

Effectiveness of Mobilization with Movement Versus Muscle Energy Technique Along with Plyometric Exercises on Pain and Functional Performance in Subjects with Chronic Lateral Epicondylitis

Hari Krishna Guniseti, Assistant professor, KIMS College of Physiotherapy, Amalapuram.

Durga Praveen Kumar, Postgraduate, KIMS College of Physiotherapy, Amalapuram.

Ashok Chakravarthi, Professor & H.O.D, KIMS College of Physiotherapy, Amalapuram.

L.V.S. Pravallika, Associate professor, KIMS College of Physiotherapy, Amalapuram.

Manuscript Received: Apr 10, 2026; Revised: Apr 13, 2026; Published: Apr 16, 2026

Abstract: Tennis elbow (lateral epicondylitis) is a painful overuse condition characterized by degeneration or micro-tearing of the tendons attaching forearm muscles to the lateral epicondyle, resulting in progressive pain and tenderness that worsens with forearm activity. This experimental study aimed to compare the effectiveness of Mobilization with Movement (MWM) versus Muscle Energy Technique combined with Plyometric Exercises (MET+PE) on pain and functional performance in subjects with chronic lateral epicondylitis. Sixty subjects meeting the selection criteria were randomly allocated into two groups of 30 each, Group A receiving MWM and Group B receiving MET combined with plyometric exercises, with both groups undergoing a four-week intervention protocol. Pain and functional performance were assessed using the Numerical Pain Rating Scale (NPRS) and the Patient-Rated Tennis Elbow Evaluation (PRTEE) questionnaire. Paired t-tests were applied to evaluate pre- and post-intervention differences within each group, while unpaired t-tests were used to compare mean differences between groups. Both interventions yielded statistically significant improvements in pain and functional performance; however, Group B demonstrated significantly greater gains across all measured parameters. These findings suggest that Muscle Energy Technique combined with Plyometric Exercises is more effective than Mobilization with Movement in reducing pain and improving functional performance in patients with chronic lateral epicondylitis.

Keywords: Chronic Lateral Epicondylitis, Mobilization with Movement, Muscle Energy Technique, Plyometric Exercises, Numerical Pain Rating Scale, Patient Rated Tennis Elbow Evaluation Questionnaire.

1. Introduction

Lateral epicondylitis (LE), or "Tennis Elbow," was first identified by Dr. F. Runge in 1873, with the modern term coined in 1883.[1] It is a chronic overuse injury affecting the common extensor tendons of the forearm, specifically the extensor carpi radialis brevis (ECRB), extensor digitorum, extensor carpi ulnaris, and extensor digiti minimi.[2] The ECRB is most frequently involved, particularly at its origin on the lateral epicondyle. Pain typically localizes to this area and intensifies during resisted wrist extension [3]. The prevalence of LE ranges from 1.5% to 3.2%, with incidence rising up to 18% among individuals aged 18 to 40, predominantly affecting males.^{4,5} While the etiology remains idiopathic, repetitive wrist extension in activities like typing, piano playing, and manual tasks are significant contributors.[6,7] Symptoms include localized tenderness, burning sensations, and diminished grip strength that may radiate to the forearm and worsen at night.[8,9] Risk factors include smoking, obesity, and psychological factors like anxiety.[10] Diagnosis involves imaging (MRI, ultrasound) and physical assessments such as Cozen's and Mill's tests.[11-15] Management involves NSAIDs, corticosteroid injections, and physiotherapy (cryotherapy, bracing, and ultrasound).[16] Mobilization with movement (MWM) integrates manual glides with active movement to enhance range of motion (ROM) and provide immediate pain relief.[17,18] Muscle energy technique (MET) utilizes post-isometric relaxation to lengthen and strengthen muscles through submaximal contractions.[19-25] Additionally, plyometric training leverages the stretch-shortening cycle (SSC) to improve functional performance.[26-29] Conventional care typically includes pulsed ultrasound and stretching.[6-30] Previous research has shown that MWM

is superior to Mill's manipulation,[31] while MET combined with plyometrics effectively enhances grip strength.[28] This study aims to perform a comparative analysis of MWM versus MET combined with plyometric exercises regarding pain and functional capacity in chronic lateral epicondylitis.

2. Materials and Methods: Research Design

This study employed an experimental pre-test-post-test-design

Study Setting

The research was conducted at the KIMS General Hospital, Physiotherapy OPD, Amalapuram, Andhra Pradesh.

