

NAME \_\_\_\_\_

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TEST BOOKLET# \_\_\_\_\_

COPY 1/2

April 29, 1996, MS-II Final Exam, version 1  
Spring Semester 1995/96

**SECTION I:** Each of the following questions has only one best answer. Mark the best selection on your Scantron sheet.

1. Rib diagnosis for an inhalation lesion includes:

- a. the inferior edge of rib most prominent posteriorly
- b. restriction of inhalation
- c. increased pain to rib on inhalation
- d. increased intercostal space above rib
- e. most affected rib is normally the most caudal rib in the group as the key rib

2. For treating a patient with an inhalation lesion of ribs 7-9 on the left using muscle energy, you would treat rib <sup>exhalation</sup> 7, 8, <sup>most caudal</sup> 9 on your supine patient by flexing and sidebending toward the right, left to the level of the involved rib while the patient reaches toward her right, left knee and holds her breath at end (inhalation, exhalation):

- a. 9, left, left, exhalation
- b. 9, left, left, inhalation
- c. 7, right, right, exhalation
- d. 7, left, left, exhalation
- e. 7, left, left, inhalation

Inhal

3. In treating a rib restricted in its inhalation motion with muscle energy, you would carry the rib toward:
- a. exhalation while the patient uses respiratory cooperation by holding her breath in
  - b. inhalation while the patient uses respiratory cooperation by holding her breath in
  - c. inhalation while the patient uses respiratory cooperation by holding her breath out
  - d. exhalation while the patient uses respiratory cooperation by holding her breath out
  - e. inhalation while the patient effort is directed to contracting muscles that carry the rib towards exhalation



\*4.

A 48 year old white female 3 months status post 3 vessel CABG (coronary artery bypass graft), otherwise healthy, complains of right-sided chest pain. Patient had a negative work up for cardiac and other medical causes. No diaphoresis/nausea/vomiting/fever/chills/shortness of breath. On physical exam you discover multiple areas of somatic dysfunction. After resolving all thoracic somatic dysfunctions you proceed to correct rib 5. What is the classical strain/counterstrain position for the 5th interspace?

- a. FSARA
- b. FSART
- c. FSTRA
- d. ESARA
- e. ESART

FSTRT

FSTRT

5. Which of the following best describe the strain/counterstrain classical treatment at anterior rib 2 (AR2)?

- a. FSART
- b. FSTRA
- c. FSTRT
- d. ESTRA
- e. FSARA



6. A biomechanical goal of Sutherland Rib Technique (MFR of the ribs) is to:

- a. widen the costophrenic angle
- b. separate the costochondral articulation
- c. stimulate the sympathetic chain ganglion at the head of the rib ✓
- d. gap the costovertebral articulation
- e. compress the sternocostal articulation



7. According to the definition of Chapman's Reflex points, they are located where?

- a. proximal end of autonomic nerves
- b. spinal interneuronal nodules
- ~~c. somatic end of visceral neurons~~
- d. distal end of spinal nerves
- e. nodes of major lymphatic vessels

8. What is the location of the Chapman's Reflex for the appendix?

- a. inferior to xiphoid process
- b. McBurney's point in right lower quadrant
- c. tip of twelfth rib on right
- d. midway between umbilicus and pubic symphysis
- e. proximal one-third of anterior lateral femur

9. Which of the following statements regarding lumbar intervertebral discs is true?

-   a. Posterior L4 concave discs help prevent nucleus pulposus herniation.
- b. Lumbar discs most commonly herniate directly posteriorly.
- c. Unco-vertebral joints limit posterolateral lumbar disc herniation.
-   d. The nucleus pulposus is compressible but not deformable.
- e. Alternating vertical and circumferential lamellae always prevent annulus fibrosus rupture.

10. Which position is optimal for returning compressed lumbar discs to their full height?

- a. standing
- b. supine
- c. lateral recumbent Sim's position on left side, right knee and thigh flexed
- d. supine with hips flexed
- e. prone with head lower than feet

11. All of the following methods can be used to test sidebending in the lumbar spine EXCEPT:

- ↑ a. With patient standing, have her slide her hand down the outside of the leg as far as possible without turning.
- b. While patient is seated, push down on his shoulder while palpating the motion throughout the lumbar spine.
- c. While standing, have the patient bend his knee, letting the hip drop while supporting the weight on the opposite leg.
- ↑ d. While the patient is in a lateral recumbant position and knees slightly flexed, lift the patient's feet while feeling motion through the lumbar spine.
- e. While the patient is seated straddling the table, have her drop her hand off the table just until you feel motion at the top of the lumbar spine.

