

SM 420

Therapeutic Modalities

Competencies

PATHOLOGY OF INJURIES AND ILLNESSES

Cognitive Domain

- Analyzes the normal physiological responses of the human body to trauma and inactivity of specific body tissues (ligaments/capsules, muscles, tendons, and bones).
- Describes the integration and coordination of cell function in response to injury (e.g., sources of cell injury, inflammation, healing, and repair).
- Defines the inflammatory response to acute and chronic injury and illness.
- Identifies the implications of various underlying pathologies and uses this knowledge to select appropriate therapeutic modalities and therapeutic exercise protocols.

ACUTE CARE OF INJURIES AND ILLNESSES

Cognitive Domain

- Cites the signs, symptoms, and pathology of acute inflammation.
- Recognizes the proper technique for using ambulatory aids, including selecting an aid appropriate for the injury and person.

Psychomotor Domain

- Administers cryotherapy, elevation, and compression to a limb and/or joint.

THERAPEUTIC MODALITIES

Cognitive Domain

- Determines the appropriate modality according to the treatment goals and objectives as they relate to wound healing and tissue repair.
- Describes methods of evaluating and recording progress of therapeutic modality treatments.
- Illustrates the use volumetric and anthropometric measurements to determine the effectiveness of treatment outcomes.
- Identifies the body's physiological responses during and following the application of therapeutic modalities.
- Describes the role and function of the common prescription and nonprescription pharmacological agents that are used in conjunction with therapeutic modalities (e.g., topical ointments, phonophoresis, iontophoresis).
- Explains the principles of physics, including basic concepts associated with the electromagnetic and acoustic spectra (e.g., frequency, wavelength).
- Interprets terminology, principles, and basic concepts of electrical units (e.g., amperes, volts, watts, ohms).
- Compares and contrasts contemporary pain-control theories.
- Assesses the selection and use of therapeutic modalities for the control of acute and chronic pain.
- Describes the electrophysics, biophysics, set-up, indications, contraindications, and specific physiological effects associated with stimulating electrical currents.
- Describes the electrophysics, biophysics, set-up, indications, contraindications, and specific physiological effects associated with short-wave diathermy.
- Describes the physical properties, biophysics, set-up, indications, contraindications, and specific physiological effects associated with the application of superficial heat and cold.

- Describes the physical properties, biophysics, set-up, indications, contraindications, and specific physiological effects associated with therapeutic ultrasound.
- Describes the physical properties, biophysics, set-up, indications, contraindications, and specific physiological effects associated with the application of intermittent compression units.
- Describes the physical properties, biophysics, set-up, indications, contraindications, and specific physiological effects associated with cervical and lumbar traction devices.
- Describes the physical properties, biophysics, set-up, indications, contraindications, and specific physiological effects associated with therapeutic LASER.
- Describes the physical properties, biophysics, set-up, indications, contraindications, and specific physiological effects associated with the application of electromyogram (EMG) and biofeedback devices.
- Describes the physical properties, biophysics, set-up, indications, contraindications, and specific physiological effects associated with therapeutic soft-tissue massage.
- Illustrates the typical physiological and psychological responses to trauma as they relate to the use of therapeutic modalities.
- Interprets local, state, and federal standards for the operation and safety standards of therapeutic modalities.
- Describes the manufacturer's protocol for use to ensure safe and proper application.
- Applies manufacturer's guidelines for the inspection and maintenance of therapeutic modalities.

