

THERAPEUTIC MODALITIES IN ATHLETIC TRAINING

EXRS 4100

Instructors: Mike Ferrara, 542-4801, mferrara@coe.uga.edu
Tamerah Hunt, 542-3273, ladycat07@hotmail.com

COURSE DESCRIPTION

Examination of the treatment of athletic injuries through the use of cryotherapy, hydrotherapy, and electrotherapy. Indications and contraindications for the use of therapeutic modalities program will be explored.

COURSE OBJECTIVES

The student will gain a basic understanding of the following:

1. Normal physiological response of the human body to trauma, physiological wound healing and tissue repair, effect of trauma and inactivity on body tissue and resulting implications for the selection of therapeutic modalities.
2. Prevailing pain control theories and associated rationale for the selection and use of therapeutic modalities for the treatment and control of pain.
3. Systemic and physiological effects of therapeutic heat and cold on normal and injured tissue in the body.
4. Principles of electricity including electric units and wave frequencies.
5. Principles of electrotherapy and specific physiological effects, indications and contraindications of: (a) shortwave and microwave diathermy (b) TENS (c) ultrasound and, (d) muscle stimulations, (e) radiant energy devices, and (f) other contemporary therapeutic modalities.
6. Principles of hydrotherapy including specific physiological effects, indications and contraindications of: (a) whirlpool (b) contrast bath and, (c) moist heat packs.
7. Principles of cryotherapy including specific physiological effects, indications and contraindications of: (a) ice (b) slush (c) ice massage (d) compression units, and (e) coolant sprays.

REQUIRED TEXT

Starkey, C. (1993). Therapeutic Modalities for Athletic Trainer. F.A. Davis.

Belanger A.L. (2003). Evidenced Based Guide to Therapeutic Physical Agents. Lippincott, Williams and Wilkins.

SUPPLEMENTAL TEXT

Denegar, C.R. (2000). Therapeutic Modalities for Athletic Injuries. Human Kinetics.

Prentice, W. (1990). Therapeutic Modalities in Sports Medicine. Times Mirror/Mosby, 2nd Edition.

Arnhiem, D. and Prentice W. (1993). Principles of Athletic Training. Times Mirror/Mosby, 8th Edition.

Case Study

There will be a case study on an athlete from your sport. You must analyze the therapeutic modality program and its effectiveness in treating an injury. The case study will be due on April 5. Late case studies will receive an automatic 75% reduction in grade. The following structure will be used in the case study:

- a. Personal Data/Pertinent Medical history (age, sex, sport, primary complaint, and pertinent aspects of his/her medical history)
- b. Physical Signs and Symptoms (chronology of the physical findings and objective measures)
- c. Differential Diagnosis (array of possible injuries/conditions)
- d. Results of Diagnostic Imaging/Laboratory Tests
- e. Clinical Course (e.g., diagnosis, treatment, surgical technique, short-term and long-term goals, modalities and rehabilitation program, final outcome)
- f. Deviation From the Expected (a brief description of what makes this case unique)
- g. Medical literature supporting the use of your therapeutic modality program and potential outcome

- h. Overall impression of clinical modality program (did it work, could it have been more effective, role in return to play, etc.)

Competency Testing

You will be tested on the following modalities for patient set-up, modality operation, patient instruction, indication, contraindication and treatment time.

Cryotherapy:	Ice bag, cold whirlpool, ice massage, cryocuff, intermittent compression
Thermotherapy:	Hot pack, paraffin bath, whirlpool
Electrotherapy:	Interferential stimulation, TENS, Iontophoresis, EMS pain protocol, EMS muscle reeducation protocol, EMS muscle hypertrophy protocol,
Mechanical:	Ultrasound, massage, manual traction, mechanical traction

Class Presentation

Each student will be assigned a modality or a specific protocol for the application of the modality. For your presentation, you will provide information for the rationale for the use of this modality, patient set-up and instructions, modality protocol, contraindications and treatment effectiveness. The presentation should be 5-10 minutes.

Quizzes

There will be 8 quizzes given throughout the semester. Quizzes will be primarily based on definitions found in the footnotes of the text book chapters and course materials.

GRADING

Grades will be based on the following:

Hourly Exams (3) 100 points each	300 Points
Final Examination (175 Points)	175 Points
Quizzes (8 at 10 points each)	80 Points
Case Study	30 Points
Modality Presentation	20 Points
Lab Points (see Lab Syllabus)	<u>60 Points</u>
TOTAL POINTS	665 Points

Final Grades will be based on points earned:

A	598 pts or better
B	532-597 pts
C	465-531 pts
D	399-464 pts
F	Less than 399 pts.

Special Student Needs

Student having any special needs (handicap problems or any other factor) that may affect their performance in class or require special instructions strategies should make these needs known to the instructor during the first week of the course.

Academic Honesty

The University of Georgia and the Athletic Training Education program seeks to promote and ensure academic honesty and personal integrity among students and members of the University community. Academic honesty means performing all academic work without cheating, lying, tampering, stealing or receiving assistance from any other person or using any source of information that is not common knowledge. You should read and become familiar with A Culture of Honesty publication which defines the policies, procedures and sanctions for academic honesty. These procedures will be strictly enforced by your instructor(s).

COURSE OUTLINE

<u>TOPIC</u>	<u>Starkey</u>	<u>Belanger</u>
Problem Solving Approach to Injuries	3	
Administrative Considerations	3	
Injuries and Healing Process	1	
Pain and Mechanism of Pain Relief	2	
 TEST 1		
Transmission of Energy	App B	15
Thermal Agents	4	
Cryotherapy		11
Intermittent Compression		
Heat Modalities		12, 14
 TEST 2		
Principles of Electricity	5	
Clinical Electrical Modalities		
HVPS		5, 6
TENS		2
Interferential	3	
Microcurrent		4
Lasers		9
Iontophoresis		1
 TEST 3		
Mechanical Agents		
Ultrasound	6	10
Mechanical Modalities	7	13
Massage	7	
Traction	7	

FINAL EXAMINATION - Friday, MAY 7 at 8:00 AM

Note: Last day of Spring classes is Thursday, April 29 but it will be a Monday class day.

<u>Week</u>	<u>Topic</u>
1	Intro to Course Problem Solving Methods
2	Administration Concepts Healing Process
3	Healing Process
4	Pain Theory and Control
5	Pain Theory and Control Test 1
6	Energy Transmission
7	Thermal Agent - Cold
8	Thermal Agent - Heat Test 2
9	Principles of Electricity
10	High Volt ES
11	Interferential Current
12	Iontophoresis/Laser
13	TENS/MENS Test 3
14	Ultrasound
15	Ultrasound CPM/Traction
16	FINAL EXAM COMPREHENSIVE

Case Study

Name _____

Subjective Findings:

Objective Findings:

Signs	Initial	_____ d PI	_____ d PI	_____ d PI	_____ d PI
Pain Level					
Swelling					
ROM					
Strength					
Function					
Other					

Therapeutic Modality Treatment Program (what, why and effectiveness)

Initial

Progression of Modalities Program (what, why and effectiveness)

Your evaluation and critiques of the therapeutic modality program: