



CRYOTHERAPY

Overview of Cryotherapy

In cryotherapy, cold is used to reduce pain and swelling. It works by causing vasoconstriction of superficial blood vessels and reducing blood flow to the affected area. Cold also reduces nerve conduction velocity, decreasing neural input to muscles. Depending on the treatment, cryotherapy can reduce tissue temperatures to a depth of 1 5/8" (4cm). Deeper tissues are unaffected because of the insulating effect of body fat. The most common forms of cryotherapy include cold packs and ice massage.

General Guidelines for use of Cryotherapy

- Therapists and therapy assistants must successfully complete the clinical competency for cryotherapy prior to using on a patient
- Therapists and therapy assistants must review the Manufacturer's Produce Manual prior to use and must follow the manufacturer's guidelines when providing treatment
- Clinicians must review the patient's medical history to ensure patient is an appropriate candidate for cryotherapy (ie: does not have any contraindications, etc)
- A daily note indicating type of cryotherapy application, location and duration of treatment, and amount/type of insulating material must be completed on each treatment date. The Modality Treatment Graph Log may also be completed.

Indications for Cryotherapy

- Reducing edema, pain, inflammation, muscle spasms and muscle facilitation (with quick icing)
- Acute management of burns and hemorrhage

Contraindications for Cryotherapy

- Patients with cold sensitivity such as cold urticarial, Raynaud's disease, cryoglobulinemia, and paroxysmal cold hemoglobinuria.
- Patients with uncontrolled angina pectoris or other unstable cardiac dysfunction

- Patients with severe arterial insufficiency
- Patients with lack of sensation in area to be treated
- Areas where peripheral nerves may be regenerated
- Open wounds after 48 – 72 hours (prolonged vasoconstriction may lead to poor healing).
- Use cryotherapy cautiously in older adults and young children, who may have poor thermoregulation, as well as in those with hypertension.

Equipment

- Cold packs in a variety of shapes and sizes, freezer unit, towels or pillowcases, timer, call bell or alerting device
- Ice massage – small foam plastic or paper cup containing ice, freezer unit, towels.

Essential Steps for Cold Packs

- If appropriate, prepare a private or semiprivate area for treating the patient
- Explain the treatment and procedure, and tell the patient what sensations to expect
- Check the patient temperature sensation and skin integrity
- Have the patient remove all clothing and jewelry from the area to be treated.
- Position the patient for comfort and modesty. Make sure that the rest of the patient's body is kept warm.
- Cover the area to be treated with a warm, damp towel to decrease the initial shock of the cold pack and enhance heat exchange between the cold pack and the patient.
- Place a cold pack of an appropriate size over the area to be treated and secure the pack well. Place a dry towel over the pack to insulate it.
- Provide the patient with a bell or another alerting device to use if your assistance is needed during the treatment.
- Treatment should last no more than 10 – 20 minutes
- Remove the pack and dry the treated area with a towel
- Inspect the skin of the treated area. Mild redness is normal, however, other reactions such as rash are abnormal and should be investigated before further cold treatments are given.

Ice Massage

- If appropriate, prepare a private or semiprivate area for treating the patient
- Explain the treatment and procedure and tell the patient what sensations to expect
- Check the patient for intact temperature sensation and skin integrity
- Have the patient remove all clothing and jewelry from the area to be treated
- Position the patient for comfort and modesty

- Place towels area the area to be treated to absorb any dripping water
- Tear off an area of the foam/paper cup to expose the ice. Smooth any rough edges on the cup by rubbing your warm hand or towel over the edges
- Rub the ice over the treatment area using small circular or overlapping motions. Wipe away any residual moisture
- Continue the ice massage through all three stage of the cold experience: cold, painful, then numb. This usually take 5-10 minutes, depending on the patient and the size of the area to be treated.
- When the treatment is finished, dry the area and impact the skin. A normal response to treatment may include reddening the skin. Rash isn't a normal response and should be investigated before further cold treatments are given.