Sample Selection

A total of 60 patients diagnosed with lateral epicondylitis were recruited using a convenience sampling technique.

Participants randomized into two groups:

- Group A: Mobilization with movement
- Group B: Muscle energy technique + Plyometric exercises

Inclusion Criteria:

- Participants having an age between 20 – 40 years.
- Both males and females are taken.
- Local pain and tenderness on the lateral side of the elbow.
- Chronic lateral epicondylitis is less than 4 weeks.
- Unilateral involvement and pain as a chief complaint.

Exclusion Criteria:

- History of trauma and surgery.
- Acute infections.
- Any systemic disorders.
- Cervical spine and upper limb dysfunction.
- Neurological impairments and cardiovascular diseases.
- Osteoporosis
- Ossification and calcification of soft tissue.
- Malignancies

Ethical considerations:

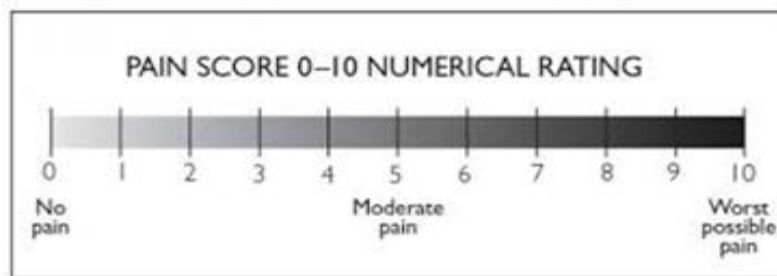
Informed consent was obtained from all participants prior to enrolment. Ethical clearance was granted by the Institutional Ethical Committee of the Konaseema Institute of Medical Sciences and Research Foundation (BPT&MPT), Amalapuram.

Study Duration

The study was conducted between June 2024 and July 2025.

Tools and Techniques

Numerical Pain Rating Scale (NPRS): The numerical pain rating scale is for measuring pain intensity. It is an 11-point scale where the 0 means no pain and 10 means worst possible pain. Numerical pain rating scale has advantages over other methods in terms of feasibility and reliability.



Patient Rated Tennis Elbow Evaluation Questionnaire (PRTEQ): The patient rated elbow evaluation questionnaire was specifically designed to measure the pain and functional performance in subjects with lateral epicondylitis. The questionnaire is divided in to two parts:

5 questions to evaluate pain and 10 questions to evaluate the functional limitations. Answers should be given on a scale from 0 to 10 (0 - no pain or difficulty in performing a task and 10- worst imaginable pain or complete inability to perform a task). To calculate the total score, the raw pain score is taken as a total of 50, the usual activities subscale and the specific activities subscale scores are added together and subsequently divided by two to obtain a functional score scaled to 50 points. Therefore: PRTEE total score = [Pain score (max 50) + Function score (max 100/2 = 50)]. The PRTEE can typically be finished in about five minutes. It is reliable, reproducible and sensitive method for measuring the pain and functional limitations.

Interventions:

Group A: Mobilization With Movement Technique with Conventional Physiotherapy:

Participants in the group A received mobilization with movement along with conventional physiotherapy. Mobilization with movement was given to proximal forearm and distal end of the humerus.

Patient position:

Patient in supine lying with elbow extension, forearm pronation and wrist in neutral position.

Procedure:

This technique involves applying lateral glide to the proximal forearm. While the other hand of the therapist is applying glide to the distal end of the humerus. While performing the mobilization, the subject was instructed to perform pain free gripping action. The glide was sustained for a period of 5 to 10 seconds. While performing the repetitions, gap of no longer than 60 sessions was present.

Dosage:

Interventions were given 3 sessions per week for 4 weeks. Participants received mobilization with movement for 6 repetitions, hold period of 5 to 10 seconds. 31

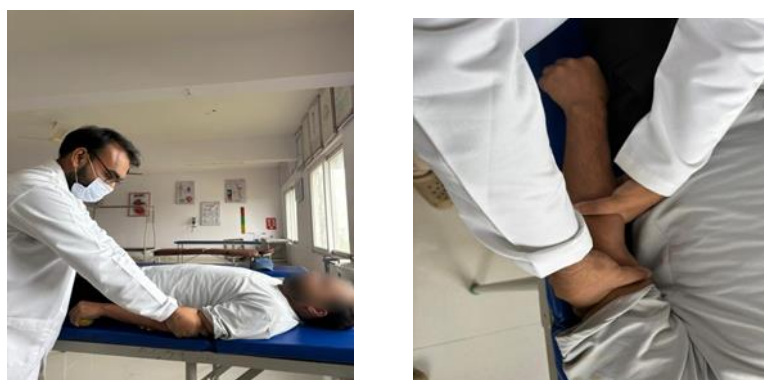


Figure 1&2: Mobilization with Movement Technique

Group B: Muscle Energy Technique Along with Plyometric Exercises with Conventional Physiotherapy:

