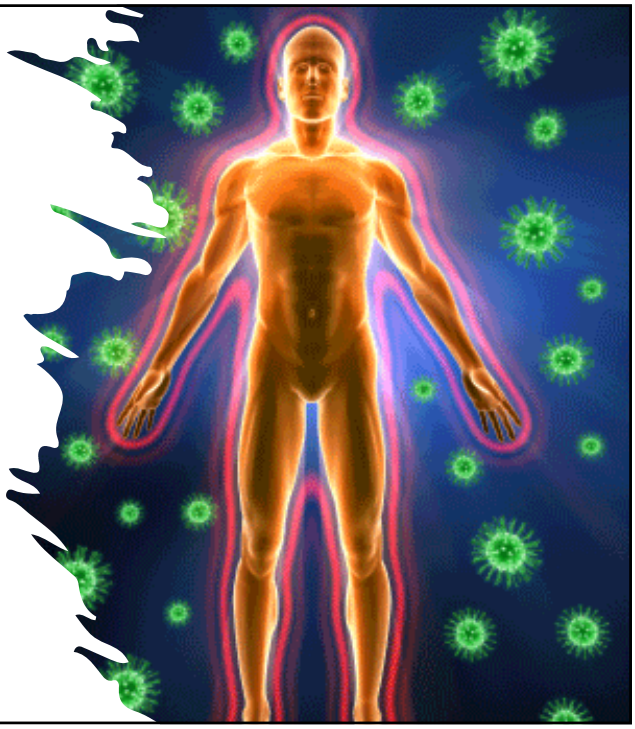
2

No Conflict of Interest with this Presentation...
My Interest is only the Science and Art of Osteopathic Medicine

3

Lecture Goals

- At the close of this presentation, one should better understand the following:
  - OMT for enhancing immune function/homeostasis including:
    - Indications for OMT as an adjunct in treating the Immune System.
    - Some of the mechanisms utilized with OMT and the Immune system.
    - A suggested "Osteopathic Rx" for OMT affecting immune system
    - Use of the 5 Osteopathic Models of Care
    - Value of OMT for diagnosis and treatment based on past evidence.
    - At the close there will be a brief "Hands On Workshop" as an option.



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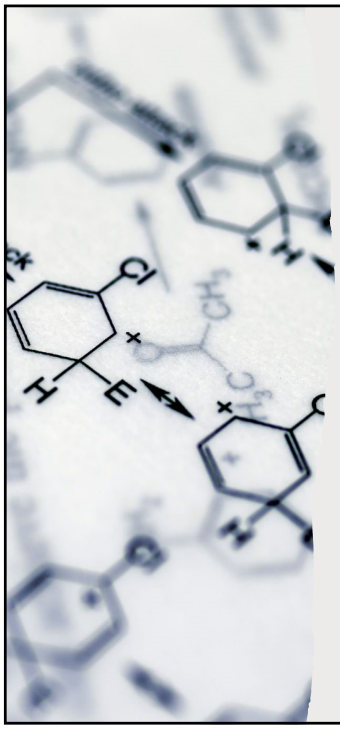


In Part One Dr. Keane just gave the latest on OMM for the Immune System at the Cellular Level and other concepts...

"HEALING

- Healing is the result of restoring normal structure to restore function.
- Mechanotransduction: The ability of a cell to sense, integrate, and convert mechanical stimuli into biochemical signals that result in intracellular changes, such as ion concentrations, activation of signaling pathways, and transcriptional regulation.
  - Dobner S, Amadi OC, and Lee RT. Chapter 14 – Cardiovascular Mechanotransduction. Muscle, Fundamental biology and mechanisms of disease. Elsevier, v1, 2012. https://doi.org/10.1016/B978-0-12-381510-1.00014-4
- In Osteopathic terms, mechanotransduction describes changes in homeostatic function due to OMT that result in aggregated structural changes within the body (i.e. healing)."

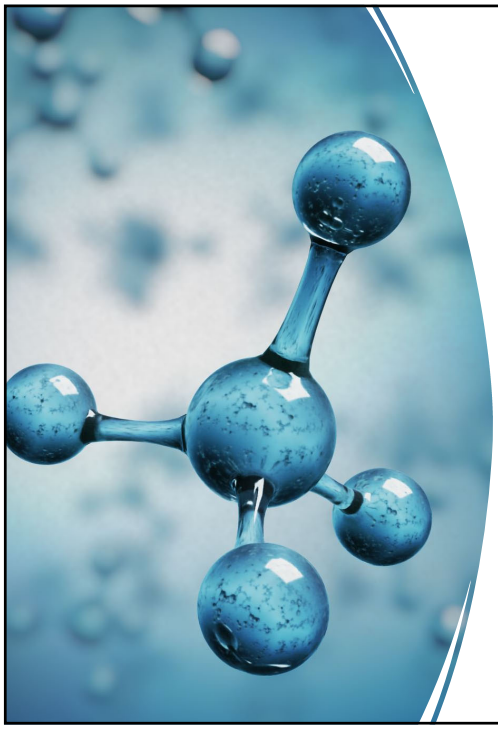
I will give you a historic approach with some simple methods of treatment

5

One Does <u>Not</u> Need to "Do OMT" to have an Osteopathic Approach to Treating the Immune System...:

- But OMT ***helps*** and will improve your results and reimbursement.
- However not doing OMT still can provide an "Osteopathic Approach"...
- Use the 5 Models of Osteopathic Care

6



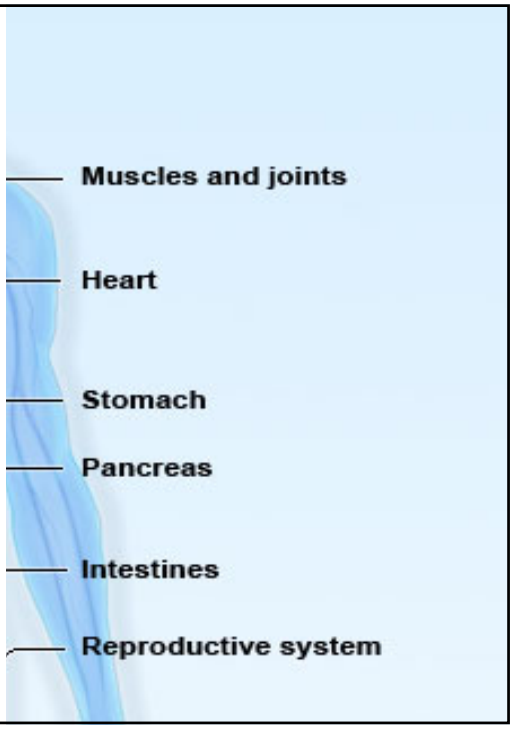
The 5 Models of Osteopathic Care

- Neurological-Autonomic Model
- Behavioral-Biopsychosocial Model
- Respiratory-Circulatory Model
- Metabolic-Hormonal Model
- Postural-Biomechanical Model

7

Neurological-Autonomic Model

- Direct sympathetic innervation of immune system (including fascia, microcirculation and lymphatics, thoracic and cervical ganglia)
  - All to focus on balancing SNS



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Behavioral-Biopsychosocial Model

- Psychoneuroimmunology and physiology of pain & stress
- Name some effects and/or behavior that relates to having stress
- Lifestyle choices and family interaction
- “Burnout”

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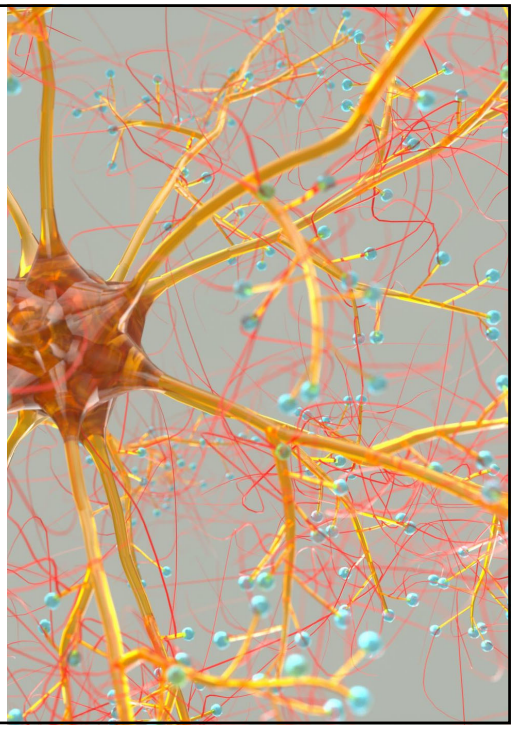
Respiratory-Circulatory Model

- Microcirculation of blood, Lymphatic and fascial roles in healing/immune function.
- External respiration determines internal respiration and oxygen saturation.