DIATHERMY

Overview of Diathermy

Diathermy is a form of deep heat produced by electromagnetic energy that can be administered with thermal or subthermal applications. The depth of penetration with diathermy is up to two inches. Diathermy can be used to treat strains, sprains, acute or chronic bursitis, joint dislocation or subluxation, treatment for a post-surgical functional loss, adhesive capsulitis, joint contracture, etc. The efficacy of this modality should plateau in no more than twelve visits; additional treatment beyond this point would not be considered medically necessary, and therefore documentation, including physician's order, would need to support continued use of diathermy beyond twelve treatments.

General Guidelines for Use of Diathermy

- The clinical competency for diathermy must be completed prior to using on a patient
- The Manufacturer's Product Manual must be reviewed prior to use and the manufacturer's guidelines must be followed when providing treatment.
- There must be a physician's order for the use of diathermy
- Diathermy must be included in the initial plan of care or, if added to the treatment plan at a later date, documented in a progress note or an updated plan of care.
- A detailed daily note indicating type of diathermy, intensity, location treated, and patient response must be completed at each treatment date. The Modality Treatment Graph Log may also be included.
- The diathermy unit must be calibrated as recommended by the manufacturer
- If the diathermy unit malfunctions, it must be removed from use and labeled accordingly to prevent further use until properly inspected.
- Diathermy should be used in conjunction with therapeutic procedures, not as an isolated treatment.
- CMS has approved coverage of diathermy for pressure, arterial, and venous stasis ulcers; however, "traditional" nursing treatment must first be tried for 30 days with no measurable signs of healing and the pressure wound must be Stage III or IV
- Clinician must review patient's medical history to ensure patient is an appropriate candidate for the electrical stimulation (ie: does not have any contraindications, etc).

- The center of the drum should be placed over the target tissue and as close to, but not touching, the skin
- The exposed skin should be draped with a towel and the patient should move as little as possible during the treatment.
- Check patient for intact temperature sensation and skin integrity
- Ask patient to remove all jewelry and clothing from area to be treated.

Indications for Use of Subthermal (Non-Heating) Diathermy

- Acute pain reduction
- Osteoarthritis
- Edema reduction
- Tissue healing

Indications for Use of Thermal (Heating) Diathermy

- Pain (not acute) reduction
- Reduce muscle spasms
- Increase bloodflow
- Collagen remodeling

Contraindications for Diathermy

- Directly over testes, eyes
- Directly over pregnant uterus
- Directly over implanted stimulators and lead wires, cardiac pacemakers, and defibrillators
- Directly over brain, spinal cord, heart, bladder, vital organs
- Any metal in the treatment field
- Cardiac insufficiency
- Active bleeding
- Unreliable thermoregulation
- Fever
- Devitalized tissue

Warnings for Use of Diathermy

- Do not apply over or in proximity to active cancerous lesions
- Directly over swollen, infected, or inflamed areas or skin eruptions, osteomyelitis, sepsis and tuberculosis
- Anterior neck triangle, directly over carotid sinus, vagus nerve

- Transcranial, transthoracic
- Directly over epiphysis of growing bone

Precautions for Diathermy

- Impaired circulation, sensation
- Pregnancy
- Recent fractures
- Hearing aids



Modalities Clinical Competency

Therapist Name:
Competency Assessed By:

Date:

NA: Not Applicable
Check: Competent

Competency Components	E-Stim	Hot Pack	Cold Pack	Paraffin	Ultrasound	Vital-Stim	Iontophoresis	Comments
Clinician has attended modality continuing ed or certification								
Clinician appropriately recognizes indications for modality								
Clinician set up/positioned equipment correctly								
Settings applied appropriately to the patient diagnosis/situation								
Clinician followed appropriate infection control procedures								
Warnings, contraindications, and precautions for modality recognized								
Clinician identified resources for implementing modalities								
Clinician familiar with all symbols associated with modality								
Clinician requires further training or re-evaluation								
Clinician proficient w/ applicable parameters (freq, time, wave form, intensity, etc)								

Clinical Attestation: By signing this form, I attest that I have read the manual and have sufficient knowledge and training in the use of the above modalities.