Participants in the group B received both muscle energy technique and plyometric exercises along with conventional physiotherapy.

Muscle Energy Technique: Patient position:

Patient should be seated in chair with elbow flexion, forearm in supination and wrist in neutral one hand of the therapist stabilizes the humerus distally, placing the subject's forearm into supination until the discomfort or resistance is detected. Then the patient is instructed to pronate the forearm briefly against the resistance applied by the therapist (approximately 75% of the maximal isometric contraction) for a period of 5 seconds. The therapist slightly increases the supination immediately until the resistance was met again. Initially, 5 seconds of relaxation period is given.

Dosage:

Muscle energy technique was given for 3 times a week for 4 weeks. In each session, the procedure was repeated 5 times for total of 10 minutes 38.

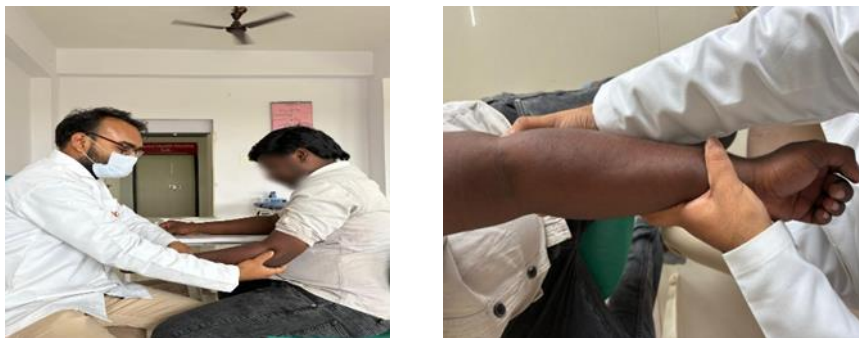


Fig 3 & 4: muscle energy technique

Plyometric Exercises: Patient Position:

Patient should be seated in a chair with hand hanging over the edge of the chair, elbow in full extension, forearm in pronation and wrist in full extension.

Procedure:

While counting to 20, patient flexes the wrist slowly. Then, returns to the starting position with the help of the other hand. Patient was instructed to continue the exercise even though they experience any mild pain. However, they were told to stop doing the exercise if the pain became disabling. When the patient can be able to the eccentric exercise without any pain or discomfort, the load was increased initially by using some free weights.

Dosage:

Plyometric exercise was given for 3 times a week for 4 weeks. 5 sets of 8 repetitions with 1 minute rest between each set [29].



IG 5: Starting Position



FIG 6: mid position



FIG 7: Ending position

Fig 5-7 : plyometric exercises



FIG 8: Starting Position



FIG 9: Mid position



FIG 10: Ending position

Fig 9-10: progression of plyometrics with free weights

Conventional Physiotherapy:

Conventional physiotherapy was applied as a baseline treatment for both groups (group A and group B).

Treatment includes: Pulsed ultrasonic therapy, strengthening exercises and Stretching exercises.

- Pulsed ultrasonic therapy:

Pulsed ultrasound therapy was applied at the Teno periosteal junction of the extensor carpi radialis brevis. Fig: 11-12. Pulse ratio: 1:4, Frequency: 1 MHZ Intensity: 1.5 W/cm²

Dosage:

3 sessions per week for 4 weeks, 12 sessions.

