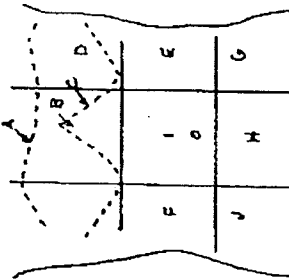


1. Which orthopedic test(s) is used to identify lesions of the sacroiliac joints;
 - I. Allis'
 - II. Gaenslen's
 - III. Nachlas
 - a. I only
 - b. II only
 - c. I, II only
 - d. I, II, III
2. A patient presents with low back and right leg pain. On examination, it is noted that his lumbar spine leans towards the left and the crest of his right innominate is low. The most likely cause of this condition;
 - a. lumbar disc syndrome
 - b. coxofemoral dislocation
 - c. right posterior innominate
 - d. left anterior innominate
3. A patient complains of general fatigue and frequent colds. The ingestion of glucose markedly weakens all muscle tests. The probable area of spinal involvement;
 - a. C5-C7
 - b. T1-T4
 - c. T5-T9
 - d. T10-T12
 - e. L3-S1
4. Which of the following spinal areas would be suspected in a patient with visual disturbances and excessive perspiration that smells strongly like ammonia;
 - a. C4-C6
 - b. T2-T4
 - c. T6-T8
 - d. T10-T12
 - e. L2-4
5. Which is the most commonly identified type of scoliosis;
 - a. pathologic
 - b. postural
 - c. idiopathic
 - d. congenital
 - e. compensatory
6. The Risser-Ferguson method for measuring scoliosis utilizes which spinal landmarks;
 - a. mamillary process
 - b. pedicle
 - c. spinous process
 - d. central body
 - e. vertebral endplate
7. The primary function of filters in diagnostic radiography is to;
 - a. improve contrast
 - b. improve detail
 - c. reduce the radiation skin dose
 - d. reduce radiographic scatter
 - e. reduce contrast
8. The cells which are most sensitive to the effects of radiation are;
 - a. skin
 - b. bone
 - c. nerve
 - d. connective tissue
9. Evidence suggests that the exclusion of the eyes from any unnecessary radiation is advised to avoid the development of;
 - a. lenticular cataracts
 - b. initis
 - c. retinal detachment
 - d. myopia
 - e. glaucoma
10. When taking a radiograph of a muscular individual, it is usually necessary to increase the KVP by ____% to maintain adequate penetration.
 - a. 5
 - b. 10
 - c. 15
 - d. 20
 - e. 50
11. Thickening and condensation of the ilium lateral to the sacroiliac articulation, without any loss of the joint space is suggestive of;
 - a. Paget's disease
 - b. osteitis condensans ilii
 - c. tuberculosis
 - d. osteoblastic metastasis
 - e. spondylitis
12. A possible spinal fracture in the cervical or thoracic area may be indicated with a positive response to;
 - a. Cozen's
 - b. Soto-Hall test
 - c. Ober's
 - d. Mill's maneuver
 - e. Yergason's test
13. In a female patient, osteolytic and osteoblastic lesions which occur simultaneously are generally secondary to;
 - a. neuroblastoma
 - b. carcinoma of the lung
 - c. carcinoma of the breast
 - d. carcinoma of the thyroid
14. Which of the following tests the vascular patency of the upper extremity;
 - a. Jackson compression
 - b. Allen's
 - c. Edent's
 - d. Adson's
 - e. Wright's
15. A muscle which has 50% of the normal range of motion with gravity eliminated is graded as
 - a. normal
 - b. good
 - c. fair
 - d. poor
 - e. trace
16. Neurologically, 'STATION' is provided by reflexes arising from the vestibular apparatus, which can be examined clinically with which test;
 - a. Romberg
 - b. Gonda
 - c. Weber's
 - d. Rinne
 - e. Trendelenburg's
17. Which nerve often expresses symptomatology from compression by the transverse carpal ligament;
 - a. median
 - b. axillary
 - c. musculocutaneous
 - d. radial
 - e. ulnar
18. Stiffness and a uniform kyphosis in the thoracic spine is accompanied by a dull, intermittent backache. In this case, which of the following will help to best differentiate apophysitis from osteoporosis;
 - a. diet
 - b. sex
 - c. weight
 - d. age
 - e. height
19. Which of the following areas of the nervous system should be tested in diagnosing a suspected case of Parkinson's disease;
 - a. extrapyramidal system
 - b. cerebellum
 - c. anterior horn cells
 - d. motor cortex
 - e. posterior columns
20. Which of the following signs would be indicative of an early or minimal sensory root and/or ganglion lesion;
 - a. shooting pain
 - b. spastic paralysis
 - c. loss of all sensation
 - d. trophic disturbances
 - e. absent reflex
21. Which of the following conditions is caused by cortical dysfunction;
 - a. Meniere's syndrome
 - b. amyotrophic lateral sclerosis
 - c. Parkinson's disease
 - d. amnesia aphasia
 - e. Bell's palsy
22. Which of the following signs would be indicative of a minimal or early peripheral nerve lesion;
 - a. paresthesia
 - b. wasting
 - c. trophic disturbances
 - d. absent reflex
 - e. flaccid paralysis
23. Which of the following is most typical of a peripheral nerve rupture;
 - a. incoordination and tremor
 - b. hyperreflexia
 - c. hyperesthesia
 - d. paresthesia
 - e. numbness and paralysis
24. Which of the following signs would be indicative of a maximal or late peripheral nerve lesion;
 - a. muscle tenderness
 - b. diminished pain sensation
 - c. paresthesia
 - d. diminished reflex
 - e. flaccid paralysis
25. Which of the following signs indicates a lesion of the frontal cortex;
 - a. incoordination
 - b. memory loss
 - c. weakness of lower extremity
 - d. ataxic aphasia
 - e. numbness
26. An electromyographic examination is of great value when evaluating a suspected injury to which of the following structures;
 - I. cauda equina
 - II. radial nerve
 - III. cervical spinal cord
 - a. I only
 - b. II only
 - c. I, II only
 - d. II, III only
 - e. I, II, III
27. A 35 year old secretary complains of a fullness or pressure at the base of her skull with waves of aching pain that extend over the top of her head. This condition has been present for two weeks and although the pain does not prevent her from sleeping, it is still present when she wakes. Her blood pressure is 115/75. Which of the following types does this best describe;
 - a. hypotension
 - b. hypertension
 - c. tension
 - d. migraine
 - e. cluster

28. A patient complains of recurrent headaches which vary in intensity and last from several minutes to several hours. The headaches occur at any time of the day or night, and frequently interrupt his sleep. The pain is localized to a small zone in the right parietal area, and the attacks have been increasing in frequency and severity for the past nine months. Which is the best diagnosis;
- hypertensive headache
 - temporal arteritis
 - meningitis
 - intracranial tumor
 - nasal sinus infection
29. A 28 year old man complains of sev-ere headaches that have occurred nightly for the past two weeks. The pain awak-ens him tow or three hours after he has been asleep and lasts for about one hour. The pain is always around his right eye and makes the affected eye water. He had a similar episode of headaches about three years ago. What is the diagnosis;
- brain tumor
 - Bell's palsy
 - hypertension
 - cluster headaches
 - migraine
30. A 25 year old woman complains of headaches which usually start in the early morning and reach their peak of severity in 30 minutes. The headaches last from several hours to several days and are severely incapacitating. They began when she was 14 years old. This best describes which headache type;
- hypertension
 - tumor
 - tension
 - migraine
 - cluster
31. Which of the following history findings are common to diseases of the stomach, gall bladder, and appendix;
- pain begins in the epigastrium
 - there is an associated increase in urination
 - there is associated jaundice
 - pain eventually localizes in the right lower abdominal quadrant
32. Serum glutamic-oxaloacetic transaminase elevation may be indicative of which disease states(s);
- acute pancreatitis
 - myocardial infarction
 - acute hepatitis
 - I only
 - II only
 - I, II only
 - II, III only
 - I, II, III
33. A patient complains of a sharp, colicky pain in the abdominal area that usually follows the ingestion of fried or fatty foods. Where would this patient most likely experience referred pain;
- left neck above second rib
 - right upper arm
 - right shoulder
 - tip of left scapula
 - point of left shoulder
34. Microscopic examination of urinary sediments reveals a large amount of waxy casts. This is most commonly due to which type of pathology;
- nephrosis
 - renal failure
 - diabetes
 - tuberculosis
 - advanced nephrosis
35. A 38 year old boxer presents with pain in the mid back and in the right shoulder area. He fought in a match three days ago and has since felt fine except for his back and shoulder pain and a chest cold. Which of the following conditions is least likely based on this history;
- liver disorder
 - vertebral subluxation
 - rib lesion
 - lung disorder
 - stomach disorder
36. A patient complains of nervousness, fatigue, and weight loss. Which of the following systems review finding would support a thyroid dysfunction as the principal mechanism for this condition;
- frequent urination, excessive sweating and thirst
 - vision is abnormal and eyes have become more prominent
 - excessive gas formation, constipation and decreased appetite
 - difficulty in breathing, abnormal breath odor and constant cough
 - chest pain with exertion and cold hands
37. A patient who takes her own oral temperature on a regular basis feels that it may be abnormal. In which of the following instances would her temperature findings be considered abnormal;
- after meals - 99.0° F
 - late afternoon - 99.2° F
 - early morning - 97° F
 - during menstruation - 99.5° F
 - midday - 98.6° F
38. A patient complains of pain between his shoulder blades. He states that this pain is often accompanied by hiccups and belching and often awakens him at night. Which of the following questions should be asked to clarify this history;
- how are these complaints affected by eating
 - have you consulted a chiropractor before?
 - do you get regular exercise
 - is there a family history of tuberculosis?
 - does deep inspiration affect the pain?
39. Which of the following chief complaints suggests a psychoneurosis;
- "I have headaches everyday"
 - "My back hurts when I first get out of bed"
 - "My head hurts, I can't swallow and my heart pounds"
 - "My neck hurts when I look over my shoulder"
 - "My back hurts when I brush my teeth"
40. After obtaining as much information as possible about the chief complaint, the next step in history taking is usually a systems review. What advantage does this provide;
- it helps to determine if there are any complications due to past illnesses
 - it reveals the relationship of the present illness to other body systems
 - it reveals what other illnesses, operations, and accidents the patient has had
 - it helps to determine what other systems need treatment
 - it determines what areas of the spine to adjust
41. Which of the following represents a proper recording of a chief complaint in the case history;
- my back hurts
 - loss of range of motion
 - subluxation
 - lumbalgia
 - sciatic neuritis
42. After the patient states that his back has been hurting him since last Tuesday, what is the next logical question to ask him when taking his case history;
- can you touch your toes without pain?
 - what do you think caused this problem?
 - what day is it today?
 - do you believe in chiropractic?
 - does your back hurt after eating a big meal?
43. Which of the following questions would help substantiate a diagnosis of rib fracture?
- is there a family history of fragile ribs?
 - do you smoke?
 - do you also have back pain?
 - does deep breathing or coughing aggravate the pain?
 - have you broken ribs before?
44. Which of the following waste products, because it is almost entirely excreted by the kidney, is one of the best tests for the evaluation of kidney function;
- creatinine
 - creatinine
 - cholesterol
 - cholesterase
 - ceruloplasmin
45. Which of the following are the most useful laboratory procedures in the differential diagnosis of a patient with suspected acute pancreatitis;
- CBC and sedimentation rate
 - cholesterol and cholesterol esters
 - amylase and lipase
 - acid and alkaline phosphatase
 - direct and indirect bilirubin
46. Which of the following is essential in order to obtain a complete history of a patient's chief complaint;
- a physical examination should be performed first
 - A pre-printed form should be filled out in the waiting room
 - the doctor should appear to be unhurried
 - a nurse should take the history
 - the doctor should sternly cross-examine the patient
47. If the heavier line in diagram A represents a normal glucose tolerance test, what is suggested by the lighter line;
-
- mild diabetes
 - hypoglycemia
 - hypothyroidism
 - Addison's disease

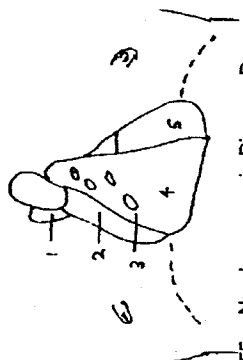
53. Mild percussion of the lumbar paraspinal musculature produces severe pain and muscle spasms at point 1 in Diagram B. Routine urinalysis and complete blood count values are within normal limits. Which of the following studies should be ordered next for this patient;

- stool analysis
- serum acid and alkaline phosphatase
- AP, lateral lumbar radiograph
- KUB radiograph
- Bence Jones urinalysis



54. What abdominal structure can be palpated in quadrant G in Diagram C;

- bladder
- upper pole of the left kidney
- ascending colon
- suprarenal gland
- sigmoid colon



55. Number _____ in Diagram D corresponds to the area which lies closest to the place where the point of maximal impulse is normally palpated;

- 1
- 2
- 3
- 4
- 5



48. At what point in Diagram B would there be maximal palpable tenderness in a case of sacroiliac sprain;

- 5
- 6
- 7
- 8
- 9

49. Rogoff's sign may be elicited in a patient with adrenal disease at which point of Diagram B;

- 1
- 2
- 3
- 4
- 5

50. In a case of iliolumbar ligament sprain there is maximal palpable tenderness at which point in Diagram B;

- 5
- 6
- 7
- 8
- 9

51. A routine urinalysis reveals a moderate number of WBC's and RBCs and casts. The patient complains of urgent and painful urination of several days duration. Palpable point tenderness would most likely be found at which point in Diagram B;

- 1
- 3
- 5
- 7
- 9

52. A 20 year old patient presents with low back and unilateral leg pain. Palpation reveals acute tenderness at points 7, 8, 10, 11 in Diagram B. What is the most workable diagnosis;

- prostatic carcinoma
- ischial bursitis
- lumbosacral disc syndrome
- obstructive bowel disease
- sacroiliac sprain



56. A middle-aged patient complains of breathlessness upon exertion and appears pale. Palpation reveals a heaving impulse in the sixth inter-space well to the left and percussion indicates increased heart borders. There is a rapid rise and fall of the pulse, and the blood pressure is 160/60. Based on these symptoms and Diagram E, which is the most likely diagnosis;

