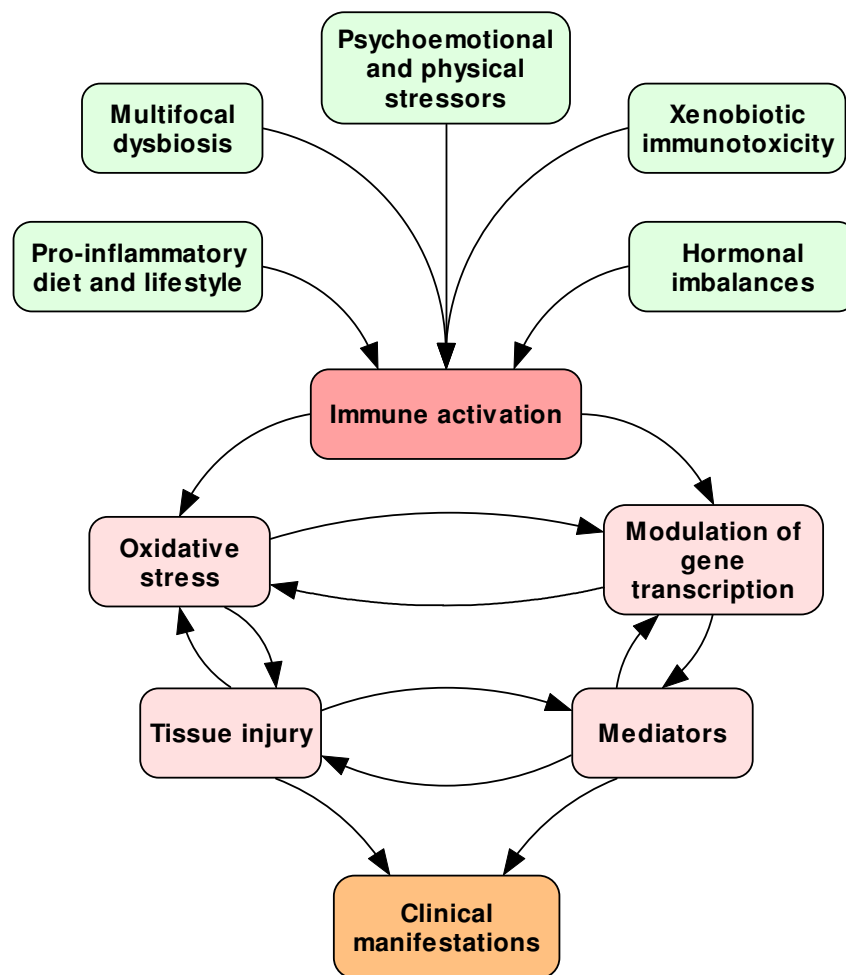


INTEGRATIVE RHEUMATOLOGY

Concepts, Perspectives, Algorithms, and Therapeutics

Second Edition 2007

The art of creating wellness while effectively managing acute and chronic musculoskeletal disorders



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Chapter 20: Core Competencies and Self-assessment

Core Competencies and Standards of Clinical Excellence:

- 1) You must know how to diagnose developmental dysplasia of the hip in a newborn.
- 2) What is the proper management of stress fractures of the proximal femur?
- 3) Define atlantoaxial instability and os odontoidium and list their presentations, complications and management.
- 4) How do you diagnose and manage slipped capital femoral epiphysis, avascular necrosis, and septic arthritis?
- 5) How do you differentially diagnose and manage meralgia paresthetica from femoral neuropathy?
- 6) Since differentiation based on physical examination and history is impossible, you must know which lab tests are used to distinguish hip osteoarthritis from hemochromatotic arthropathy and how the tests are correlatively interpreted.
- 7) You must know how to diagnose by cauda equina syndrome *by history and physical examination alone* (e.g., without CT or MRI results).
- 8) You must know how to diagnose and manage vertebral osteomyelitis and infectious discitis.
- 9) Be able to explain the mechanism by which vitamin D deficiency causes low back pain; know the indications, contraindications, dosing, and monitoring involved with vitamin D supplementation.
- 10) Name five inflammatory disorders that can affect the lumbar spine and sacroiliac joints. Provide the diagnostic criteria and management strategy of each.
- 11) List at least five ways to improve proprioceptive/sensorimotor function in patients with low-back pain.
- 12) Differentially diagnose a bladder infection from a kidney infection; describe appropriate management strategies for both problems.
- 13) Be able to explain why “fibromyalgia” is an overused diagnosis and be able to provide a list of treatable conditions that are often misdiagnosed as fibromyalgia.
- 14) Name the proper angle for obtaining an anteroposterior radiograph of the knee to demonstrate osteoarthritis.
- 15) List the characteristics of migraine headaches and the proper administration of six nutritional treatments.
- 16) Differentiate a benign headache from one that is potentially life-threatening.
- 17) Name the two best and most commonly used tests for assessing the anterior cruciate ligament. Which test is better and why?
- 18) McMurray’s test is one of the most commonly used tests for assessing menisci. How is the test performed, and what is the sensitivity and specificity of a positive finding?
- 19) You must know how to identify and manage acute compartment syndrome.
- 20) If you think your patient may have a meniscus injury, how do you decide for or against ordering an MRI?
- 21) Describe the clinical manifestations of spinal cord compression.
- 22) Your patient is a cyclist and presents with knee pain under the patella on the lateral aspect. What is the most likely diagnosis and your treatment?
- 23) Why must you examine the *hip* of an adolescent patient who presents with *knee* pain? Provide the specific anatomic basis.
- 24) You must know how to distinguish *benign* sacroiliac and pelvic pain from that which results from rheumatic diseases such as the spondyloarthropathies and infections.
- 25) You must know the wrist/hand manifestations of hemochromatosis and how to differentiate this potentially life-threatening condition from benign osteoarthritis. Compare and contrast the physical examination, laboratory, and treatment differences.
- 26) You must know how to differentially diagnose and treat rheumatoid arthritis, osteoarthritis, and hemochromatosis.
- 27) You must know how to properly administer high-dose pyridoxine as a component of the treatment plan for a patient with carpal tunnel syndrome.
- 28) You must know how to diagnose and manage fracture of the scaphoid.
- 29) You must know how to manage a hand/bone injury that has been contaminated with human saliva, such as a hand injury resulting from a fist fight.
- 30) You must know how to diagnose and manage supracondylar fractures of the humerus.
- 31) You must know how to diagnose and manage lateral epicondylitis.
- 32) Differentially diagnose and treat rotator cuff tendonitis from proximal biceps tendonitis.
- 33) Differentially diagnose overuse bursitis from septic bursitis.