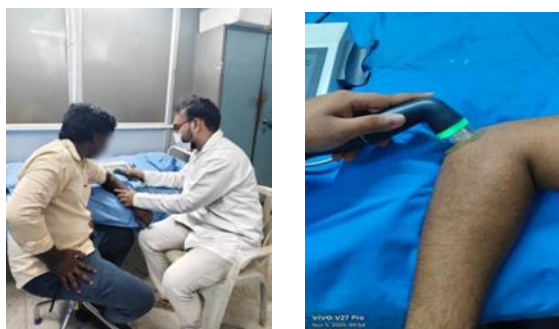


FIG 11 & 12: Application of Ultrasound

Strengthening exercises:

Procedure: Isometric contractions with elbow in 90 degrees flexion, manual resistance was applied with the hand of unaffected arm over the dorsum of the supinated arm of affected side. Pain free isometric contractions of the extensors of wrist were initiated and held for 5 to 10 seconds. Progression - Includes forearm pronation as the starting position and increasing resistance. Fig: 13 &14

Dosage: 3 times a week for 4 weeks, for each session, 15 contractions.

Stretching exercises:

Procedure: Elbow in extension, forearm in pronation: using the other hand of the subject or with the help of wall, the wrist was palmar flexed. This exercise was held for few seconds and then released. Fig 15-16.

Dosage: 3 times a week for 4 weeks. 10 stretches for each session 6, 30.



FIG 13 & 14: Strengthening exercises



FIG 15 & 16: Stretching exercises

Statistical Analysis:

All collected data were entered into master data sheet and analyzed using SPSS software version 20.0. The paired student’s t-test was applied to assess statistically significant differences within each group (pre-test vs post-test). The independent student’s t-test was employed to compare post-test values between the two groups. A p-value<0.05 was considered statistically significant.

3. Results

Analysis of pre-and post-test score within group A (mobilization with movement) and group B (muscle energy technique along with plyometric exercises.) demonstrated statistically improvements in all outcome measures (NPRS, Patient Rated Tennis Elbow Evaluation Questionnaire). However, comparison of post-test values between revealed that both mobilization with movement and muscle energy technique combined along with plyometric exercises (MET+PE) produced statistically significant improvements in reducing pain intensity and enhancing functional ability in individuals with chronic lateral epicondylitis.

Table-1: Analysis of post mean of NPRS between Group-A and Group-B.

Group- A&B	Tests	Mean	S.D	T-value	P-value
NPRS	Post test Group-A	3.87	0.900	9.464	<0.001
	Post test	1.77	0.817		
	Group-B				

Table-2: Analysis of post mean of PRTEEQ between Group-A and Group-B

Group-A &B	Tests	Mean	S.D	T-value	P-value
PRTEEQ	Post test - Group-A	27.90	5.416	10.441	<0.001
	Post test - Group-B	14.47	4.508		

The above table shows the post mean values in both Group-A and Group-B with T-value (10.441) & P-value (<0.001)

4.Discussion

The primary objective of this study was to evaluate and compare the therapeutic efficacy of Mobilization with Movement (MWM) against a combination of Muscle Energy Technique (MET) and plyometric exercises in patients suffering from chronic pain and functional limitations associated with lateral epicondylitis. Despite the prevalence of

this condition, clinical literature has historically offered limited comparative evidence regarding these specific advanced manual therapy techniques. However, emerging research suggests that integrating MWM and MET with active loading protocols, such as plyometrics, may yield superior outcomes in pain modulation and functional recovery compared to traditional exercise regimens.

The current study utilized a sample of 60 participants diagnosed with chronic lateral epicondylitis. These subjects were partitioned into two distinct intervention groups to observe the specific physiological impacts of each modality. Both groups underwent a standardized conventional physiotherapy program to ensure a consistent baseline. Group A received the MWM approach, while Group B received MET combined with plyometric activities for three sessions per week over a four-week duration. Progress was quantified using the Numerical Pain Rating Scale (NPRS) for pain intensity and the Patient-Rated Tennis Elbow Evaluation Questionnaire (PRTEEQ) for functional disability. In Group A, the mean NPRS score dropped by 2.2 points from 6.07 to 3.87, while the PRTEEQ score showed a significant improvement of 42.8 points from 70.70 to 27.90. These results were statistically significant ($p < 0.001$), confirming that MWM is an effective standalone intervention for lateral epicondylitis.

