Seize the Evidence!
Lateral Elbow Tendinopathy and the Role of Scapular Muscle Strengthening

Lateral Elbow Tendinopathy (LET)
• Most common cause of elbow pain
  • Prevalence as high as 29% in occupational settings¹⁻²
  • Incomplete resolution of symptoms or recurrence ranges from 20-38%³⁻⁶
  • Etiology likely to be multifactorial

Lateral Elbow Tendinopathy
• Lack of consensus on best management approach
  • Moderate and high levels of evidence support use of local exercise/strengthening for LET
  • Often studied as a part of a multimodal treatment approach

LET and Local Strengthening
• Systematic Reviews in past 5 years found
  • Raman et al, 2012²
    • Moderate to high quality studies show improvements in pain, strength, and disability as a response to local exercise interventions
    • Evidence is insufficient as to whether local strengthening adds to the benefits seen in multimodal treatment

LET and Local Strengthening
• Systematic Reviews in past 5 years found
  • Olaussen, et al 2013³
    • Moderate evidence supports either cortisone injection or local exercise plus manipulation in short-term, but for intermediate-term cortisone injection were worse
    • No difference in long-term outcomes
      • Overall improvement
      • Pain
      • Grip strength
LET and Local Strengthening

- Systematic Reviews in past 5 years found
  - Hooyliet, et al 20139
    - Moderate evidence supports the short and mid-term effectivness of concentric and eccentric exercise as an adjunct to local mobilization in improving pain and function
  - Brantingham, et al 201310
    - Multimodal treatment program which includes exercise appeared to be effective in reducing pain, increasing grip strength and function in short-term

- Stasinopoulos & Stasinopoulos, 201612
  - Report greatest short-term treatment effect in group performing a combined eccentric-concentric with isometric strengthening to the wrist extensors compared with
    - Eccentric-concentric strengthening alone
    - Eccentric strengthening alone

LET and Local Exercise

- Olaussen et al 201513
  - No long term (1-year) difference of percentage of self-reported recovery on a 6-point scale between 3 groups:
    - Control (Wait-listed)
    - Multimodal PT including local exercise plus corticosteroid injection
    - Multimodal PT including local exercise plus sham injection

LET and Scapular Strength Impairment

- Lucado et al, 201214
  - When tennis players (all female) with LET (n=21) were compared to those without LET (n=21)
    - Lower trapezius strength adjusted for body weight was significantly lower (p<0.01)
    - Strength ratio between upper trapezius and lower trapezius significantly higher (p<0.005)
      - A higher ratio indicate greater strength of the upper trapezius when compared to the lower trapezius muscle fibers
      - May indicate a tendency for altered scapular control
      - Imbalance between the scapular upward and downward rotators may interfere with proper shoulder kinematics during tennis play

- Day et al, 201515
  - The involved side of the patients with LET had significantly lower strength compared to control group without LET
    - Middle Trapezius (p<.01)
    - Serratus Anterior (p<.001)
    - Lower Trapezius (p=.006)
LET and Scapular Strength Impairment

- Day et al, 2015
- The involved side of the patients with LET had significantly lower endurance of scapular muscle groups compared to control group without LET ($P = .003$)

SMS for LET Protocol

- Funding from Orthopedic Section of the American Physical Therapy Association for the Mercer site
- Funding from American Society of Hand Therapists for the South Alabama site
- Current $n=5$ from Mercer site $n=11$ from South Alabama site (total following protocol $>16$) to date

LET Case Study

- Bhatt et al, 2013
- Patient with a 5-month history of LET
- Periscapular weakness and malpositioning evident on eval
- Exercise intervention of MT and LT strengthening progression implemented (5 visits over 10 weeks)
  - NPRS decreased from 7 to 0/10 pain
  - PFSG increased 38%
  - MT/LT strength increased to 5/5
  - Scapular position improved to visual inspection
  - Full resolution of symptoms and function (DASH)
References


References