10

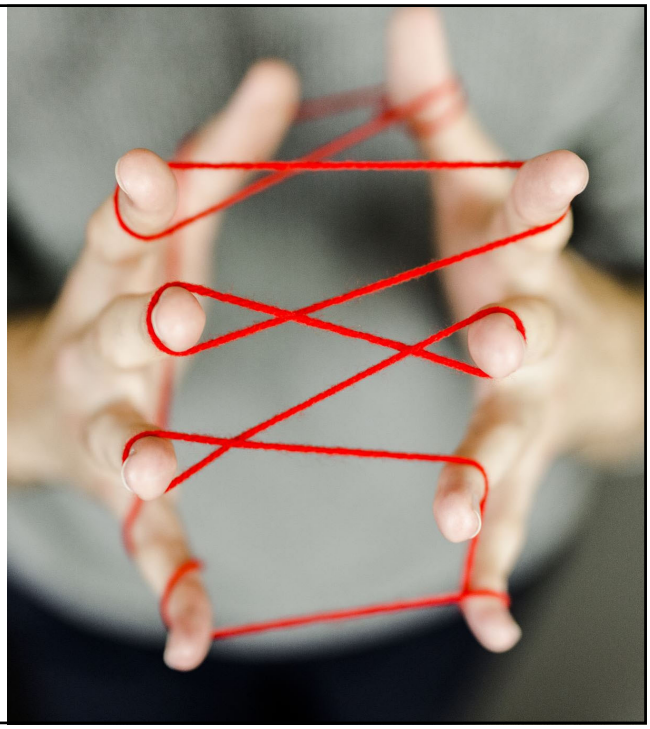
Metabolic-Hormonal Model

- Balanced Diet, vitamins, elevations in cortisol (etc) in stress
  - Role of diet and exercise in immune function
  - Sleep hygiene (8-9 hours?)
  - Low inflammatory diet
  - Excessive calorie intake

11

Postural-Biomechanical Model

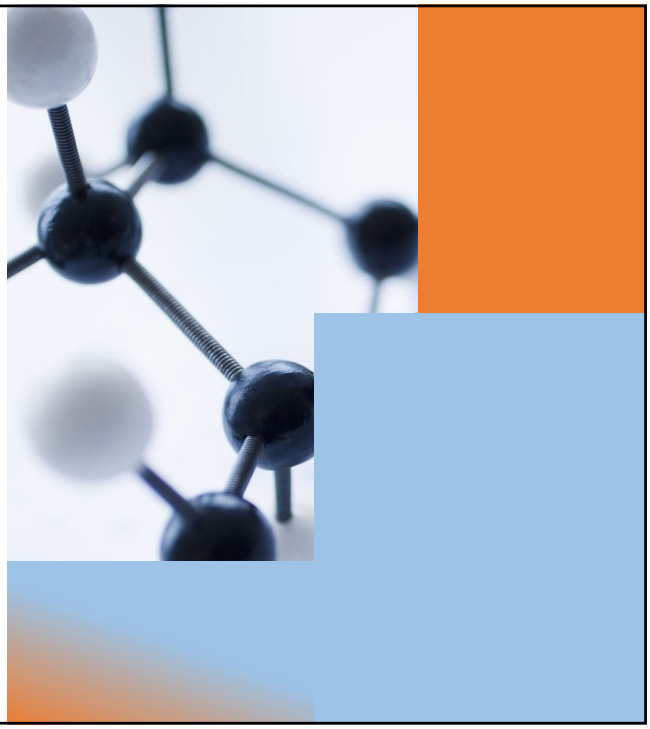
- Elements related to all of previous models
  - Consider:
    - Facilitated segments
    - Chest cage and diaphragmatic function
    - Fascial impediments & vascular flow
    - Mechanotransduction
    - Body weight
    - Tensegrity



12

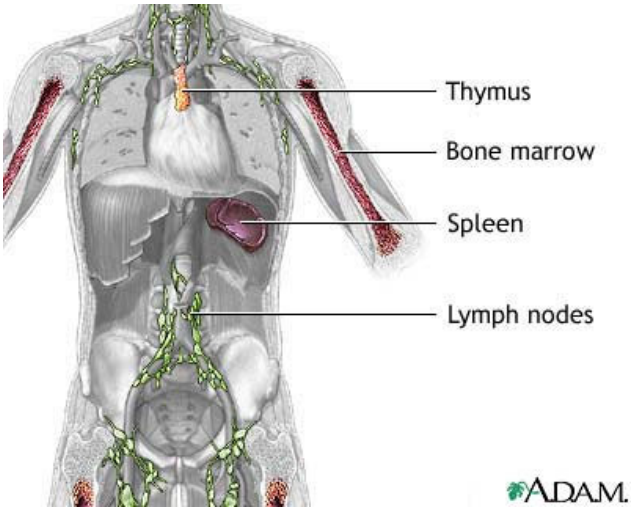
Considerations of Immunological Mediators

- Psychoneuroimmunology
- Reduction of *nociception or Pain*
- Mechanicotransduction:
  - "*mechanisms*" focusing mechanical energy on cellular/molecular transducers to affect vascular/immune function
- Restoration of circulation



13

THE IMMUNE SYSTEM



14

Historical Perspective & Early Osteopathic Research

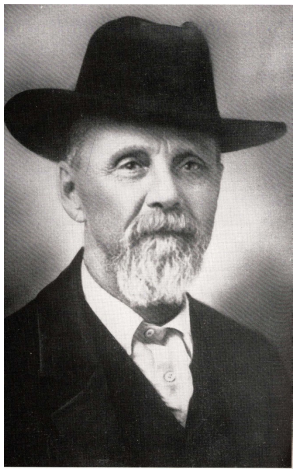
15

Andrew T. Still, M.D., D.O.

"The osteopathic prognosis for speedy relief of influenza is good when the osteopath has been called to the case within reasonable time."

16

Andrew T. Still, M.D., D.O.



" I have successfully treated many cases of pneumonia, both lobar and pleurotic, by correcting the ribs at their spinal articulations … I carefully adjust misplaced ribs …"

17

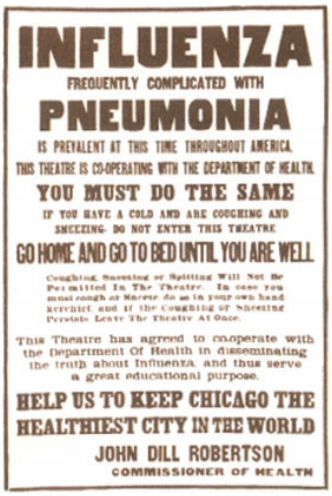
1918 Influenza Pandemic: Turning Point for Profession

- 1918-19 Spanish Flu Pandemic
  - 500-650,000 US dead
  - 400,000 in Germany died
  - 20-40 million died world-wide
  - pre-antibiotic: viral flu + bacterial pneumonia
  - flu (5% mortality) / pneumonia (60% mortality)
- Different Care Profile (DO's more than musculoskeletal)
  - allopathic care: calomel, strychnine, analgesic
  - osteopathic care: OMT, fluids, isolation, no Rx
    - OMT within 24 hours onset … 2-3 X early in course
    - OMT: Loosen chest cage, relax deep muscles
    - Later more emphasis on lymph pumps and other areas of spine

18

"One hundred thousand cases of influenza with a death rate one-fortieth of that officially reported under conventional medical treatment"

-- R.K. Smith, M.D., D.O.
***J.A.O.A.* 1920 Vol. 19**



INFLUENZA

FREQUENTLY COMPLICATED WITH

PNEUMONIA

IS PREVALENT AT THIS TIME THROUGHOUT AMERICA.