- atherosclerotic heart disease
- aortic regurgitation
- massive pericardial effusion
- mitral stenosis
- pericarditis

57. Which of the following ophthalmological findings is/are considered normal when viewing the retinal vessels;

- veins appear darker than arteries
 - veins are larger than arteries
 - the arteries have a glistening quality
- I only
 - II only
 - I, II only
 - I, II, III
 - I, II, III



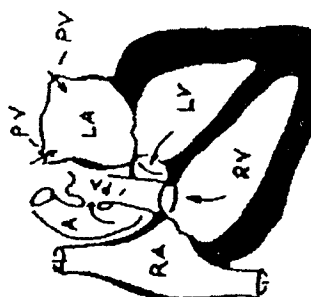
58. Inspection of a middle-aged patient reveals distention of the cervical veins and edema of the face and upper extremities. There is an increased area of cardiac dullness, and the heart sounds are distant. This patient exhibits a relative hypotension. Based on these symptoms and Diagram F, which is the most likely diagnosis;

- aortic regurgitation
- hydrothorax
- pneumothorax
- pericardial effusion
- mitral stenosis



59. A patient exhibits a dusky flush over the cheeks. Palpation reveals a late diastolic thrill sharply localized at the apex, and a low-pitched rumbling murmur beginning in mid-diastole and ending in a snapping mitral first sound can be heard. Pulse and blood pressure are normal. Based on the history and Diagram G, which of the following is the likely diagnosis;

- mitral stenosis
- aortic aneurysm
- coarctation of the aorta
- aortic regurgitation
- coronary artery disease



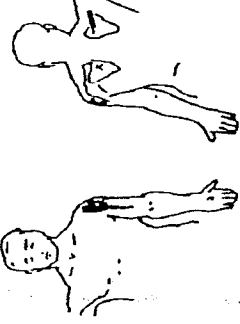
60. With the heart defect illustrated in Diagram H, where and at what time during the cardiac cycle will the resultant murmur be at its greatest intensity;

- second left interspace/ systole
- second right interspace/ diastole
- fourth left interspace/ systole
- fourth left interspace/ diastole

A patient with evidence of a cervical disc syndrome complains of neck pain that radiates to the medial aspect of the arm, forearm, wrist and the fourth and fifth fingers.

61. Which of the following reflexes is likely to be affected?

- brachioradialis
- triceps
- biceps
- pronator

62. Which of the following motor disturbance or atrophy would be associated with these symptoms?
- biceps
 - deltoid
 - supraspinatus
 - hypothenar eminence
63. Which of the following orthopedic maneuvers will best help to localize the vertebral level of involvement?
- palpation of the radial pulses with cervical rotation
 - lateral pressure over the spinous process
 - axial cervical distraction
 - forced flexion of the cervical spine
64. Which of the following conditions present symptoms that are the least similar to the case described?
- carpal tunnel syndrome
 - cervicobrachial neuralgia
 - nerve entrapment in the canal of Guyon
 - Pancoast's tumor
- A 42 year old male patient presents with chronic left knee pain, and a more recent onset of left hip and groin pain. There is no pain in the foot. He has been a long distance runner for years, and admits that he rarely takes time to stretch. The knee pain comes and goes. He notices it most when running or when picking up heavy objects. The hip pain increases when he tries to stand after sitting for long periods. A pronation wedge in his shoe seemed to lessen the pain for a while. Usually new running shoes have remedied the pain, but they do not help at this time.
65. Which of the following orthopedic tests would be the most appropriate in this case?
- Soto-Hall
 - Dawbarn's
 - Apley's
 - Yeoman's
66. Standard orthopedic tests for the knee are negative. Which of the following orthopedic tests would be most appropriate to perform next?
- Lindner's
 - Trendelenburg's
 - Fajersztajn
 - Patrick's
- Inward and outward rotation of the left foot and lower extremity is restricted both actively and passively. Resistive adduction of the left lower extremity elicits pain in the left adductor muscles.
67. Based on the findings up to this point, what area is the most likely primary area of dysfunction?
- pelvis
 - knee
 - hip
 - foot
68. Radiographs reveal degenerative change of the area of dysfunction. Which of the following would not be part of the therapy in this case?
- ultrasound and electrical muscle stimulation
 - range of motion and stretching exercises
 - complete bed rest until the pain is gone
 - gentle mobilization and eventual manipulation
 - contrast application of ice and moist heat
69. An 84 year old female complains of constant dull headaches and daily nausea that is worse in the morning. She also complains of easy fatigue, insomnia, and slight breathlessness. Her skin appears dry with a sallow tint, and her breath is vaguely uniferous.
70. Which of the following laboratory or special procedures gives information which is most directly related to this condition?
- electrocardiogram
 - urinalysis
 - CBC
 - serum lipid analysis
71. If this patient experienced a sudden unexplained fall in blood pressure or a lapse into disorientation, which of the following complications should be suspected?
- infection or bleeding
 - gouty arthritis
 - hypoglycemia
 - brain tumor
72. Which of the following would be the best referral if a second opinion is required?
- cardiologist
 - neurologist
 - orthopedist
 - internist
- A 35 year old woman who is pregnant for the first time complains of frequent severe headaches that are sometimes accompanied by visual disturbances. She is in her third trimester and has gained approximately 70 pounds. She saw her obstetrician three weeks ago and he was not concerned about her weight gain. She appears to have some puffiness of the face, fingers and ankles.
73. Which of the following physical findings is the most significant in this case?
- blood pressure 140/90
 - mild extensoral dyspnea
 - deep tendon reflexes 1+ and symmetrical
 - bilateral positive shoulder depression test
74. Which of the following procedures is indicated?
- EMG
 - ECG
 - CT scan
 - UA
75. Which of the following developments gives the poorest prognosis in this case?
- hypoglycemia
 - oliguria
 - anemia
 - hypochlorhydria
76. What is the best course of action to take in this case?
- x-ray the cervical spine and adjust atlas only
 - recommend bed rest and a low protein diet
 - refer her to a neurologist for a second opinion
 - call her obstetrician and arrange for her to be re-examined
- 
77. Which of the following nerve root levels is principally involved in this condition?
- C3
 - C5
 - C7
 - T2
- A 36 year old patient presents with shoulder weakness and a pain pattern depicted in Figures A and B. Palpation reveals point tenderness and atrophy which corresponds to letter X in Figure A
78. What action of the arm is affected if there is motor involvement?
- lateral rotation
 - medial rotation
 - abduction
 - adduction
79. Which of the following conditions commonly causes this clinical picture?
- axillary neuritis
 - uremic polyneuropathy
 - suprascapular neuritis
 - long thoracic nerve neuritis
80. Which of the following is the major difference between neurologic amyotrophy and this condition?
- age at onset of condition
 - symmetric distribution
 - location of pain
 - muscle atrophy
- A 32 year old married woman presents with the complaint of violent headaches in the suporbital region. These headaches usually last from two to three days, are associated with nausea, and occur a week before the onset of menstruation and occasionally following exposure of the neck to a draft. Her history reveals that she had fallen from a bicycle three years ago and had experienced some cervical pain which had quickly disappeared. The headaches began approximately two years ago. She has been treated by injection of progesterone on day 21 of her menstrual cycle. This treatment seems to reduce, but not eliminate the headaches. Stressful incidents also increase the frequency, intensity, and duration of these headaches.
81. Which of the following is the best initial examination procedure for the evaluation of this patient's headaches?
- CT scan of the skull
 - serum estrogen and progesterone
 - cervical spinal examination
 - CBC and urinalysis
82. If these headaches are bilateral, starting at the base of the skull and spreading toward the forehead but never reaching it, they will most closely resemble:
- Arnold's neuralgia
 - cluster headache
 - typical migraine
 - occipital lobe tumor
- X-rays of this patient are negative for fracture, dislocation, and acute bony pathology. There is no evidence of spondylosis or anomalies. Bicep and tricep reflexes are 2+ and symmetrical. Cranial nerve survey is negative and pathological reflexes are absent.
83. What other procedure is necessary to complete this survey?
- psychological profile
 - cervical vascular evaluation
 - SMAC
 - lumbopelvic profile
84. Which of the following case management approaches is indicated by the information presented up to this point?
- refer to a psychologist
 - refer to her gynecologist
 - pursue chiropractic management
 - refer to a neurologist

A 48 year old female presents with acute low back pain with no radiation. She explains that earlier that day, while leaning a cross the table to reach something, she heard a popping sound and experienced immediate pain which seemed to be in the area of the left sacroiliac joint. She is fairly comfortable either sitting or standing, but moving from one position to the other or walking results in pain. Achilles and patellar reflexes are normal. All lumbar ranges of motion are guarded. Left lateral bending is the most restricted and very painful. Lifting the left leg in Trendelenburg's test is painful in the left sacroiliac area. Supported Adam's test produces less pain than unsupported forward bending.

85. Given only this information, which of the following is the most likely diagnosis?

- a. sacroiliac sprain/strain
- b. osteitis condensans illi
- c. ankylosing spondylitis
- d. lumbosacral disc syndrome
- e. intervertebral disc syndrome

86. Which of the following would be the initial treatment of choice?

- a. ice and ultrasound
- b. referral to an orthopedist
- c. inversion therapy
- d. hot moist packs
- e. flexion-distraction

The next day, the patient reports that the sharp pain has subsided and that the pain is now more of an ache and radiates to the left buttock and hip area. She had sneezed and noticed a sudden increase in pain. Linder's test produces back pain at the waist line level. The spine deviates to the right on limited flexion. All other ranges of motion and reflexes remain the same as the previous day. An AP lumbar radiograph reveals a slight wedging open on the left at the L3-L4 segment. The lateral lumbar radiograph shows a flattening of the normal lumbar lordosis.

87. Given this new information, which of the following is the critical diagnosis?

- a. piriformis syndrome
- b. intervertebral disc syndrome
- c. sacroiliac syndrome
- d. facet syndrome

88. Which of the following orthopedic tests or signs would be most helpful in differentiating a diagnosis?

- a. Sicard's
- b. Goldthwait's
- c. Hoover's
- d. Fabere
- e. Thomas'

A 23 year old male presents with low back pain and burning in the front of his right thigh to the knee. He holds the affected thigh in abduction, flexion and external rotation. These symptoms began suddenly about a week ago, although he cannot remember any specific traumatic episode which may have caused them. Since the onset of these symptoms he has not felt well and has had several episodes of chills and sweating.

89. Which of the following procedures is NOT specifically indicated by this case presentation?

- a. X-ray
- b. UA
- c. CBC
- d. EMG
- e. ESR

90. Which of the following orthopedic tests or maneuvers is most closely associated with this condition?

- a. Valsalva's
- b. Nachlas
- c. Patrick's
- d. Soto-Hall
- e. Adam's

91. Which of the following health histories would predispose this patient to the condition described?

- a. asthma
- b. diabetes
- c. acromegaly
- d. Osgood-Schlatter
- e. osteomalacia

92. What would be the indicated case management for this patient?

- a. recommend anti-inflammatory enzyme supplements
- b. recommend ice packs and elevation of the lower extremities
- c. manipulate the lumbar spine and sacroiliac joints
- d. manipulate the coxofemoral articulation
- e. refer to an internist



A 24 year old male presents with necks pain and left arm weakness. He reported that he had fallen from a horse and landed in the manner depicted in Figure A. The affected arm hangs limp as in Figure B. He also complains of numbness in the front of his upper arm.

93. Which is the most likely site of injury?

- a. upper cervical plexus
- b. lower cervical plexus
- c. upper brachial plexus
- d. lower cervical plexus

94. What type of palsy is associated with this injury?

- a. Erb's
- b. Landry's
- c. Klumpke's
- d. cerebral

95. Which orthopedic maneuver is most likely to reproduce this patient's symptoms?

- a. jugular compression
- b. cervical distraction
- c. shoulder depression
- d. cervical compression

96. What is the indicated ancillary procedure in the first phase of treatment?

- a. traction
- b. ultraviolet
- c. diathermy
- d. immobilization



24 year old woman presents with complaints of vague shoulder pain and weakness in her left arm. During the examination the patient is instructed to perform a modified push-up while leaning against the wall. Her appearance during this maneuver is depicted in Figure E.