The efficacy of MWM is rooted in a dual-phase mechanism. Initially, the therapist applies a sustained lateral glide to the joint to correct minor positional faults. Simultaneously, the patient performs an active movement, such as clenching a fist or extending the wrist. This combination of passive mobilization and active contraction is designed to stimulate Golgi tendon organs (GTOs) within the muscle tendons. This stimulation triggers Ib afferent signals to the spinal cord, which in turn activate inhibitory interneurons. These interneurons decrease motor neuron activity, effectively relaxing hypertonic muscles.[39] By reducing protective muscle spasms and decompressing local capillaries, MWM improves regional circulation and restores optimal joint mechanics, facilitating rapid, short-term pain relief and increased range of motion (ROM).[34] Research by Asma Aleem et al. (2022) reinforces these findings, noting that MWM provides superior functional and analgesic outcomes compared to traditional methods like Mill's manipulation/[31] Furthermore, the hypoalgesic effects of MWM have been linked to significant increases in Pain-Free Grip Strength, which directly correlates with improved functionality.[33]

Group B demonstrated even more pronounced clinical gains. The mean NPRS score decreased by 4.63 points from 6.40 to 1.77, and functional scores improved by 57.03 points from 71.50 to 14.47, maintaining high statistical significance ($p < 0.001$). MET functions primarily by lengthening shortened muscles to increase ROM.[40-41] The analgesic effect observed here is attributed to autogenic inhibition following post-isometric relaxation. As the patient performs a controlled isometric contraction, the GTO sends impulses to the posterior horn cell, inhibiting the motor stimulus at the anterior horn cell and leading to muscle relaxation.[42] This process not only reduces discomfort but also improves blood and lymphatic circulation by regulating interstitial pressure, effectively flushing nociceptive stimuli from the tissue.[21-25] The inclusion of plyometric exercises introduces the stretch-shortening cycle (SSC), involving a rapid pre-stretch followed by an explosive concentric contraction.[43-44] This cycle enhances the muscle-tendon unit's ability to generate maximum force efficiently. While the exact pathways are still being explored, it is believed that plyometrics help realign collagen fibers at the periosteal insertions and mitigate local inflammation.[29,45,46] The superior results in Group B suggest a synergistic effect between MET and progressive loading. While MWM is highly effective for correcting biomechanical positional faults and providing immediate relief,^{51,52} its effects can be transient if not supported by active tissue remodeling.[53]

In contrast, the addition of eccentric and plyometric loading targets the underlying degenerative tendon pathology. High-load exercises stimulate collagen synthesis and restore the load-bearing capacity of the tendon.[47,48] As Stasinopoulos et al. (2017) noted, combining stretching with eccentric training is more effective than isolated protocols.[49] By addressing both the muscular hypertonicity via MET and the structural integrity of the tendon via plyometrics, Group B provided a more comprehensive treatment for the multifactorial nature of chronic tennis elbow.[50] Consequently, the results of this study lead to the rejection of the null hypothesis and the acceptance of the alternate hypothesis: the combination of MET and plyometric exercises is more effective than MWM alone in reducing pain and improving functional performance in patients with chronic lateral epicondylitis. This holistic approach ensures both immediate symptomatic relief and long-term structural resilience for the patient..

5. Conclusion

Both Mobilization with Movement (MWM) and Muscle Energy Technique combined along with Plyometric Exercises (MET+ PE) produced statistically significant improvements in reducing pain intensity and enhancing functional ability in individuals with chronic lateral epicondylitis. However, Muscle energy technique along with Plyometric Exercises, demonstrated greater clinical significance, with a larger reduction in pain scores and more substantial improvement in

functional outcomes when compared to Mobilization with movement alone. Hence, Muscle Energy Technique combined with Plyometric Exercises is more effective in reducing pain and increasing functional performance compared to Mobilization with Movement in subjects with chronic lateral epicondylitis.