Signature of Successful Completion:

TR Employee _____ Competency Assessed By: _____



Directions for Use of Modality Manual

The manual was developed for 2 purposes:

1. To provide an internal tracking mechanism for ensuring clinical competency with use of modalities.
2. To provide an internal tracking mechanism of parameters of use with each patient.

Directions:

1. Each employee utilizing physical agent modalities of any kind will read the guideline for that modality included in this manual.
2. A corresponding competency check-off sheet will be completed for each employee by the TR Clinical Specialist or designated Area Modality Lead (selected by the Clinical Specialist or Area Director).

The Clinical Competency Check off for each employee will be completed for each type of modality used in the department. If a piece of equipment is not in the department or if that particular employee will not be using the equipment, the column should be marked with NA.

Please note: If a piece of equipment is acquired at a later time, the Area Director will need to contact the Area Modality Lead or Clinical Specialist to notify them of the new equipment, who will be utilizing the equipment, and date that training needs to occur. Each associate that utilizes that equipment will need to receive a competency check off for that specific piece of equipment and a form will need to be filled out on that date.

The completed Clinical Competency Check-Off forms will need to be faxed to the home office on the date of completion and the original should be kept in the manual.

3. A detailed daily note will be written each time a modality is used by any staff. The Modality Treatment log can also take the place of the daily note. The daily note or Treatment Log should include any necessary information utilized during the treatment session (electrode placement, intensity, frequency, duration, etc).
4. The VitalStim Certification is required for use of VitalStim with a patient. This certification takes the place of the Competency Check off for this modality. The certification will need to be placed with the rest of the competency check offs in the manual.

For any questions regarding the intent, purpose, and use of this manual, please contact your Clinical Specialist.



PARAFFIN

Superficial heating agents are used to produce a tissue temperature rise in superficial tissues. The depth of penetration is limited to the first 3/8" to 3/4" (1-2 cm) of tissue. These heating agents come in several forms. The agents most commonly used to produce a superficial tissue temperature rise include hot packs and paraffin.

Hot packs are canvas (or another container) filled with hydrophilic silicate (or another heated substance) and stored on racks in hot water or heated in a microwave. Paraffin is a mixture of mineral oil and paraffin heated in a thermostatically controlled bath unit.

General Guidelines for use of Superficial Heating Elements

- Therapists and therapy assistants must successfully complete the clinical competency for use of heating elements on a patient
- Therapists and therapy assistants must review the Manufacturer's Produce Manual prior to use and must follow the manufacturer's guidelines when providing treatment
- Clinicians must review the patient's medical history to ensure patient is an appropriate candidate for hot packs or paraffin (ie: does not have any contraindications)
- A detailed daily note including location of hot pack, duration of heating time (if microwave pack), type/size/shape of hot pack, number of towels/insulating agents, and duration of treatment must be written on each service date. The Modality Treatment Graph Log can also be utilized.

Indications for use of Superficial Heating Elements

- Treatment of sub-acute or chronic inflammatory conditions, to reduce pain, to enhance tissue extensibility, and to reduce muscle spasm.

Contraindications for use of Superficial Heating Elements

- Patients with acute inflammatory conditions
- Malignancies
- Significant cardiac insufficiency

- Active bleeding (such as trauma)
- Lack of sensation in the area to be treated
- Unreliable thermoregulation (often seen with young children and the elderly)
- Existing fevers
- Significant peripheral vascular disease
- Devitalized tissue caused by x-ray therapy
- Women in the last trimester of pregnancy