97. Which of the following activities would contribute directly to this clinical condition?

- a. driving a car with power steering
- b. carrying a heavy purse
- c. jogging five miles a day
- d. sleeping on her right side

98. Which of the following diseases is least likely to be an underlying cause of this condition?

- a. pleurodynia
- b. diabetes
- c. breast cancer
- d. cholecystitis

99. Reflex nerve irritation from this condition will affect which nerve roots?

- a. C3-C4
- b. C6-C7
- c. T2-T3
- d. T5-T6

100. Which of the following is the most important consideration for the long term prognosis for this patient?

- a. mobilize thoracoscaphular articulation
- b. reduce pain and swelling
- c. prevent primary muscle atrophy
- d. strengthen synergistic muscles

101. Irregular body surfaces are best treated with ultrasound by using:

- a. pulsed ultrasound
- b. piezoelectric effect
- c. underwater technique
- d. increased voltage

102. Ultrasound would be most effective in treatment of:

- a. erysipelas
- b. herpes zoster
- c. salpingitis
- d. athlete's foot
- e. osteoporosis

103. The most commonly injured tissue in knee injury:

- a. medial collateral
- b. lateral collateral
- c. anterior cruciate
- d. joint capsule

104. Finklestein's test is associated with:

- a. Dupuytren's contracture
- b. Volkmann's ischemia
- c. carpal tunnel syndrome
- d. DeQuervain's disease

105. To test for arterial occlusion of the wrist the following test would be performed:

- a. Allen's
- b. Phalen's
- c. Eden's
- d. Wright's

106. Yeagason's test is used to check:

- a. rotator cuff
- b. lateral epicondylitis
- c. sub-acromial bursitis
- d. bicipital tendinitis

107. Decreased chest expansion is an early sign of:

- a. osteoarthritis
- b. Oiler's disease
- c. ankylosing spondylitis
- d. menopausal osteoporosis

108. The most common clinical feature of vertebro-basilar arterial insufficiency is:

- a. headache
- b. vertigo
- c. hemiparesis
- d. visual disturbances

109. The exercise for the shoulder that requires the patient to bend over at the waist, allowing the arm to hang like a pendulum at 90° to the floor. A weight is placed in the hand and the arm is moved through various arcs to increase ranges of motion;
- Codman's exercises
 - DeLorme exercises
 - deltoid exercises
 - rotator cuff resistive exercises
110. The type of headache most commonly found in cases of increased intracranial pressure of a brain tumor;
- morning headache
 - evening headache
 - morning-evening headache
 - afternoon headache
111. The etiology of a "frozen shoulder" is considered to be;
- trauma
 - infection
 - excessive muscular activity
 - lack of muscular activity
112. Tension headaches occur as a result of;
- disogenic disease
 - sustained muscle contraction
 - sensory nerve root pressure
 - motor nerve root pressure
113. The type vertigo most frequently seen in elderly patients is;
- drug intoxication
 - postural
 - blood sugar alteration
 - traumatic
114. The most common level of cervical dislocation occur at;
- C3-4
 - C4-5
 - C5-6
 - C6-7
115. DeQuervain's stenosing tenosynovitis most commonly affects;
- adductor pollicis longus
 - abductor pollicis longus
 - extensor hallucis longus
 - biceps femoris
116. The most common type of knee dislocation is;
- anterior
 - posterior
 - lateral
 - medial
117. A rare, non-hereditary condition characterized by attacks of painful swelling of the costo-cartilage, and is an important as a differential diagnosis of angina and intrathoracic malignancy;
- transient synovitis
 - Tietze's syndrome
118. Which mineral is important in the regulation of parathyroid hormone secretion;
- copper
 - magnesium
 - manganese
 - zinc
119. Which vitamin is considered to be a possible anti-stroke agent;
- B1
 - B2
 - B12
 - C
120. An 84 year old male presents with muscle rigidity, tremors, flexed posture, and an expressionless face is likely to have;
- multiple sclerosis
 - Parkinson's
 - Paget's
 - ankylosing spondylitis
121. A patient presents with anemia characterized by normal reticulocyte count, low hematocrit but MCV and MCH are normal;
- Crohn's disease
 - hemolytic anemia
 - iron deficiency disease
 - vitamin B12/folate anemia
122. A patient presents with anemia characterized by a low reticulocyte count, low hematocrit but MCV and MCH are normal;
- Crohn's disease
 - hemolytic anemia
 - iron deficiency disease
 - vitamin b12/folate anemia
123. A jerky yielding then a holding up of muscle tone on passive range of motion suggests which type of hypertonia?
- spasticity
 - gegenhalten
 - lead pipe rigidity
 - cogwheel rigidity
 - knife-clasp rigidity
124. Hyperthyroidism is associated with which exam finding?
- slumped posture
 - hoarse voice
 - coarse hair
 - fast speech
125. A patient complains of painful and urgent urination of several days duration. Urinalysis reveals numerous casts and a moderate number of RBC's and WBC's. The most likely area for palpable point tenderness would be;
- manubriosternal joint
 - sacroiliac articulation
 - costovertebral joint
 - greater sciatic notch
 - superior iliac crest
126. Which of the following is thought to be a peripheral nervous system equivalent of post-infectious encephalomyelitis;
- Guillain-Barre syndrome
 - poliomyelitis
 - tardive dyskinesia
 - syringomyelia
 - Reye's syndrome
127. Which of the following is inappropriate in the case management of a patient with spondylolisthesis?
- orthotic support
 - weight reduction
 - abdominal strengthening
 - bilateral heel lifts
128. A patient is placed in side posture, with the right side down. The doctor contacts the left mamillary process and applies the thrust with counterclockwise torque. Which of the following misalignments would this adjustment be indicated?
- left body rotation, left lateral flexion
 - right body rotation, right lateral flexion
 - left body rotation, right lateral flexion
 - right body rotation, left lateral flexion
129. A 26 year old construction worker presents with low back pain which is central and does not radiate. He has had this condition since age 17, but it has increased in severity over the past year. There are no neurological abnormalities, but there is decreased thoracolumbar ranges of motion with decreased chest expansion. Which laboratory procedure is least useful in confirming your initial impression?
- ANA
 - alkaline phosphatase
 - HLA-B27
 - C-reactive protein
 - erythrocyte sedimentation rate
130. When correcting a side bending fixation of the cervical spine with the patient lying supine, the doctor's position is normally;
- at the head of the table favoring the side of fixation
 - on the side of fixation facing headward
 - at the foot of the table favoring the side of fixation
 - on the side opposite the fixation facing headward
131. The prognosis for a nine year old male with transient synovitis of the hip;
- poor; it recurs chronically
 - good; residuals are not frequent
 - guarded because of chronic septicemia
 - fair; residuals are likely
 - excellent; it is self-limiting
132. During lateral bending, the intervertebral disc bulges;
- posteriorly
 - circumferentially
 - on the convex side of the curve
 - on the concave side of the curve
133. Which of the following types of exercise is indicated for a frozen shoulder;
- active
 - passive
 - postural
 - pressive resistance
134. A 22 year old collegiate swimmer complains of vague shoulder discomfort and weakness. Examination reveals winging of the scapula on the affected side. Which supportive technique would be most useful in preventing further muscle atrophy?
- contrast baths in a Hubbard tank
 - heel lift on the affected side
 - electrical stimulation
 - ice and compression of the thorax with a rib belt
135. A 26 year old patient presents with symptoms resembling a lumbar disc protrusion. There is an antalgic posture and a positive Laseque's on the affected side. Lower extremity reflexes are +2 and symmetrical with no apparent muscle weakness. What is the indicated case management?
- referral to a neurosurgeon
 - chiropractic adjustments with re-evaluation in two weeks
 - referral to a physical therapist
 - chiropractic adjustments with re-evaluation in six months
136. A high school football player hyperextended his knee during a game. When strapping the knee to prevent recurrence of the injury, the leg should be positioned with the knee;
- slightly flexed
 - externally rotated
 - fully flexed
 - internally rotated
137. Physical examination of a 29 year old female hairdresser with right hand numbness of one month duration reveals a moderate carpal tunnel syndrome. Which of the following adjunctive techniques is contraindicated in the conservative treatment of this patient?
- immobilization with an elastic wrist band
 - supplementation of vitamin B complex with emphasis on B6
 - pulsed short-wave diathermy to the wrist
 - underwater ultrasound to the wrist

138. Which of the following pelvic subluxations is represented in the following diagram?



- a. posterior-inferior rotation of the sacrum on the right
- b. inferior innominate with medial movement of the PSIS on the right
- c. anterior-inferior rotation of the sacrum on the left
- d. superior innominate with medial rotation of the PSIS on the left

139. A patient presents with recurrent attacks of deafness, tinnitus, vertigo, nausea, vomiting, and nystagmus. He most likely has;

- a. otitis media
- b. Meniere's
- c. inflammation of the eustachian tube
- d. perceptive deafness

140. The area of the spine that would be adjusted in a case of asthma;

- a. T1
- b. T2
- c. T3
- d. T4

141. Cervical traction is not indicated in;

- a. whiplash
- b. cervical disc injuries
- c. heart disease
- d. migraine headaches
- e. arthritic conditions

142. Which of the following signs would be most indicative of bacterial endocarditis;

- A. petechiae
- B. jaundice
- C. clubbing of the fingers
- D. cherry red skin

143. Which of the following is the least significant finding in a case of low back ache;

- A. leg weakness
- B. constipation and diarrhea
- C. diabetes
- D. bladder dysfunction
- E. heart disease

144. Which of the following signs are most suggestive of a bronchogenic carcinoma;

- A. teleangiectasis of the skin and mucosa
- B. clubbing of the fingers
- C. heart murmurs
- D. friction rubs

145. Which of the following is a significant finding of bronchial asthma;

- A. glucosuria
- B. proteinuria
- C. eosinophilia
- D. basophilia

146. A radiographic opacity in the parenchyma of the lung is best termed;

- A. bleb
- B. infiltrate
- C. cavity
- D. bullae
- E. fibrosis

147. A subluxation of which carpal bone is suggested to be involved in carpal tunnel syndrome;

- A. scaphoid
- B. lunate
- C. triquetrum
- D. hamate
- E. pisiform

148. Which of the following is a classic sign of mitral regurgitation;

- A. diastolic click
- B. gallop murmur
- C. S-4 sound
- D. systolic murmur
- E. splitting of the S-2

149. Which of the following imaging methods would be most useful in identifying a typical lumbar canal stenosis;

- A. flexion extension view
- B. CT scan
- C. ultrasound diagnostic imaging
- D. lumbar obliques

150. A 13 year old boy presents with pain in the proximal tibia, approximately 1" distal to the patella. The most likely cause is;

- A. Osgood-Schlatter's
- B. Scheuermann's
- C. Legg-Calves-Perthes
- D. Kainboch's

151. A 28 year old female presents with painful mass of the breast. The mass becomes larger and more painful during the first week of menstruation the probable diagnosis would be;

- A. mastitis
- B. mammary duct dysectasia
- C. fibrocystic disease
- D. adenoma

152. Which of the following is the most common feature of bacterial pneumonia;

- A. fever
- B. bradycardia
- C. hypotension
- D. hypothyroidism

153. A patient walks in an effort to get away from pain will manifest what type of gait;

- A. steppage
- B. spastic
- C. atalgic
- D. slapping

154. Normal breath sounds heard at the periphery of the lungs will typically be;

- A. louder and longer on inspiration
- B. louder and longer on expiration
- C. inspiration equal to expiration
- D. heard on inspiration only

155. Which of the following is not a sign of congestive heart failure;

- A. orthopnea
- B. dyspnea
- C. bradycardia
- D. dysphoria
- E. nocturia

156. Which would not be a recommended treatment in a patient with congestive heart failure;

- A. increase potassium intake
- B. increased diuretics
- C. decreased sodium intake
- D. increased sodium intake

157. Which of the following arteries would be involved with scalenus anticus syndrome;

- A. subclavian
- B. axillary
- C. brachial
- D. femoral

158. The radiographic manifestations of ankylosing spondylitis initially begins in;

- A. cervico-thoracic area
- B. thoraco-lumbar
- C. lumbar
- D. sacroiliac joints

159. In the case of near sightedness, which diopters would be used to visualize the retina of the eye;

- A. positive
- B. negative
- C. zero

160. Massage as a method of treatment would not be indicated in which of the following;

- A. post traumatic fracture
- B. phlebitis
- C. hypotension
- D. hypothyroidism

161. The "rugger jersey" appearance is most classically associated with which of the following;

- A. hypoparathyroidism
- B. hypothyroidism
- C. Paget's
- D. sickle cell anemia
- E. hyperparathyroidism

162. Fundoscopic examination of the retina of the eye reveals: waxy exudates, microaneurysms of the eye. What would be the most important question to ask on the case history;

- A. occupational history
- B. social history
- C. familial history
- D. present illness

163. A young adult male presents with chest pain of sudden onset which is localized to a specific area of the chest. What would be a probable diagnosis in this case;

- A. pneumothorax
- B. pneumonia
- C. pulmonary embolism
- D. myocardial infarct
- E. infection of the lungs

164. In the recommended course of care of this patient the next procedure would be;

- A. taking a chest x-ray
- B. analysis of blood gases
- C. spirometer
- D. blood culture

165. A 27 year old female with lymphadenopathy and swelling, with involvement of spleen, and liver, lymphatics. The signs are suggestive of;

- A. acute cervical lymphadenitis
- B. Hodgkin's disease
- C. Gaucher's disease
- D. infectious mononucleosis

166. 14 year old girl headaches that show up in the autumn, sometimes three times a day and lasting no more than an hour and a half;

- A. cluster headache
- B. tension headache
- C. migraine
- D. temporal arteritis

167. A female patient presents with headaches that start at the occipital lobes and radiates towards the anterior portion of the skull. It has a characteristic vise-like appearance to them. What would be the initial diagnosis;

- A. common migraine headache
- B. muscle tension headache
- C. temporal arteritis
- D. histamine headache

168. She also notes there are visual disturbances, and the episodes are somewhat incapacitating. Based upon the follow-up symptoms, which is the most likely type of headache that she presents;

- A. common migraine headache
- B. muscle tension headache
- C. temporal arteritis
- D. histamine headache

169. Sternoclavicular dislocations most commonly presents which of the following displacements;

- A. superior;medial
- B. inferior; medial
- C. superior;lateral
- D. inferior;lateral

170. A patient presents with inflammation of the supraclavicular nodes. What is most likely to be the primary area for this condition;

- A. upper abdomen
- B. breasts
- C. nasopharynx
- D. oropharynx

171. Which of the following modalities does not involve a chemical effect;

- A. UV light
- B. ultrasound
- C. diathermy
- D. galvanic

172. A doctor notices a patient having difficulty in breathing and there is distention of the jugular vein, along with activity of the SCM, scalene muscles, and abdominal muscles during breathing. Breath rate is about 8 per minute what is the most likely diagnosis;

- A. pulmonary edema
- B. pneumothorax
- C. pulmonary embolism
- D. pulmonary emphysema

173. In a patient with adhesive capsulitis, what would be the cause of the restricted range of motion;

- A. muscle spasm
- B. articular adhesions
- C. tissue contracture
- D. degenerative arthritis

174. A patient presents with pain, and swelling in the metacarpal-phalangeal joint of the great toe, and calcific deposits in the elbow. History reveals the patient was an alcoholic. Which of the following dietary recommendation should be made;

- A. low protein diet
- B. high protein diet
- C. high carbohydrate diet
- D. low fat diet

175. Which of the following is the least likely involved ligament of the knee;

- A. anterior cruciate
- B. posterior cruciate
- C. medial collateral
- D. lateral collateral

176. A male presents with pain in the knees that is manifested when riding in an automobile, or sitting in a movie theatre;

- A. Osgood-Schlatter's
- B. rheumatoid arthritis
- C. pes anserine bursae
- D. chondromalacia patella

177. A woman presents difficulty with carrying a heavy purse. Her arm hangs limp and there is heaviness of the arm. Which question in the case history would be relevant in this case;

- A. is there a history of diabetes?
- B. was there a previous fracture

178. In a fracture of the clavicle of a duration of 5 weeks, which of the following would be the most probable sign of healing;