12. Lumbar spine lesion defined as L3 FRRSR: HVLA treatment sequence in the lateral recumbent position includes which of the following?

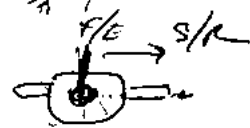
- a. while palpating L3/L4 joint space, move the patient's lowermost leg and thigh into extension to include the L3/L4 space
- ∠ b. pull the patient's lower arm caudad to induce sidebending at L3
- ∠ c. rotate the patient's upper torso to the right until motion is felt through the L3/L4 joint space
- d. with the cephalad arm against the ribs and the caudad arm against the muscle mass overlying the SI area, force the forearms apart to augment sidebending
- ∠ e. thrust at end of exhalation is facilitated through the cephalad forearm

13. Using muscle energy to treat L3 FRR5R you would position the patient on his:

- a. left side and pull the left arm toward you and caudad
- b. left side and pull the right arm toward you and caudad
- c. left side and pull the left arm toward you and cephalad
- d. right side and pull the right arm toward you and cephalad
- e. right side and pull the right arm toward you and caudad

14. Which of the following characteristics of patient treatment positioning are shared by A2L, A3L, A4L and A5L when using strain/counterstrain?  $S_A R_A$   $S_A R_A$   $S_A R_A$   $S_A R_T$

- a. flexion of hips to 90°
- b. sidebend away
  - c. sidebend toward
  - d. rotate away
  - e. rotate toward



15. Midline strain/counterstrain tender points typically require more sidebending and rotation for treatment than do more lateral points.

- a. True
- b. False

16. According to Dr. Gordon Zink, which is the most common sacral torsion pattern?

- a. R/R sacral torsion
- b. R/L sacral torsion
- c. L/L sacral torsion
- d. L/R sacral torsion
- e. none of the above

OA SRRL  
T12 SRRL  
T12 SRRL  
at leg shoot  
at inomrot ant.  
LS rot at.  
L/L

#17. Zink interpreted the body largely using the respiratory/circulatory model. The junctional areas are of importance because of their influence on the four transverse functional diaphragms of the body. Which of the following reflects Zink's common compensatory pattern?

- a. OA SRRL, T12 SRRR
- b. OA SRRL, T12 SRRL
- c. OA SRRL, T12 SLRR
- d. OA SRRL, T12 SLRL
- e. none of the above

18. What is the "point of balanced tension"?

- a. where all elements are at the end of their range of motion
- b. where the tension of the dysfunctional fascial elements are equal to the tension of those not strained
- c. where all of the tissues reach a point of relaxation and softening
- d. where the tissue is completely relaxed throughout normal range of movement
- e. where the lesion is exaggerated beyond the limit of motion in the direction of strain

19. The findings of a sacroiliac (SI) dysfunction improved with backward bending. The possible SI diagnoses include:

- a. L/L sacral torsion, R/R sacral torsion, bilaterally flexed sacrum
- F b. L/L sacral torsion, R/L sacral torsion, bilaterally flexed sacrum
- F c. L/L sacral torsion, R/R sacral torsion, bilaterally extended sacrum
- F d. L/R sacral torsion, R/L sacral torsion, bilaterally flexed sacrum
- F e. L/L sacral torsion, R/R sacral torsion, unilaterally extended sacrum

20. A 17 year old male comes to your office complaining of low back and tailbone pain since falling while roller-blading 2 days ago. You take x-rays which are negative for any fracture. You notice he has decreased lordosis, and your physical exam shows the following: positive left seated flexion test, right deep sulcus, left posterior/inferior ILA. With backward bending his right sacral sulcus is even deeper and he has poor spring. You check L5 and it is rotated right. What is his diagnosis? L<sup>+</sup> E R<sub>rot</sub>

- a. bilaterally extended sacrum
- b. left unilaterally extended sacrum
- c. L/R sacral torsion
- d. R/R sacral torsion
- e. R/L sacral torsion

21. The treatment for a posterior innominate rotation using muscle energy is performed with:

- a. patient prone
- b. ipsilateral leg off the table to the restriction barrier
- c. physician with one hand on the ischial tuberosity and the other on the ASIS
- d. extension of the thigh against resistance
- e. both knees and thighs flexed

22. Which of the following is the correct position for muscle energy treatment of a R/R sacral torsion?

- a. right lateral recumbent, back to the table
- b. right lateral recumbent, shoulders perpendicular to the table
- c. left lateral recumbent, chest to the table
- d. right lateral recumbent, chest to the table
- e. left lateral recumbent, shoulders perpendicular to the table

23. Which of the following describes the correct hand placement and direction of force in the muscle energy treatment of a right unilateral sacral extension?