THIS THEATRE IS CO-OPERATING WITH THE DEPARTMENT OF HEALTH.

YOU MUST DO THE SAME

IF YOU HAVE A COLD AND ARE COUGHING AND SNEEZING DO NOT ENTER THIS THEATRE

GO HOME AND GO TO BED UNTIL YOU ARE WELL

Coughing, Sneezing or Spitting Will Not Be Permitted In The Theatre. In case you must cough or Sneeze do so in your own hand kerchief, and if the Coughing or Sneezing Persists Leave The Theatre At Once.

This Theatre has agreed to co-operate with the Department Of Health in disseminating the truth about Influenza, and thus serve a great educational purpose.

HELP US TO KEEP CHICAGO THE HEALTHIEST CITY IN THE WORLD

JOHN DILL ROBERTSON
COMMISSIONER OF HEALTH

<u>*JAOA* Article summarized</u>

- **Care by 2,445 D.O.s**
- **Sometimes 100-120 cases per physician**
- **1/40th the mortality rate of conventional care**

19

Spanish Flu Outcomes (1918)

Mortality Comparisons

	<u>Allopathic Care</u>	<u>Osteopathic Care</u>
Influenza Only	5-15% *(literature)*	0.2% (*n=110,120)*
Flu+Pneumonia	25-60% *(literature)*	10.1% (*n=6,258)*

Smith: *"…as a result of surviving the flu, or knowing someone who had, patients…and individuals who had never frequented the office of an osteopath... now decided that they would rely on the D.O. as their family doctor."*

20

The Journal of Osteopathy

G. HULBURT, Editor CHAS. C. TEALL, D. O., Osteopathic Editor
C. RIVERS SCHMIDT, D. O., Associate Editor

XXVII JUNE, 1920 No. 6

INCREASING THE ANTIBODY CONTENT OF THE SERUM BY MANIPULATION OF THE SPLEEN

M. A. LANE, Professor of Pathology and Immunology in the American School of Osteopathy at Kirksville

- M.A. Lane is also the author of a rare but informative book on Dr. Still
- Research with rabbits exposed to antigen treated with manipulation
- Possible relationship of continued manipulation of spleen on rise in antibody levels

Note: Contraindication of splenic pump in mono today is due to splenic fragility in that infection (otherwise recommended for most infection!)

21

How To Make Examination For Lympathic Disorders*

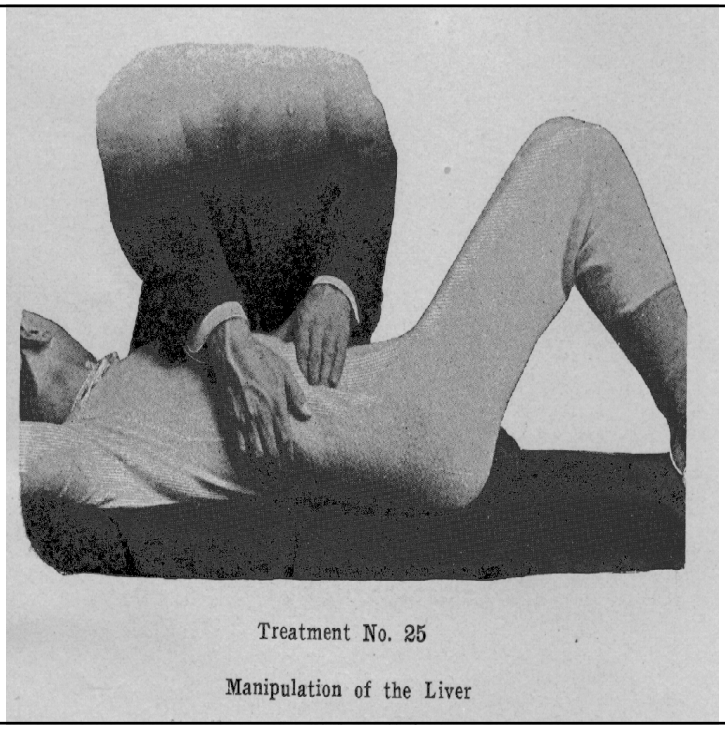
F. P. MILLARD, D.O., Toronto

J.A.O.A. February 1922

- Canadian D.O. wrote on specific findings and treatment of lymphatic tissues
- Textbook 1st devoted specifically to treatment of lymphatics
- Brief treatments repeated several times/week
- Inspired Zink's Respiratory-Circulatory Model

THE AUTHOR
F. P. MILLARD, D. O.

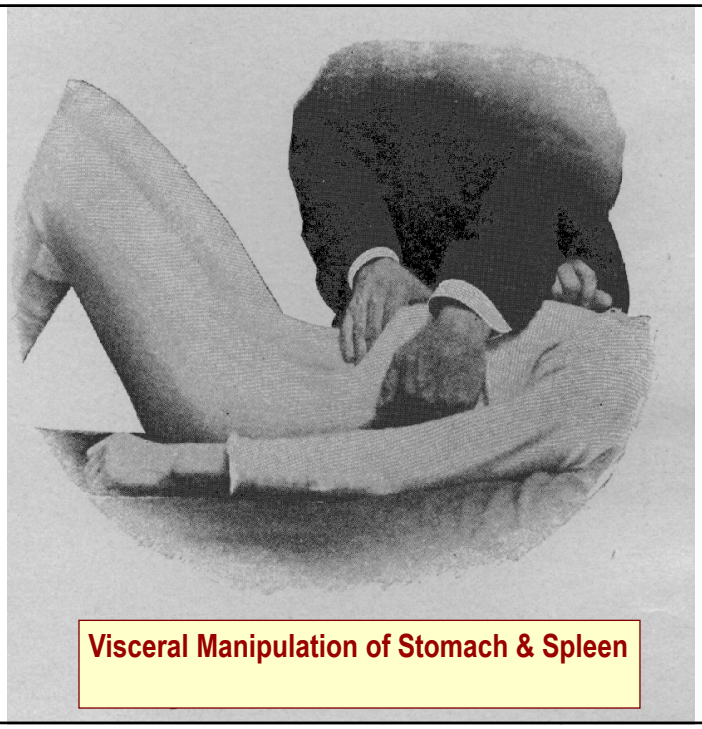
22



Treatment No. 25

Manipulation of the Liver

23



Visceral Manipulation of Stomach & Spleen

24

Lymphatic Pump Treatment—Discussion and Cases

J. V. McManis, D. O.
Kirksville, Mo.

J.A.O.A. March 1932

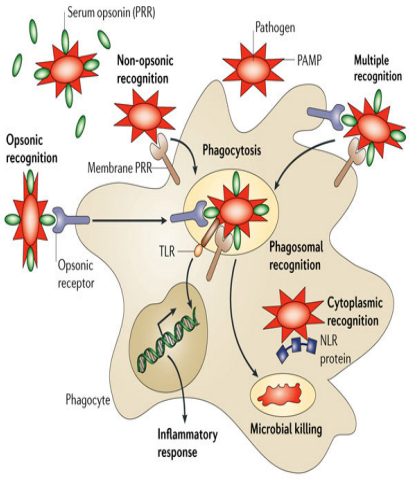
- **Developer of the McManis table – difficult prize to find - highly adjustable hydraulic tables (lymphatic attachment)**
- **Length of treatment 5 - 12 minutes**
- **Discussed writings of Still, Miller, Downing, Lane, Becker, Millard, Castillo**
- **Description of case studies**

"The effect of direct splenic stimulation on the cells and anti-body content of the blood stream in acute infectious diseases"