Essential steps for Paraffin

- Explain the procedure to the patient and tell the patient what kind of sensations to expect during the treatment.
- Inspect the area to be treated for possible skin irritations, and check for level of sensation to temperature in the treatment area.
- Wash and dry the area to be treated, or ask the patient to do so, to minimize contamination of paraffin.
- Ask the patient to remove all jewelry and clothing from the area to be treated.
- Do not proceed if the patient has an open wound
- Immerse the body part in the bath using a dipping motion. Instruct the patient to move slowly and steadily; then lift the body part out of the bath. Warn the patient not to touch the sides or bottom of the bath, which are very hot
- Repeat this dipping motion 6 – 12 times, allowing the wax layer to harden slightly between dips into the paraffin
- Wrap the treated body part in a plastic bag or plastic wrap and then in a towel. The plastic wrap keeps the wax from sticking to the towel and the towel is used as insulation to slow the cooling process
- Rest the treated body part in an elevated position, if possible
- Remind the patient not to move the body part because this may crack the wax coating
- Tell the patient the paraffin “glove” may stay in place for up to 20 minutes
- When the treatment is complete, remove the towel and plastic layer and simply peel back the glove. You may return the glove to the paraffin bath for remelting, if this is permitted by your facility’s policy
- Check the skin condition. Mild hyperemia should be expected; however skin mottling and severe hyperemia aren’t normal responses and their cause should be investigated before continuing with paraffin or any other superficial heating treatments
- After the bath treatment, the patient’s skin will be very oily and slippery. This may be a desired result, but if the patient is to continue the session with upper extremity exercises, advise him to wash the body part so that he won’t lose grip of any equipment.



ULTRASOUND

Overview of Ultrasound

Ultrasound is a form of deep heat produced by high frequency sound waves. Ultrasound can produce thermal/heating or subthermal effects based on the selected settings. Indications for the use of ultrasound include, but are not limited to, arthritis, inflammation of periarticular structures, soft tissue calcification, sprains, strains, and neuromas. Ultrasound can be applied via direct technique utilizing a coupling agent such as gel and through an indirect technique using water bath immersion or film dressing. The depth of penetration is determined by frequency, not intensity. For 3 MHz, the depth of penetration is approximately one inch and with 1 MHz, the penetration is up to two inches. It is generally not recommended or necessary for a patient to receive more than twelve treatments of ultrasound; documentation supporting medical necessity may be required if treatments exceed this number.

General Guidelines for Use of Ultrasound

- The clinical competency for ultrasound must be completed prior to using on a patient
- The Manufacturer's Product Manual must be reviewed prior to use and the manufacturer's guidelines must be followed when providing treatment.
- There must be a physician's order for the use of ultrasound
- Ultrasound must be included in the initial plan of care or, if added to the treatment plan at a later date, documented in a progress note or an updated plan of care.
- A detailed daily note indicating type of ultrasound (waveform), frequency, intensity, location treated, and patient response must be completed at each treatment date. The Modality Treatment Graph Log may also be included.
- The ultrasound unit must be calibrated as recommended by the manufacturer
- If the ultrasound unit malfunctions, it must be removed from use and labeled accordingly to prevent further use until properly inspected.
- Clinician must review patient's medical history to ensure patient is an appropriate candidate for the electrical stimulation (ie: does not have any contraindications, etc).
- Check patient for intact temperature sensation and skin integrity
- Ask patient to remove all jewelry and clothing from area to be treated.

Indications for Use of Subthermal (Non-Heating) Ultrasound

- Pain reduction
- Arthritis
- Acute soft tissue trauma/edema reduction
- Tissue healing (wound, tendon, nerve)
- Reduce muscle tone
- Increase tissue extensibility
- Decrease scar formation

Indications for Use of Thermal (Heating) Ultrasound

- Subacute or chronic inflammatory conditions
- Pain (not acute) reduction/circulation
- Reduce muscle spasms and guarding
- Contracture/joint stiffness management
- Enhance tissue extensibility
- Increase bloodflow
- Improve nutrition to the involved area
- Collagen remodeling

Contraindications for Ultrasound

- Directly over testes, eyes
- Directly over pregnant uterus
- Directly over implanted stimulators and lead wires, cardiac pacemakers, and defibrillators
- Directly over brain, spinal cord, heart, bladder, vital organs
- Tissue devitalized by radiation therapy
- Any area where a thrombus is present
- Areas of hemorrhage
- Hemophiliacs/Thrombophlebitis
- Over certain cement products commonly used in arthroplasty procedures
- Severe arterial disease