- a. contact right sacral base, apply force anterior and caudad
- b. contact right ILA, apply force anterior and caudad
- c. contact right sacral base, apply force anterior and cephalad
- d. contact whole sacral base, apply force anterior and cephalad
- e. contact right ILA, apply force anterior and cephalad

24. The definition of a myofascial trigger point includes all of the following EXCEPT:

- a. hyperirritable
- b. always tender
- c. prevents full muscle lengthening
- d. increases strength of muscle
- e. may be associated with other "satellite" trigger points

25. Treatment of a Travell trigger point lesion pattern may include any of the following EXCEPT:

- ↑ a. ischemic compression 30-60 seconds
- ↑ b. use of fluromethane to cool the overlying tissues
- ~~over~~  c. repeated injections of steroids on a frequent basis to reduce inflammation of associated tissues around the trigger point
- ↑ d. stretching of the myofascial tissues involved along a parallel axis of affected muscle fibers
- e. use of a small amount of anesthetic in injection is sufficient to achieve numbing of affected trigger point

26. A 22-year old patient presents complaining of low back pain for one week, without sciatica. There is no history of trauma, cancer, or weight loss. On examination there is decreased lumbar range of motion and paraspinal tenderness. Neuromotor findings: reduced sensation to light touch on the right lateral foot. Your *initial* testing of this patient would include:

- a. lumbar spine MRI
- b. lumbar spine plain film X-rays
- c. lumbar spine CT
- d. bone scan
- e. do not order diagnostic tests

27. Your *initial* management of the above patient would include:

- a. strict bed rest for 1 week
- b. tricyclic antidepressants
- c. OMT and gradual return to normal activities
- d. narcotic analgesics
- e. epidural steroid injection

The following is needed to answer the next 4 questions.

A patient comes to you complaining of neck pain 5 days after being rear-ended in a car accident. Her police report stated she denied any pain at the time of the accident, and she admitted that she didn't have pain until the next day. The patient complains of severe neck pain radiating to the right shoulder and going into her hands. On examination, the cervical paravertebral area is so tender she won't let you touch it, and it is difficult to examine.

28. You can safely conclude that the patient does not have a "whiplash" injury and she is just trying to get a larger insurance settlement.
- a. True
  - b. False
29. You can safely start manipulation without getting X-ray results.
- a. True
  - b. False
30. After appropriate workup, your *initial* OMT treatment of this patient might include:
- a. cervical muscle energy
  - b. cervical articular treatment
  - c. CV-IV
  - d. cervical HVLA
  - e. thoracic Kirksville Crunch
31. After her first treatment, the patient uses ice and NSAID's at home as instructed. She returns five days later with decreased pain and increased range of motion. What areas of the body might you consider treating now?
- a. cervicals
  - b. sacrum
  - c. right leg
  - d. upper extremities
  - e. all of the above

32. A negative Tinel's sign or Phalen's test excludes the diagnosis of carpal tunnel syndrome.

- a. True
- b. False

33. All the following treatments have been shown to give lasting improvement of symptoms of carpal tunnel syndrome EXCEPT:

- a. vitamin B-6
- b. NSAIDs
- c. myofascial release of the flexor retinaculum
- d. strain/counterstrain of wrist and forearm
- e. Opponen's Roll stretching exercise

34. Sympathetic nerves to the nasal cavity and sinuses arise from the cervical sympathetic ganglia and:

- Correct* →  a. C1-C4
- b. C5-C8
- c. T1-T3
- d. T1-T6
- e. T4-T8

35. Increased sympathetic tone to the nasal mucosa and sinuses results in:

- a. vasoconstriction, thinning of secretions, and decreased drainage
- b. vasoconstriction, thinning of secretions, and increased drainage
- c. vasodilation, thickening of secretions, and decreased drainage
- d. vasoconstriction, thickening of secretions, and decreased drainage
- e. vasodilation, thinning of secretions, and increased drainage

36. Stimulation of the sphenopalatine ganglion causes:

- a. thinning of nasal secretions and an increase in the number of goblet cells
- b. thickening of nasal secretions and an increase in the number of goblet cells
- c. an anticholinergic effect like Atrovent nasal spray
- d. thickening of nasal secretions and normalizing of the ratio of the number of goblet to ciliated cells
- e. vasodilation and thinning of nasal secretions