Castillo - Ferris - Swift
***JAOA* 1934**

Splenic Stimulation OMT

- **⇑ leukocyte count (80% cases)**
  - **average ⇑ 2,000 cells**
  - **right shift (mature cells)**
- **⇑ opsonic index (>80% cases); expulsion of formed antibodies into general circulation**
- **⇑ serum bacteriolytic power 68%**



Pneumonia Research in Children at Los Angeles County Osteopathic Hospital*

A Preliminary Report

JAMES O. WATSON, D.O., M.D.
Senior Pediatrician, Los Angeles County Osteopathic Hospital
and
EVANGELINE N. PERCIVAL, D.O.
Junior Pediatrician, Los Angeles County Osteopathic Hospital
Los Angeles

***J.A.O.A.* November 1939**

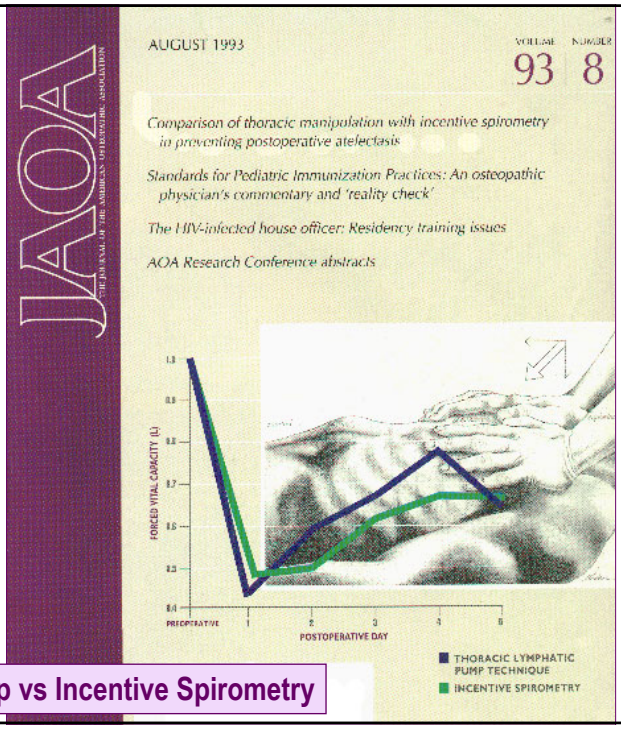
Compared Los Angeles County Osteopathic Hospital vs. N.Y.C. Municipal Hospital

- **Bronchopneumonia mortality (⇓ 2/3)**
  - **DO: 10.7%**
  - **MD: 29.6%**
- **Lobar pneumonia mortality (=)**
  - **DO: 11.2%**
  - **MD: 10.8%**

Before antibiotics and IVs

27

JAOA Cover Aug '93



Thoracic pump vs Incentive Spirometry

28

"Comparison of thoracic manipulation with incentive spirometry in preventing postoperative atelectasis"

Sandra L. Sleszynski, DO

Albert F. Kelso, PhD

***J.A.O.A.* (Aug 1993)**
Randomized
Researcher-Blinded Trial

Randomized: 21 received thoracic lymphatic pump; 21 received incentive spirometry

Atelectasis occurred in 2/21 patients regardless of treatment (predicted value for postoperative patients is 15-20%)

FVC & FEV1 in thoracic lymphatic pump OMT treated patients had earlier recovery & quicker return toward preoperative values than incentive spirometry

29

Transient basophilia following the application of lymphatic pump techniques: A pilot study

Messina & Hampton: *JAOA* 98(2):91-94

7 Study Subjects

- All received lymphatic pump technique
  - pectoral traction and splenic pump
- Blood (¼,½, 1, 2, & 4 hours post-OMT)
- All showed significant basophilia

5 Control Subjects

- None received lymphatic pump OMT
- No change in white blood cell count

Splenic Pump

Significant Findings

- Basophils & Mast Cells may play a more significant role in initial immune response and rise OMT

30

Effect of lymphatic and splenic pump techniques on antibody response to hepatitis B vaccine: A pilot study

Jackson & Steele: *JAOA* 98:155 -160

Recombinant hepatitis vaccine @ 0, 5, & 25 wks

- Experimental (n=20): OMT 3x/wk for 2 weeks after each vaccination
- Control (n=19): Only vaccination
- Measure protective antibody levels on 13th week
- Study suggested OMT enhances immune response
  - OMT: 50% of subjects
  - Control: 16% of subjects

Thoracic & Splenic Pumps

31

Abdominal Lymphatic Pump Treatment Increases Leukocyte Count and Flux in Thoracic Duct Lymph

Hodge LM, Bearden MK, King HH et al. *JAOA* 107(8): 355.

This canine model abdominal lymph pump may provide a rational basis for the use of OMT to ⇑ immune function & treat infection.

Leukocyte mobilization & Lymph flow (WBC X Flow = Leukocyte Flux)

- Both probably important mechanisms in Lymph Pump OMT effect
- 2-3X ⇑ # of leukocytes in lymph (4.8→11.8 million cells/ml ($p<0.05$)
- Almost 4-fold increase in lymph flow (ml/min) in the thoracic duct
- ⇑ leukocyte flux through the thoracic duct to the circulation (8.2 → 60 million leukocytes/min)

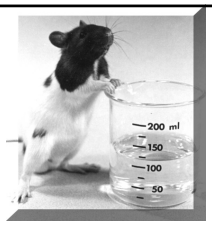
Leukocytes possibly mobilized from mucosal tissues

- Macrophages, neutrophils, total lymphocytes, T cells, B cells, and IgG forming B cells increased similarly during LPT
- IgA antibody forming B cells ⇑'ed from 5.8% → 17% (with OMT)

This spring we will measure nitric oxide in the thoracic duct (PCOM-TCOM)

32

Lymphatic Pump Treatment Increases Leukocyte Trafficking and Inhibits Tumor Formation in the Lungs of Rats



Hodge LM, Harden L, et al. *JAOA* 107(8): 355-6

Rats injected with MADB106 cancer cell line (forms solid lung tumors). Starting 24 hrs later X 7d received (1) 4min lymphatic pump; (2) 4min sham; (3) no treatment. 8th day measure solid tumors, leukocyte populations, immune cell activity & tumor lysis in euthanized rats.

Results: LPT reduced solid tumors ($p<0.05$) and increased macrophages, NK cells, B-cells and CD8+T cells ($p<0.05$).

No difference in VEGF-C suggests LPT does not promote lymphangiogenesis in early stage tumor development.

Suggests lymphatic pump inhibits pulmonary tumor formation by enhancing numbers of leukocytes with anti-tumor activities that migrate into lungs. Scientific support for clinical use of LPT to enhance anti-tumor immunity.

33

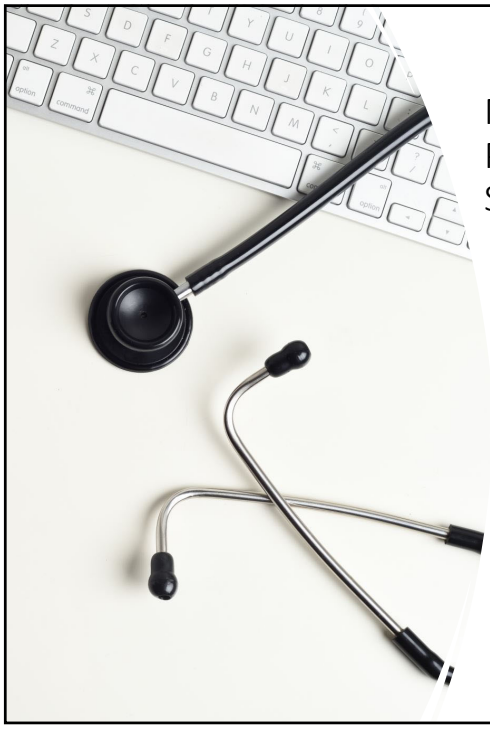
The "Osteopathic Approach" to the Immune System Is Application of Principles of Applied Anatomy and Physiology using Osteopathic Medical Philosophy and if indicated, OMT.

