



## Physical Rehabilitation Modalities and Their Indications

- **Passive Range of Motion (PROM)** – Each individual joint is flexed and extended in a pattern that mimics normal movement. Post-operatively this helps maintain the normal motion of each joint.
- **Low Level Laser Therapy (LLLT)** – A non-visible light therapy that aids in the healing of diseased or injured tissues. Useful for wound healing, muscle strains and pain management.
- **Electrical Stimulation** –
  - TENS is a comfortable, relaxing type of electric stimulation that is used to reduce pain. Often administered along with warm compresses and massage.
  - NMES is a type of electric stimulation that is used for muscle strengthening and reconditioning. Most useful in muscle atrophy or disuse situations.
- **Treadmill** – This allows jogging, incline challenges, and walking in a controlled environment. Speed is adjusted as appropriate for each patient.
- **Underwater Treadmill** – The water level is the key.
  - **Encourage Limb Use** - A higher water level provides buoyancy, which decreases weight bearing on the joints. Most appropriate for patients in pain, or with limited mobility.
  - **Strengthen and Condition** - Lowering the water level increases weight bearing and provides greater resistance as the limbs move through the water.
- **Thermal Therapy** –
  - **Heat** – Increases blood flow and tissue relaxation. Decreases pain, muscle spasms, and stiffness. Applied to the affected area prior to therapeutic exercise.
  - **Cryotherapy** – Cold compresses are applied post-operatively and after acute injuries to reduce pain, swelling, and inflammation.
- **Therapeutic Exercise** – This is just a sample of the many exercises that we use in the clinic and may recommend for the owners to do daily at home as well.
  - **Standing** – For animals with neurological disorders or limb injuries where standing under their own power is difficult. May include support by sling, hoist or wheelchair.
  - **Weight Shifting** – Exercises that encourage use of affected muscle groups and aid with proprioceptive deficits.
    1. **Physioball/Physioroll** – Inflatable exercise balls that are used to support a pet's weight while performing exercises or stretches.
    2. **Balance Board** – An unsteady surface that encourages a pet to use all muscles in order to maintain balance and posture.
  - **Walking** – Slow controlled walks encourage limb use, or challenge affected muscle groups. Can include figure eights, inclines, and unsteady footings.
  - **Sit to Stands** – These are “doggie squats” to strengthen the hip and stifle muscles. This is a common at home exercise.
  - **Cavaletti Rails** – These are horizontal poles that are set at various heights and spacing to help with flexion and proprioception as pets walk over them.