6. References

- [1] Thiele S, Thiele R, Gerdesmeyer L. Lateral epicondylitis: this is still a main indication for extracorporeal shockwave therapy. *Int J Surg*. 2015;24:165–170.
- [2] Saini S, Sahu R. A comparative study of effectiveness of Mulligan mobilization with movement and Cyriax deep transverse friction along with Mills manipulation in individuals with chronic lateral epicondylitis. *Int J Res Anal Rev*. 2020;7(4):562–589.
- [3] Harrington JM, Carter JT, Birrell L, et al. Surveillance case definitions for work related upper limb pain syndromes. *Occup Environ Med*. 1998;55:264–271.
- [4] Desai R, Kulkarni S, Palekar T, et al. A comparative study of muscle energy technique versus Cyriax technique in lateral epicondylitis among professional Indian cooks. *Int J Basic Appl Res*. 2019;9(6):363–371.
- [5] Lai WC, Erickson BJ, Mlynarek RA, Wang D. Chronic lateral epicondylitis: challenges and solutions. *Open Access J Sports Med*. 2018;9:243.
- [6] Trivedi P, Sathiyavani D, Nambi G, Khuman R, Shah K, Bhatt P. Comparison of active release technique and myofascial release technique on pain, grip strength and functional performance in patients with chronic lateral epicondylitis. *Int J Physiotherapy Res*. 2014;2(3):488–494.
- [7] Shiri R, Viikari-Juntura E, Varonen H, Heliövaara M. Prevalence and determinants of lateral and medial epicondylitis: a population study. *Am J Epidemiol*. 2006;164(11):1065–1074.
- [8] Vicenzino B, et al. Effects of a novel manipulative physiotherapy technique on tennis elbow: a single case study. *Man Ther*. 1995;1:30–35.
- [9] Jobe FW, Ciccotti MG. Lateral and medial epicondylitis of the elbow. *J Am Acad Orthop Surg*. 1994;2(1):18–29.
- [10] Shiri R, Viikari-Juntura E, Varonen H, Heliövaara M. Prevalence and determinants of lateral and medial epicondylitis: a population study. *Am J Epidemiol*. 2006;164(11):1065–1074.
- [11] Du Toit C, Stieler M, Saunders R, Bisset L, Vicenzino B. Diagnostic accuracy of power Doppler ultrasound in patients with chronic tennis elbow. *Br J Sports Med*. 2008;42:872–876.
- [12] Miller TT, Shapiro MA, Schultz E, Kalish PE. Comparison of sonography and MRI for diagnosing epicondylitis. *J Clin Ultrasound*. 2002;30:193–202.
- [13] Savnik A, Jensen B, Nørregaard J, et al. Magnetic resonance imaging in the evaluation of treatment response of lateral epicondylitis. *Eur Radiol*. 2004;14:964–969.
- [14] Sasaki K, Tamakawa M, Onda K, et al. Detection of capsular tear at the undersurface of the extensor carpi radialis brevis tendon in chronic tennis elbow. *J Shoulder Elbow Surg*. 2011;20:420–425.
- [15] Cohen M, Motta G. Lateral epicondylitis of the elbow. *Rev Bras Ortop*. 2012;47:414–420.
- [16] Derebery VJ, Devenport JN, Giang GM, Fogarty WT. Effects of splinting on outcomes for epicondylitis. *Arch Phys Med Rehabil*. 2005;86(6):1081–1088.
- [17] Shafique S, Muneeb HN, Abbas N, Ghafoor I. Comparison of mobilization with movement and soft tissue mobilization on pain severity, hand grip strength and functional activity in tennis elbow patients. *Pak J Rehabil*. 2022;11:45–50.
- [18] Ravichandran H, Balamurugan J. Effectiveness of muscle energy technique and Mulligan's MWM in lateral epicondylalgia. *Arch Med Health Sci*. 2015;3(2):198–202.
- [19] Ballantyne F, Fryer G, McLaughlin P. Effect of muscle energy technique on hamstring extensibility. *J Osteopath Med*. 2003;6:59–63.
- [20] Burns DK, Wells MR. Gross cervical ROM: effects of osteopathic muscle energy technique in asymptomatic subjects. *J Am Osteopath Assoc*. 2006;106:137–142.
- [21] Fryer G. Muscle energy technique: an evidence-informed approach. *Int J Osteopath Med*. 2011;14:3–9.
- [22] Goodridge JP. Muscle energy technique: definition, explanation, methods. *J Am Osteopath Assoc*. 1981;81:249–254.
- [23] Unnisa R, Sivajothi N, Rahman MW, Ahmed I. METs and oscillating energy manual therapy in chronic lateral epicondylitis: a comparative study. *Int J Res Pharm Sci*. 2019;10(3):1914–1919.
- [24] Kumar V, Kothawala B. A comparative study of muscle energy technique versus Cyriax technique in lateral epicondylitis among professional Indian cooks.
- [25] Naik V, Phadke R, Pote V. Effectiveness of MET vs MARHYTHE in chronic lateral epicondylitis: a randomized clinical trial. *Int J Physiother*. 2020;7.
- [26] Pezzullo DJ, Karas S, Irrgang JJ. Functional plyometric exercises for the throwing athlete. *J Athl Train*. 1995;30(1):22–26.
- [27] Wilk KE, Voight ML, Keirns MA, et al. Stretch shortening drills for the upper extremities: theory and clinical application. *J Orthop Sports Phys Ther*. 1993;17(5):225–239.
- [28] Trivedi P, Arunachalam R, Vaithianadane K. Efficacy of MET with plyometric exercises in chronic lateral epicondylitis. *Int J Health Sci Res*. 2019;9(2):108–114.
- [29] Stergioulas A. Effects of low-level laser and plyometric exercises in lateral epicondylitis. *Photomed Laser Surg*. 2007;25(3):205–209.