34

MODERN MEDICINE

- Has no drug that balances and restores the immune regulation.
- OMT can help the body rebalance and enhance the immune response at the different levels and at the same time.

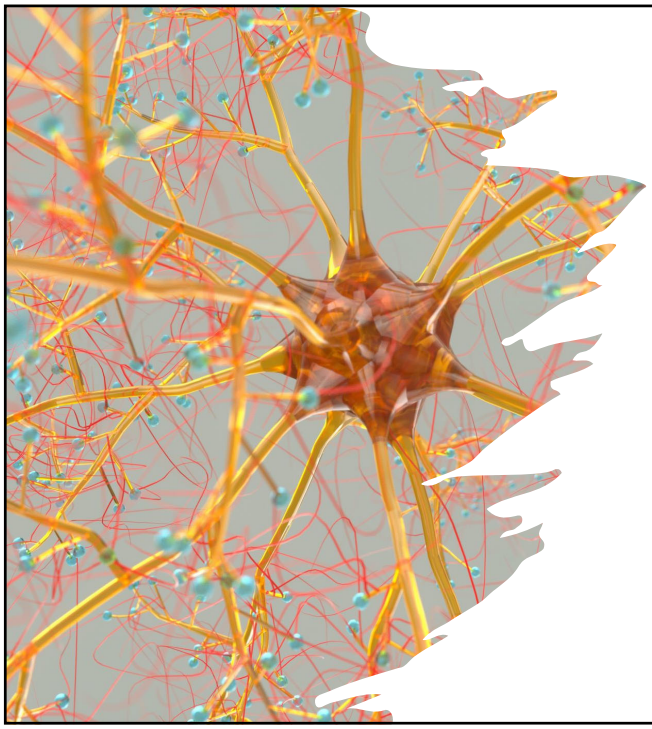
35



Modern Research Supports Use of OMT and Principles in Treatment of the Immune System –"Evidence Based Tx"

- International and US studies support the use of "manual medicine" to enhance the immune response and vitality.
- Much evidence is coming from the Osteopathic Research Center (ORC) in Fort Worth with original research on the Lymphatic System, studies on OMT and pneumonia and other studies from our schools, and residencies.
- Kirksville's DO Touch Net PBRN –Clinical research

36

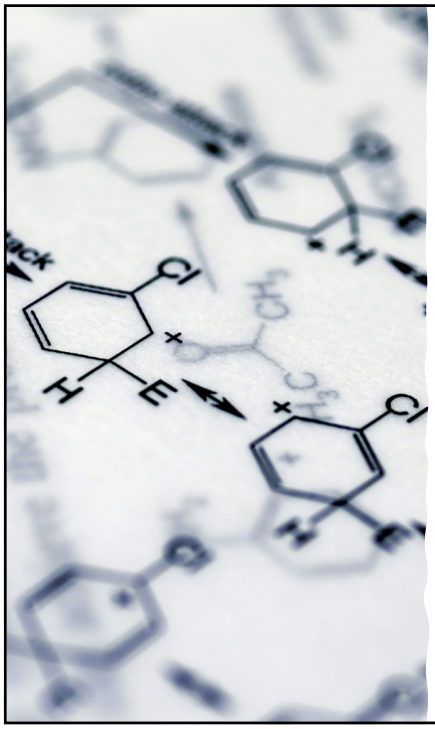


Using OMT as Part of the "Osteopathic Approach":

OMT to Immune System addresses the:

- SYMPATHETIC NERVOUS SYSTEM and to a lesser extent the PARASYMPATHETIC NERVOUS SYSTEM..
- Linked LYMPHATIC SYSTEM
- BOOD CIRCULATORY SYSTEM
- PULMONARY SYSTEM

37



Autonomic Nervous System and Immunity: SNS

- **Known to early DOs as important to immune system treatment.**
- **Circulation Blood and Lymph, Oxygenation, and ANS Balance with reduction of Inflammation**
- **The Sympathetic Nervous System is the modulator of neuromuscular transmission and Homeostatic functioning of the body.**
- **The SNS is the link between the musculoskeletal system and the fighting of disease.**

38

Autonomic Nervous System and Immunity: SNS

- **The Sympathetic Nervous System can inhibit healing when stimulated and excessive. Balance with OMT is the goal.**
- **The SNS will cause increase in immune-endocrine responses when outflow is improved.**
- **Increase in Receptor Cell Sensitivity.**
- **Innervates capillaries and endolymphatic circulation.- Blood and Lymphatic circulation.**

39

Autonomic Nervous System and Immunity: PNS

- **The Parasympathetic Nervous System (PNS) can help balance healing with its function in replacing body nutrition and body stores that were depleted by the SNS.**
- **It has very little control over the vascular circulation except in the pelvis.**
- **It can help calm down an excessive SNS output.**
- **Vagus Nerve is the major PNS player.**

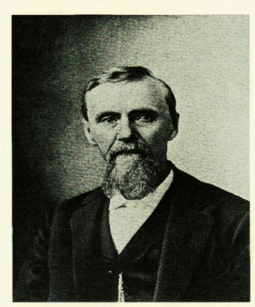
40

41

Lymphatic Circulation and Osteopathy

42

"We strike at the source of life and death when we go to the lymphatics."



A.T. Still 1909

43

Four Basic Functions of Lymphatics:

- Maintain fluid balance in body.
- Purification and cleansing of tissues.
- Defense-Immunity
- Nutrition

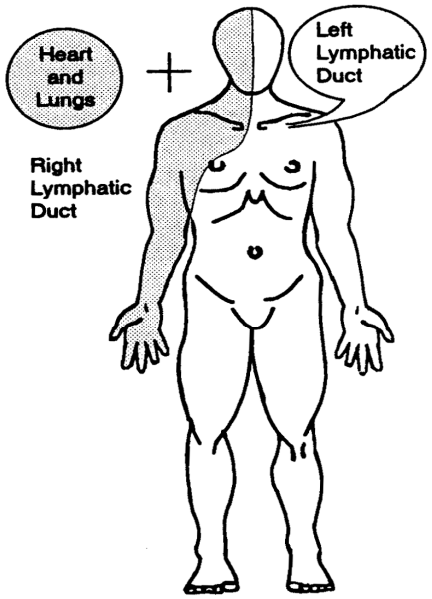
44

Lymphatic System Function

- Filters 30 liters of fluids out of Capillaries per Day!
- 90% (27 liters) returns cleansed back to the Capillaries.
- 10% (3 liters) flows into the Lymphatic System
- 2.3 liters per day returns to the Left Lymphatic duct (under the left clavicle)

Right and Left Lymphatic Ducts

- RIGHT LYMPHATIC DUCT DRAINS INTO:
  - the right brachiocephalic vein and the left drains into the left internal jugular and subclavian vein.
  - serves the right upper extremity, right hemicranium (including the head and face), pericardium, heart and all but the left upper lobe of the lungs.
- The LEFT LYMPHATIC DUCT serves the rest of the body. (abdomen, pelvis, both lower extremities, left side of head and neck, left arm, left upper thorax, and Empties into the Left Subclavian Vein.)
- Both are closely affected by the Thoracic Inlet which responds to OMT easily.



Lymphatic Drainage

47

Deep nodes and vessels receive drainage from superficial system and visceral organs of trunk. And eventually into the left lymphatic duct under the left clavicle. -NOTE: Cisterna Chyli is at L1-L2

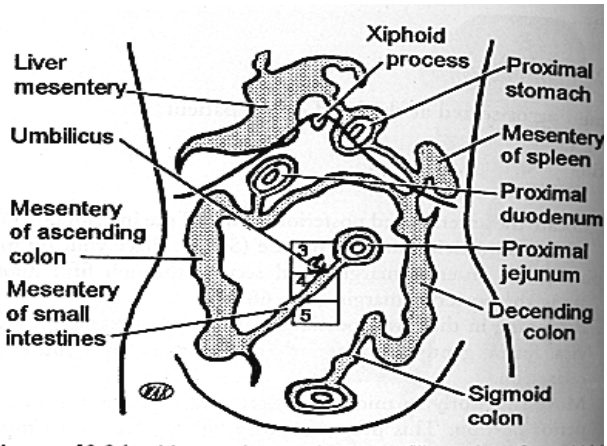


Figure 68.24. Mesenteric attachments. (Illustration from W.A Kuchera.)