- 34) Differentiate thoracic outlet syndrome from fibromyalgia and the musculoskeletal manifestations of hypothyroidism.
- 35) You must know how to grade reflexes and muscle strength and know the implications and management of abnormal findings
- 36) You must know how to rapidly diagnose and effectively manage the following musculoskeletal emergencies: Neuropsychiatric lupus, Giant cell arteritis, Temporal arteritis, Acute red eye, including acute iritis and scleritis, Atlantoaxial subluxation & instability, Myelopathy, spinal cord compression, Cauda equina syndrome, Septic arthritis, Osteomyelitis, Acute nontraumatic monoarthritis
- 37) Following a joint aspiration for acute monoarthritis, which analyses are used to differentiate septic arthritis from inflammatory arthritis and gout?
- 38) Demonstrate competency in the interpretation and correlative interpretation of the following commonly performed tests: CRP, ESR, CBC, Chemistry/metabolic panel, Ferritin, Serum 25(OH)-vitamin D, TSH, ANA, CCP.
- 39) For example, what is the important difference between “elevated CRP with a normal ferritin” and “elevated CRP with elevated ferritin.”
- 40) *Bonus:* If the lactulose-mannitol assay is abnormal (elevated lactulose-to-mannitol ratio) and the comprehensive stool analysis and comprehensive parasitology results are normal, what are the two most likely diagnoses, assuming that your patient does not overconsume alcohol or NSAIDs.
- 41) If your patient’s serum 25(OH)-vitamin D is low but the serum calcium level is elevated, what are three possible underlying diseases and what single blood test is most indicated?
- 42) Describe how to clinically distinguish fibromyalgia from polymyalgia rheumatica.
- 43) How are nondisplaced clavicle fractures managed?
- 44) Provide one example from each letter of the “p.r.i.c.e. a. t.u.r.n.” and “b.e.n.d. s.t.e.m.s.” mnemonic acronyms for holistic acute care for musculoskeletal injuries.
- 45) List the two most common clinical findings associated with myofascial trigger points and describe appropriate physical/manual and nutritional treatments.
- 46) Describe a plan for proprioceptive retraining/rehabilitation for a patient who has no exercise equipment.
- 47) Describe the effects of stereotypic NSAIDs on chondrocyte metabolism and the long-term effects on joint structure.
- 48) Name four biochemical/physiologic mechanisms by which COX-2 inhibiting drugs predispose to cardiovascular death.
- 49) Name the only absolute contraindication to the use of willow bark extract.
- 50) In a patient with fever and focal back pain exacerbated by spinal percussion, what is the most likely diagnosis?
- 51) How do you differentiate chest/back pain resulting from a “benign” musculoskeletal condition from pain that is a manifestation of intrathoracic pathology?
- 52) Briefly and generally describe how to administer the following relative to the treatment of musculoskeletal pain; you must know the treatments by their commonly used names and abbreviations: ALA, EPA, DHA, GLA, D3, Niacinamide, Glucosamine sulfate and Chondroitin Sulfate, proteolytic enzymes, *Zingiber*, Cat’s claw, *Salix*, topical *Capsicum annuum*, *Boswellia*, Devil’s claw, *Curcuma longa*

The following questions are derived from the midterm and final exam questions that I created when I taught Orthopedics at Bastyr University in 2000. The emphasis of the exam is on clinical synthesis—combining history, physical examination, lab and imaging, along with basic knowledge of therapeutics such as manipulation, botanical medicine, nutrition, physiotherapy, and other subjects taught and tested in other courses. “Core competencies” represent the information that every student and doctor must know; missing even one of these questions meant failure for the entire examination. An answered version of first edition of this assessment is available on-line at: www.OptimalHealthResearch.com/tests/musculoskeletal. Questions in **bold** were added in March 2007.

Chapter 20: Core Competencies and Self-assessment

PART ONE

List and provide one example of the **4 general categories** that need to be assessed during the history and physical when a patient presents with a musculoskeletal complaint:

- | | |
|----|----------|
| 1. | Example: |
| 2. | Example: |
| 3. | Example: |
| 4. | Example: |

Your patient presents with a complex history and examination picture that suggests the possibility of organic disease as a cause of his/her complaints, but you are not sure what disease might be present. **List the combination of lab tests that represent a safe and reasonably inexpensive means of laboratory investigation that allows you to objectively screen for several different diseases:**

1. (essential)
2. (essential)
3. (essential)
4. (optional)
5. (optional)

What percentage range of “trauma-related” injuries are actually associated with organic disease? _____

A 50-year-old woman presents with generalized stiffness and pain in the shoulder for 2 months duration; she recalls no trauma. On examination she exhibits severe loss of internal and external rotation and abduction at the shoulder.

