

ST 310

Upper Extremity Injuries

COMPETENCIES

RISK MANAGEMENT AND INJURY PREVENTION

Cognitive Domain

- Appraises the risk factors associated with common congenital and acquired abnormalities, disabilities, and diseases.

Psychomotor Domain

- Administers static and dynamic postural evaluation procedures, including tests for muscle shortening.
- Implements appropriate screening procedures to identify common acquired or congenital risk factors that would predispose athletes and others engaged in physical activity to certain types of injuries.
- Able to operate contemporary isometric, isotonic, and isokinetic strength testing devices.

PATHOLOGY OF INJURIES AND ILLNESSES

Cognitive Domain

- Defines tissue lesions by body system in terms of etiology, pathogenesis, pathomechanics, treatment options, and expected outcomes.

ASSESSMENT AND EVALUATION

Cognitive Domain

- Demonstrates knowledge of the normal anatomical structures of the human body systems and their physiological functions, including the musculoskeletal (including articulations) and nervous (central and peripheral) systems.
- Describes commonly accepted techniques and procedures for evaluation of the common injuries and illnesses that are incurred by athletes and others involved in physical activity. These techniques and procedures include the following:(a) taking a history, (b) inspection or observation,(c) palpation, (d) functional testing (range of motion, ligamentous or capsular stress, manual muscle, sensory, motor, reflex neurological), (e) special evaluation techniques (e.g., orthopedic tests, auscultation, percussion)
- Explains the role of special tests, testing joint play, and postural examination in injury assessment.
- Explains how to measure resistive range of motion (or strength) of major muscles using manual muscle testing or break tests.
- Differentiates the use of diagnostic tests (x-rays, arthrograms, MRI, CAT scan, bone scan, ultrasound, myelogram) based on their applicability in the assessment of an injury or illness when prescribed by a physician.
- Describes the etiological factors, signs, symptoms, and management procedures for injuries of the shoulder, upper arm, elbow, forearm, wrist, hand, thumb, fingers, spine, thorax.
- Explains how to identify and evaluate various postural deformities.

Psychomotor Domain

- Applies appropriate stress tests for ligamentous or capsular instability based on the principles of joint positioning, segmental stabilization, and force.
- Measures the grade of ligamentous laxity during a joint stress test and notes the quality and quantity of the end point.
- Applies appropriate and commonly used special tests to evaluate athletic injuries to various anatomical areas.
- Palpates bony and soft tissue structures to determine normal or pathological tissue(s).
- Performs appropriate examination of injuries to the trunk and upper extremities prior to an individual's return to activity.
- Uses appropriate terminology in the communication and documentation of injuries and illnesses.

THERAPEUTIC EXERCISE

Cognitive Domain

- Describes common surgical techniques, pathology, and any subsequent anatomical alterations that may affect the implementation of a rehabilitation or reconditioning exercise program.

PROFICIENCIES

INSTRUCTED & EVALUATED

Assessment and Evaluation

The student will perform a postural assessment of the following:

- shoulder

The student will obtain the medical history of an ill or injured athlete or other physically active individual suffering from a shoulder injury.

The student will observe and identify the clinical signs and symptoms associated with common injuries, illnesses, and predisposing conditions:

- atrophy
- positioning (Sprengel's deformity)
- bursitis
- strain
- dislocation or subluxation
- scapulohumeral rhythm
- efficiency of movement
- scapular winging
- fracture
- step deformity
- sprain
- symmetry
- nerve injury
- tenosynovitis and tendonitis

The student will administer active and passive range-of-motion tests using standard goniometric techniques for the shoulder.

The student will use manual muscle-testing techniques for the shoulder

The student will administer appropriate sensory, neurological, and circulatory tests for the shoulder

The student will administer functional tests and activity-specific tests for the shoulder

The student will identify and palpate bony landmarks of the shoulder

The student will identify and palpate soft tissue landmarks of the shoulder.

The student will administer commonly used special tests to make a differential assessment of the following

- glenohumeral instability (e.g., anterior drawer test, posterior drawer test, relocation test, apprehension test, clunk test, sulcus sign)
- acromioclavicular instability (e.g., shear test, compression test)
- rotator cuff impingement/inflammation (e.g., Speed's test, drop arm test, empty can test, impingement test, Hawkins-Kennedy impingement test, Neer impingement test, pectoralis major contracture test)
- biceps and biceps tendon pathology (e.g., Yergason's test, Ludington's test)

- thoracic outlet syndrome (e.g., Adson's maneuver, Allen test, military brace position)

The student will obtain the medical history of an ill or injured athlete or other physically active individual suffering from elbow pathology.

The student will observe and identify the clinical signs and symptoms associated with common injuries, illnesses, and predisposing conditions:

- symmetry
- epicondylitis
- carrying angle (cubital valgus and varus)
- tenosynovitis and tendonitis
- dislocation or subluxation
- osteochondritis dissecans
- fracture
- sprain
- atrophy
- strain
- efficiency of movement
- nerve injury
- bursitis

The student will administer active and passive range-of-motion tests using standard goniometric techniques of the elbow.

The student will use manual muscle-testing techniques of the elbow

The student will administer appropriate sensory, neurological, and circulatory tests for the elbow.

The student will administer functional tests and activity-specific tests for the elbow.

The student will identify, palpate, and interpret the integrity of bony landmarks of the elbow

The student will identify, palpate, and interpret the integrity of the soft tissue of the elbow.

The student will administer commonly used special tests to make a differential assessment of the following

- joint instability (e.g., valgus stress test, varus stress test)
- inflammatory conditions (e.g., tests for lateral epicondylitis, tests for medial epicondylitis)
- neuropathy (e.g., Tinel's sign, pronator teres syndrome, pinch grip test)

The student will obtain the medical history of an ill or injured athlete or other physically active individual suffering from forearm, wrist, or hand pathology.

The student will observe and identify the clinical signs and symptoms associated with the following

- fracture (Colles' fracture, Bennett's fracture, carpal fracture ["boxer's fracture"], metacarpal fracture, phalanges fracture)
- dislocation or subluxation
- disease states (e.g., clubbed nails, spoon-shaped nails)
- soft tissue pathology (e.g., sprain, flexor tendon avulsion [jersey finger sign], extensor tendon avulsion [mallet finger], extensor tendon rupture [boutonniere deformity], volar plate rupture [pseudo-boutonniere deformity], Dupuytren's contracture, ganglion, swan neck deformity, trigger finger)
- neurovascular involvement (e.g., carpal tunnel syndrome, bishop's or benediction deformity, ape hand, claw fingers, drop-wrist deformity, Volkmann's contracture)

The student will administer active and passive range-of-motion tests using standard goniometric techniques for the forearm, wrist, and hand

The student will use manual muscle-testing techniques for the forearm, wrist, and hand.

The student will administer appropriate sensory, neurological, and circulatory tests for the forearm, wrist, and hand.

The student will administer functional tests and activity-specific tests for the forearm, wrist, and hand.

The student will identify, palpate, and interpret the integrity of bony landmarks for the forearm, wrist, and hand.

The student will identify, palpate, and interpret the integrity of soft tissue for the forearm, wrist, and hand.

The student will administer commonly used special tests to make a differential assessment of the following

- joint instability (e.g., valgus stress test, varus stress test)
 - inflammatory conditions (e.g., tests for lateral epicondylitis, tests for medial epicondylitis)
- neuropathy (e.g., Tinel's sign, pronator teres syndrome, pinch grip test)