ST 320
Lower Extremity Injuries

COMPETENCIES

RISK MANAGEMENT AND INJURY PREVENTION

Cognitive Domain

- Appraises the risk factors associated with common congenital and acquired abnormalities, disabilities, and diseases.
- Describes the basic principles and concepts of orthotic fabrication. This includes, but is not limited to, evaluating the need for orthotics, selecting the appropriate manufacturing material, manufacturing the orthosis, and fitting the orthosis.

Psychomotor Domain

- 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 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 toes, foot, ankle, lower leg, knee, thigh, hip, pelvis.
- 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 and lower 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:

- hip and pelvis
- knee
- ankle, foot, and toes

The student will obtain the medical history of an ill or injured athlete or other physically active individual for hip/pelvis pathology.

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

- leg length discrepancies
- osteitis pubis
- hip retroversion
- athletic pubalgia
- hip anteversion
- bursitis
- Legg-Calve-Perthes disease
- piriformis syndrome
- apophysitis
- iliotibial band syndrome
- slipped capital femoral epiphysis
- contusion
- dislocation or subluxation
- sprain
- fracture
- strain
- stress fracture
- tendonitis

The student will administer active and passive range-of-motion tests using standard goniometric techniques and/or a tape measure for the hip/pelvis.

The student will use manual muscle-testing techniques for the hip and pelvis.

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

The student will administer functional tests and activity-specific tests for the hip/pelvis.

The student will identify, palpate, and interpret the integrity of bony landmarks of the hip/pelvis.

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

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

- sacroiliac dysfunction (e.g., Patrick's/FABER, Gaenslen's test, pelvic compression/distraction test)
- neuropathy (e.g., femoral nerve traction test)
- neuromuscular pathology (e.g., Trendelenburg test, Thomas test, rectus femoris contracture test, Ober test, Noble's test, piriformis test)

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

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

- bursitis
- patellar tendon rupture
- chondromalacia patella
- peroneal nerve contusion or palsy
- dislocation and subluxation
- popliteal cyst
- fat pad contusion
- sprain
- fracture
- strain
- leg length
- tendonitis
- meniscal tear
- tibial torsion
- Osgood-Schlatter disease
- tibiofemoral alignment
- osteochondritis dissecans
- patellar alignment (e.g., patella alta, patella baja, squinting patella, Q angle)

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

The student will use manual muscle-testing techniques for the knee.

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

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

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

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

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

- uniplanar stress tests (e.g., valgus stress test, varus stress test, Lachman test, anterior drawer test, posterior drawer test, posterior sag sign
- multiplanar (rotational) stress tests (e.g., Slocum test, Hughston's test, lateral pivot shift maneuver)
- meniscal tears (e.g., McMurray's test, Apley's test)
- patellofemoral dysfunction (e.g., grind test, apprehension test)
- intra-extracapsular swelling (e.g., sweep test, ballottable patella)

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

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

- overuse injures
- Achilles tendon rupture
- compartment syndromes
- apophysitis
- dislocation or subluxation
- foot type/structure
- fracture
- deep vein thrombosis
- neuroma
- osteochondritis dissecans
- sprain
- strain
- toe structure/alignment
- weight-bearing versus non-weight-bearing alignment
- gait

The student will administer active and passive range-of-motion tests using standard goniometric techniques for the foot, ankle, and lower leg.

The student will use manual muscle-testing techniques for the foot, ankle, and lower leg.

The student will administer appropriate sensory, neurological, and circulatory tests for the foot, ankle, and lower leg.

The student will administer functional tests and activity-specific tests for the foot, ankle, and lower leg.

The student will identify, palpate, and interpret the integrity of bony landmarks for the foot, ankle, and lower leg.

The student will identify, palpate, and interpret the integrity of soft tissue of the foot, ankle, and lower leg.

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

- compression test
- talar tilt test
- percussion test
- Thompson test
- anterior drawer test
- Tinel's sign
- Kleiger's test
- Homans' sign