What is the most likely diagnosis? _____

What two endocrine conditions must she be assessed for with a blood test? _____

A 60-year-old man presents with diffuse pain in the left shoulder region for 4-weeks duration; he recalls no trauma and notes that the pain is worse at night. His health history reveals that he follows a typical American diet, walks for exercise, is right-handed, is a house painter by profession, and that he no longer smokes. Physical examination reveals the following:

- Shoulder ROM is full and generally painless except for what you consider to be mild age-related stiffness that is symmetric
- Provocative maneuvers are negative
- He is afebrile, and blood pressure, pulse, and peripheral capillary refill are normal
- Lab tests performed by his MD last week show slight anemia, normal ferritin, and slightly elevated Hgb-A1c

What condition should he be assessed for? _____

What additional physical examination procedures should be performed? _____

If the above test is positive, what is your next step? _____

Mark the 1 (one) best answer for each of the following questions.

- 1) Which of the following are characteristics of “cancer pain:”
 - A. Vague, diffuse pain
 - B. Worse at night
 - C. Increasing severity
 - D. Unrelieved by rest, unresponsive to standard musculoskeletal treatment
 - E. All of the above.

- 2) Your patient is over age 50 and has back pain, which he cannot ascribe to any recent injury, motions, or positions. The ESR is 40 and ferritin is 8. Which of the following is the best next step?
 - A. High-dose proteolytic enzymes
 - B. *Boswellia* tincture dosed per body weight
 - C. Topical capsaicin
 - D. Radiographs
 - E. A 2-week trial of spinal manipulation

- 3) Your 55-year-old patient presents with left-sided shoulder pain, wrist weakness, miosis, ptosis of the left eyelid, and anhidrosis (decreased sweating) of the left side of the face. The condition for which you must assess is:
 - A. Cauda equina syndrome
 - B. Thoracic outlet syndrome
 - C. Pancoast syndrome
 - D. Chronic fatigue syndrome
 - E. Frozen shoulder syndrome

- 4) Which of the following are causes of shoulder pain:
 - A. Apical lung tumor
 - B. Cervical radiculopathy
 - C. Impingement syndrome
 - D. Biceps tendonitis
 - E. All of the above

- 5) Your 25-year-old patient presents to you following a car accident that occurred earlier that morning. He has neck pain, and requests that you treat him homeopathically and with herbs for the tingling he now has in his arms and legs. You should:
 - A. Immediately perform the Sotto-Hall neck-flexion test to assess him for cervical instability.
 - B. Take a complete homeopathic history and send him home with a remedy after telling him to avoid coffee and mint. Follow-up visit is scheduled for 2 weeks.
 - C. Prescribe high-dose bromelain.
 - D. Perform a cautious physical examination to determine which is more appropriate: radiographs or hospital referral.
 - E. Begin treatment with manipulation.

- 6) Your 42-year-old patient presents with “shoulder pain” and “insomnia.” History reveals that she has difficulty getting to sleep due to the shoulder pain. During physical examination, you find that ROM is full and does not exacerbate her pain, and that there is slight swelling in the supraclavicular fossa. The best choice from the selection below is:
 - A. Order radiographs or CT scan
 - B. Request a diet diary
 - C. Request a urinalysis
 - D. Recommend that she get a new pillow
 - E. Valerian tincture to help her sleep

- 7) Your new 20-year-old patient presents with chief complaints of “back pain” and “the flu.” The onset of both complaints was yesterday with a slight fever and now the back pain is rated 7 on a scale of 1-10 with 10 being severe pain. Lungs are clear to auscultation, and the lower back is stiff and painful to percussion. Your main concern is:
 - A. Pancoast syndrome
 - B. Myofascial trigger points
 - C. Costochondritis
 - D. Osteomyelitis
 - E. Pneumonia

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- 8) **Your diabetic adult male patient has CRP of 5, ESR of 5, and ferritin of 600. He is asymptomatic. The most likely cause to explain these findings is:**
- A. **Diabetes mellitus**
 - B. **Osteochondritis**
 - C. **Behcet's disease**
 - D. **Hepatitis**
 - E. **Hemochromatosis**
- 9) Rust's sign, whereby the patient needs to support head/neck during normal motions and positions to prevent pain, is considered indicative of:
- A. Cervical instability
 - B. Cervical radiculopathy
 - C. Tietze's syndrome
 - D. Myofascial trigger points in the sternocleidomastoid
 - E. Impingement syndrome
- 10) **Your elderly adult female patient presents with subacute back pain and has ESR of 40, CRP of 28, and ferritin of 5. She is afebrile and has no cardiac or intestinal complaints. Your next action is:**
- A. **Referral to a rheumatologist for immunosuppression**
 - B. **Lumbar radiographs**
 - C. **Referral to a gastroenterologist**
 - D. **Joint aspiration**
 - E. **Treat conservatively and repeat labs in 2 months**
- 11) Cervical radiculopathy is characterized by:
- A. Babinski reflex
 - B. Upper extremity motor deficits with dermatomal sensory abnormalities
 - C. Lower extremity hyperreflexia
 - D. Bowel and bladder dysfunction
 - E. Delayed Achilles' reflex return
- 12) In a patient with neck pain and dermatomal sensory changes in the arm, associated onset of which of the following suggests the need for additional investigation and/or referral to a surgeon?
- A. Asymmetric biceps weakness
 - B. Babinski reflex
 - C. Lower extremity clonus
 - D. Incontinence
 - E. All of the above
- 13) Recent trauma-related onset of myelopathy indicates the need for treatment, specifically with methylprednisolone, within:
- A. 8 hours
 - B. 10 days
 - C. 12 weeks
 - D. The first 30 days of treatment
- 14) Which of the following are causes of torticollis?
- A. Cancer
 - B. Infection
 - C. Injury at birth
 - D. Neuromuscular disease
 - E. All of the above
- 15) **Your patient was in a severe car accident 2 days ago. Now she feels sleepy during the day, despite sleeping 10 hours each night, and has recent onset clonus. Proper management for this patient includes:**
- A. **Adrenergic agonist treatment, either with drugs or amino acid therapy**
 - B. **Dopamine agonist, either with drugs or botanical medicines**
 - C. **Laboratory assessment for anti-myelin antibodies**
 - D. **CT scan**
 - E. **Sotto-Hall test**

- 16) Pain in the C5 dermatome, with biceps strength +5
- Bicipital tendonitis—conservative treatment, no need for referral
 - Cervical myelopathy—urgent referral
 - Cervical radiculitis—conservative treatment, no need for referral
 - Cervical radiculopathy—conservative treatment, no need for referral
 - Supraspinatus tendonitis—conservative treatment, no need for referral
- 17) Pain in the C5 dermatome, with biceps strength +3
- Bicipital tendonitis—consider conservative treatment, PAR
 - Cervical myelopathy—urgent referral
 - Cervical radiculitis—consider conservative treatment, PAR
 - Cervical radiculopathy—consider conservative treatment, PAR, recommend referral
 - Supraspinatus tendonitis—consider conservative treatment, no need for referral
- 18) Pain in the C5 dermatome, lower extremity weakness, patellar and Achilles reflexes +4
- Bicipital tendonitis—conservative treatment, PAR
 - Cervical myelopathy—urgent referral
 - Cervical radiculitis—conservative treatment, PAR
 - Cervical radiculopathy—conservative treatment, PAR, recommend referral
 - Supraspinatus tendonitis—conservative treatment, no need for referral
- 19) Positive Speed's test and Yergason's test, sensory testing WNL, with biceps strength +4
- Bicipital tendonitis—conservative treatment, no need for referral
 - Cervical myelopathy—urgent referral
 - Cervical radiculitis—conservative treatment
 - Cervical radiculopathy—recommend referral
 - Supraspinatus tendonitis—conservative treatment, no need for referral
- 20) Pain with 90° shoulder abduction and internal rotation, pain with "empty can" test
- Bicipital tendonitis—conservative treatment, no need for referral
 - Cervical myelopathy—urgent referral
 - Cervical radiculitis—conservative treatment
 - Cervical radiculopathy—recommend referral
 - Supraspinatus tendonitis—conservative treatment, no need for referral
- 21) Your patient presents with neck pain following trauma. Your clinical assessment needs to evaluate for which of the following:
- Myelopathy
 - Radiculopathy
 - Fracture
 - Instability
 - All of the above
- 22) Tom is a 47-year-old right-handed male who presents to your office with a chief complaint of "chest pain" on the right that he first noticed this morning when he was finishing a tennis match with his son. He has anterior peristernal chest pain with point tenderness, increased pain with hyperabduction of the ipsilateral arm, increased pain with deep inspiration, increased pain with palpation-provocation of the peristernal structures. Cardiopulmonary assessments are WNL. Tom most likely has:
- Costochondritis
 - Pancoast syndrome
 - Horner's syndrome
 - Intercostal neuralgia
 - Cardiovascular disease
- 23) Bob is a 47-year-old right-handed male who presents to your office with a chief complaint of "chest pain" on the left that he first noticed this morning when he was finishing a tennis match with his son. He experienced anterior peristernal chest pain with diffuse tenderness, and your clinical assessment finds no increased pain with hyperabduction of the ipsilateral arm, no increased pain with deep inspiration, and no increased pain with palpation-provocation of the thoracic structures. Bob most likely has:
- Costochondritis (Tietze's syndrome)
 - Pancoast syndrome
 - Horner's syndrome
 - Intercostal strain
 - Cardiovascular disease

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- 24) Mary is a 47-year-old right-handed female who presents to your office with a chief complaint of “chest pain” on the right that she first noticed this morning when she was finishing a tennis match with her son. She experienced anterior-lateral chest pain with sharp tenderness, and your clinical assessment finds increased pain with hyperabduction of the ipsilateral arm, increased pain with deep inspiration, and increased pain with deep palpation of the space between her 8th and 9th ribs. Mary most likely has:
- A. Costochondritis (Tietze’s syndrome)
 - B. Pancoast syndrome
 - C. Horner’s syndrome
 - D. Intercostal muscle strain
 - E. Cardiovascular disease
- 25) Suggested by signs of myelopathy with flexion and diagnosed with lateral radiographs demonstrating dens abnormalities or increased atlantodental interval; may be seen in a patient with rheumatoid arthritis or ankylosing spondylitis:
- A. Atlantoaxial instability
 - B. Cervical radiculitis
 - C. Cervical radiculopathy
 - D. Supraspinatus tendonitis
 - E. De Quervain’s syndrome
- 26) Common in patients with Down’s syndrome, contraindication to cervical spine manipulation
- A. Atlantoaxial instability
 - B. Foraminal encroachment
 - C. Cervical radiculopathy
 - D. Supraspinatus tendonitis
 - E. Lesion of the subscapularis
- 27) Inability of the patient to lift the dorsum of the hand from the sacrum
- A. Atlantoaxial instability
 - B. Bicipital tendonitis
 - C. Cervical myelopathy
 - D. Supraspinatus tendonitis
 - E. Lesion of the subscapularis
- 28) Any patient diagnosed with adhesive capsulitis (and/or frozen shoulder) needs to be assessed with which of the following tests:
- A. Phalen’s test
 - B. Serum glucose
 - C. Adson’s test
 - D. Soto-Hall test
 - E. Serum CK-Mb
- 29) Elbow extended or flexed, forearm pronated, wrist extended, patient resists wrist flexion force by doctor
- A. Speed’s test
 - B. Lift-off test
 - C. Codman’s test
 - D. Yergason’s test
 - E. Cozen’s test
- 30) Elbow extended, passive wrist flexion to stretch the wrist extensors
- A. Phalen’s test
 - B. Mill’s test
 - C. Adson’s test
 - D. Soto-Hall test
 - E. Varus testing
- 31) Inability to elevate the dorsum of the hand from the sacrum
- A. “Empty can” test, supraspinatus isolation test—supraspinatus tendonitis
 - B. Speed’s test—biceps tendonitis
 - C. Lift-off test—subscapularis lesion
 - D. Codman’s test, arm drop test—supraspinatus tendonitis
 - E. Yergason’s test—biceps tendonitis

