



College of Health and Human Performance

Department of Exercise Sciences



ES 417
INJURY EVALUATION: UPPER QUARTER
Athletic Training Program
Brigham Young University

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Office Hours:
(or just stop by and knock on my door)

Course Objectives:

Upon completion of this course, the student will understand and be able to explain and/or demonstrate by performance on an exam:

1. Mechanisms of common injuries in various sports.
2. Basic principles of evaluation and diagnostic terminology.
3. Signs and symptoms of upper extremity injuries.
4. Specific steps in injury evaluation.
5. Evaluation techniques, including special tests, used to identify and assess degree of disability of the upper extremity.
6. Proficiency in performing manual muscle testing of the upper extremity.
7. Proficiency in performing girth and goniometric measurements of the upper extremity.
8. Basic on-the-field/off-the-field injury management.

II. Course Requirements:

Mid-Term Written Exam	150 points
Quizzes	50 points
Practical Final	50 points
Written Final Exam	<u>150 points</u>
	400 points total *(or so)

*periodic quizzes will be given when the instructor feels the students will benefit from a quiz.

Grading is based strictly on a percentage basis. The breakdown is as follows:

93%-100%	A	73-76%	C
90-92%	A-	70-72%	C-
87-89%	B+	67-69%	D+
83-86%	B	63-66%	D
80-82%	B-	60-62%	D-
77-79%	C+	0-59%	E

Generally no make-up quizzes, exams are given, unless prior arrangements have been made.

III. Required Textbooks:

Starkey, C, and Ryan, J. Evaluation of Orthopedic and Athletic Injuries. Philadelphia: F.A. Davis, 2002.

Optional Textbooks:

Konin, JG, Wiksten, DL, and Isear, JA, Jr. Special Tests for Orthopedic Examination. Thorofare, NJ: Slack, Inc., 1997.

Magee, DJ. Orthopedic Physical Assessment (3rd ed.). Philadelphia: W.B. Saunders, 1997.

IV. Course Outline:

- A. Introduction/Course Requirements
- B. General Principles and Concepts
- C. Head Injuries
 - 1. Lab
- D. Neck Injuries
 - 1. Lab
- E. Shoulder Injuries
 - 1. Lab
- F. Elbow/Forearm Injuries
 - 1. Lab
- G. Wrist/Hand Injuries
 - 1. Lab
- H. Thoracic/Abdominal Injuries
 - 1. Lab
- I. Heat-Related Problems/Thermal Injuries

V. The following NATA Competencies will be addressed:

RM-C2 Identify and explain the risk factors associated with common congenital and acquired abnormalities, disabilities, and diseases.

RM-C3 Identify and explain the epidemiology data related to the risk of injury and illness related to participation in physical activity.

RM-C4 Identify and explain the recommended or required components of a preparticipation examination based on appropriate authorities' rules, guidelines, and/or recommendations.

RM-C7 Explain the importance for all personnel to maintain current certification in CPR, automated external defibrillator (AED), and first aid.

RM-C8 Explain the principles of effective heat loss and heat illness prevention programs. Principles include, but are not limited to, knowledge of the body's thermoregulatory mechanisms, acclimation and conditioning, fluid and electrolyte replacement requirements, proper practice and competition attire, and weight loss.

RM-C9 Explain the accepted guidelines, recommendations, and policy and position statements of applicable governing agencies related to activity during extreme weather conditions.

RM-C19 Explain the basic principles and concepts of home, school, and workplace ergonomics and their relationship to the prevention of illness and injury.

RM-C20 Recognize the clinical signs and symptoms of environmental stress.

RM-P6 Obtain, interpret, and make decisions regarding environmental data. This includes, but is not limited to the ability to:

RM-P6.3 Access local weather/environmental information

DI-C2 Describe the anatomical and physiological growth and development characteristics as well as gender differences across the lifespan.

DI-C4 Explain directional terms and cardinal planes used to describe the body and the relationship of its parts.

DI-C5 Describe the principles and concepts of body movement including functional classification of joints, arthrokinematics, normal ranges of joint motion, joint action terminology, and muscle groups responsible for joint actions (prime movers, synergists), skeletal muscle contraction, and kinesthesia/proprioception.

