

## **SIM 387 Assessment and Evaluation of Upper Extremity Injuries**

### **RISK MANAGEMENT AND INJURY PREVENTION**

#### Cognitive Domain

- 6 Describes the principles of effective heat loss and heat illness prevention programs. These principles include, but are not limited to knowledge of the body's thermoregulatory mechanisms for acclimation and conditioning, fluid and electrolyte replacement requirements, proper practice and competition attire, and weight loss.
- 7 Evaluates the accepted guidelines, recommendations, and policy and position statements of applicable governing agencies relating to practice during extreme weather conditions (e.g., heat, cold, and lightning).
- 8 Describes the use of a sling psychrometer, and possesses the ability to apply wet bulb globe thermometer (WBGT) reading and other heat and humidity indices to determine the scheduling, type, and duration of practice.
- 17 Describes the components of an educational program for self-identification of the warning signs of cancer, including self-examination of the breasts and testicles.
- 25 Identifies the basic principles and concepts of home, school, and work place ergonomics and their relationship to the prevention of illness and injury.

#### Psychomotor Domain

- 2 Administers static and dynamic postural evaluation procedures, including tests for muscle shortening.
- 3 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.

#### Affective Domain

- 7 Appreciates the importance of the body's thermoregulatory mechanisms for acclimation and conditioning, fluid and electrolyte replacements, proper practice and competition attire, and weight loss.
- 8 Values the importance of collecting data on temperature, humidity, and other environmental conditions that can affect the human body when exercising in adverse weather conditions.
- 12 Appreciates and respects the principles and concepts of home, school, and work place ergonomics.

### **PATHOLOGY OF INJURIES AND ILLNESSES**

#### Cognitive Domain

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

#### Affective Domain

- 2 Recognizes that physician consultation is a moral and ethical necessity in the diagnosis and treatment of pathologic conditions.

## **ASSESSMENT AND EVALUATION**

### Cognitive Domain

- 5 Defines the principles and concepts of body movement including functional classification of joints, joint biomechanics, normal ranges of joint motion, joint action terminology, muscular structures responsible for joint actions (prime movers, synergists), skeletal muscle contraction, and kinesthesia/proprioception.
- 6 Differentiates injury recognition, assessment, and diagnosis.
- 7 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)
- 10 Explains how to take measurements of the neurological function of cranial nerves, spinal nerves, and peripheral nerves, and describes their relationships in a neurological examination.
- 11 Describes the use of myotomes, dermatomes, and reflexes (deep tendon, superficial) including manual muscle-testing, range-of-motion testing, and distinguishes between primary, cortical, and discriminatory forms of sensation.
- 12 Defines the measurement and grading of dermatomes, myotomes, and reflexes and their relationships in a neurological examination.
- 13 Describes active, passive, and resisted range-of-motion testing and differentiates the significance of the findings of each test.
- 14 Explains the role of special tests, testing joint play, and postural examination in injury assessment.
- 15 Explains how to measure resistive range of motion (or strength) of major muscles using manual muscle testing or break tests.
- 19 Explains how to recognize and evaluate athletes and others involved in physical activity who demonstrate clinical signs and symptoms of environmental stress.
- 20 Describes the etiological factors, signs, symptoms, and management procedures for injuries of the toes, foot, ankle, lower leg, knee, thigh, hip, pelvis, shoulder, upper arm, elbow, forearm, wrist, hand, thumb, fingers, spine, thorax, abdomen, head, and face.
- 21 Explains how to identify and evaluate various postural deformities.
- 23 Describes the signs and symptoms of injuries to the abdominal viscera.

### Psychomotor Domain

- 1 Constructs and phrases appropriate questions to obtain a medical history of an injured or ill individual that includes a previous history and a history of the present injury or illness.
- 2 Visually identifies clinical signs associated with common injuries and illnesses, such as the integrity of the skin and mucous membranes, structural deformities, edema, and discoloration.
- 3 Demonstrates active, passive, and resisted range-of-motion testing of the toes, foot, ankle, knee, hip, shoulder, elbow, wrist, hand, thumb, fingers, and spine.
- 4 Measures active and passive joint range of motion with a goniometer.

- 5 Performs appropriate manual muscle-testing techniques and/or break tests, including application of the principles of muscle/muscle group isolation, segmental stabilization resistance/pressure, and grading, to evaluate injuries incurred by athletes and others engaged in physical activity.
- 7 Applies appropriate stress tests for ligamentous or capsular instability based on the principles of joint positioning, segmental stabilization, and force.
- 8 Measures the grade of ligamentous laxity during a joint stress test and notes the quality and quantity of the end point.
- 9 Applies appropriate and commonly used special tests to evaluate athletic injuries to various anatomical areas.
- 11 Conducts auscultation of normal heart, breath, and bowel sounds, demonstrating proper position and location of stethoscope.
- 12 Palpates bony and soft tissue structures to determine normal or pathological tissue(s).
- 13 Performs and interprets appropriate palpation techniques and special tests of the abdomen, chest, cranium, and musculoskeletal system.
- 14 Assesses the neurological function of cranial nerves, spinal nerves, and peripheral nerves and assesses the level of spinal cord involvement following injury, including the function of dermatomes, myotomes, and reflexes (e.g., deep tendon, superficial).
- 15 Performs appropriate examination of injuries to the trunk and upper and lower extremities prior to an individual's return to activity.
- 16 Performs an appropriate examination to evaluate the return to activity of an individual who has sustained a head injury.
- 17 Uses appropriate terminology in the communication and documentation of injuries and illnesses.

