

TABLE E-1 Basic-Competency Examination In Musculoskeletal Medicine\*

Question	Answer	Residents' Mean Score (percent)	Chairpersons' Importance Score** (points)
1. What common problem must all newborns be examined for?	Congenital dislocation of the hip (CDH, dislocation, subluxation also accepted): 1 point	99	9.1
2. What is a compartment syndrome?	Increased pressure in a closed fascial space: 1 point	95	9.0
3. Acute septic arthritis of the knee may be differentiated from inflammatory arthritis by which laboratory test?	Any analysis of fluid from aspiration (cell count, gram stain, culture): 1 point	76	8.5
4. A patient dislocates his knee in a car accident. What structure(s) is/are at risk for injury and therefore must be evaluated?	Must mention popliteal artery: 1 point	70	8.4
5. A patient punches his companion in the face and sustains a fracture of the 5th metacarpal and a 3-mm break in the skin over the fracture. What is the correct treatment, and why?	Irrigation and débridement; risk of infection: 1/2 point each	54	8.4
6. A patient comes to the office complaining of low-back pain that wakes him up from sleep. What two diagnoses are you concerned about?	Tumor and infection: 1/2 point each	33	8.0
7. How is compartment syndrome treated?	Fasciotomy (surgery also accepted): 1 point	94	7.9
8. A patient lands on his hand and is tender to palpation in the "snuff box" (the space between the thumb extensor and abductor tendons). Initial radiographs do not show a fracture. What diagnosis must be considered?	Scaphoid fracture (carpal bone fracture also accepted): 1 point	54	7.8
9. A 25-year-old male is involved in a motor-vehicle accident. His left limb is in a position of flexion at the knee and hip, with internal rotation and adduction of the hip. What is the most likely diagnosis?	Hip dislocation: 1 point	35	7.6
10. What nerve is compressed in carpal tunnel syndrome?	Median nerve: 1 point	94	7.4
11. A patient has a disc herniation pressing on the 5th lumbar nerve root. How is motor function of the 5th lumbar nerve root tested?	Dorsiflexion of the great toe (toe extensors also accepted): 1 point	20	7.2
12. How is motor function of the median nerve tested in the hand?	Any median function (metacarpophalangeal finger flexion; thumb opposition, flexion, or abduction): 1 point	75	7.0
13. A 12-year-old boy severely twists his ankle. Radiographs show only soft-tissue swelling. He is tender at the distal aspect of the fibula. What are 2 possible diagnoses?	Ligament sprain and Salter-Harris I fracture (sprain, fracture also accepted): 1/2 point each	67	7.0
14. A patient presents with new-onset low-back pain. Under what conditions are plain radiographs indicated? Please name 5 (example: history of trauma).	Age >50; neurological deficit; bowel or bladder changes; history of cancer, pregnancy, drug use, or steroid use; systemic symptoms (night pain, fever); pediatric population: 1/4 point each, full credit for 4 correct responses	50	7.0
15. A patient has a displaced fracture near the fibular neck. What structure is at risk for injury?	Common peroneal nerve (peroneal nerve also accepted): 1 point	62	6.8
16. A 20-year-old injured his knee while playing football. You see him on the same day, and he has a knee effusion. An aspiration shows frank blood. What are the three most common diagnoses?	Ligament tear, fracture, peripheral meniscal tear (capsular tear, patellar dislocation also accepted): 1/2 point each, full credit for 2 correct responses	44	6.8
17. What are the five most common sources of cancer metastatic to bone?	Breast, prostate, lung, kidney, thyroid: 1/4 point each, full credit for 4 correct responses	86	6.7
18. Name two differences between rheumatoid arthritis and osteoarthritis.	Any two correct statements (i.e., inflammatory vs. degenerative, proximal interphalangeal joint vs. distal interphalangeal joint, etc.): 1/2 point each	76	6.6
19. Which malignancy may be present in bone yet typically is not detected with a bone scan?	Myeloma (full credit for hematological malignancies—leukemia, lymphoma): 1 point	51	6.4
20. What is the function of the normal anterior cruciate ligament at the knee?	To prevent anterior displacement of the tibia on the femur: 1 point	53	6.2
21. What is the difference between osteoporosis and osteomalacia?	Osteoporosis—decreased bone density; osteomalacia—decreased bone mineralization (any true statement about epidemiology, pathophysiology—e.g., estrogen vs. vitamin D—also accepted): 1 point	40	5.7
22. In elderly patients, displaced fractures of the femoral neck are typically treated with joint replacement, whereas fractures near the trochanter are treated with plates and screws. Why?	Blood supply to femoral head (avascular necrosis, nonunion also accepted): 1 point	40	5.2
23. What muscle(s) is/are involved in lateral epicondylitis (tennis elbow)?	Wrist extensors (full credit for any wrist extensor—extensor carpi radialis brevis, extensor carpi radialis longus, extensor digitorum communis): 1 point	18	5.1
24. Rupture of the biceps at the elbow results in weakness of both elbow flexion and _____?	Supination: 1 point	49	5.1
25. What muscle(s) control(s) external rotation of the humerus with the arm at the side?	Infraspinatus or teres minor accepted (full credit for rotator cuff): 1 point	28	4.6

\*The items are listed in order of the importance score.

\*\* On a scale of 1 to 10 points.

Reprinted from: Freedman KB, Bernstein J. The adequacy of medical school education in musculoskeletal medicine. *J Bone Joint Surg Am.* 1998;80:1421-7.

TABLE E-2 Musculoskeletal Basic Competency Exam Data Sheet

1. Are you a: (circle)

Medical student	year	1	2	3	4	5	
Resident	year	1	2	3	4	5	6
Attending	years in practice	_____					
Nurse	years in practice	_____					

2. Are you military? (circle)      yes      no

3. What is your specialty? (e.g., medicine, pediatrics, general surgery)

4. What % of your practice deals with musculoskeletal problems?

5. Did you ever take any elective or required course in Orthopaedics during your training?  
(circle)      yes      no

If yes, how long was the course? (weeks/months)

6. Do you feel comfortable with the musculoskeletal exam? (circle)      yes      no

If no, why not? (circle)      training in musculoskeletal medicine inadequate  
not required or taught during your training  
never did a rotation in Orthopaedics  
other \_\_\_\_\_

7. Have you ever taken a basic musculoskeletal competency exam before? (circle)  
yes      no

8. Any additional comments?