48

"I'm not here to teach a bunch of parrots"....

Andrew Taylor Still, MD, DO:

- "It is not necessary to do what I do if you can obtain the same results."

Alan Becker, D.O.

- "Design the treatment as you go."

"Know that you're right And do your work accordingly"

49

Now Therapeutic Techniques:

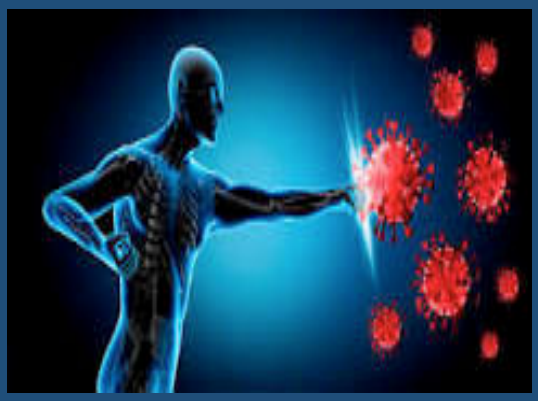
50

OMT for Blood Circulation, Lymphatic Circulation, Respiration *and* ANS Balance *can* Include:

- Chapman's Reflexes
- Thoracic Pump (of Miller)
- Pedal Pump (of Dalrymple)
- Osteopathy in the Cranial Field
- Muscle Energy to the Thoracic Inlet
- Rib Raising
- Splenic/ Liver Pump
- Extremity Pump
- Cervical myofascial mobilization
- Strain Counterstrain OMT to SNS Related Sites

51

OMT TO THE SNS, LYMPHATICs, RESPIRATORY AND MICROCIRCULATION SYSTEM can be SIMPLE AND EASY



Sequence of Treatment is Important:

- Start at thoracic inlet
- Then cervical myofascial release, both shoulder girdles, respiratory diaphragm, rib raising, chest pump, bilateral lower extremity release, dorsal pedal pump

52

Thoracic Inlet Release - First

- Is used a first part of an integrated approach for URIs, lymphedema, of the upper extremities and even mastitis.
- Treat the thoracic spine and cervical spine prior to treating the “operculum” or thoracic inlet (outlet) for ANS balance*, lymphatic and blood circulation as well as mechanical function.
- Rebalances the ANS via the Sympathetic Chain, & Vagus

53

Thoracic Inlet Release –Direct or Indirect

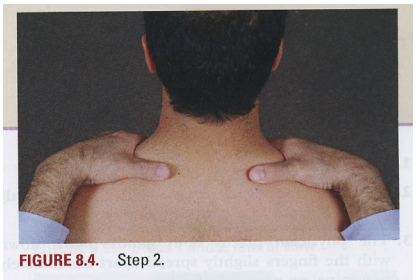


FIGURE 8.4. Step 2.

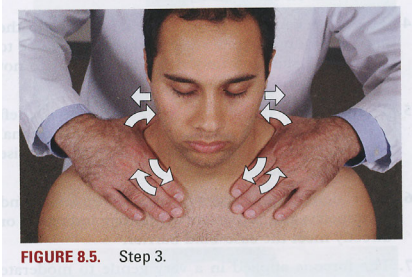


FIGURE 8.5. Step 3.

54

Or by Using Combined Indirect and Direct OMT

55

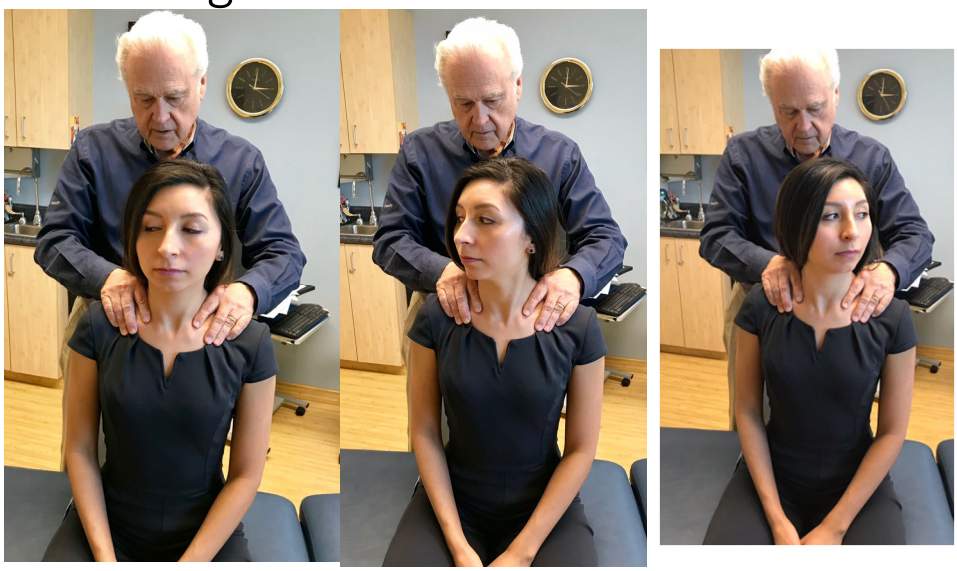
Move to indirect position and hold

56

Then slowly have patient move toward barrier while you hold

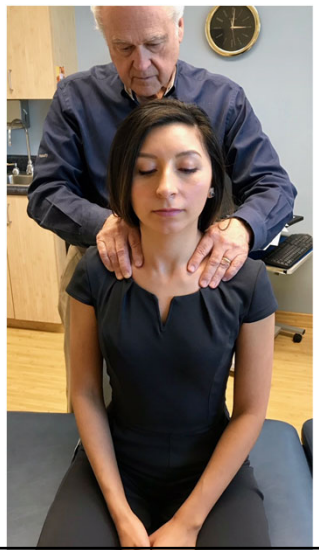
57

Sitting Position Alternative



58

Re check in Neutral Position



59

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Treating the Cervical Lymphatics and Sympathetics

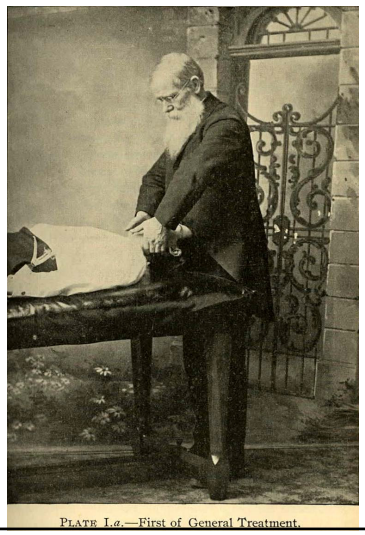


PLATE I.*a*.—First of General Treatment.

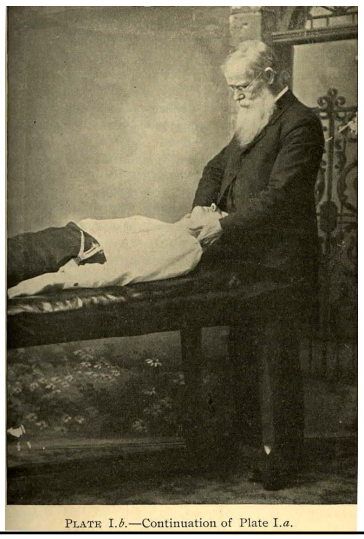


PLATE I.*b*.—Continuation of Plate I.*a*.

