

PTAT-1411: PHYSICAL THERAPY PROCEDURES

Cuyahoga Community College

Viewing: PTAT-1411 : Physical Therapy Procedures

Board of Trustees:

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Academic Term:

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Subject Code

PTAT - Physical Therapist Assist

Course Number:

1411

Title:

Physical Therapy Procedures

Catalog Description:

Physical therapy procedures focuses on the principles and application of various therapeutic modalities used in physical therapy treatment that augment rehabilitation intervention as part of the comprehensive physical therapy treatment plan.

Credit Hour(s):

3

Lecture Hour(s):

2

Lab Hour(s):

3

Requisites

Prerequisite and Corequisite

PTAT-1100 Introduction to Physical Therapist Assisting, PTAT-1300 Functional Anatomy, and PTAT-1312 Fundamentals of Physical Therapy, and departmental approval.

Outcomes

Course Outcome(s):

A. Describe, categorize and compare the types of physical agents used in rehabilitation to address response to injury, promotion of healing and perception of pain.

Objective(s):

1. Identify the various structures of the skin and explain the functions of each.
2. Discuss examination of the patient for pain, edema, muscle spasm, skin color and integrity to record and adjust treatment as needed to meet therapeutic goals.
3. Describe the key events that occur in the stages of tissue response to injury.
4. Identify factors that impact wound healing.
5. Identify the potential patient responses and physiological effects of the application of various physical agents.
6. Discuss the various pain theories.
7. Describe the use of physical agents in the intervention for the reduction of pain symptoms.
8. Discuss the adjustment of treatment parameters and respond appropriately to meet the needs and responses of the patient.
9. Outline the general contraindications and precautions for the use of physical agents.
10. Explain the role of physical agents in rehabilitation and patient care.

Course Outcome(s):

B. Apply and utilize superficial heat and cold thermal agents effectively and safely to achieve the goals of physical therapy treatment.

Objective(s):

1. Describe the physical principles of thermal energy and the modes of heat transfer.
2. Discuss the physical properties and physiological effects of thermal agents.
3. Identify the indications, contraindications and precautions for the use of thermal agents with respect to different patient management situations.
4. Choose and use the most appropriate thermal agent to obtain desired treatment goals.
5. Discuss the various methods of application of heat and cold.
6. Safely and effectively demonstrate the various applications of heat and cold.
7. Describe various responses to thermal agents and adjust treatment according to response.
8. Presented with a clinical case study, formulate an effective treatment including the most appropriate thermal agent and application of that agent for achieving the goals of treatment

Course Outcome(s):

C. Demonstrate safe and effective application of therapeutic ultrasound utilizing appropriate treatment parameters and equipment to achieve treatment goals as identified in the physical therapy plan of care.

Objective(s):

1. Identify ultrasound as belonging on the acoustic spectrum.
2. Define the terminology used to describe therapeutic ultrasound as utilized in physical therapy.
3. Identify the physical properties of and the physiological responses to therapeutic ultrasound.
4. Identify the indications, contraindications and precautions for the use of ultrasound.
5. Demonstrate safe and effective application of ultrasound using appropriate parameters based on the patient goals as identified in the physical therapy plan of care.
6. Discuss the application of ultrasound to achieve thermal, non-thermal responses and the delivery of medication.
7. Describe various responses to ultrasound treatment and adjust treatment according to response.
8. Presented with a clinical case study, formulate an effective treatment including the most appropriate parameters and demonstrate the application of ultrasound for achieving the goals of treatment.

Course Outcome(s):

D. Describe the benefits of water as a therapeutic agent and safely and effectively apply hydrotherapy according to plan of care.

Objective(s):

1. Discuss the physical properties of water including heat transfer, buoyancy, resistance and hydrostatic pressure.
2. Describe how the physical properties and physiological effects of hydrotherapy can be used for cleansing, wound care, musculoskeletal support and resistance, cardiovascular and respiratory training and for psychological benefits.
3. Differentiate between the benefits of land and water activities.
4. Identify the indications, contraindications and precautions for the use of hydrotherapy.
5. Describe various responses to hydrotherapy treatment and adjust treatment according to response.
6. Presented with a clinical case study, formulate an effective treatment including choosing the most appropriate form of hydrotherapy and its application for achieving the goals of treatment.

Course Outcome(s):

E. Describe the theories, principles and physiological effects and demonstrate the safe and effective application of mechanical forms of treatment to obtain the desired physical therapy outcomes.

Objective(s):

1. Identify the indications, contraindications and precautions for the use of intermittent compression with respect to different patient management situations.
2. Demonstrate the safe and effective use of the most appropriate compression device and treatment parameters to obtain the desired treatment goals.
3. Discuss the physical properties and physiological effects of compression.
4. Describe and demonstrate the effective measurement of compression garments on various body segments.
5. Discuss the physical properties and physiological effect of spinal traction.

6. Identify the indications, contraindications and precautions for the use of traction with respect to different patient management situations.
7. Demonstrate the safe and effective use of the most appropriate traction device and treatment parameters to obtain the desired treatment goals
8. Discuss the use of continuous passive motion (CPM) after joint trauma or surgery.
9. Demonstrate the safe and effective application of CPM in various treatment situations.
10. Discuss the use of CPM to accelerate healing, prevent motion loss, and the inhibition of edema.

Course Outcome(s):

F. Apply massage and other soft tissue mobilization techniques safely and effectively to various body parts to achieve the goals of treatment and identified in the physical therapy plan of care.