- A. callous formation
- B. fuzziness of the fracture line
- C. remodeling of bone
- D. hematoma

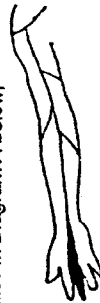
179. Tenderness at the level of T-12, with pain along the iliac crest which of the following areas of possible involvement;

- A. liver
- B. gall bladder
- C. stomach
- D. appendix
- E. kidney

180. The long term deformity that occurs in Scheuermann's disease would result from;

- A. separation from the disc
- B. the epiphysis is the growth center of the vertebra
- C. the vertebral endplates serve as the separation between the disc nucleus pulposus and cancellous bone
- D. fusion of the ring with the body

181. Identify the innervation to the area indicated in Diagram A below;



- A. C-5
- B. C-6
- C. C-7
- D. C-8
- E. T-1

182. What spinal segments would be involved with the sensory area in diagram B;



- A. C3-C4
- B. C4-C5
- C. C5-C6
- D. C6-C7
- E. C7-T1

The doctor in Diagram C is testing which muscle;



- A. latissimus dorsi
- B. posterior deltoid
- C. pectoralis major
- D. pectoralis minor

184. Identify the condition demonstrated in Diagram D;



- A. osteoarthritis
- B. Volkmann's contracture
- C. Dupuytren's contracture
- D. rheumatoid arthritis

185. Identify the clinical condition in Diagram E;

- A. tropism
- B. spinal stenosis
- C. spina bifida S1
- D. disc degeneration
- E. knife clasp

186. The patient in Diagram F most likely presents what is the most common dislocation; acromioclavicular dislocation

187. A patient presents with pain in the 5th intercostal space and red spots in the same area. Which of the following physiotherapy courses would be recommended;

- A. high intensity, one time a day for five days
- B. low intensity, five times daily for seven days

188. In a case of cirrhosis of the liver where there is distention of the veins and abdominal ascites, would accompany this clinical picture;

- A. internal hemorrhoids
- B. hepatic scratch test

189. A soccer player who injured his ankle presents with swelling. Which is the next logical step in terms of safety management;

- A. x-ray the ankle

190. 46 year old carpenter who recently suffered a fall

- A. traumatic compression fracture to the anterior body of L3

191. Which of the following views would best identify a Pancoast tumor;

- A. a-p cervical
- B. apical lordotic
- C. a-p thoracic
- D. swimmer's

192. Which view is not taken to visualize the nasal sinuses;

- A. Water's
- B. Caldwell's
- C. lateral
- D. submentovertebral
- E. Towne's

193. Which of the following is not a clinical sign of multiple sclerosis;

- A. scanning speech
- B. intention tremor
- C. chorea
- D. optic muscle atrophy

194. In a case of a 65 year old male with weakened abdominal muscles, which of the following recommendations would be used if you wanted to strengthen the abdominal muscles without strengthening psoas muscle;

- A. straight leg sit up
- B. bent knee sit up
- C. straight leg raisers
- D. supine elbow knee situps

195. A 14 year old girl demonstrates a scoliosis that disappears or decreases with Adams test and when she sits down what is the most likely cause;

- A. unequal leg length
- B. hemivertebra
- C. idiopathic scoliosis

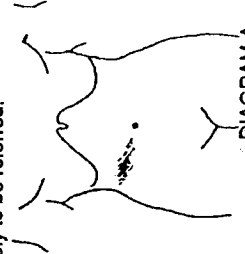
56. A patient presents with sciatic neuralgia, pain in the gluteal region. When the patient walks he presents with an inverted toe-in appearance of the foot. Which of the following is the most likely cause;

- A. sartorius strain
- B. psoas strain
- C. piriformis disorder

196. A patient presents with symptomatology you are treating the patient for TMJ problem. The patient improves, but the adjustment does not hold. Which is the most logical step;
 A. refer to an orthopedist
 B. refer to a dentist who specialized in TMJ problems
 C. refer to a neurologist
 D. continue treatment
197. Hemangioma presents which of the following classic radiographic findings;
 A. fish vertebra
 B. expansion
 C. cortical thickening
 D. vertical striations
198. Which of the following conditions or signs is not a type of secondary osteoporosis;
 A. increased cortisol
 B. increased T4
 C. osteomalacia
 D. Bence-Jones proteinuria
 E. elevated HCG
199. In a urine dip stick test which of the following would not be able to be identified;
 A. glucose
 B. Bence-Jones proteinuria
 C. protein
 D. bilirubin
200. The first muscle atrophy in a case of knee injury;
 A. vastus medialis
 B. vastus intermedius
 C. vastus lateralis
 D. rectus femoris
201. A patient presents with all kinds of hip problems, all sciatic tests are negative, no lumbar problem, and symptoms increases with activity. What is the most likely cause;
 A. L4 disc herniation
 B. rectus femoris strain
 C. femoral ischemia
202. A 65 year old leg pain that increases when walking, diminishes with rest for a while, then increasing again;
 A. vascular insufficiency
 B. spinal stenosis
 C. disc protrusion
203. T11 vertebra body has rotated to the right, spinous to the left, what would be the proper contact point for the patient when using a modified pisiform contact when contacting the right transverse. What would the patient set up;
 A. patient is prone and contact is the left pisiform
 B. patient is prone and contact is the right pisiform
204. A patient presents pain in the shoulder and back along the lower portion of the cervical spine and the medial border of the scapula, history from rowing over the weekend which of the following is the most likely area;
 A. levator C4
 B. rhomboids C5
 C. scalenes C3
 D. SCM C1
205. What is the contact point for a straight lateral axis;
 A. lamina
 B. vertebral body
 C. anterior arch
 D. posterior arch
206. Axis on an electrocardiogram would indicate which of the following;
 A. right and left ventricular hypertrophy
 B. ventricular fibrillation
 C. cardiac infarct
 D. angina pectoris
207. The sacral base on the right has gone anterior what is the most logical place to contact with the patient in the prone position;
 A. right sacral base
 B. left sacral base
 C. left sacral apex
 D. left ischium
208. With extension of atlas between atlas and occiput, what would you find;
 A. the mastoid approximates the ramus of the mandible
 B. the mastoid approximates the transverse process
 C. the transverse approximates the mastoid
 D. the transverse approximates the mandible
209. A young girl presents with a short leg. From the ASIS down to the malleolus the measurements are identical, however which of the following is going to be the cause;
 A. congenital short femur
 B. pelvis obliquity
 C. hip dislocation
210. Which would be a sequel to a case of chronic tensor fascia lata contracture;
 A. trochanteric bursitis
 B. meralgia paresthetica
 C.
211. 30 year old male is playing basketball for about 60 minutes and was resting when a ball was thrown towards him. He turned rapidly and felt a snapping noise in his leg. The pain manifests itself deep in the calf. Which of the following is likely to be the involved area;
 A. tibialis posterior
 B. popliteus plantaris
 C. Achilles tendon
 D. tibialis anterior
212. A patient presents with pain and lateralization of Weber's test towards the right, Rinne's test demonstrates increased bone conduction as compared to air conduction. Which of the following would be true;
 A. auditory neuroma
 B. tympanosclerosis
 C. Meniere's syndrome
213. Which of the following would not be a pertinent consideration in this case
 A. TMJ dysfunction
 B. parotid gland problem
 C. pressure on the tragus
 D. malposition of the teeth
214. Inspection of the ear will demonstrates shortening of the malleus, no evidence of fluid level, the cone of light is prominent an distorted, and the tympanic membrane has a gray lusterless appearance;
 A. serous otitis media
 B. purulent otitis media
 C. bullous myringitis
 D. Eustachian blockage
215. A middle aged male presents with history of chronic constipation, rebound tenderness, and proctoscopic examination was negative;
 A. Crohn's
 B. diverticulitis
 C. irritable bowel syndrome
 D. ulcerative colitis
216. A 13 year old girl with a history of constipation presents with diarrhea, stringy and stool studies are negative, sigmoidoscopy is negative;
 A. Crohn's
 B. diverticulitis
 C. irritable bowel syndrome
 D. ulcerative colitis
217. A patient presents with swollen testicles. There is a mass in the spermatic cord, and in the testicles. Which of the following procedures would be the next logical procedure;
 A. transillumination of the testicle
 B. palpation of the inguinal canal
218. Which mineral is responsible for enhancing of the immune system;
 A. cobalt
 B. magnesium
 C. calcium
 D. potassium
 E. zinc
219. In a case of preventing renal calculi what mineral would be best;
 A. sodium
 B. potassium
 C. calcium
 D. phosphorus
 E. magnesium
220. Which element is important in sexual maturation;
 A. cobalt
 B. magnesium
 C. calcium
 D. potassium
 E. zinc
221. Which line would be used in a case of diagnosing a case of platybasia;
 A. Kohler's
 B. Boehler's
 C. McNabb's
 D. Chamberlain's
222. Which of the following lines are used to identify a femur-acetabular misalignment or dislocation;
 A. Skinner's
 B. femoral angle
 C. Shenton's
 D. coxo-femoral line
223. Which line or measurement would be used to measure lumbar canal stenosis;
 A. McNabb's
 B. Eisenstein's method
 C. George's
 D. Hadley's
224. The nerve root that innervates the extensor hallucis longus, the extensor digitorum longus exits the spinal canal at the level of;
 A. L3-4
 B. L4-5
 C. L5-S1
 D. S1-2
225. Which is an important lab test in a patient with rheumatic fever;
 A. rheumatoid factor
 B. ASO-titre
 C. HLA-B-27
 D. ESR
226. Which of the following peripheral arteries should not be compressed bilaterally;
 A. subclavian
 B. carotid arteries
 C. brachial
 D. femoral
227. Stool contains fat particles
 A. pancreatic insufficiency
228. A patient with a third degree scoliosis. What would be recommended;
 A. observation
 B. exercise
 C. bracing if the scoliosis is progressive
 D. surgery

229. A previously normotensive 26 year old patient presents with headaches and a blood pressure of 170/110. These symptoms would indicate?
 a. barbiturate poisoning
 b. bleeding ulcer
 c. subarachnoid hemorrhage
 d. hyperventilation
230. A 30 year old female presents with fever and recurrent polyarthritides. Which of the following is the least likely cause of her condition?
 a. systemic lupus erythematosus
 b. rheumatoid arthritis
 c. pleurisy
 d. pericarditis
 e. cervical discopathy
231. Which of the following shapes of the lumbar neural canal predisposes a patient to neurogenic claudication?
 a. triangular
 b. oval
 c. round
 d. trefoil
232. What is indicated when a palpable thrill is heard over the anterior chest wall?
 a. myocardial infarct
 b. angina pectoris
 c. congestive heart failure
 d. mitral stenosis
 e. coarctation of the aorta
233. Funduscopic examination is appropriate in which of the following conditions?
 a. myxedema
 b. pulmonary disease
 c. increased intracranial pressure
 d. hyperventilation
234. In the fully flexed position (approximately 85°), what structure gives the most stability and therefore is most likely to be stressed?
 a. gluteals
 b. lumbar ligaments
 c. erector spinae muscles
 d. psoas
235. The most common pathology or disease of spondylolisthesis is?
 a. D.J.D.
 b. facet degeneration
 c. stress fracture of pars
236. Which of the following signs is consistent with myxedema?
 a. profuse perspiration
 b. hypothermia
 c. hyperventilation
 d. flapping tremor
237. A 23 year old female comes in with a painful swollen red mass in her breast.
 a. mammary duct ectasia
 b. mastitis
 c. fibrocystic disease
 d. adenocarcinoma
238. Where is coccidiomycosis most likely to be found?
 a. Florida
 b. Ohio
 c. Arizona
 d. Hawaii
239. To palpate the scaphoid, you should
 a. ulnar deviate the patient's wrist
 b. radial deviate
 c. flex
 d. extend
240. An increase in WBCs 2x's when there is no infection present may be due to?
 a. alcohol
 b. starvation
 c. exercise
 d. prolonged sleep
 e. smoking
241. What is the first sign of adenocarcinoma of the prostate?
 a. increased serum alkaline phosphatase
 b. increased serum acid phosphatase
 c. decreased serum amylase
 d. diffuse, tender, and enlarged prostate
 e. non-tender, solitary nodule of prostate
242. An overuse of which vitamin may give a false positive for glucose in Clinistix urinary test?
 a. A
 b. niacin
 c. C
 d. D
243. What substance when added to the diet will cause stools to appear black?
 a. vitamin A
 b. vitamin E
 c. fiber
 d. iron salts
244. What vitamin or supplement is given for intermittent claudication?
 a. B complex
 b. magnesium
 c. zinc
 d. vitamin A
 e. vitamin E
245. Following a case of cervical trauma where stability is in question, which of the following would be performed last?
 a. case history
 b. orthopedic test
 c. x-ray
 d. vital signs
246. Consuming large amounts of water in summer months may cause excessive depletion upon sweating of which of the following?
 a. vitamin A & D
 b. vitamin B & C
 c. vitamin E & K
 d. calcium and phosphorus
 e. amino acids
247. Most clearly visualized on the flexion and extension views?
 a. instability
 b. degeneration
 c. range of motion
 d. spondylosis
248. Which of the following positions of the neck and head would be most appropriate when correcting a lateral flexion fixation of the cervical spine with the patient in the supine position?
 a. neck slightly extended and rotated away from the side of fixation
 b. head neutral, no rotation
 c. head slightly extended and rotated 45° away from fixation
 d. head slightly extended and rotated 45° toward the side of fixation
249. Slow accommodation of the eye is often found in the following condition:
 a. strabismic amblyopia
 b. tabes dorsalis
 c. diabetes
 d. multiple sclerosis
250. Hilar enlargement is least likely in which of the following instances?
 a. vascular dilatation
 b. lymph nodes
 c. aneurysm
 d. neoplasm
 e. emphysema
251. The appropriate case management in a patient with a direct posterior midline C4 disc prolapse with mild to moderate spasticity in the lower extremity?
 a. Chiropractic case and re-evaluate in 2 weeks
 b. refer to a neurosurgeon
 c. refer to a physiotherapist
 d. refer to a psychologist for biofeedback
252. Which of the following is elevated in hemolytic disease?
 a. CPK
 b. SGOT
 c. LDH
 d. indirect bilirubin
 e. potassium
253. To differentiate between fibroadenoma and breast carcinoma:
 a. palpate for tenderness
 b. transilluminate the mass
 c. palpate for mobility
 d. pain and temperature
254. A patient has a unilateral exophthalmos. The probable diagnosis?
 a. aneurysm
 b. hypothyroidism
 c. hyperthyroidism
 d. alcoholism
 e. hyperlipidemia
255. A woman wakes up in the middle of the night with numbness and pain in one hand. She shakes her hand for a few seconds and the pain goes away. She is suffering from:
 a. carpal tunnel syndrome
 b. vascular compression
 c. nerve compression
 d. thoracic outlet syndrome
 e. rheumatoid arthritis
256. An auscultatory gap is heard when a patient is suffering from:
 a. hypertension
 b. extreme fatigue
 c. debilitation
 d. hypotension
 e. obesity
257. Which of the following exercises would be most appropriate to relieve low back pain resulting from encroachment of the IVF?
 a. extension
 b. flexion
 c. hamstring stretching
 d. adductor strengthening
 e. L/D circumduction
258. Thumb adduction is innervated by:
 a. radial
 b. median
 c. ulnar
 d. axillary
 e. musculocutaneous
259. When you rotate the head to the right, the left articular process moves:
 a. superior and anterior
 b. superior and posterior
 c. inferior and anterior
 d. inferior and posterior
260. Which form of physiotherapy produces a redness which goes away after a minute?
 a. infrared
 b. ultraviolet
 c. hydrotherapy
 d. short-wave diathermy

261. Which of the following fractures does not require rigid splinting (casting)?
 a. femur
 b. tibia/fibula
 c. Colles
 d. clavicle
 e. humerus
262. The mamillary process of L3 is located where?
 a. 2" lateral to the spinous above
 b. 3/4" lateral to its spinous
 c. 1/2" lateral to its spinous
 d. 1/3" lateral to its spinous
263. When using the modified thumb move to adjust T1 spinous right:
 a. patient is prone, contact the right side of the spinous process
 b. patient is prone, contact the left side of the spinous process
 c. patient is supine, contact the right side of the spinous process
 d. patient is supine, contact the left side of the spinous process
264. What modality may accelerate the growth of a tumor or metastasis of cancer?
 a. whirlpool
 b. stretching exercises
 c. hot fomentation
 d. ultrasound
 e. Burn's lamp
265. A 28 year old female with low back pain in her third day of menstruation. Contraindications?
 a. TENS (battery operated)
 b. massage
 c. SW diathermy
 d. cryotherapy
266. The most common complication of cervical traction:
 a. jaw pain
 b. stroke
 c. disc herniation
 d. radicular pain
267. Which exercise should be avoided with a patient with a spondylolisthesis?
 a. supine knee to chest
 b. hamstring stretch
 c. supine bent knee curl-ups
 d. standing pelvic rotation
 e. supine spinal extension
268. Serial hematology reports on a male patient consistently demonstrates a normocytic anemia with elevated reticulocyte count. Serum chemistry studies reveal indirect hyperbilirubinemia. Which test should be done next?
 a. serum ferritin
 b. Coombs
 c. fecal occult blood
 d. serum blood assay
 e. bone marrow biopsy
269. The presence of immature WBCs in peripheral blood indicates:
 a. bone marrow disease
 b. acute blood loss
 c. parasitic infection
 d. soft tissue injury
 e. starvation
270. A patient presents with a sprain/dislocation of the sternoclavicular joint. The supportive care would be?
 a. cock-up splint
 b. abduction-external rotation cast
 c. figure eight brace
 d. triangular bandage sling
271. An 82 year old male presents with right hip pain and warmth over the skin. Lab shows an increased alkaline phosphatase. X-ray reveals a density of the pelvic brim and increased trabeculae of the femur. Your diagnosis?
 a. metastatic carcinoma
 b. osteitis deformans
 c. rheumatoid arthritis
 d. osteogenic sarcoma
 e. D.J.D.
272. A 30 year old female presents with bilateral paresthesia and pallor of the hands. Examination reveals acute exacerbation of Raynaud's. Which supportive technique is contraindicated?
 a. biofeedback
 b. ultrasound
 c. Fluidotherapy
 d. TENS
 e. cryotherapy
273. A 1 cm nodule on x-ray in the upper thoracic?
 a. hamartoma
 b. T.B.
 c. silicosis
 d. bronchogenic carcinoma
274. Which cell will constitute 25-30% of the WBC count in peripheral blood?
 a. lymphocytes
 b. neutrophils
 c. monocytes
 d. eosinophils
 e. basophils
275. A patient presents with shoulder pain on rotation of several weeks duration. Physical exam reveals a rotator cuff strain. Which regimen will prevent loss of range of motion?
 a. Bobath's exercises
 b. William's exercises
 c. Frenkel's exercises
 d. Codman's exercises
 e. Jacobson's exercises
276. Which of the following modalities are contraindicated for cervical radiculopathy with lateral elbow pain?
 a. home cervical traction
 b. massage
 c. cryotherapy
 d. ultrasound
277. Contrast baths are utilized in a case of?
 a. hypertension
 b. causalgia
 c. extremity sprain
 d. migraine headaches
 e. tuberculosis of the spine
278. Which group of serum tests would be abnormal in metabolic bone disease?
 a. CPK, LDH, C-RP
 b. creatinine, CPK
 c. calcium, phosphorus, acid phosphatase
 d. CPK, SGOT, C-RP
 e. phosphorus, calcium, alkaline phosphatase
279. Which motion is severely limited in congenital hip dysplasia?
 a. abduction
 b. adduction
 c. flexion
 d. extension
280. Which of the following conditions would not be a chiropractic patient?
 a. IVD syndrome
 b. facet syndrome
 c. canal stenosis
 d. lumbo-sacral strain/sprain
281. Latent dermal erythema is a side effect of?
 a. ultraviolet
 b. infrared
 c. short wave diathermy
 d. ultrasound
282. In a patient presenting with abdominal pain, the order of examination is:
 a. palpate, percuss, auscultate
 b. percuss, palpate, auscultate
 c. palpate, auscultate, percuss
 d. auscultate, percuss, palpate
283. In a patient with multiple sclerosis, which of the following is least likely to occur?
 a. nystagmus
 b. deep tendon hyporeflexia
 c. Babinski's reflex
 d. spastic paralysis
284. Hip abduction from normal standing position is at least:
 a. 45°
 b. 55°
 c. 65°
 d. 75°
285. Early radiographic changes in acute hemogenous osteomyelitis include:
 a. periosteal lifting
 b. cortical erosion
 c. medullary evasion
 d. decreased joint space
 e. soft tissue swelling
286. A 44 year old male complains of headaches of two months duration, with intermittent paroxysmal pain. The attacks occur in lightening bursts of 20-25 seconds duration. The attacks are incapacitating and salivary production is increased:
 a. TMJ
 b. multiple sclerosis
 c. transient ischemic attacks
 d. cluster headaches
 e. trigeminal neuralgia
287. Angina may be differentiated from myocardial infarct by:
 a. a history of pre-cordial pressure
 b. pain from the jaw to the neck
 c. smoking
 d. relief with rest
288. A 50 year old male on diuretics and blood pressure tablets complaining of acute disc pain suggests?
 a. osteoarthritis
 b. gout
 c. sacroiliac lesion
 d. I.V.D. syndrome
289. Spasmodic torticollis in a 6-12 year old may be due to?
 a. fibroma in the SCM muscle
 b. upper respiratory infection
 c. spinal stenosis
 d. ligament abnormality
 e. distortion of spinal segments
290. What percent decrease of bone is necessary to achieve an observable difference on x-ray?
 a. 10%
 b. 20%
 c. 30%
 d. 50%
291. An A-P radiograph of the knee reveals calcification of the medial collateral ligament. The most likely cause of this appearance would be?
 a. Baker's cyst
 b. tenosynovitis of the knee
 c. Pellegrini-Stieda
 d. osteochondromatosis
 e. osteochondritis dessicans
292. What would your management of a stable rib fracture where a punctured lung is not a possibility?
 a. refer to an orthopedist
 b. tape ribs and recommend rest
 c. provide the patient with a rib belt

293. How would you adjust an anterior coccyx using an external coccygeal move?
 a. base of the sacrum
 b. apex of the sacrum
 c. base of the coccyx
 d. apex of the coccyx
294. A patient begins his morning with a walk. After 100 yards claudication began. He chose to ignore the pain and continued walking. After the second hundred yards the pain ceased. The reason for the claudication would likely be:
 a. neurogenic
 b. vascular
 c. vasodilation
 d. oxygen debt metabolites
295. Which of the following exercises would be recommended in a patient with low back pain due to facet syndrome?
 a. Codman's
 b. Williams's
 c. Delorme
 d. Jacobson's
296. A patient presents with spinal and flank pain, and mild hematuria. The most likely cause of this condition would be?
 a. acute cystitis
 b. acute cholecystitis
 c. acute pyelonephritis
 d. nephrosclerosis
 e. ureteral stone
297. Until proven otherwise, acute low back pain that is not relieved by rest must be assumed to be?
 a. infectious
 b. vascular
 c. canal stenosis
 d. malignancy
298. To correct a cervical lateral flexion fixation, the patient's head will be:
 a. neutral with lateral flexion
 b. rotated 45° to the side of fixation
 c. rotated 45° away from the side of fixation
 d. rotated 90° away from the side of fixation
299. A patient presents with acute low back pain and loss of bowel control. The correct course of action should be?
 a. heat and exercise
 b. chiropractic adjustments with re-evaluation in two weeks
 c. refer to a neurosurgeon
 d. chiropractic adjustments with re-evaluation in six months
300. A patient presents with weakness of the finger flexors, sensory disturbances of the medial forearm and normal reflexes. Which cord level is involved?
 a. C5
 b. C6
 c. C7
 d. C8
 e. T1
301. Patient presents with left tongue paralysis:
 a. lingual cardnoma
 b. Horner's syndrome
 c. aphthous stomatitis
 d. CN X lesion
 e. CN XII lesion
302. A female patient presents complaining of hearing music, voices, clanking sounds indicates possible:
 a. acoustic neuroma
 b. Bell's palsy
 c. Meniere's
 d. patent Eustachian tubes
 e. psychiatric case
303. PA and lateral chest radiographs reveal consolidation which extends from the hilar region to the mid-lung field. This is suggestive of?
 a. tuberculosis
 b. pulmonary edema
 c. pneumothorax
 d. lobar pneumonia
 e. pericarditis
304. The right innominate has gone posterior and inferior. The segment-al contact point that would be used to correct this misalignment would be?
 a. right PSIS
 b. right sacral base
 c. left sacral base
 d. left PSIS
305. A 25 year old female presents with hands that go cold and blue in the cold. The hands turn red and throb after one hour:
 a. Buerger's disease
 b. Raynaud's
 c. diabetes mellitus
 d. acroparesthesia
 e. acrocyanosis
306. What condition may be associated with a case of intermittent claudication?
 a. diabetes
 b. degenerative joint disease
 c. rheumatoid arthritis
 d. tabes dorsalis
307. Dietary recommendations for a patient with elevated serum uric acid and calcium urate crystals in the elbow would include restriction of?
 a. carbohydrates
 b. salt
 c. potassium
 d. purines
308. In a female with a positive Phalen's and Tinel's tests, which test or study would be indicated next?
 a. Allen's
 b. nerve conduction study
 c. Adson's
 d. electromyography
309. What would cause a localized pain in the lateral aspect of the shoulder on forced adduction of the arm?
 a. deltoid bursitis
 b. acromioclavicular sprain
 c. sterno-clavicular sprain
 d. gleno-humeral dislocation
310. In the cervicals when you laterally flex to one side the spinous moves _____ similar to the _____ spine.
 a. concavity; lumbar
 b. convexity; lumbar
 c. concavity; thoracic
 d. convexity; thoracic
311. A 63 year old woman has difficulty knitting and picking up coins. Her lab results show a normochromic anemia with an elevated MCH. What additional survey would be indicated?
 a. iron assay
 b. serum folic acid
 c. vitamin B-12
312. Radiographs of the humerus of a 4 year old child reveals complete periosteal lifting, and a dense, wavy periosteal new bone formation. What would be your initial impression?
 a. scurvy
 b. congenital syphilis
 c. osteogenesis imperfecta
 d. battered child syndrome
313. A female presents with a lump in her breast, and pain which increases with her menstrual period. The most likely diagnosis would be?
 a. carcinoma
 b. mammary duct ectasia
 c. fibrocystic disease
 d. adenoma
 e. mastitis
314. Examination of a 24 year old female reveals an enlarged liver and spleen, and lab findings indicate atypical lymphocytes. What lab procedure should be requested?
 a. CBC
 b. throat culture
 c. ASO titre
 d. monospot
315. The patient lies with their right side down. The doctor contacts the left mamillary and delivers a P-A thrust with a counter-clockwise torque. Determine the malposition:
 a. body has rotated posterior and superior on the left
 b. body has rotated posterior and inferior on the left
 c. body has rotated posterior and superior on the right
 d. body has rotated posterior and inferior on the right
316. A 23 year old woman presents with back pain. She states that about ten days ago she had been horse-back riding when she fell. Pain is increased with right lateral bending. The pain radiates to the area indicated in DIAGRAM A. From which of the following areas is the pain NOT likely to be referred:
 a. thoracic spine
 b. ovaries
 c. sigmoid colon
 d. kidneys
- 
- DIAGRAM A
317. In the above patient which diagnostic test should you perform first?
 a. ultrasound
 b. x-rays
 c. GI series
 d. CBC/UA
318. A child presents with a fever and auscultation reveals an apical systolic murmur. Which would be the most appropriate lab test to run?
 a. ESR
 b. serum folic acid
 c. ASO titre
 d. RA latex