- 32) Weakness and pain when patient resists downward force applied to the distal forearm when shoulder is 90° abducted, internally rotated, with the arm in the scapular plane, with the elbow extended.
- “Empty can” test, supraspinatus isolation test—supraspinatus tendonitis
 - Speed’s test—biceps tendonitis
 - Lift-off test—subscapularis pathology
 - Codman’s test, arm drop test—supraspinatus tendonitis
 - Yergason’s test—biceps tendonitis
- 33) Which of the following problems is potentially serious and requires immediate assessment for neurovascular injury?
- Supracondylar fracture of the humerus
 - Carpal tunnel syndrome
 - Rotator cuff tear
 - Costochondritis
 - De Quervain’s syndrome
- 34) Following trauma or overuse of the brachioradialis or the wrist extensors; positive Cozen’s test, positive Mill’s test
- Supraspinatus tendonitis
 - Lateral epicondylitis
 - Medial epicondylitis
 - Lesion of the subscapularis
 - De Quervain’s syndrome
- 35) Positive Finkelstein’s test
- Pancoast syndrome
 - Lateral epicondylitis
 - Medial epicondylitis
 - Lesion of the subscapularis
 - De Quervain’s syndrome
- 36) Reproduction of carpal tunnel syndrome manifestations with forced wrist flexion, may be held for 1 minute
- Phalen’s test
 - Mill’s test
 - Codman’s test
 - Yergason’s test
 - Cozen’s test
- 37) Your patient presents with pain at the “anatomic snuff box” following a fall on the palm with an extended wrist. While your evaluation should include assessment of neighboring regions, which condition is most likely in this patient:
- Fracture of the dens
 - Medial epicondylitis
 - Fracture of the scaphoid
 - Supraspinatus tendonitis
 - Supracondylar fracture of the humerus
- 38) Flexion deformities of the fingers, usually 3rd and 4th fingers and/or a tender nodule in the ulnar palm suggests which of the following problems:
- De Quervain’s
 - Dupuytren’s
 - Finkelstein’s
 - Phalen’s
 - Normal finding—no need for additional investigation
- 39) Spinal percussion causes deep dull pain that disappears slowly. Choose the best single answer.
- Atlantoaxial instability
 - Spinal fracture
 - Bilateral pneumothorax
 - Spinal tumor or vertebral osteomyelitis
 - Normal finding—no need for additional investigation

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- 40) Spinal percussion causes acute pain that rapidly subsides
- A. Desiccated intervertebral disc
 - B. Recent joint or ligament injury
 - C. Normal finding—no need for additional investigation
 - D. Supracondylar fracture
 - E. Acute compartment syndrome
- 41) **Your patient is a 15-yo male with progressive scoliosis for the past 6 months. Which of the following is inconsistent with early benign idiopathic scoliosis?**
- A. Platelet abnormalities
 - B. Morphologic changes in the cerebellum
 - C. Pain
 - D. Proprioceptive defects
 - E. Compensatory lateral curvature of the spine
- 42) **Your patient presents with ESR of 30, CRP of 25, negative rheumatoid factor, negative HLA-B27, ferritin of 150, and positive cyclic citrullinated peptide antibodies. What is this patient's clinical status?**
- A. Early iron overload
 - B. Severe lupus
 - C. Probable early rheumatoid arthritis
 - D. Seronegative spondyloarthritis
 - E. Klippel-Feil syndrome
- 43) **Which of the following is consistent with occult gastrointestinal dysbiosis?**
- A. Increased lactulose-mannitol ratio
 - B. Upregulated phase 1 of detoxification/biotransformation
 - C. Inhibited phase 1 of detoxification/biotransformation
 - D. Systemic immune activation
 - E. All of the above
- 44) Which of the following characteristics places a patient in a higher risk category when associated with musculoskeletal pain and suggests the need for additional assessment?
- A. Age greater than 50 years, or diabetes
 - B. Drug or alcohol use
 - C. Low-grade fever
 - D. Elevated WBC, ESR, or CRP; anemia
 - E. All of the above.
- 45) Your 12-year-old gymnast patient presents with non-traumatic elbow pain in her dominant arm associated with stiffness, locking, and crepitus. Cozen's and Mill's tests are negative, and neurologic screening examination is normal. Regional assessments of neighboring regions are unremarkable. Your clinical concern and means of assessment are:
- A. Fracture of the olecranon—radiographs
 - B. Supracondylar fracture of the humerus—radiographs
 - C. Osteochondritis dissecans or osteochondrosis—radiographs
 - D. Dislocation of the ulna—radiographs
 - E. Fracture of the scaphoid—radiographs
- 46) Your 55-year-old patient presents with left-sided shoulder pain, wrist weakness, miosis, ptosis of the left eyelid, and anhidrosis on the left side of the face. The condition for which you must assess is:
- A. Cauda equina syndrome
 - B. Thoracic outlet syndrome
 - C. Pancoast syndrome
 - D. Chronic fatigue syndrome
 - E. Frozen shoulder syndrome

- 47) Which of the following are causes of shoulder pain:
- A. Apical lung tumor
 - B. Cervical radiculopathy
 - C. Impingement syndrome
 - D. Biceps tendonitis
 - E. All of the above
- 48) Your new 20-year-old patient presents with chief complaints of “back pain” and “the flu.” The onset of both complaints was yesterday with a slight fever and now the back pain is rated 7 on a scale of 1-10 with 10 being severe pain. Lungs are clear to auscultation, and the lower back is stiff and painful to percussion. Your main concern is:
- A. Pancoast syndrome
 - B. Myofascial trigger points
 - C. Costochondritis
 - D. Osteomyelitis
 - E. Pneumonia
- 49) **Elevated ferritin with elevated CRP correlates with:**
- A. Cancer**
 - B. Iron overload**
 - C. Systemic inflammation**
 - D. Acute infection**
 - E. All of the above**
- 50) Acute onset of pain in the C5 dermatome, lower extremity strength +3, patellar and Achilles reflexes +4
- A. Bicipital tendonitis—conservative treatment, PAR
 - B. Cervical myelopathy—urgent referral
 - C. Cervical radiculitis—conservative treatment, PAR
 - D. Cervical radiculopathy—conservative treatment, PAR, recommend referral
 - E. Supraspinatus tendonitis—conservative treatment, no need for referral
- 51) Positive Speed’s test and Yergason’s test, sensory testing WNL, with biceps strength +4
- A. Bicipital tendonitis—conservative treatment, no need for referral
 - B. Cervical myelopathy—urgent referral
 - C. Cervical radiculitis—conservative treatment
 - D. Cervical radiculopathy—recommend referral
 - E. Supraspinatus tendonitis—conservative treatment, no need for referral
- 52) Billy Bob is a 51-year-old right-handed male who presents to your office with a chief complaint of “chest pain” on the right that he first noticed this morning when he was finishing a tennis match with his daughter. He has anterior peristernal chest pain with point tenderness, increased pain with hyperabduction of the ipsilateral arm, increased pain with deep inspiration, increased pain with palpation-provocation of the peristernal structures. Heart and lung auscultation are WNL. Billy Bob most likely has:
- A. Costochondritis
 - B. Pancoast syndrome
 - C. Horner’s syndrome
 - D. Intercostal neuralgia
 - E. Cardiovascular disease
- 53) Your patient presents with pain at the “anatomic snuff box” following trauma. Which condition is most likely in this patient?
- A. Fracture of the dens
 - B. Medial epicondylitis
 - C. Fracture of the scaphoid
 - D. Supraspinatus tendonitis
 - E. Supracondylar fracture of the humerus
- 54) Which of the following conditions can predispose your patient to atlantoaxial instability?
- A. Down syndrome
 - B. Inflammatory arthropathy, such as rheumatoid arthritis
 - C. Congenital agenesis of the dens, os odontoidium
 - D. Trauma
 - E. All of the above

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- 55) Patient seated with flexion of spine, patient then extends knee; a test for lumbar discogenic radiculopathy:
- A. Bechterew's test
 - B. Sotto-Hall test
 - C. Empty can test
 - D. Kemp's test
 - E. Cozen's test
- 56) Patient seated, then lumbar spine is passively moved into rotation, extension, lateral flexion:
- A. Bechterew's test
 - B. Braggard's test
 - C. Empty can test
 - D. Kemp's test
 - E. Cozen's test
- 57) Dorsiflexion of ankle with straight leg raising, confirms the radicular nature of a positive straight leg raising test
- A. Bechterew's test
 - B. Braggard's test
 - C. Empty can test
 - D. Kemp's test
 - E. Cozen's test
- 58) Your patient is a 60-year-old male who presents with back pain and slight nausea of 1-month duration. During your comprehensive low back examination, your abdominal examination reveals a large midline pulsatile abdominal mass, and the femoral and dorsalis pedis pulses are weak. Your main concern and method of assessment are:
- A. Ovarian cancer—assess with ultrasound
 - B. Aneurysm of the abdominal aorta—assess with ultrasound
 - C. Lymphoma—assess with CBC
 - D. Testicular torsion—assess with palpation and transillumination
 - E. Meralgia paresthetica—assess with MRI
- 59) Which of the following are general categories of causes of low back pain:
- A. Serious organic diseases
 - B. Serious musculoskeletal disorders requiring immediate attention
 - C. Psychogenic
 - D. Benign musculoskeletal disorders requiring conservative treatment and monitoring
 - E. All of the above
- 60) Patient age 30-50 years with a history of chronic/recurrent low back pain notices an exacerbation of low back pain or the onset of leg pain associated with a bending and/or twisting motion; leg pain predominates over the severity of the low back pain. This is the classic presentation for:
- A. Atlantoaxial instability
 - B. Meralgia paresthetica
 - C. Osteochondrosis dissecans
 - D. Lumbar disc herniation
 - E. De Quervain's syndrome
- 61) Low back and leg pain exacerbated by spinal extension and relieved by flexion suggests which of the following differential diagnoses:
- A. Lumbar disc herniation or De Quervain's syndrome
 - B. Meralgia paresthetica or cauda equina syndrome
 - C. Sacroiliac joint dysfunction or scoliosis
 - D. Spinal stenosis or facet syndrome
 - E. Atlantoaxial instability or Tietze's syndrome
- 62) Results from rupture/laxity of the soft tissues at the symphysis pubis; associated with pregnancy and/or vaginal delivery in women or repetitive overuse in men; conservative management with a trochanteric-SIJ support belt is appropriate:
- A. Symphysis pubis diastasis or osteitis pubis
 - B. SIJ sprain
 - C. SIJ functional subluxation and/or dysfunction
 - D. SIJ infection
 - E. All of the above