Objective(s):

1. Identify the indications, contraindications and precautions for the application of massage.
2. Identify and demonstrate the basic movements of massage.
3. Identify the various responses to massage and adjust treatment based on patient response.
4. Discuss the importance of professional presentation, positioning and draping to the effective application of massage.
5. Presented with a clinical case study, formulate an effective treatment including the most appropriate position, lubricant and massage movements and demonstrate the application of massage for achieving the goals of treatment.
6. Discuss the components and theory of myofascial release (MFR) and soft tissue mobilization (STM) and their use in physical therapy.
7. Identify the various movements used in MFR.
8. Identify the indications, contraindications and precautions for the use of MFR and STM.
9. Discuss various complimentary therapies that may be seen in the physical therapy clinic.

Course Outcome(s):

G. Safely and effectively demonstrate the application of electromagnetic radiation forms of treatment to obtain the desired physical therapy goals.

Objective(s):

1. Discuss the physical properties of electromagnetic radiation.
2. Classify the different ranges and types of electromagnetic radiation used therapeutically, including infrared, ultraviolet, diathermy and lasers.
3. Identify the physiological effects of different ranges of electromagnetic radiation.
4. Discuss the indications, contraindications and precautions for the application of different frequency ranges with respect to different patient management situations.
5. Select the most appropriate device and treatment parameters to produce the desired effects as outlined in the plan of care.
6. Describe various responses to electromagnetic radiation and adjust treatment according to response.
7. Presented with a clinical case study, formulate an effective treatment including the most appropriate form of electromagnetic radiation and application of that for achieving the goals of treatment.

Course Outcome(s):

H. Demonstrate safe and efficient utilization of optimal current parameters and electrode placement for effective delivery of electrical stimulation to achieve physical therapy goals.

Objective(s):

1. Define the different types of electrical stimulation used in physical therapy.
2. Discuss the guidelines, precautions and contraindications in working with electrical stimulation devices.
3. Identify the basic concepts, terminology and physiology of electrical stimulation.
4. Identify the physiological effects of electrical stimulation.
5. Discuss the basic principles for electrode selection, care, and appropriate placement for each application.
6. Discuss and demonstrate the multiple uses of electrical stimulation including muscle re-education, strengthening, gait training, spasticity reduction, wound care, pain modulation and medication delivery.

7. Describe the various currents, waveforms and parameters for effective and safe delivery of electrical stimulation.
8. Presented with a clinical case study, formulate an effective treatment including the selection of the appropriate device and treatment parameters for achieving the goals of treatment.

Course Outcome(s):

I. Demonstrate competence with various essential skills required to effectively and safely implement the plan of care established by the physical therapist.

Objective(s):

1. Discuss the impact that differences in culture, ethnicity, socioeconomic and psychological background can have on patient interaction and response to treatment.
2. Identify when intervention should not be provided due to changes in patient status.
3. Identify when the physical therapist should be notified regarding a change in patient status.
4. Accurately and concisely document the application of physical agents in the patient's interim note in the medical record.
5. Include all pertinent information and parameters using the SOAP format to document treatment.
6. Discuss the importance of equipment maintenance, calibration and safety inspections of all equipment utilized for physical agents.
7. Demonstrate safe handling of all equipment utilized in the performance of therapeutic modalities.
8. Demonstrate the foundational elements of patient interaction, which includes professionalism, communication/education, and general safety during all real and simulated patient interactions.

Methods of Evaluation:

1. Quizzes and tests
2. Student documentation on patients
3. Midterm and final examination
4. Laboratory skill checks
5. Practical laboratory examination
6. Supplemental web site activities

Course Content Outline:

1. Modalities as part of the physical therapy plan of care
 - a. Skin as organ of thermal regulation
 - b. Tissue response to injury
 - c. Patient responses to interventions
 - d. Pain theories and aspects of pain
2. Thermal and mechanical agents
 - a. Therapeutic heat and cold
 - b. Therapeutic ultrasound
 - c. Hydrotherapy
 - d. Traction
 - e. Edema treatment and management
 - f. Massage, soft tissue mobilization (STM), myofascial release (MFR)
 - e. Continuous passive motion (CPM)
3. Electromagnetic spectrum
 - a. Ultraviolet
 - b. Diathermy
 - c. Light therapy/lasers
4. Electrical Stimulation
 - a. Foundations of electrical stimulation
 - b. Electrodes: material and care
 - c. Neuromuscular electrical stimulation
 - d. Electrical stimulation for tissue repair
 - e. Pain management
 - f. Transdermal drug delivery
5. Comprehensive approach to treatment
 - a. Routine maintenance, care and safety of equipment
 - b. Integrating physical and mechanical agents into patient care
 - c. Documentation

- d. Foundational elements of patient interaction
- e. Clinical decision making

Resources

Behrens, B. . *BIO Physical Agents: Theory and Practice*. 4th ed. Philadelphia, PA: FA Davis, 2021.

APTA. *APTA Guide to Physical Therapist Practice 4.0*. American Physical Therapy Association , 2023.

S. Michlovitz, J. Bellew, T. Nolan. *Modalities for Therapeutic Intervention*. 7th ed. Philadelphia: F. A. Davis, 2022.

Hayes, K. K Hall. *Manual for Physical Agents*. 6th ed. Upper Saddle River, NJ: Pearson Education,inc, 2012.

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