319. A 60 year old male presents with low back and hip pain. Radiographs and lab tests are all negative. What test would you run next?
 a. MRI
 b. bone scan
 c. CAT scan
 d. lumbar flexion/extension
320. Which structure has no vascular supply in the adult?
 a. intervertebral disc
 b. vertebral body
 c. pedicle
 d. spinous process
321. Sacralization involves:
 a. non-fusion of the first sacral segment to the second
 b. non-segmentation of the first sacral segment from the second sacral segment
 c. non-fusion of L5 to the first sacral segment
 d. non-segmentation of L5 from the first sacral segment
322. The first radiographic finding of multiple myeloma in an 83 year old female would be:
 a. periosteal lifting
 b. medullary involvement
 c. reactive sclerosis
 d. cortical erosion
323. The optic disc would be considered abnormal if:
 a. 4 veins and 4 arteries leave all quadrants
 b. macula is two disc diameters away
 c. the disc is creamy-orange
 d. reflection of all vessels
324. Otoroscopic exam reveals a retracted tympanic membrane. How would you differentiate for a blocked Eustachian tube?
 a. have the patient hold their nose and swallow
325. A 55 year old retired marine sergeant presents with ankle edema, chest pain, and bruises easily. He has a history of being a smoker. What additional questions may be important?
 a. familial history of smoking
 b. familial history of bleeding
326. Klippel-Feil syndrome involves?
 a. blockage of 2 or more vertebrae (cervical?)
327. What color does the mucous membrane become in carbon monoxide poisoning?
 a. cherry red
328. With which of the following musculoskeletal diseases do you expect to see an increase in the eosinophil count?
 a. myasthenia gravis
 b. osteoporosis
 c. polymyositis
 d. muscular dystrophy
329. A patient presents with bilateral edema, paroxysmal nocturnal dyspnea, orthopnea and diaphoresis. These symptoms would be most likely due to:
 a. thrombophlebitis
 b. bronchiectasis
 c. cardiac syndrome
 d. congestive heart failure
330. The ability to recognize an object by the sense of touch only is called:
 a. 2 point discrimination
 b. topognosis
 c. graphesthesia
 d. stereognosis
331. A 30 year old male patient presents with low back pain and pain in his left leg. Patellar reflex is normal but the dorsum of his left foot feels numb and the extensors of the foot are found to be weak. Lasèque's and well-leg raiser are positive. What is the probable condition?
 a. disc L4-L5
 b. disc L5-S1
 c. peroneal nerve atrophy
 d. capsulitis at L5
332. A 35 year old patient presents with right leg and low back pain. His antalgic posture is to the right, and Braggard's and well-leg raiser are positive. What is your diagnosis?
 a. posterolateral protrusion
 b. posteromedial protrusion
 c. facet syndrome
 d. disc prolapse
333. A 25 year old obese woman presents with loss of the lateral one third of her eyebrows, weight gain and intolerance to cold. What is her condition?
 a. hypothyroidism
 b. hypoadrenalism
 c. pregnancy
 d. Cushing's
334. Superficial reflexes are normal but deep tendon reflexes are ++. What is the most likely cause?
 a. upper motor neuron lesion
 b. lower motor neuron lesion
 c. flaccid paralysis
 d. spastic paralysis
335. What is the most common condition of the shoulder?
 a. sub-deltoid bursitis
 b. bicipital tendinitis
 c. adhesive capsulitis
 d. rotator cuff tear
336. Which of the following does not produce redness of the overlying skin?
 a. osteoarthritis
 b. rheumatoid arthritis
 c. gout
 d. pyogenic arthritis
337. A young girl presents with a fever and a 2-6mm macular rash that blanches when pressure is applied. The rash started on the outer extremities and progressed to the anterior trunk. Which of the following histories would help in the diagnosis of this condition?
 a. sexually active with many partners
 b. allergy to medications particularly to antibiotics
 c. recent trip to the Rocky Mountains
 d. familial history of adrenal disease
338. A 40 year old woman presents with fine tremors of the fingers with extension, heat intolerance, nervousness, and fatigue, multiple bowel movements each day and irregular periods for the last several months. After normal x-rays and UA, what else would you do?
 a. orthopedic and neuromuscular exam
 b. palpate the thyroid
 c. abdominal exam
339. Which vitamin aids the liver in thrombinogen production?
 a. A
 b. D
 c. E
 d. K
340. What muscle group would you want to strengthen to prevent hip injury in osteoporosis?
 a. flexors
 b. abductors
 c. adductors
 d. rotators
341. A 58 year old male presents with 5-10 RBCs in the urinalysis.
 a. not important
 b. repeat the urinalysis in 6-8 weeks
 c. give cranberry juice
 d. find out the cause of the hematuria immediately
342. Patient presents with constant foot pain on standing and walking. Based on this information, what would you do next?
 a. refer out to a podiatrist to exercise the tendon
 b. adjust and put bilateral heel lifts and cushiony doughnut under the painful heel.
 c. adjust and give nutrients
343. A patient demonstrates a retropharyngeal space of 29mm with a history of a recent hyperflexion-hyperextension injury. What would you suspect?
 a. neoplasm
 b. disc herniation
 c. hematoma
 d. infection
344. Which patient condition would require the doctor to do a complete physical exam with radiographs and lab?
 a. flu with a moderate temperature of three days duration
 b. acute abdominal cramps of 4 days duration
 c. low back pain which was unsuccessfully treated by 2 other doctors
 d. low back pain or discomfort after a normal pregnancy and delivery
345. A large disc protrusion/ herniation protrudes from what level to effect 2 cauda equina segments.
 a. L2
 b. L3
 c. L4
 d. L5
346. Bruising the common peroneal nerve would result in:
 a. sciatica
 b. foot drop
 c. enuresis
 d. tarsal tunnel syndrome
347. A sacular conduit calcification anterior to L4 body is _____ aneurysm.
 a. internal iliac artery
 b. femoral artery
 c. abdominal aorta
 d. splenic artery
348. A 25 year old male presents with acute right sided low back pain. He states that it began when he bent over to pick up a heavy object. The patient sits on his left hip away from the pain. Orthopedic findings: (+) Gaensler's on the right, (+) straight leg raiser on the right, deep tendon reflexes are +2 and symmetrical. 1" short leg. The gait is normal, but movement is guarded in bending and twisting. What is your diagnosis?
 a. coxofemoral dislocation
 b. sacroiliac sprain
 c. lumbosacral disc
 d. lumbar spondylolysis
349. What type of person is most likely to have a slipped femoral epiphysis?
 a. an infant
 b. an obese hypo genital adolescent
 c. a young male athlete
 d. an old osteoporotic female

350. What nerve is damaged when a person has wrist drop?
 a. ulnar
 b. radial
 c. median
 d. axillary
351. A mother brings in her 6 year old male child. She states that he fell off a swing five days ago and scraped his knee. His knee is a little tender but the injury has scabbed over. The child has a fever of 103° and is listless. What is the next step that you would do?
 a. x-ray the lumbar spine and the knee
 b. blood chemistry and urinalysis
 c. call his pediatrician and inform him of the child's condition
 d. _____
352. What part of the x-ray machine converts alternating current to direct current?
 a. high volt converter
 b. low volt converter
 c. transformer
 d. rectifier
353. A 20 year old female patient with low back pain states that she is not pregnant, but is not within the ten day rule. What would you do?
 a. x-ray and treat her
 b. treat her without x-rays
 c. refer her out
 d. wait until she is within the ten day rule
354. What test would you use to confirm thoracic outlet syndrome?
 a. Jackson's test
 b. compression test
 c. Bakody's test
 d. Spurling's test
355. What modality do you use on a patient who is 7 months pregnant with low back pain?
 a. ultrasound
 b. interferential
 c. short wave diathermy
 d. hydrocollator packs
356. Which of the following would not be cause of canal stenosis?
 a. anterior buckling of the ligamentum flava
 b. prolapse disc
 c. anterior longitudinal ligament
 d. posterior longitudinal ligament
357. The patient is a 45 year old obese female with a blood pressure of 180/110. How would you classify her blood pressure?
 a. normal
 b. high
 c. severe
 d. critical
358. A patient stands up from a chair with a positive Neri's bowing sign. What is the problem?
 a. chondromalacia patella
 b. anterior cruciate ligament
 c. medial collateral ligament
 d. lateral collateral ligament
359. The best projection to visualize the fovea capitis would be;
 a. full spine
 b. frog leg
 c. lateral lumbar
 d. A-P pelvic
360. Which of the following is not characteristic of a soft tissue injury or bone trauma?
 a. fluid leaks from traumatized blood vessels
 b. normal repair processes seal off torn blood vessels within minutes depending upon the severity of injury
 c. small blood vessels take longer to clot than larger vessels
 d. resorption of extracellular fluid and dissolution of hematoma are a necessary process of healing
361. A lab work up would be necessary for a patient presenting with which case history;
 a. 2 day history of gastroenteritis
 b. 3 day history of flu-like symptoms
 c. 5 day history of a headache
 d. 2 week history of a sore throat
362. A shiny swollen appearance in the front of the lower leg, tender tight muscles along the shin with weak dorsiflexors of the foot would indicate?
 a. femoral neuritis
 b. anterior compartment syndrome
 c. peroneal tendinitis
 d. tarsal tunnel syndrome
363. A 28 year old female is complaining of numbness down her arm, pain between her shoulder blade and at the base of her occiput. She said that it started after an aerobics class six months ago. Six weeks ago she started experiencing numbness at night that awakens her and lasts for 15 minutes two to three times a week. Evaluation reveals a T3-T4 spasm and tenderness. All other exams were negative. What should you do next?
 a. refer to an orthopedic surgeon
 b. adjust the thoracic spine
 c. adjust the occiput
 d. apply moist heat and traction
364. Why would you discontinue chiropractic adjustments?
 a. the patient experiences only temporary relief
 b. not enough force used in the initial adjustment
 c. the patient experiences transient discomfort from the adjustment
 d. the pain moves distally along the peripheral nerve
365. A female patient states that she recently noticed eye discomfort, and that the eyes appeared to be larger. What other findings would be consistent with the patient's complaints?
 a. urgency, dysuria, lower abdominal tenderness
 b. chills, fever, nausea
 c. lethargy, stomach pain, tarry stools
 d. nervousness, tiredness, weight loss
366. How long must ice be applied on a muscle to achieve a 1°C decrease to a depth of .5cm?
 a. 5 minutes
 b. 10 minutes
 c. 20 minutes
 d. 30 minutes
367. The test that would be performed for a patient with infectious mononucleosis?
 a. HCG
 b. ASO titer
 c. fluorescent Treponema
 d. heterophil agglutination
368. Urine which forms a yellow foam when shaken suggests increased levels of;
 a. protein
 b. bilirubin
 c. urobilinogen
 d. blood
369. A 42 year old male presents a swollen, blue-red knee of 24 hours duration. He has a history of urethritis (which has not bothered him for the last month). He has had no sex for the last two months. The patient is 5'7" and 235 pounds. He mentions that his older brother and father have occasionally had similar episodes of swollen joints. He also mentions that last he had a steak and a bottle of red wine for dinner. His UA: 3WBC/HPE, Blood; total WBC 11,000; 84% PMNS; 24% lymphocytes. What is the most revealing part of the case history?
 a. physical exam
 b. familial history
 c. laboratory findings
 d. vital signs
370. Which of the following conditions would be the least likely diagnosis?
 a. suppurative arthritis
 b. hypertrophic osteoarthritis
 c. gout
 d. rheumatoid arthritis
371. Of the information that is given, which of the following would be the most important problem or risk?
 a. gonorrhea
 b. obesity
 c. hypertension
 d. leukemia
372. What is the maximum radiation dosage allowed per month for a patient involved with radiation?
 a. 10 mR
 b. 400 mR
 c. 1250 mR
 d. 1500 mR
373. Which muscles would be used when using the shoulder to lift heavy objects (as in throwing a shot-put)?
 a. supraspinatus, latissimus dorsi, pectoralis, and biceps
 b. supraspinatus, latissimus dorsi, serratus anterior, and triceps
 c. trapezius, rhomboids, anterior deltoid, latissimus dorsi, serratus anterior, pectoralis, triceps, biceps
 d. _____
374. The benefits of which modality include micro-massage, dispersing edema, and the breaking up of adhesions?
 a. ultrasound
 b. short wave diathermy
 c. ice
 d. galvanic
375. Which of the following conditions does the pain reach its maximum intensity almost immediately?
 a. migraine
 b. gastric ulcer
 c. dissecting aneurysm
 d. duodenal ulcer
376. In iontophoresis, which chemical would be used for myofascitis, or bursitis of the shoulder?
 a. zinc
 b. copper
 c. heparin
 d. Mg
377. Dupuytren's contracture affects which area?
 a. thumb and index finger
 b. ring and little finger
 c. hamstrings
 d. arm and hand flexors

378. Increased urination which is relieved when lying down is suggestive of?

- a. prostate
- b. diabetes insipidus
- c. diabetes mellitus
- d. bladder stone

379. A three year old child presents with cough and fever. Which of the following mouth lesions are signs of rubeola?

- a. strawberry tongue
- b. Koplik spots
- c. Bitot's spots
- d. Forsschheimer spots

380. Which of the following systems are the primary cause of TRUE vertigo?

- a. cerebellar
- b. cerebrum
- c. vestibular
- d. posterior columns

381. Curschmann's spirals are suggestive of which of the following conditions?

- a. bronchial pneumonia
- b. acute bronchitis
- c. bronchiectasis
- d. bronchial asthma

382. The area or system which is most likely to be affected in a patient with a proprioceptive problem?

- a. cerebellar
- b. cerebrum
- c. vestibular
- d. posterior columns

383. The alar and atlanto-axial ligaments allow how much rotation?

- a. 5-10°
- b. 10-15°
- c. 15-20°
- d. 20-25°

384. The patient stands by a table and shifts their weight to one leg. Which of the following muscle groups keeps the pelvis horizontal?

- a. gluteus medius
- b. iliotibial band
- c. gracilis
- d. abdominals

385. Blood with the cellular components and fibrinogen removed is known as;

- a. hematocrit
- b. hemoglobin
- c. serum
- d. plasma

386. A 25 year old male presents with fatigue and green urine. Laboratory studies reveals a normal CBC, and the SMAC reveals an increased total bilirubin direct bilirubin, SGPT and SGOT. A heterophil test should be run to rule out;

- a. cancer of the head of the pancreas
- b. infectious mononucleosis
- c. viral hepatitis
- d. cholecystitis

387. A patient presents with a history of waking up in the middle of the night with a dry cough which is relieved by sitting up. The patient notes that he has several episodes every 2-3 months. The episodes last approximately 10 days.

