## Summary of Electrotherapy Modalities

<table>
<thead>
<tr>
<th>Electrotherapy Modalities</th>
<th>Transfer Method</th>
<th>Physiologic Effects</th>
<th>Indications</th>
<th>Contraindications</th>
</tr>
</thead>
</table>
| Transcutaneous Nerve Stimulation (TENS) | Electrical: releases endogenous opioids and neurotransmitters  
Non-Electrical: Gate Control Theory (inhibit Aβ fibers)  
Low Frequency: mu receptors  
High Frequency: Delta receptors | -Decreased pain, edema, effusions.  
Increased muscle bulk.  
Improves soft tissue and bone healing. | -Acute/chronic pain  
-Opioid tolerant (at high frequencies)  
-Neuromuscular disease  
-Joint effusion/edema  
-Disuse muscle atrophy  
-Wound/bone healing | -Use over carotid sinus, heart, pregnant uterus, infected areas, AICDs, pacemakers, battery operated implant devices  
-Seizures  
-Active hemorrhage  
-Malignancy  
-Circulatory impairments  
-Arterial or venous thrombosis  
-Thrombophlebitis  
-Decreased sensation  
-Atrophied skin  
-Open wounds |
| Interferential Therapy (IFT)           | Electrical, Non-Electrical                           |                                               | -low frequency nerve stimulation for those uncomfortable or refractory to low frequency TENS  
-Pain  
-Edema/effusion  
-Strengthen muscle | -Disuse muscle atrophy  
-Strengthen and retrain muscle  
-Pain  
-edema/effusion |
| Neuromuscular Electrical Stimulation (NMES) | Electrical, Non-Electrical                           |                                               | -Palmar-planter hyperhidrosis  
-Pain  
-Bursitis  
-Tendinitis  
-Tendinopathy  
-Scar tissue | |
| Iontophoresis                         | Electrical, Non-Electrical, chemical (drug)          |                                               |                                                                           |                                                                                 |