- 63) Supine infant with flexed and abducted hip, the physician gently pulls the femur anteriorly while palpating at the trochanter for hints of anterior glide/dislocation
- Ortolani test
 - Barlow test
 - Allis's sign
 - Thomas test
 - Ober's test
- 64) Supine infant with flexed and adducted hip; physician gently pushes the femur posteriorly while palpating at the gluteus maximus for hints of posterior glide/dislocation
- Ortolani test
 - Barlow test
 - Allis's sign
 - Thomas test
 - Ober's test
- 65) Management of infants with congenital hip dysplasia minimally includes:
- Antiinflammatories
 - Calcium supplementation
 - Bromelain
 - Manipulation
 - Orthopedic referral
- 66) Children and adolescents with afebrile hip pain are evaluated by which of the following:
- Applied kinesiology
 - Urinalysis
 - Food allergy elimination and provocation
 - Radiographs
 - Assessing response to a 3-week trial of manipulation
- 67) Which of the following are causes of hip pain in children?
- Avascular necrosis of the femoral head
 - Apophysitis
 - Slipped capital femoral epiphysis
 - Transient synovitis
 - All of the above
- 68) In your office, what procedure(s) allows you do you differentiate septic arthritis from transient synovitis (assume classic location and presentation)?
- Observation and "vitals"
 - Patrick's test
 - Lift-off test confirmed by active internal rotation
 - Sotto-Hall test
 - Spinal percussion and lung auscultation
- 69) Your patient is a 40-year-old woman who presents with pain of the right hip. She recalls no trauma; and the onset of pain and limited motion has been gradual over the past week. She is obese, diabetic, smokes, and drinks a 6-pack of beer per day. Except for her prednisone to treat her asthma, she is not on any other medications. Physical examination of her right hip reveals painful limited ROM, and pain with compressive circumduction. Otherwise, she is in no acute distress, and vitals are normal, except for hypertension of 150/95. This patient most likely has:
- Transient synovitis
 - Slipped femoral capital epiphysis
 - Avascular necrosis of the femoral head
 - Septic arthritis
 - Meralgia paresthetica
- 70) Your management of the above patient includes:
- Radiographs of the hip
 - Immediate referral for joint aspiration
 - Immediate referral to the emergency room
 - Urinalysis
 - Ultrasound of the abdomen

Chapter 20: Core Competencies and Self-assessment

- 71) You are a student clinician at the Bastyr clinic, and your supervising doctor assesses the 35-year-old patient with osteoarthritis of both hips and knees. Since you are well educated and since you care enough about your patient to ensure that he/she gets a proper evaluation, you tactfully remind your clinician that this patient needs to be assessed with which of the following lab tests?
- A. Lipoprotein(a)
 - B. Urinalysis
 - C. Blood pH
 - D. Creatine phosphokinase
 - E. Serum ferritin
- 72) Positive McMurray's test, positive bounce test, pain and limited motion with waddling, negative Lachman's test, negative patellar ballottement test, negative patellar grinding test:
- A. Joint effusion
 - B. Meniscus injury
 - C. Patellofemoral arthralgia
 - D. Meralgia paresthetica
 - E. None of the above
- 73) Which of the following suggest the need for knee radiographs following trauma:
- A. Local tenderness at the head of fibula or patella
 - B. Inability to flex the knee to 90°
 - C. Inability to walk >4 steps
 - D. Blunt trauma or fall with one of the following: Age <12 years or >50 years
 - E. All of the above
- 74) Your 14-year-old overweight male patient presents with knee pain and a limp. Clinical assessment reveals the following: negative McMurray's test, negative bounce test, negative Lachman's test, negative patellar ballottement test, negative patellar grinding test, and pain and hesitancy with the following assessments: Patrick's (FABER) test, Thomas test, circumduction. He is afebrile. This patient most likely has _____ and needs to be assessed with _____.
- A. Meniscus injury—MRI of the knee
 - B. Congenital hip dysplasia—ultrasound of both hips
 - C. Slipped femoral capital epiphysis—radiographs of both hips
 - D. Osteochondritis dissecans of the knee—radiographs of both knee
 - E. Osteoarthritis—radiographs
- 75) **Which of the following is the most consistent finding associated with compartment syndrome?**
- A. Elevated troponin and positive Rovsing's sign**
 - B. Painful passive stretch and elevated serum haptoglobin**
 - C. Proximal pallor, arterial hypotension, low TSH**
 - D. Pulselessness with elevated urobilinogen**
 - E. Sensory deficit, distal pulselessness, elevated CK**
- 76) Which of the following are nerve root tension tests for the assessment of lumbar radiculopathy?
- A. Straight leg raising
 - B. Bechterew's test
 - C. Braggard's test
 - D. All of the above
 - E. Only two of the above answers (A, B, or C) are correct
- 77) Regarding the management of what appears to be mechanical low back pain, failure to produce significant resolution of pain and symptoms after _____ indicates the need for additional evaluation, imaging, and/or referral to a specialist.
- A. 2 days
 - B. 1 week
 - C. 2 weeks
 - D. 4 weeks
 - E. 10 weeks