Warnings for Use of Ultrasound

- Do not apply over or in proximity to active cancerous lesions
- Directly over swollen, infected, or inflamed areas or skin eruptions, osteomyelitis, sepsis and tuberculosis

- Anterior neck triangle, directly over carotid sinus, vagus nerve
- Transcranial, transthoracic
- Directly over epiphysis of growing bone

Precautions for Ultrasound

- Impaired circulation, sensation (thermal)
- Pregnancy
- Recent fractures



ELECTRICAL STIMULATION

Overview of Electrical Stimulation

Electrotherapeutic modalities include a broad group of physical agents that use electricity in the form of alternating or direct current waveforms to decrease pain and edema, enhance tissue healing, and provide muscle and neuro re-education (eg: assist muscle contraction in gait or other functional activities). Electrotherapeutic modalities are generally considered components of a treatment plan used in combination with other, functional therapeutic procedures.

General Guidelines for Use of Electrical Stimulation

- The clinical competency for electrical stimulation must be completed prior to using on a patient
- The Manufacturer's Product Manual must be reviewed prior to use and the manufacturer's guidelines must be followed when providing treatment.
- There must be a physician's order for the use of electrical stimulation
- Electrical stimulation must be included in the initial plan of care or, if added to the treatment plan at a later date, documented in a progress note or an updated plan of care.
- Note: when using electrical stimulation for wound care, it is a Medicare requirement that nursing has tried "traditional" treatment first for at least 30 days with no measurable signs of healing and that the wound is stage III or IV.
- Medicare has issued non-coverage decision in the use of electrical stimulation for treatment of facial nerve paralysis, multiple sclerosis, and strokes when it has been determined there is no potential to restore function.
- A detailed daily note indicating type of e-stim, electrode placement, intensity, and patient response must be completed at each treatment date. The Modality Treatment Graph Log may also be included.
- The electrical stimulation unit must be calibrated as recommended by the manufacturer
- If the electrical stimulation unit malfunctions, it must be removed from use and labeled accordingly to prevent further use until properly inspected.
- Clinician must review patient's medical history to ensure patient is an appropriate candidate for the electrical stimulation (ie: does not have any contraindications, etc).

- The patient's skin must be inspected and prepared prior to treatment and also checked during treatment as needed and at the end of each treatment.
- Clinical must ensure that the proper size of electrode is used (current density is inversely related to electrode size)
- The patient's sensation must be assessed prior to the first treatment and as needed thereafter
- Any deviation of 20 volts above the highest intensity level previously documented should be avoided. If this occurs, the clinician must reassess the situation and have the equipment checked if indicated.
- Provide patient with safety switch and accompanying instructions when available and appropriate

Indications for Use of Electrical Stimulation

There are various options for providing electrical stimulation treatment, some of which are listed below:

High voltage galvanic stimulation- pulsed current used to increase circulation, reduce edema, control pain, and for wound healing of decubitus ulcers

Interferential current- medium current units that use a frequency which allows the current to penetrate deeper into the tissue to control swelling and pain

Neuromuscular electrical stimulation (NMES)- provides muscle stimulation to retrain weak muscle following surgery or injury. Medicare coverage of NMES to treat muscle atrophy is limited to those patients who nerve supply to the muscle is intact

Transcutaneous electrical nerve stimulation (TENS) and Micro amperage electrical nerve stimulation (MENS)- primarily used for pain control

Iontophoresis- process in which an electrical field drives topically applied medication to a specific area of the body to treat such conditions as tendonitis and bursitis. The voltage provides the driving force.

Functional electrical stimulation (FENS)- uses electrical impulses to activate paralyzed or weak muscles in precise sequence. Medicare coverage of this treatment is limited to patients with spinal cord injuries.