37. Treatment of cervical and O-A somatic dysfunction does all of the following for an upper respiratory infection EXCEPT:
- a. ensures optimal function of the phrenic nerve to the diaphragm
  - b. increases sympathetic hyperactivity from the cervical sympathetic ganglia
  - c. relaxes fascial pathways for lymph flow
  - d. influences parasympathetic response in respiration
  - e. reduces viscerosomatic afferent influences from sinuses
38. A 15 year old asthmatic patient presents with an acute onset of bronchospasm. Your physical exam is most consistent with an asthmatic attack. What is the *most accurate* viscerosomatic reflex associated with the lung?
- a. C6-7
  - b. T1-T2
  - c. T1-T6;
  - d. T1-T9
  - e. T1-T12
39. A 60 year old man who had a history of myocardial infarction presents with aspirin induced gastroenteritis. What is the *most accurate* viscerosomatic reflex associated with the stomach?
- a. T1-T4
  - b. T5-T9
  - c. T10-T11
  - d. T12-L2
  - e. L4-L5
40. The most common cause of fever in the first 3 days after surgery is:
- a. metabolic abnormality
  - b. atelectasis
  - c. wound infection
  - d. pneumonia
  - e. thrombophlebitis

\*41. The average time to resolution of a post-operative adynamic ileus after OMT is:

- a. 1 hour
- b. 8 hours
- c. 2 days
- d. 3 days
- e. 6 days

42. OMT to treat thrombophlebitis would NOT include:

- a. thoracic diaphragm release
- b. wringing lymphatic technique of the lower extremities
- c. pelvic diaphragm release
- d. vertebral segment levels for viscerosomatic reflexes
- e. gentle inhibition to sympathetics

43. Signs and symptoms of atelectasis may include all EXCEPT:

- a. tachypnea
- b. tachycardia
- c. normal breath sounds on pulmonary exam
- d. lack of bowel sounds
- e. fever

\*44. Joint afferents carry nociception except in the central hyaline cartilage.

- a. True
- b. False

- \*45. Types of spinal dorsal horn neurons listed in order from least common to most common are:
- a. wide dynamic range neurons, high threshold mechanoreceptors, low threshold mechanoreceptors
  - b. low threshold mechanoreceptors, wide dynamic range neurons, high threshold mechanoreceptors
  - c. wide dynamic range neurons, low threshold mechanoreceptors, high threshold mechanoreceptors
  - d. high threshold mechanoreceptors, wide dynamic range neurons, low threshold mechanoreceptors
  - e. high threshold mechanoreceptors, low threshold mechanoreceptors, wide dynamic range neurons
46. Learning disabilities are better prevented than treated. Some prevention can be accomplished by which of the following?
- a. early enrollment in an academically focussed preschool
  - b. osteopathic structural examination of the newborn
  - c. homeschooling
  - d. early introduction to the computer and educational games
  - e. tutoring in reading
47. In taking a history of a learning disabled child, which of the following warning signs and symptoms should **LEAST** alert the physician to a possible osteopathic treatment which may assist the child?
- a. long and/or difficult labor
  - b. delay or difficulty learning to latch onto the breast and suck efficiently
  - c. vomiting in early life
  - d. sleeping through the night within the first few months of life
  - e. colic

**SECTION II: K-Type.** Use the following key for answering the following questions:

- a. 1, 2 and 3 are correct
- b. 1 and 3 are correct
- c. 2 and 4 are correct
- d. 4 only is correct
- e. all of the above are correct

A. 48. How can you diagnose lumbosacral compression?

- T1. lack of resiliency in the L-S junction
- T2. decreased flexion/extension of sacrum with secondary respiration
- T3. decreased flexion/extension of the sacrum with primary respiratory mechanism
- 4. standing flexion test

B. 49. Which of the following are considered a medical emergency when a patient presents complaining of low back pain?

- 1. cauda equina syndrome
- 2. radicular pain and numbness to lateral foot
- T3. abdominal aortic aneurysm
- 4. positive straight leg raising

E. 50. Endogenous chemicals leading to excitability of the chemoreceptive nociceptors are:

- 1. bradykinin
- 2. serotonin
- 3. epinephrine
- 4. potassium ions

+ 2

**Extra Credit:** For 2 points extra credit, name each of the four basic philosophical principles of osteopathic medicine. Verbatim is not required, but all four principles must be correct to receive the extra credit.

- ✓ ① The body is a dynamic unit of function
- ✓ ② Structure & function are interrelated & not static
- ✓ ③ The body has an inherent ability to heal itself
- ✓ ④ Treatment is based on a rationale using  
in collaboration of body's systems structure & function  
on the inherent ability of the body

RAVISHA SCOTT

Please print your name