- a. chronic bronchitis
- b. bronchial pneumonia
- c. asthma
- d. emphysema

388. A female patient presents with exophthalmos, hyperosmia, and nervous tremors. The laboratory studies are all within normal limits;

- a. recommend iodine supplements
- b. repeat the laboratory studies in 60-90 days
- c. refer out
- d. palpate the thyroid

389. On an AP lumbopelvic radiograph, posterior rotation of the innominate will make the ilium appear;

- a. larger longitudinal measurement
- b. shorter longitudinal measurement
- c. narrower obturator foramen
- d. narrower lateral measurement

390. Loss of lateral aspect of the eyebrows may be suggestive of;

- a. Graves disease
- b. myxedema
- c. Cushing's disease
- d. Addison's disease

391. Therapeutic exercises for scoliosis;

- a. can't isolate the affected muscles
- b. can't get the patient to do them
- c. may be used before epiphyseal closure
- d. are ineffective without braces

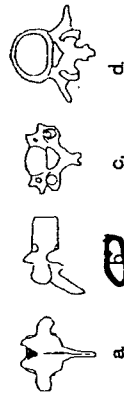
392. The recommended nutrient supplements for a patient with degenerative joint disease would be;

- a. chondroitin sulphate
- b. Vitamin A
- c. calcium
- d. B-complex

393. A patient presents complaining of knee pain which is worse when walking up the stairs or when rising from the seated position. The patient states that his knees "give out" but doesn't lock.

- a. osteochondritis dissecans
- b. chondromalacia patella
- c. patellar tendinitis
- d. Osgood-Schlatter's

394. Identify the sagittal view from the silhouettes below.



395. A 50 year old woman presents with pain of the left wrist. She states that she fell on an outstretched hand. Which of the following fracture correspond to her history and x-ray?

- a. Smith
- b. Colle's
- c. Bennett's
- d. Barton's

396. The lesion indicated by the arrow in the diagram below would most likely be;



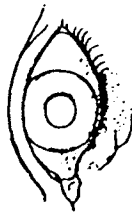
- a. cyst
- b. rheumatoid nodule
- c. Bouchard's node
- d. Heberden's node

397. A 36 year old male presents with neck pain one week after a motorcycle accident (The diagram depicts the manner in which he fell). He has anesthesia of the left arm and shoulder. He has an absent left biceps reflex and he is unable to abduct the left arm at all. Based upon the available information, the prognosis for this patient should be considered to be;



- a. good
- b. fair
- c. poor
- d. no recovery likely

398. The condition depicted in the diagram below is;



- a. ectropion
- b. exophthalmosis
- c. chalazion
- d. pinquecula

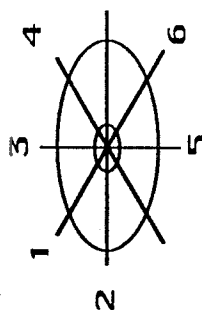
399. The first type of exercise that would be used in a case of a musculo-skeletal or a joint injury;

- a. active
- b. passive
- c. active assisted
- d. active resistive

400. A 24 year old male patient with neck pain presents a history. He states that he fell on his buttocks with minimal impact. Based on this history and the radiograph below, what is the most likely diagnosis;

- a. osteolytic metastasis to the cervicals
- b. compression fracture of C7
- c. pathological compression of C7
- d.

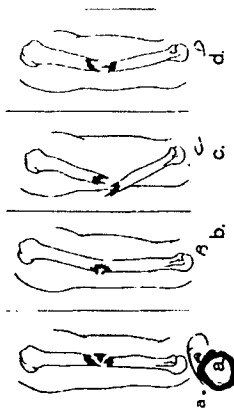
402. Cranial nerve III does not innervate eye movement in which direction?



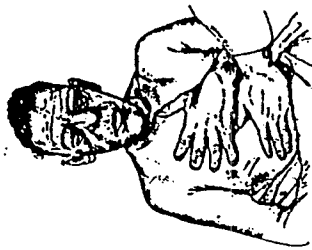
Right eye

- a. 1
- b. 2
- c. 3
- d. 4

402. Which of the following fractures in the diagram below represent a comminuted fracture?



403. drawing of an acromegaly man



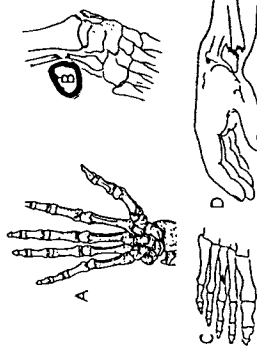
404. A patient presents with pes planus. Which of the following do you not do?

- a. give high heels
b. medial wedge
c. lateral wedge

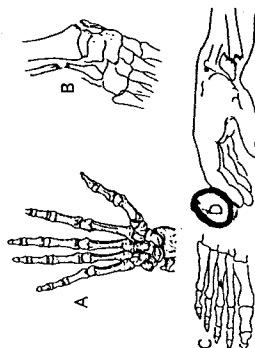
405. Select the features that are most suggestive of a spinal tap headache;

	posture	time	location	activity
a	upright	am	frontal	aerobics
b	upright	am	frontal	aerobics
c	upright	am	frontal	aerobics
d	upright	am	frontal	aerobics

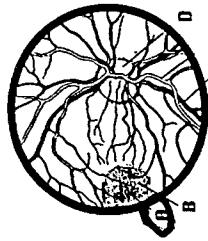
406. In Diagram A, which of the following represents a Pott's fracture;



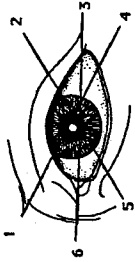
407. In Diagram B, which of the following represents a Colles' fracture?



408. Identify the fovea centralis in diagram C.

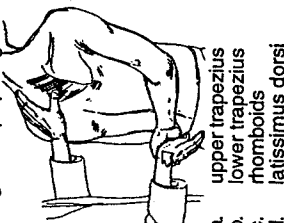


409. Cranial nerve number III innervates all of the following muscles except;



- a. 1 and 4
b. 5 and 3
c. 4 and 6
d. 5 and 6

410. Which muscle is the doctor in Diagram E palpating with his left thumb?



- a. upper trapezius
b. lower trapezius
c. rhomboids
d. latissimus dorsi

411. The doctor in Diagram F is testing which muscle?



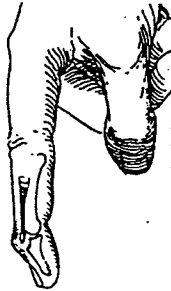
- a. latissimus dorsi, teres minor, posterior deltoid
b. anterior deltoid, coracobrachialis
c. middle deltoid, supraspinatus
d. pectoralis major, latissimus dorsi

412. Identify the listing for the segments in Diagram H;



- a. ALI
b. PRI-PS
c. PLI-PRS
d. PLS

413. The diagram below demonstrates which of the following conditions?



- a. swan neck deformity
b. Sprengel's deformity
c. boutonniere's deformity
d. mallet finger

414. To correct a fixation demonstrated in the diagram below in the thoracics, using a knife-edge contact on the spinous process;



- a. superior
b. lateral
c. flexion
d. extension

415. The area indicated by the diagram is known as;



- a. tunnel of Guyon
b. hook of the hamate
c. anatomic snuff box
d. carpal tunnel

416. In a traction injury to the nerves of the brachial plexus, what would be your recommended course of treatment?

- a. cervical traction
b. arm sling
c. resisted range of motion

417. Which sensory component is involved when testing the cornea of the eye with a cotton wisp?

- a. II
b. III
c. V
d. VII

418. A 60 year old female has low back pain and spotting. Her history reveals she is on estrogen therapy. What is your recommended management of the patient?

- a. refer to her gynecologist

- b. c. d.

419. The double fat pad sign indicates?

- a. interarticular disturbance

420. Protrusion of the femur head into the pelvic cavity is also known as;

- a. Otto's pelvis

421. A 20 year old male presents with back pain an a history of a previous healed Scheuermann's disease;

- a. pursue Chiropractic care

422. Patient cannot extend leg fully with the hip in flexion and has meningeal irritation. Which test is it?

- a. Brudzinski's
b. Kernig's
c. Babinski
d. O'Connell

423. Identify the type of subluxation which is characterized by abnormal excessive movement upon extension with instability;

- a. fixation
b. traumatic
c. defect
d. hypermobile

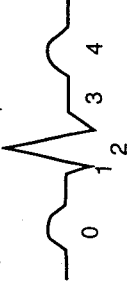
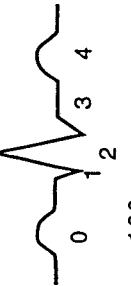
424. 35 year old male with a blood pressure of 145/92. This would be considered;

- a. normotensive
b. moderate-severe hypertension
c. low-mild hypertension
d. malignant hypertension

425. With a patient standing, the umbilicus will be found at the level of;

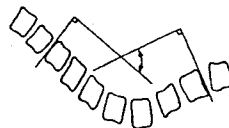
- a. L1
b. L3
c. L5
d. S2

426. A 52 year old male experiences deep, severe retrosternal pain and pressure which occurs when mowing the lawn or after eating a heavy meal. The symptoms lasts for 5 minutes?
- hiatal hernia
 - angina pectoris
 - myocardial infarction
 - pulmonary disease
427. The pain from myocardial infarct can be distinguished from angina pectoris by:
- duration
 - intensity
 - character
 - location
428. Sclerolomal pain is best described as:
- sharp shooting
 - pins and needles
 - numbness
 - dull and achy
429. Which of the following clinically presented cases would most likely require referral to a medical specialist?
- lumbosacral ache after lifting a heavy object
 - mild cervical pain and stiffness with associated weakness of the legs
 - low back pain and stiffness that progresses with prolonged standing
 - painful catch in sacroiliac joint that is exacerbated with rotation movement of trunk
430. An eleven year old female presents with a red, swollen tender right knee; non itchy salmon colored maculopapular rash; general muscle pain, intermittent chills and fever. Upon palpation, knee is warm and tender with limited ROM. Lab reveals increased polymorphonuclear leukocytes, and elevated ESR. What is it?
- juvenile rheumatoid arthritis
 - transient synovitis
 - dermatomyositis
 - lupus erythematosus
431. Nine year old male presents with insidious onset of groin and medial thigh pain. He has a limp with pain on walking. What would be most appropriate?
- Ober's
 - Ely's sign
 - Patrick's
 - Hibb's
432. A 43 year old male has pain in mastoid while eating. What adjustment is contraindicated?
- take occiput to maximum rotation and thrust mastoid
 - cup the chin, extend the head and adjust mastoid
 - stabilize squamous temporal suture and adjust cervical laminae
 - toggle recoil
433. Which would be elevated in ankylosing spondylitis?
- serum Ca^{++}
 - serum uric acid
 - LE prep
 - ESR
434. Which view would best demonstrate a joint mouse?
- A-P knee
 - P-A knee
 - sunrise
 - tunnel
435. Most common area of skeletal metastasis to affect is:
- vertebrae
 - skull
 - humerus
 - femur
436. A 68 year old male with pill-rolling tremors and a festination gait is likely to have a lesion in which area?
- pyramidal
 - extra pyramidal
 - basal ganglia
 - cerebellar
437. Pupil dilates on exposure to bright light and on accommodation to near vision. This would be known as:
- Adie's pupil
 - Argyll-Robertson pupil
 - paradoxical pupil
 - anisocoria
438. Which of the following is cause for immediate surgical referral?
- grade II spondylolisthesis
 - cauda equina syndrome
 - lumbo-sacral disc protrusion
 - pubic-symphysis syndrome
439. Patient states that with eyes open the room moves around. When the eyes are closed his body feels like it is moving back and forth.
- dizziness
 - nausea
 - tinnitus
 - vertigo
440. Patient presents with shoulder pain. Exam reveals decreased glenohumeral motion in all ranges. Trauma occurred six months ago, but none since. What is your diagnosis?
- frozen shoulder
 - shoulder separation
 - Tietze's syndrome
 - thoracic outlet syndrome
441. Upon taking a step in forward flexion with right leg, right P.S.I.S. will rocks posteriorly and inferiorly. The sacral base on the right side will move;
- posterior and superior
 - posterior and inferior
 - anterior and superior
 - anterior and inferior
442. Which dietary recommendations would be best for a 56 year old male with degenerative joint disease of weight bearing joints?
- calcium and magnesium
 - ideal body weight
 - lower cholesterol
 - manganese
443. Which muscle group produces shoulder flexion, elbow flexion and supination?
- biceps brachii
 - triceps brachii
 - brachioradialis
 - coracobrachialis
444. Increased ilium vertical angle due to muscle weakness.
- biceps femoris
 - adductor magnus?
 - tensor fascia
 - hamstrings
445. The long axes of the occipital condyles converge?
- posteriorly
 - anteriorly
 - laterally
 - superiorly
446. What is associated with a lower motor neuron lesion?
- fasciculations
 - tics
 - chorea
 - athetosis
447. 26 year old secretary presents with a hyperkyphosis of the thoracic spine. What muscle groups would you want to strengthen or stretch?
- strengthen rhomboid and stretch the pectorals
 - stretch rhomboid and abdominal
 - stretch serratus anterior and rhomboid
 - stretch erector spina and rhomboid
448. Which condition is characterized by morning stiffness, lipping and spurring?
- RA
 - OA
 - gout
 - osteopenia
449. HLA - B27 is seen in which condition:
- ankylosing spondylitis
 - rheumatoid arthritis
 - gout
 - rheumatic fever
450. 47 year old male presents with mitral stenosis, a temperature of 104° . He has tender nodules on toes and fingers. Examination reveals small hemorrhages in the skin and retina. He states that he is presently taking no medication. What is the best management of the patient?
- refer to internist
 - adjust and monitor
 - contact state health agency
 - refer to ophthalmologist
451. Cervical traction injury
- arm sling
 - scalene ant muscle traction
 - Codman's exercise
 - passive exercises
452. Which of the following groups would be most susceptible to iron deficiency anemia?
- prepubertal females
 - middle aged males
 - adolescent males
 - pregnant females
453. In a case of soft tissue injury, which modality would you want to use as soon as possible?
- ultrasound continuous
 - infrared
 - diathermy
 - interferential
454. A 50 year old male presents with hypo-chromic anemia. He has been taking iron supplement for six months with no improvement. Laboratory reveals a decreased serum iron and increased TIBC. What do you do next?
- occult blood
 - serum count
 - serum amylase
 - alkaline phosphatase
455. What substance helps the liver produce the glucose tolerance factor?
- chromium
 - selenium
 - zinc
 - magnesium