Contraindications for Use of Electrical Stimulation

- Implanted stimulators and their lead wires, cardiac pacemakers, defibrillators
- Brain, spinal cord, heart, bladder, etc
- Directly over eyes and testes
- Directly over pregnant uterus
- Significant unstable cardiac pathology

- Uncontrolled arrhythmia
- Phlebothrombosis, thrombophlebitis

Warnings for Use of Electrical Stimulation

- Do not apply over or in proximity to active cancerous lesions
- Directly over swollen, infected, or inflamed areas or skin eruptions, osteomyelitis, sepsis and tuberculosis
- Anterior neck triangle, directly over carotid sinus, vagus nerve
- Transcranial, transthoracic

Precautions for Use of Electrical Stimulation

- Impaired circulation, sensation
- Abnormal skin (eg: psoriasis, abrasion, or laceration)
- Pregnancy
- Caution when removing electrodes due to potential for skin tear
- Inspect skin for irritation
- Use manufacturer-approved electrodes.



SUPERFICIAL HEATING ELEMENTS

Superficial heating agents are used to produce a tissue temperature rise in superficial tissues. The depth of penetration is limited to the first 3/8" to 3/4" (1-2 cm) of tissue. These heating agents come in several forms. The agents most commonly used to produce a superficial tissue temperature rise include hot packs and paraffin.

Hot packs are canvas (or another container) filled with hydrophilic silicate (or another heated substance) and stored on racks in hot water or heated in a microwave. Paraffin is a mixture of mineral oil and paraffin heated in a thermostatically controlled bath unit.

General Guidelines for use of Superficial Heating Elements

- Therapists and therapy assistants must successfully complete the clinical competency for use of heating elements on a patient
- Therapists and therapy assistants must review the Manufacturer's Produce Manual prior to use and must follow the manufacturer's guidelines when providing treatment
- Clinicians must review the patient's medical history to ensure patient is an appropriate candidate for hot packs or paraffin (ie: does not have any contraindications)
- A detailed daily note including location of hot pack, duration of heating time (if microwave pack), type/size/shape of hot pack, number of towels/insulating agents, and duration of treatment must be written on each service date. The Modality Treatment Graph Log can also be utilized.

Indications for use of Superficial Heating Elements

- Treatment of sub-acute or chronic inflammatory conditions, to reduce pain, to enhance tissue extensibility, and to reduce muscle spasm.

Contraindications for use of Superficial Heating Elements

- Patients with acute inflammatory conditions
- Malignancies
- Significant cardiac insufficiency

- Active bleeding (such as trauma)
- Lack of sensation in the area to be treated
- Unreliable thermoregulation (often seen with young children and the elderly)
- Existing fevers
- Significant peripheral vascular disease
- Devitalized tissue caused by x-ray therapy
- Women in the last trimester of pregnancy

Essential steps for Hot Pack Application

- Explain the procedure to the patient and tell the patient what kind of sensations to expect during the treatment.
- Inspect the area to be treated for possible skin irritations, and check for level of sensation to temperature in the treatment area.
- Ask the patient to remove all jewelry and clothing from the area to be treated.
- Position the patient for comfort and modesty
- Remove the hot pack from the hydroculator unit by using the tabs on the pack (for moist heat units) or heat the pack in the microwave in accordance with Manufacturer's instructions (for microwave packs)
- Apply as many towels (or other insulating agents) as necessary to disperse heat to a level that will be comfortable to the patient and effective for treatment.
- Place the pack on top of the body part to be treated and secure it well. It's best to place the pack on top of or over the body part, but you may have to address patient comfort or positioning restraints by having the patient lie on top of the pack or resting a limb on top of it. In this case, add more toweling to compensate for the weight of the body part compressing the insulating layers.
- Provide the patient with a bell or another alerting device to use if your assistance is needed during the treatment.
- The treatment should last no more than 15-30 minutes
- Check on the patient and the treated area after the first 5 minutes. Signs of excessive redness may indicate that the pack is too hot and additional layers of insulation need to be added. If blistering is present, discontinue the treatment immediately.
- At the conclusion of the treatment, remove the pack and dry the area. Check the skin condition again. A regular response is mild hyperemia in the area. Skin mottling and severe hyperemia aren't normal responses and their cause should be investigated before continuing with hot pack or any other superficial heating treatments.
- Return the pack to the hydroculator tank or storage unit for next use.
- Hydroculators must be maintained according to the Manufacturer's recommendations, including calibration, cleaning, and temperature maintenance.
- Hydroculators must be stored at a location within the department that will minimize or eliminate patient risk of burns due to contact with the hot water. Units should be stored on a stable surface in an area of the department of low/no patient traffic – preferably in a therapy office.