#### Affective Domain

- 1 Appreciates the importance of a systematic assessment process in the management of injuries and illness.
- 2 Appreciates the importance of documentation of assessment findings and results.
- 4 Recognizes the initial clinical evaluation by the certified athletic trainer as an assessment and screening procedure, rather than as a diagnostic procedure.
- 5 Appreciates the practical importance of thoroughness in a clinical evaluation.
- 6 Accepts the professional, ethical, and legal parameters that define the proper role of the certified athletic trainer in the evaluation and appropriate medical referral of injuries and illnesses of athletes and others involved in physical activity.
- 7 Values the skills and knowledge necessary to competently assess the injuries and illnesses of athletes and others involved in physical activity.

### **ACUTE CARE OF INJURIES AND ILLNESSES**

#### Cognitive Domain

- 6 Describes the principles and rationale for a primary survey of the airway, breathing, and circulation.
- 7 Differentiates the components of a secondary survey, including obtaining a history, inspection and observation, palpation, and the use of special tests to determine the type and severity of the injury or illness sustained.

- 8 Interprets vital signs as normal or abnormal including, but not limited to, blood pressure, pulse, respiration, and body temperature.
- 9 Assesses pathological signs of injury including, but not limited to, skin temperature, skin color, skin moisture, pupil reaction, and neurovascular function.
- 13 Recognizes the characteristics of common life-threatening conditions that can occur either spontaneously or as the result of direct trauma to the throat, thorax and viscera, and identifies the management of these conditions.
- 20 Recognizes signs and symptoms of head trauma, including loss of consciousness, changes in standardized neurological, cranial nerve assessment, and other symptoms that indicate underlying trauma.
- 21 Explains and interprets the signs and symptoms associated with increasing intracranial pressure.
- 22 Explains the importance of monitoring a patient following a head injury, including obtaining clearance from a physician before further patient participation.
- 23 Defines cerebral concussion and lists the signs and symptoms used to classify cerebral concussions according to accepted grading scales (e.g., Cantu, Colorado, Torg, American Neurology Association standards).
- 24 Recognizes the signs and symptoms of trauma to the cervical, thoracic and lumbar spines, the spinal cord, and spinal nerve roots, including neurological signs, referred symptoms, and other symptoms that indicate underlying trauma.
- 26 Recites the indications and guidelines for removing the helmet and shoulder pads from an athlete with a suspected cervical spine injury.
- 41 Recognizes the signs, symptoms, and treatment of individuals suffering from adverse reactions to environmental conditions.

#### Psychomotor Domain

- 4 Performs a secondary survey/assessment, including obtaining a history, inspection/observation, palpation, and using special tests.
- 9 Assesses a patient for possible closed-head trauma using standard neurological tests and tests for cranial nerve function.
- 15 Palpates for the rigidity, guarding, and rebound tenderness of the abdomen associated with internal injury or illness.

#### Affective Domain

- 7 Realizes the importance of identifying signs and symptoms in cases of possible shock, internal bleeding, and closed-head trauma.

### **GENERAL MEDICAL CONDITIONS AND DISABILITIES**

#### Cognitive Domain

- 4 Recognizes common eye pathologies (e.g., conjunctivitis, hyphema, corneal injury, and scleral trauma).
- 5 Recognizes common ear pathologies (e.g., otitis, ruptured tympanic membrane, and impacted cerumen).
- 6 Recognizes common pathologies of the mouth, sinus, oropharynx, and nasopharynx.
- 12 Recognizes the relationship between changes in blood pressure and changes in activity level.

- 13 Recognizes the relationship between changes of respiration rate and changes in activity level.
- 31 Recognizes the main cerebral lesions caused by trauma (e.g., subdural, epidural hematoma, aneurysm).
- 33 Recognizes postconcussional syndrome.

#### Psychomotor Domain

- 11 Uses a penlight to examine pupil responsiveness, equality, and ocular motor function.
- 12 Palpates the abdominal quadrants for tenderness and rigidity.
- 13 Uses the stethoscope correctly to auscultate the heart, lungs, and bowel.

### **NUTRITIONAL ASPECTS**

#### Cognitive Domain

- 6 Explains the importance of good nutrition in enhancing performance and preventing injury and illness.
- 7 Describes the common illnesses and injuries that are attributed to poor nutrition.
- 8 Evaluates the energy and nutritional demands of specific activities and the nutritional demands placed on athletes and others involved in physical activity.
- 9 Delineates the effects of poor dietary habits on bone loss, injury, and long-term health.
- 10 Applies the principles of nutrition, including the roles of fluids and electrolytes, vitamins, minerals, ergogenic aids, macronutrients, carbohydrates, protein, fat, and dietary supplements, as they relate to the dietary and nutritional needs of athletes and others involved in physical activity.
- 15 Recognizes the implications of FDA endorsement of nutritional products.
- 17 Analyzes the principles of weight control, including body fat percentage, caloric requirements, effects of exercise, and fluid loss.
- 18 Identifies the consequences of improper fluid replacement.

### **PSYCHOSOCIAL INTERVENTION AND REFERRAL**

#### Affective Domain

- 2 Accepts the responsibility to provide health care information, intervention, and referral consistent with the certified athletic trainer's professional training.