

## Recurrent Unremitting Quadriceps Tendonitis/ Tendinosis Rehabilitation Program

### I. Phase I of I.

**Goals:** Diminish pain and inflammation  
Promote quad tendon healing  
Improve quadriceps strength  
Enhance flexibility  
Control functional stresses

#### **Treatment Regimen:**

- Hot packs applied to knee – quad tendon
  - Ultrasound to quadriceps tendon
  - Transverse friction & soft tissue massage
  - Warm-up bicycle (10 min.) light bike
  - Stretch (hamstrings quadriceps, gastroc)
  - Application of pain stimulation to each side of patella tendon or infra-patellar fat pad x 10 minutes (use this technique only if needed)
    - Electrical stimulation parameters
      - Waveform: Russian
      - Frequency: 2500 Hz pulse; width: 200 MS; Rate: 50/sec
      - 60 pulses per second (pps)
      - duty cycle 10 on/10 off; ramp of 1 second
    - pad placement- 1"x1" electrodes placed on each side of inflamed/painful tendon (After 3 minutes, palpate tendon, should be less painful and becoming numb, if not, move electrodes)
  - Quadriceps strengthening program
    - E-stim to quadriceps\*
    - Quad sets\*
    - SLR flexion\*
    - Hip abduction\*
    - Leg press with theraband around distal thigh ( ABDuct first then squat)
    - Wall slides with theraband around distal thigh (only 60-70 deg PAINFREE ROM)
    - Standing hip extension
    - Hip ER/IR theraband
    - Sidelying clams with manual resistance
    - RDLs
    - Standing on foam stability position with ball catches
    - Star drill (5 cones)
    - Tilt board squats with ball catches
- \*Monitor subjective pain level response (goal level 4-5 )
- Stretch (aggressive stretching) hip flexors, quads, hamstrings, hip abductors (stretch everything)
  - Laser to quad tendon
  - Cryotherapy ??? (only use ice if you get sore)

**Pain (noxious) Stimulation Protocol**

- Clinical muscular electro-stimulator
  - Specific parameters
    - Frequency: 2500 Hz pulse width: 200MS
    - Rate: 60 pulses per second (pps)
    - Ramp: 1 sec
    - Waveform: Russian
    - Duty cycle: 10 on/10 off
    - Time: 12 minutes
  - Electrode placement
    - 1" X 1" electrodes placed on each side of painful tendon or infrapatella fat pad
  
- \* after 3 minutes palpate tendon, if not becoming less painful or numb, move electrodes