DI-C6 Describe common techniques and procedures for evaluating common injuries including taking a history, inspection/observation, palpation, functional testing, special evaluation techniques, and neurological and circulatory tests.

DI-C7 Explain the relationship of injury assessment to the systematic observation of the person as a whole.

DI-C8 Describe the nature of diagnostic tests of the neurological function of cranial nerves, spinal nerves, and peripheral nerves using myotomes, dermatomes, and reflexes.

DI-C9 Assess neurological status, including cranial nerve function, myotomes, dermatomes and reflexes, and circulatory status.

DI-C10 Explain the roles of special tests in injury assessment.

DI-C12 Describe strength assessment using resistive range of motion, break tests, and manual muscle testing.

- DI-C14 Describe the clinical signs and symptoms of environmental stress.
- DI-C17 Describe the components of medical documentation (e.g. SOAP, HIPS and HOPS).
- DI-P1 Obtain a medical history of the patient that includes a previous history and a history of the present injury.
- DI-P2 Perform inspection/observation of the clinical signs associated with common injuries including deformity, posturing and guarding, edema/swelling, hemarthrosis, and discoloration.
- DI-P3 Perform inspection/observation of postural, structural, and biomechanical abnormalities.
- DI-P4 Palpate the bones and soft tissues to determine normal or pathological characteristics.
- DI-P5 Measure the active and passive joint range of motion using commonly accepted techniques, including the use of a goniometer and inclinometer.
- DI-P6 Grade the resisted joint range of motion/manual muscle testing and break tests.
- DI-P7 Apply appropriate stress tests for ligamentous or capsular stability, soft tissue and muscle, and fractures.
- DI-P8 Apply appropriate special tests for injuries to the specific areas of the body as listed above.
- DI-P9 Assess neurological status, including cranial nerve function, myotomes, dermatomes and reflexes, and circulatory status.
- DI-P10 Document the results of the assessment including the diagnosis.
- DI-CP1 Demonstrate a musculoskeletal assessment of upper extremity, lower extremity, head/face, and spine (including the ribs) for the purpose of identifying (a) common acquired or congenital risk factors that would predispose the patient to injury and (b) a musculoskeletal injury. This will include identification and recommendations for the correction of acquired or congenital risk factors for injury. At the conclusion of the assessment, the student will diagnose the patient's condition and determine and apply immediate treatment and/or referral in the management of the condition. Effective lines of communication should be established to elicit and convey information about the patient's status. While maintaining patient confidentiality, all aspects of the assessment should be documented using standardized record-keeping methods.
- DI-CP1.8 Thoracic Spine
- DI-CP1.9 Ribs
- DI-CP1.10 Cervical Spine
- DI-CP1.11 Shoulder Girdle
- DI-CP1.12 Upper Arm
- DI-CP1.13 Elbow

DI-CP1.14 Forearm

DI-CP1.15 Wrist

DI-CP1.16 Hand, Fingers & Thumb

DI-CP1.17 Head and Face

DI-CP1.18 Temporomandibular Joint

MC-C3 Describe common techniques and procedures for evaluating common medical conditions and disabilities including taking a history, inspection/observation, palpation, functional testing, special evaluation techniques (e.g., assessing heart, lung and bowel sounds), and neurological and circulatory tests.

MC-C4 Describe and know when to refer common eye pathologies from trauma and/or localized infection (e.g., conjunctivitis, hyphema, corneal injury, sty, scleral trauma).

MC-C5 Describe and know when refer common ear pathologies from trauma and/or localized infection (e.g., otitis, ruptured tympanic membrane, impacted cerumen).

MC-C10 Explain the possible causes of sudden death syndrome.

MC-C21 Describe and know when to refer common injuries or conditions of the teeth (e.g., fractures, dislocations, caries).

MC-C22 Explain the importance and proper procedures for measuring body temperature (e.g., oral, axillary, rectal).

MC-P1 Obtain a medical history of the patient that includes a previous history and a history of the present condition.

MC-P2 Perform a visual observation of the clinical signs associated with common injuries and/or illnesses including deformity, edema/swelling, discoloration, and skin abnormalities.

MC-P3 Palpate the bones and soft tissues, including the abdomen, to determine normal or pathological characteristics.

MC-P4 Apply commonly used special tests and instruments (e.g., otoscope, stethoscope, ophthalmoscope, peak flowmeter, chemical "dipsticks" [or similar devices]) and document the results for the assessment of:

MC-P4c Pupil response, size and shape, and ocular motor function

MC-CP1 Demonstrate a general and specific (e.g., head, torso and abdomen) assessment for the purpose of (a) screening and referral of common medical conditions, (b) treating those conditions as appropriate, and (c) when appropriate, determining a patient's readiness for physical activity. Effective lines of communication should be established to elicit and convey information about the patient's status and the treatment program. While maintaining confidentiality, all aspects of the assessment, treatment, and determination for activity should be documented using standardized record-keeping methods.

MC-CP1.2 Head, including the Brain

- MC-CP1.3 Face, including the Maxillofacial Region
- MC-CP1.4 Thorax, including the heart and lungs
- MC-CP1.5 Abdomen, including the abdominal organs, the renal and urogenital systems
- MC-CP1.6 Eyes
- MC-CP1.7 Ear, Nose, and Throat
- AC-C4 Know and be able to use appropriately standard nomenclature of injuries and illnesses.
- AC-C12 Describe 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 identify the management of these conditions.
- AC-C16 Describe the injuries and illnesses that require medical referral.
- AC-C19 Identify the signs and symptoms of head trauma, including loss of consciousness, changes in standardized neurological function, cranial nerve assessment, and other symptoms that indicate underlying trauma.
- AC-C20 Explain the importance of monitoring a patient following a head injury, including obtaining clearance from a physician before further patient participation.
- AC-C21 Define cerebral concussion, list the signs and symptoms of concussions, identify the methods for determining the neurocognitive status of a patient who sustains a concussion and describe contemporary concepts for the management and return-to-participation of a patient who sustains a concussion.
- AC-C22 Identify 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 and pathology.
- AC-C23 Describe cervical stabilization devices that are appropriate to the circumstances of an injury.
- AC-C24 Describe the indications, guidelines, proper techniques and necessary supplies for removing equipment and clothing in order to evaluate and/or stabilize the involved area.
- AC-C25 Describe the effective management, positioning, and immobilization of a patient with a suspected spinal cord injury.
- AC-C29 Identify the signs, symptoms, and treatment of patients suffering from adverse reactions to environmental conditions.
- AC-C30 Identify information obtained during the examination to determine when to refer an injury or illness for further or immediate medical attention.
- AC-P2 Perform an initial assessment to assess the following, but not limited to:
 - AC-P2a Airway
 - AC-P2b Breathing

- AC-P2c Circulation
- AC-P2d Level of consciousness
- AC-P2e Other life-threatening conditions
- AC-P3 Implement appropriate emergency treatment strategies, including but not limited to:
 - AC-P3g Normalize body temperature in situations of severe/life-threatening heat or cold stress
 - AC-P4 Perform a secondary assessment and employ the appropriate management techniques for non-life-threatening situations, including but not limited to:
 - AC-P4b Closed-head trauma (using standard neurological tests and tests for cranial nerve function)
 - AC-P4c Environmental illness
 - AC-P4g Thoracic, respiratory, and internal abdominal injury or illness
 - AC-P4h Acute musculoskeletal injuries (i.e. sprains, strains, fractures, dislocations)
 - AC-P4i Spinal cord and peripheral nerve injuries
- NU-C13 Explain consequences of improper fluid replacement.

Preventing Sexual Harassment

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education. Title IX covers discrimination in programs, admissions, activities, and student-to-student sexual harassment. BYU's policy against sexual harassment extends not only to employees of the university but to students as well. If you encounter unlawful sexual harassment or gender based discrimination, please talk to your professor; contact the Equal Employment Office at 378-5895 or 367-5689 (24-hours); or contact the Honor Code Office at 378-2847.

BYU Honor Code will be enforced!!!

Please be respectful:

- ★ Do not read anything except our subject matter during class_(*The BOC exam doesn't cover what is in the Daily Universe*)
- ★ Turn your cell phones off and put them away
- ★ I'm old enough to be your father, please don't call me David, Dave, Davey, or Double D. I prefer Dr. Draper at work, and Brother Draper at church.