IONTOPHORESIS

Overview of Iontophoresis

Use of direct current electrical stimulation to deliver ionized anti-inflammatory medication across the skin into tissue to relieve pain and swelling and to help improve strength and range of motion. Iontophoresis utilizes low voltage (<150 volts) during treatment. Amount of medication administered is determined by the amount of the charge of the current (measured in milliamps).

General Guidelines

- The clinical competency for electrical stimulation must be completed prior to using on a patient
- The Manufacturer's Product Manual must be reviewed prior to use and the manufacturer's guidelines must be followed when providing treatment.
- There must be a physician's order for the use of electrical stimulation
- Electrical stimulation must be included in the initial plan of care or, if added to the treatment plan at a later date, documented in a progress note or an updated plan of care.
- Medication is administered on the electrode of the matching charge (ie: dexamethosone is negatively charged and will be placed on the negative electrode).
- Amount of medication that should be used should be printed on the electrode.
- Hydrate electrode so that there are no dry spots, but be careful to not overfill electrode.
- Electrode containing medication then administered to treatment site – with dispersive electrode place over a major muscle at least 4-6 inches away.
- Clinical parameters are based on the patient's tolerance and comfort rather than the speed of which the treatment can be administered.
- Most protocols recommend administering iontophoresis every other day to minimize skin irritation and to take advantage of the carryover effect/half life of the medication from the previous treatment.
- Patient should notice a decrease in pain or symptoms after 4-6 treatments. Acute inflammation should also subside during this period.
- Treatment should be stopped if the patient is not getting at least 50% relief.

- A detailed daily note indicating electrode placement, intensity, and patient response must be completed at each treatment date. The Modality Treatment Graph Log may also be included.
- The iontophoresis unit must be calibrated as recommended by the manufacturer
- If the iontophoresis unit malfunctions, it must be removed from use and labeled accordingly to prevent further use until properly inspected.
- Clinician must review patient's medical history to ensure patient is an appropriate candidate for the electrical stimulation (ie: does not have any contraindications, etc).
- The patient's skin must be inspected and prepared prior to treatment and also checked during treatment as needed and at the end of each treatment.

Contraindications for Iontophoresis

- Pacemaker, defibrillators, and other implanted devices and their wires
- Anaphylaxis (Always ask about any known drug allergies! Do not leave patient unattended!)
- Medication or seafood allergies
- Skin irritation due to treatment
- Do not apply before 6 weeks of post tendon repair
- Do not use over temples, thoracic area, eyes, staples, sutures, fixators, or pins.
- Uncontrolled arrhythmia
- Phlebothrombosis, thrombophlebitis
- Brain, spinal cord, heart, bladder, etc
- Directly over eyes and testes
- Directly over pregnant uterus
- Significant unstable cardiac pathology

Warnings for Use of Iontophoresis

- Do not apply over or in proximity to active cancerous lesions
- Directly over swollen, infected, or inflamed areas or skin eruptions, osteomyelitis, sepsis and tuberculosis
- Anterior neck triangle, directly over carotid sinus, vagus nerve
- Transcranial, transthoracic

Precautions for Use of Iontophoresis

- Impaired circulation, sensation
- Abnormal skin (eg: psoriasis, abrasion, or laceration)
- Pregnancy
- Caution when removing electrodes due to potential for skin tear

- Inspect skin for irritation
- Use manufacturer-approved electrodes.