Psychomotor Domain

- Utilizes assessment skills to determine a patient's specific therapeutic modality indications, contraindications, and precautions.
- Measures limb edema and effusion using volumetric tank and anthropometric measurements.
- Takes into account patient-specific indications, contraindications, and precautions when applying a specific therapeutic modality (e.g., age, underlying pathology, disease processes).
- Performs appropriate patient preparation and positioning for therapeutic modality application.
- Performs the appropriate set-up for therapeutic modalities.
- Selects and applies appropriate therapeutic modality parameters (e.g., intensity, length of time, duration, frequency), and modifies them as required.
- Operates and applies contemporary therapeutic modalities (electrical stimulating currents, thermotherapy, cryotherapy, diathermy, ultrasound, intermittent compression, cervical and lumbar traction, laser, EMG and biofeedback, soft tissue massage, and other contemporary therapeutic modalities) according to established guidelines.
- Evaluates patient response to therapeutic modalities during and following the application of therapeutic modalities.
- Formulates progress notes and treatment outcomes that are relevant to the selection and application of therapeutic modalities
- Inspects the therapeutic modalities and treatment area for potential safety hazards.

Affective Domain

- Accepts the professional, ethical, and legal parameters that define the proper role of the certified athletic trainer in the use of therapeutic agents to treat, rehabilitate, and recondition athletes and others involved in physical activity.
- Respects the role of attending physicians and other medical and allied health personnel in the use of therapeutic agents to treat, rehabilitate, and recondition athletes and others involved in physical activity.
- Advocates the accepted medical protocol regarding the confidentiality of medical information relative to therapeutic modality treatments.
- Initiates accepted medical protocol regarding therapeutic prescriptions.
- Promotes the accepted medical protocol regarding health care referral in the rehabilitation and reconditioning process.

HEALTH CARE ADMINISTRATION

Cognitive Domain

- Constructs a basic research design and statistical interpretation pertaining to the formulation and interpretation of a case study, outcome measurement, and literature review and interpretation.

Psychomotor Domain

- Demonstrates the ability to prepare a sample design for scientific research in the areas of a case study, outcome measurement, and literature review.

PROFICIENCIES

INSTRUCTED & EVALUATED

Therapeutic Modalities

The student will perform a physical examination to identify the current inflammatory stage.

The student will perform a physical examination and interview to identify the indications, contraindications, and precautions to various treatment protocols.

The student will demonstrate the ability to select the appropriate parameters for and then prepare and apply the following:

- cold whirlpool treatment
- ice immersion
- controlled cold therapy unit
- ice massage
- ice pack
- cryokinetics
- vapo-coolant spray

The student will demonstrate the ability to select the appropriate parameters for and then prepare and apply the following:

- moist heat pack
- contrast bath
- paraffin treatment
- warm whirlpool treatment

The student will demonstrate the ability to select the appropriate parameters for and then prepare and apply the following:

- sensory-level pain control treatment
- muscle atrophy retardation treatment
- noxious-level pain control treatment
- acute edema treatment
- motor-level pain control treatment
- muscle splinting/spasm treatment
- muscle re-education treatment
- iontophoresis treatment
- muscle pumping treatment

The student will set-up and apply the following types of electrical stimulation units:

- monophasic stimulator (e.g., high volt stimulation)
- biphasic stimulator (e.g., Transcutaneous Electrical Nerve Stimulation [TENS], Neuromuscular Electrical Stimulation [NMES])
- direct current (e.g., iontophoresis)
- alternating current (e.g., interferential, NMES)
- multifunction electrical stimulation devices

The student will demonstrate the ability to select the appropriate parameters for and then prepare and apply the following:

- thermal ultrasound treatment
- non-thermal ultrasound treatment
- combination electrical-stimulation/ultrasound treatment
- phonophoresis treatment
- indirect application of ultrasound treatment (underwater, bladder)

The student will demonstrate the ability to select the appropriate parameters for and then prepare and apply the following:

- mechanical traction
- manual traction
- positional traction

The student will demonstrate the ability to select the appropriate parameters for and then prepare and apply intermittent compression to the upper and lower extremities.

The student will demonstrate the ability to prepare and apply a massage treatment.

The student will demonstrate the ability to properly perform the following therapeutic massage strokes:

- effleurage
- tapotement
- petrissage
- vibration
- friction (circular, transverse)
- myofascial release techniques