60

61

Treating the Cervical ANS and Lymphatics

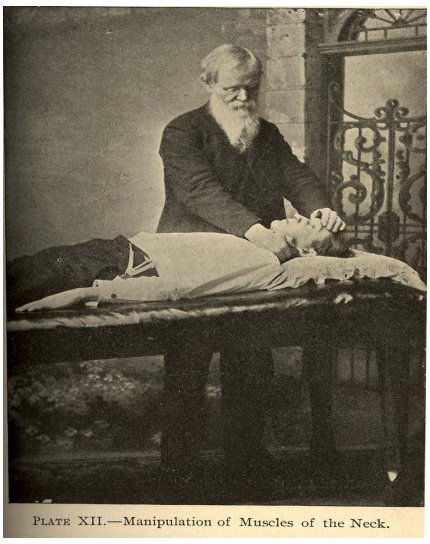


PLATE XII.—Manipulation of Muscles of the Neck.

62

Suboccipital Tension Release

63

Thoracic OMT

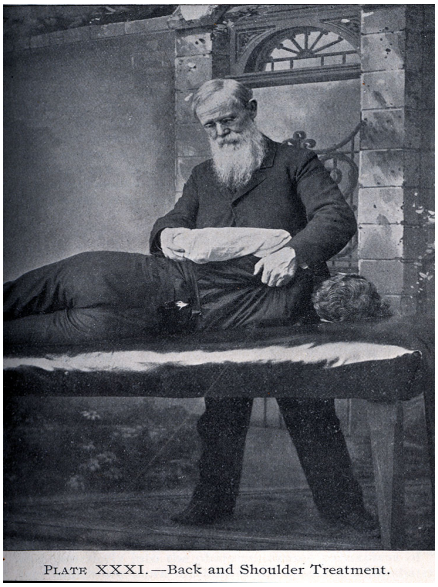
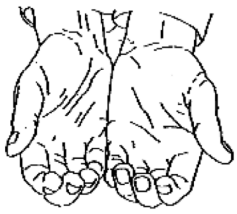


PLATE XXXI.—Back and Shoulder Treatment.

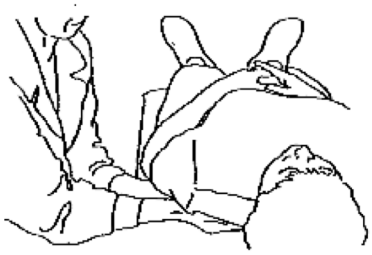
64

65

- **Rib raising**
  - Promotes venous and lymphatic drainage, and impacts the SNS ganglia, vasomotor tone.
    - Pt supine, operator's cupped hands under thorax with finger tips placed 1-2 inches lateral to the spinous processes
    - Use an upward, lateral motion of the wrist and hands, operator lifts the rib angles, to cause expansion of the thoracic cage
    - Repeat on the other side.



Rib Raising - Figure A
hand position



Rib Raising - Figure C
lifting rib angles (supine)

66

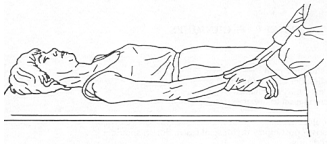
Direct MFR (Right) Shoulder Girdle

67

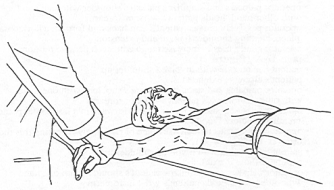
Left Lymphatic Duct MFR

68

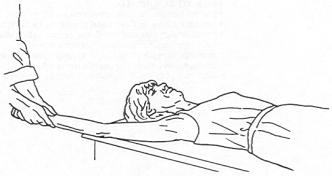
Shoulder Shake



Shoulder Shake - Figure A
starting position



Shoulder Shake - Figure B
abduction & adduction with vibratory motion

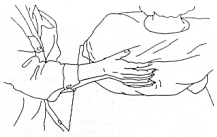


Shoulder Shake - Figure C
abduction & adduction with vibratory motion

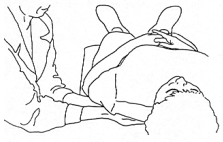
69

Rib Raising

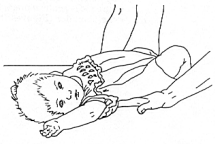
Rib Raising - Figure A
hand position



Rib Raising - Figure B
hand placement



Rib Raising - Figure C
lifting rib angles (supine)



Rib Raising - Figure D
infants & small children

Rib Raising - Figure E
patient seated

70

- **Anterior chest wall (sternal) lymphatic pump:**
  - Pt. supine and operator places one or both hands together on pts. sternum or anterior chest wall
  - Pt. inhales fully
  - On exhalation, apply a gentle posterio-caudad pressure to the sternum
    - Pressure may be vibratory
  - Momentary resistance to inhalation accentuates the negative intrathoracic pressure which further assists air flow and fluid return

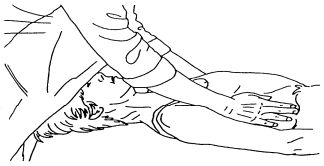
Anterior Chest Wall Pump

Female

Female

73

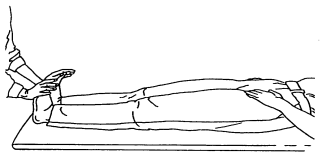
Lymphatic Pump OMT



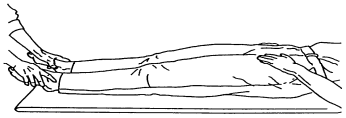
Lymphatic Pump - Figure A
hand placement

Lymphatic Pump - Figure B
anterior chest wall (sternal) pump

Lymphatic Pump - Figure C
anterior chest wall pump



Lymphatic Pump - Figure D
pedal pump (dorsiflexion)



Lymphatic Pump - Figure E
pedal pump (plantar flexion)

74

Release of Thoracics, Ribs, and Shoulder Girdle Lymphatics

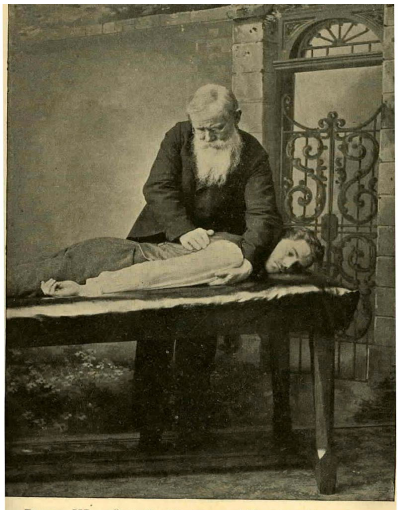


PLATE XL.—Scapula, Dorsum and Shoulder Treatment.

75

OMT to Liver (or Spleen) if indicated

PLATE XXXIII.—Showing Manner of Liver Treatment.

76

- **Abdominal Diaphragm Release**
  - Doming of a flattened diaphragmatic muscle will increase the pressure gradients that it is able to produce between the thoracic and abdominal regions that are decreased during times of intrapulmonary inflammatory processes, impaired chest wall excursion, etc.
  - There are three major openings in the abdominal diaphragm, and each of those important structures can be affected by a change in resting tone of the diaphragm:
    - Aorta and cysterna chili – impaired blood flow and lymph flow
    - Esophagus – esophageal reflux and hernia's
    - Inferior vena cava – impaired venous return

77

Diaphragm Release OMT

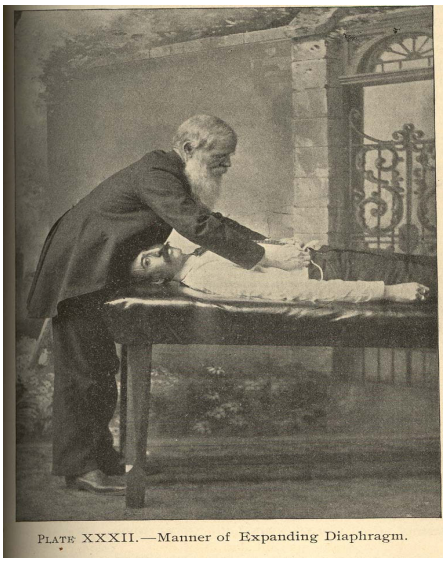


PLATE XXXII.—Manner of Expanding Diaphragm.

78

Still‘s Thoracic Diaphragm OMT

79

Resist Inhalation and follow exhalation

80

Littlejohn Iliopsoas Diaphragm Pump (Oscillatory Technique)

81

Lymphatic- Pedal Pump

- **Pedal Pump**
  - Patient lies supine. Physician standing at the foot of the bed.
  - Physician passively dorsiflexes the patients ankles repeatedly to create a fluid wave motion throughout the patient's entire body.
  - Next repeat using plantar flexion

82

- **Pedal Pump**
  1. Pt supine, physician standing at the patient's feet
  2. Contact the patient's feet and dorsiflex.
  3. Introduce a force which dorsiflexes the feet. Continue the force along the longitudinal axis of the body. The force should send a wave of motion cephalad, which will be followed by a rebound wave moving caudally.
  4. Use an osseous landmark or dermal dysfunction to appreciate the wave motion.
  5. As the rebound wave returns to the feet, reapply the dorsiflexion force thereby creating an "oscillatory wave".

Pedal Pump technique: Force is directed upon a dorsiflexed foot along a vertical axis.

83

84

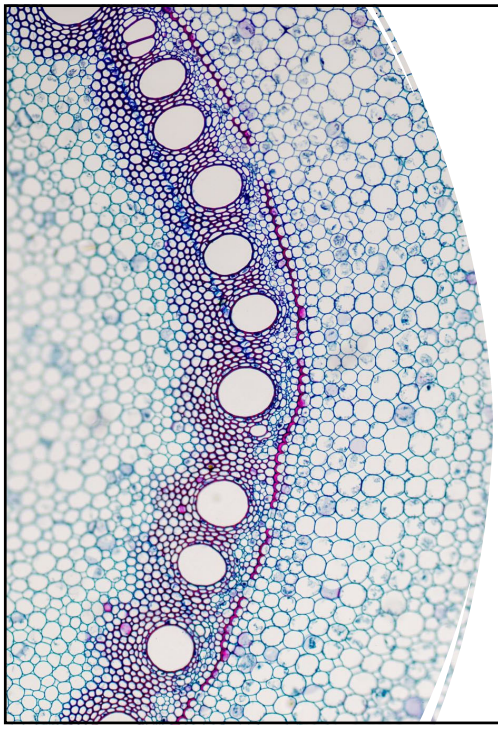
85

86

Indirect Fascial Release for Infected Wounds

- After above Lymphatic OMT-Treat AROUND wound gently, NOT straining the tissues, but relaxing the tissues.
- Focus on tissues closer to the heart first.

87



Summary of Suggested Lymphatic Treatment Sequence

- Lymphatic OMT is given -After First providing OMT to the primary areas of somatic dysfunction.
- Then Treat: Thoracic inlet, Cervical spine, Thoracic cage, Shoulder girdles, Thoracic diaphragm,
- Pelvis if needed
- Then extremities –proximal to distal.

REMEMBER THAT OMM AND OMT OF THE IMMUNE SYSTEM IS **NOT NEW** AND IS WORTH USING AS AN ADJUNCT TO YOUR TREATMENT PLAN.

88

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Treating the Cervical Lymphatics and Sympathetics

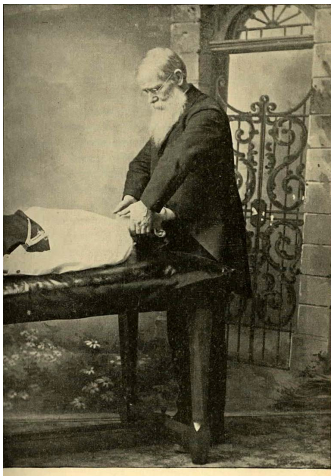


PLATE I.*a*.—First of General Treatment.

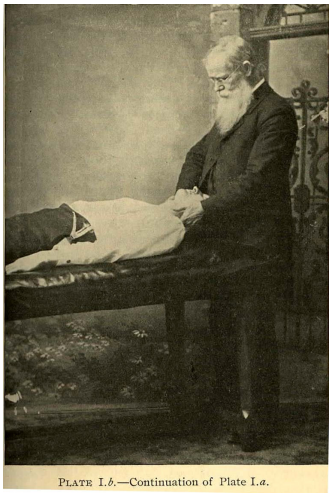


PLATE I.*b*.—Continuation of Plate I.*a*.

89

Treating the Cervical Muscles

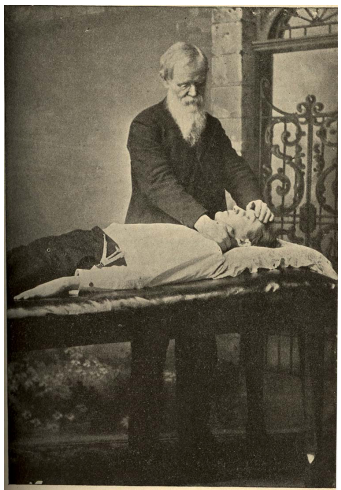


PLATE XII.—Manipulation of Muscles of the Neck.

90

Release of Thoracics, Ribs, and Shoulder Girdle Lymphatics

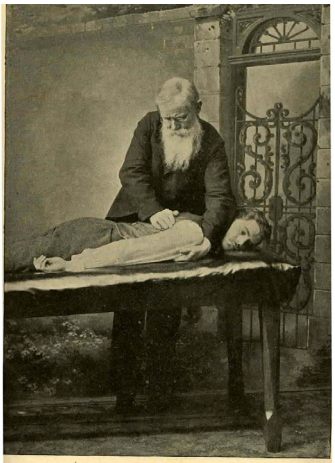


PLATE XL.—Scapula, Dorsum and Shoulder Treatment.

91

OMT to Liver (or Spleen)

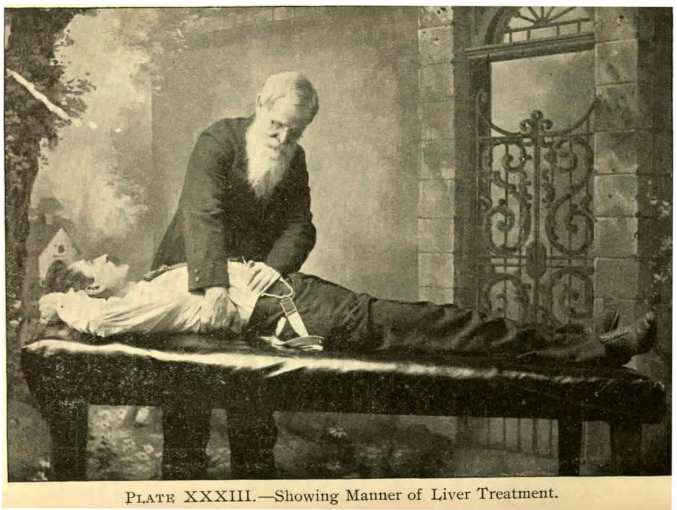
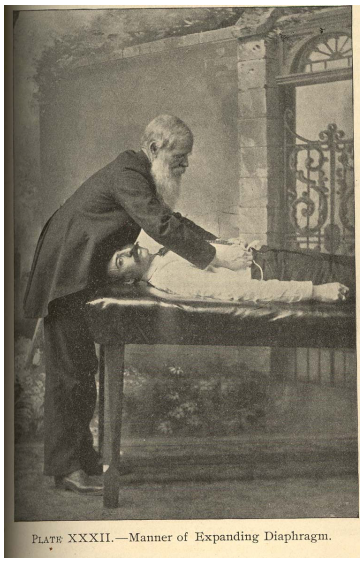


PLATE XXXIII.—Showing Manner of Liver Treatment.

92

Diaphragm Release OMT



Any Questions?

You are now welcome for “hands on workshop” up front

Together We Can

OSTEOPATHIC MEDICINE
D O
Making a Difference
Since 1892

COMMON SENSE

Just because you can, doesn't mean you should.

95

Interpret Research Correctly!

Excellent health statistics … smokers are less likely to die of age-related illnesses!

96

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