- 78) **Leg weakness, bladder/bowel incontinence, and perineal numbness suggests:**
- A. Klippel-Feil syndrome
 - B. Turner syndrome
 - C. Acute compartment syndrome
 - D. Cauda equina syndrome
 - E. Pelvic inflammatory disease
- 79) **Your patient is an overweight 55-year-old woman who presents to your office after a recent diagnosis of meralgia paresthetica. A doctor at her HMO, who saw her for 5 minutes and performed essentially no physical examination, made the diagnosis. She would like you to treat her for this condition, and to help her modify her lifestyle so that she can lose weight, get off her blood pressure meds, stop smoking, and reduce her risk for ovarian cancer, which was the cause of death in her mother and sister. After your physical examination confirms that she has meralgia paresthetica and excludes radiculopathy, which of the following should you perform?**
- A. Hemoglobin A1c
 - B. Lumbosacral radiographs
 - C. Diagnostic ultrasound
 - D. Electromyography
 - E. Joint aspiration

Match the following.

- A. Tibial stress fracture
 - B. Shin splints
 - C. Compressive compartment syndrome
 - D. Jones fracture
 - E. Metatarsal stress fracture
 - E. Metatarsalgia
- 80) Overuse strain of the compartmentalized muscles of the lower leg and/or inflammation of the tibial periosteum
- 81) Localized leg pain in an endurance or overtrained athlete; exacerbation of pain with static weight-bearing
- 82) Diffuse pain in a novice overtrained athlete; clinical findings include: painful passive stretch, pallor, pulselessness
- 83) Pain at the 2nd or 3rd metatarsal head in a runner or obese patient;
- 84) Pain at the middle inferior lateral aspect of the foot following a "twisted ankle"; exacerbation of pain with weight-bearing and walking
- 85) Pain in the metatarsal shaft in a runner or obese patient

Mark "A" for true and "B" for false for the remaining questions.

- 86) Generally speaking, any patient with a history of cancer who presents with a complaint of pain or loss of function needs to be carefully clinically evaluated for metastatic disease and should be assessed with laboratory tests (e.g., ESR, CRP, alk phos) and imaged with radiographs, ultrasound, CT, or MRI, as indicated.
- 87) Trauma to the thoracolumbar region mandates a urinalysis to assess for kidney damage.
- 88) Any patient with a recent head injury who demonstrates depressed sensorium must be evaluated with CT to assess for possible subdural hematoma or other intracranial pathology.
- 89) Any woman over the age of 40 who presents with chronic or recalcitrant neck, chest, shoulder, or arm pain which is not definitively ascribed to another condition must be assessed for breast cancer: history, family history, physical examination (breast exam, lymph nodes, regional exam, and mammography if appropriate).
- 90) Patients with recent trauma and the possibility of serious bleeding such as subdural hematoma or internal bleeding are not treated with medications/nutrients/botanicals that significantly impair coagulation.
- 91) Physical examination of a painful region also requires examination of neighboring regions and organs.
- 92) Differentiating viscerosomatic referral from mechanical causes of musculoskeletal pain, depends upon 1) the doctor's taking a complete patient history, 2) the doctor's performing a complete examination, 3) the doctor's obtaining proper laboratory tests, 4) the doctor's effective and appropriate use of imaging studies.
- 93) "Osteoarthritis" is a diagnosis of exclusion, and one of the diseases that must be ruled out before osteoarthritis can be diagnosed is hemochromatosis, which must be screened for with the laboratory tests serum ferritin and transferrin saturation.

Chapter 20: Core Competencies and Self-assessment

CORE COMPETENCIES

Provide the standard grading and description of **MUSCLE STRENGTH**.

Grade	Description

Provide the standard grading and description of **REFLEXES**.

Grade	Description

Verbal assessment for myelopathy, cauda equina syndrome, and radiculopathy includes the following:

- 1) _____
- 2) _____
- 3) _____

List the **4 general categories** that need to be assessed during the history and physical when a patient presents with **any musculoskeletal complaint**:

1. _____	2. _____
3. _____	4. _____

5. Describe the clinical management of the patient with cauda equina syndrome—be specific with regard to what you will do and what the patient will do:

Your patient presents with a complex history and examination picture that suggests the possibility of organic disease as a cause of his/her complaints. A safe and reasonably inexpensive means of laboratory investigation that allows you to objectively screen for several different diseases includes (essential tests only):

6. _____	7. _____	8. _____
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9. Your patient is sick and presents with recent onset of severe back pain, a rigid back, fever, and a raised WBC and sedimentation rate. The most likely diagnosis and your method for managing this patient are: _____

Your patient is a 46-year-old woman whom you have been treating for various complaints including low back and neck pain, which she has had for several years following two car accidents. Today she presents to you with some concern because her low-back pain is worse, and she mentions that she has recently noticed a decrease in sensitivity of the regions around her anus and genitals. She denies pain or sensory changes in her legs and arms. Vital signs and routine neurologic examination of the upper and lower extremities are normal.

10. What is the most serious and likely diagnosis that you must consider? _____

11. What key question must you ask? _____

12. If your clinical suspicion of #10 is high, and #11 is positive/abnormal, how will you manage this patient? What needs to happen? _____

13. What is the approximate time frame for implementing the management plan that you have described in #12? _____

Two causes of knee joint locking:

14.	15.
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4 musculoskeletal conditions that can typically cause low back pain with thigh pain:

16.	17.
18.	19.

20. Proper method of evaluation for **acute febrile non-traumatic monoarthritis** is (provide at least 3 specific answers, at least one of which must be the "gold standard"): _____