456. Which pain is described as aching, poorly localized and associated with nausea, vomiting, sweating and increased body temperature?
 a. peripheral nerve
 b. nerve root
 c. thalamic
 d. visceral
457. Which of the following represents a functional predisposition to medial knee injury?
 a. hormonal imbalance
 b. toe in gait
 c. bipartite patella
 d. Morton's foot
458. Which nerve innervates the P.L.L. and ligamentum flavum?
 a. sinu-vertebral
 b. accessory
 c. long thoracic
 d. Wrisberg
459. Left ventricular hypertrophy seen with may be seen in:
 a. aortic stenosis
 b. mitral stenosis
 c. systemic hypertension
 d. vascular
460. 36 year old female presents with fatigue, white sclera, and yellow skin especially at palms. What's question should be asked at palms.
 a. condition of your RA now
 b. have you eaten excess deep color vegetables
 c. any change in stools
 d. ask about alcohol consumption
461. During flexion of the occipital-atlantal joint:
 a. mastoid approximates the mandible
 b. ramus of the mandible and atlas TVP approximation
 c. mandible approximates the mastoid
 d. mandible separates from the mastoid
462. An indication of immature WBCs in peripheral blood in absence of infection.
 a. bone marrow disease
 b. acute blood loss
 c. parasitic infection
 d. starvation
463. Evidence of stalk-like mushroom projection from the metaphysis of long bone
 a. solitary osteochondroma
 b. benign osteoblastoma
 c. osteoid osteoma
 d. non-ossifying fibroma
464. A person with which of the following may have a normal ESR?
 a. ankylosing spondylitis
 b. multiple myeloma
 c. fibrositis
 d. rheumatoid arthritis
465. Glucose Tolerance test levels increase and continue to increase for six hours of test.
 a. severe diabetes
 b. mild diabetes
 c. hypothyroidism
 d. hypoglycemic
466. Which condition may be characterized by a lesion at the anterior horn and the corticospinal tract?
 a. amyotrophic lateral sclerosis
 b. multiple sclerosis
 c. muscular dystrophy
 d. Parkinson's
467. Most likely diagnosis of 35 year old with facial drooping.
 a. Bell's
 b. Parkinson's
 c. myasthenia gravis
 d. multiple sclerosis
468. Which supplement to diet make result in black stools?
 a. vitamin A
 b. iron
 c. licorice root tea
 d. fiber
469. Bacterial endocarditis may result in.
 a. cherry red skin
 b. petechia
 c. jaundice
 d. rachitic rosary
470. Picture of lateral and AP view of a PFI.
 a. extension malposition, body right, left lateral flexion
 b. extension malposition, spinous right, right lateral flexion
 c. flexion malposition, body right, left lateral flexion
 d. flexion malposition, spinous right, left lateral flexion
471. Which cervical vertebra will move anterior upon the extension of the neck?
 a. C2
 b. C3
 c. C4
 d. C6
472. To achieve an upright position, a young male patient with Duchenne's Palsy, "climbs up" his lower extremities. This is known as?
 a. Minor's sign
 b. Gowers' sign
 c. Brudzinski's sign
 d. Kernig's sign
473. Which muscle may cause pain in lateral thigh, anterior leg, and the dorsum of the foot?
 a. gastrocnemius
 b. piriformis
 c. psoas
 d. gluteus maximus
474. Which of the following is a contraindication to UV light?
 a. alopecia funicularis
 b. lupus vulgaris
 c. lupus erythematosus
 d.
475. Nyctalopia is a deficiency of which vitamin?
 a. A
 b. B
 c. C
 d. D
476. In what age group do people with Huntington's chorea most often present?
 a. 5-10
 b. 10-20
 c. 20-35
 d. 35-50
 e. 50-65
477. Kayser-Fleischer rings in the cornea is apparent in which disease?
 a. Wilson's
 b. Addison's
 c. Homer's
 d. Charcot's triad
478. Which portion of the EKG below represents atrial depolarization?

479. Which area in the diagram below represents ventricular depolarization?

480. Decrease proportion of calcium and therefore a decreasing kidney stones is a result of administering which of the following?
 a. Vitamin A
 b. Vitamin C
 c. chromium
 d. magnesium
481. Which of the following would you not do in the management of carpal tunnel syndrome?
 a. therapeutic hot and cold
 b. flexion exercises to strengthen wrists
 c. cock up splint
 d. adjusting procedures
482. What is the most common site for a stress fracture of the foot?
 a. calcaneus
 b. second metatarsal
 c. third metatarsal
 d. navicular
483. What line runs down the posterior aspects of the vertebral body?
 a. Jackson's
 b. George's
 c. digastric
 d.
484. Which of the following is characterized by the appearance of calcified plaques at the femoral insertion of the medial collateral ligament following partial avulsion of the ligament from the condyle?
 a. synovitis
 b. Baker's cyst
 c. osteochondromatosis
 d. osteochondritis desiccans
 e. Pelligrini-Stieda
485. Facet hypertrophy or degenerative changes of articular processes will cause which of the following syndromes?
 a. lateral recess stenosis
 b. D.I.S.H.
 c. spondylolisthesis
 d. articular tropism
486. Which of the following is performed with the patient prone?
 a. McMurray's
 b. Apley's
 c. Drawer sign
 d. Bounce home
487. A man with low back pain has pain in his calf when bending at the trunk. After 4 weeks of chiropractic care his back pain subsides but the calf pain persists and is not affected by trunk position, what is the best management for this case?
 a. inversion therapy for 2 weeks
 b. over the counter anti-inflammatory medicine
 c. regimen of calf stretching
 d. MRI

488. Which of the following modalities is indicated for use with acute tissue damage?
 a. ultraviolet
 b. s.w. diathermy
 c. ultra sound
 d. interferential
489. What tests for cerebellar dysfunction?
 a. limb drop test
 b. cogwheel rigidity
 c. deep tendon reflex
 d. finger to nose test
490. A 70 year old male patient presents with pain in the calves after walking for a short period of time. He states that the pain is relieved after sitting down and bending forward for approximately 20 minutes. Based on the information given what is the most likely diagnosis?
 a. peripheral vascular disease
 b. neurologic claudication
 c. peripheral neuritis
 d. Buerger's disease
491. In which of the following disorders are the apophyseal articulations spared from destruction?
 a. rheumatoid arthritis
 b. osteoarthritis
 c. D.I.S.H.
 d. osteoarthritis
492. Blood mixed with anticoagulant powder to prevent clotting and centrifuged to separate the cells produces a liquid:
 a. serum
 b. plasma
 c. fibrinogen
 d. hematocrit
493. Which of the following would massage of hypertonic gastrocnemius muscles be contraindicated?
 a. pain in gastrocnemius
 b. numbness in gastrocnemius
 c. phlebitis
 d. knee joint immobility
494. A female has chronic low grade headache that gets worse as day goes on. She is not awakened at night, but has the headaches when she wakes up. The headache is relieved by concentrating on a single task, or by taking a couple of alcoholic drinks. What type of headache?
 a. temporal arteritis
 b. hypertension headache
 c. common migraine
 d. classic migraine
495. Festinating gait, pill rolling tremors, what else would they have
 a. intention tremor
 b. steppage gait
 c. nystagmus
 d. cogwheel rigidity
496. Inability to heel walk with what level?
 a. L3
 b. L4
 c. L5
 d. S1
497. A 15 year old male athlete presents with a tenderness over the plantar aspect of the calcaneus. There is normal alignment of the anatomy and there are no remarkable radiographic findings. What would you do to relieve the pain?
 a. stretch calf muscles
 b. strengthen tibialis anterior muscle
 c. strengthen the intrinsic foot muscles
 d. use metatarsal pad
498. What type of destruction would you have with increased Ca^{++} , increased phosphorus, increased alkaline phosphatase
 a. kidney
 b. liver
 c. bone
 d. bone
499. 14 year old patient presents with mottled teeth. What would be most appropriate questions
 a. source of drinking water
 b. dietary intake of fats
 c. cravings for certain food (?)
 d. dietary intake of calcium
500. The presence of metastasis in bone can be most accurately diagnosed with use of:
 a. CT scan
 b. lab study
 c. plain film X-Rays
 d. radionuclide bone scan
501. The most common cause of vacuum phenomena in discs is?
 a. disc degeneration
 b. trauma
 c. metastasis
 d. rheumatoid arthritis
502. Suspect epidural hematoma, how do you handle case?
 a. Davis series
 b. CT
 c. wait 24 hours
 d. Send X-rays to radiologist for second opinion
503. Which of the following condition most likely result in dull percussion note?
 a. acute asthma
 b. pneumothorax
 c. emphysema
 d. pneumonia
504. The pause after QRS complex on EKG known as
 a. T wave
 b. ST segment
 c. QRS wave
 d. P wave
505. 40 year old male has microcytic, hypochromic anemia. He took medication for 6 months with no apparent relief. What procedure would you perform?
 a. copper
 b. occult blood stool
 c.
 d. Bence Jones urinalysis
506. A patient presents with weakness in the right arm and a lemon shaped mass in the antecubital fossa. He went bowling two days ago. What is the most likely diagnosis?
 a. strain of the brachialis with edema
 b. rupture of the biceps tendon
 c. rupture of the triceps tendon
 d. hypertrophy of the distal portion of the biceps
507. Which palpation technique uses joint play and the dis-relation between joints?
 a. static
 b. joint play palpation
 c. motion palpation
 d.
508. A 32 year old male presents with neck and upper lumbar pain. Cervical ranges of motion is decreased. One month previous, he had fatigue, weight loss. His M.D. told him that he had a "mild pneumonia". He had similar symptoms once before. Examination of the oral and buccal tissues reveals red streaks and lines. His CBC reveals a low lymphocyte count. What is the most likely diagnosis?
 a. spinal meningitis
 b. acquired immunodeficiency syndrome
 c. Hodgkin's
 d.
509. The major branch of nerve tested with abduction and opposition
 a. radial
 b. ulna
 c. median
 d. axillary
 e. musculocutaneous
510. Most likely diagnosis of male with a + Valsalva's, Dejerine + Trid and + Naffziger's?
 a. protruded disc
 b. L muscle strain
 c. hip subluxation
 d. intermittent claudication
511. Female distended veins in neck, dyspnea, enlarged heart, muffled heart sounds, pericardial effusion
 a. pericarditis?
 b. acute MI
 c. chronic obstructive lung disease
 d.
512. Throbbing headache over the occiput and vertex?
 a. post concussion headache
 b. psychogenic headache
 c. hypertension headache
 d. cluster headache
513. Which of the following is the most likely cause of bradycardia?
 a. increase in intracranial pressure
 b. acute fever
 c. hyperthyroidism
 d. ? hypertension/pleurisy
514. What vertebral spinous appears to disappear because the segment moves anterior compared to segment below when extending the head back?
 a. C1
 b. C2
 c. C6
 d. T3
515. 30 year old male now in the spring gets a pain over the left eye. The pain happened last fall, and the pain lasts approximately 45 minutes, and the pain is over the left eye and tearing of the eye.
 a. cluster headache
 b. sinus infection
 c. migraine
 d. temporal arteritis
516. Sharp shooting knife like pain is indicative of:
 a. tic douloureux
 b. Bells palsy
 c. myofascitis
 d.
517. Clubbing of finger, supraclavicular lymph node swelling, retrosternal pain
 a. bronchogenic CA
 b. COPD
 c.
518. 40 year old male with mid back pain. X-ray reveals a healed Scheuermann's
 a. refer out
 b. adjust
 c. lab checking for Bence Jones
 d. CBC

519. A 65 year old presents with fatigue, shortness of breath, cyanosis, edema of the hands and feet. What does she have?
- congestive heart failure
 - acute MI
 - angina pectoris
 - ??
520. Megaloblastic anemia - what vitamin for diet?
- pantothenic acid
 - biotin
 - riboflavin
 - folic acid
521. On view of x-ray above the scoliosis is due to?
- infectious
 - idiopathic
 - congenital
 - neuropathic
522. Which cranial nerve would be responsible in the patient can't move eye in position 2
- III
 - IV
 - VI
 - X
523. Two views of Ewing's w/ Laminations and Codman's cuff and systemically ill (fever, sweats, etc.).
- Ewing's sarcoma
 - osteomyelitis
 - osteosarcoma
 - osteitis deformans
524. 10 year old presents with pain in the wrist and hand. This may be due to which of the following.
- unicameral one cyst
 - giant cell tumor
 - aneurysmal bone cyst
 - osteolytic metastasis
525. Which of the following is a macrocytic anemia?
- iron deficiency
 - pernicious anemia
 - aplastic anemia
 - thalassemia anemia
526. The examiner passively abducts the shoulder to test for a supraspinatus tear and there is pain. The is known as;
- apprehension
 - Dugas'
 - Yergason's
 - Codman's drop arm
527. Weber's test in a patient with nerve deafness in the right ear will demonstrate;
- sound lateralizes to the right ear
 - sound lateralizes to the left ear
 - blockage of the right ear
528. Which of the following modalities would be used in acute ankle sprain?
- ultrasound
 - diathermy
 - low volt galvanic
 - interferential
529. A 56 year old male has a 4 year history of left upper and lower extremity weakness, which has worsened over the last 4 months. It was of insidious onset. He has trouble climbing stairs. He is experiencing twitching of the arms and legs. Neurological exam reveals marked emaciation, weakness, and atrophy of all 4 limbs. Deep tendon reflexes are decreased on the right. Babinski is positive on the left. These findings are characteristic of?
- chronic degenerative disease
 -
 -
 -
530. All of the following are consistent of this case except?
- the motor system is affected.
 - there are signs of UMN.
 - there are signs of a LMN.
 - there is a brain stem lesion
531. What is the most likely diagnosis?
- amyotrophic lateral sclerosis
 - multiple sclerosis
 -
 -
532. Which method for scoliosis is being demonstrated in the figure above?



Cobb's
Risser-Ferguson's
Ferguson's
Ullmann's