- [30] Khuman PR, Trivedi P, Devi S, et al. Myofascial release technique in chronic lateral epicondylitis: a randomized controlled study. *Int J Health Sci Res.* 2013;3(7):45–52.
- [31] Aleem A, Rehman SS, Kousar R, Khalid S, Chiragh S. Effects of MWM versus Mills manipulation in chronic lateral epicondylitis. *Ann Allied Health Sci.* 2022;8(2):34–39.
- [32] Rompe J, Overend T, MacDermid J. Validation of the patient-rated tennis elbow evaluation questionnaire. *J Hand Ther.* 2007;20.
- [33] Anap DB, Shende ML, Khatri S. MWM as adjunct to conventional physiotherapy in chronic lateral epicondylitis. *J Nov Physiother.* 2012;2:121.
- [34] Kim L, Choi H, Moon D. Improvement of pain and functional activities in lateral epicondylitis by MWM. *J Phys Ther Sci.* 2012;24:787–790.
- [35] Ahmad Z, Siddiqui N, Malik SS, et al. Lateral epicondylitis. *Bone Joint J.* 2013;95-B(9):1158–1164.
- [36] Williamson A, Hoggart B. Pain: review of three rating scales. *J Clin Nurs.* 2005;14(7):798–804.
- [37] Boonstra AM, Stewart RE, Köke AJA, et al. Cut-off points for pain levels using NRS. *Front Psychol.* 2016;7:1466.
- [38] Küçükşen S, Yılmaz H, Salli A, Uğurlu H. MET vs corticosteroid injection in chronic lateral epicondylitis: RCT with 1-year follow-up. *Arch Phys Med Rehabil.* 2013;94(11):2068–2074.
- [39] Leonard CT. *The neuroscience of human movement.* St. Louis: Mosby; 1998:25–30.
- [40] Selkow NM, Grindstaff TL, Cross KM, et al. Short-term effect of MET on nonspecific lumbopelvic pain. *J Man Manip Ther.* 2009;17:14–18.
- [41] Moore SD, Laudner KG, McLoda TA, Shaffer MA. Immediate effects of MET on posterior shoulder tightness. *J Orthop Sports Phys Ther.* 2011;41:400–407.
- [42] Sarkar B, Mangalam AK, Sahay P. Efficacy of MET vs myofascial trigger point release in chronic plantar fasciitis. *Int J Health Sci Res.* 2018;8(6):128–136.
- [43] Pezzullo DJ, Karas S, Irrgang JJ. Functional plyometric exercises for the throwing athlete. *J Athl Train.* 1995;30(1):22–26.
- [44] Wilk KE, Voight ML, Keirns MA, et al. Stretch shortening drills for upper extremities. *J Orthop Sports Phys Ther.* 1993;17(5):225–239.
- [45] Hawary R, Stanish W, Curwin S. Rehabilitation of tendon injuries in sport. *Sports Med.* 1997;24:347–358.
- [46] Khan KM, Cook JL, Kannus P, et al. Time to abandon the “tendonitis” myth. *BMJ.* 2002;324:626–627.
- [47] Malliaras P, Barton CJ, Reeves ND, Langberg H. Achilles and patellar tendinopathy loading programmes: systematic review. *Sports Med.* 2013;43(4):267–286.
- [48] Kongsgaard M, Kovanen V, Aagaard P, et al. Heavy slow resistance vs eccentric training for patellar tendinopathy. *Am J Sports Med.* 2009;37(4):743–750.
- [49] Stasinopoulos D, Stasinopoulos K. Eccentric vs eccentric plus stretching in lateral elbow tendinopathy. *J Back Musculoskeletal Rehabil.* 2017;31(3):423–430.
- [50] Chaitow L. *Muscle Energy Techniques.* 3rd ed.
- [51] Bisset L, Vicenzino B. Physiotherapy management of lateral epicondylalgia. *J Physiother.* 2015;61(4):174–181.
- [52] Vicenzino B. Mobilisation with movement (MWM): a critique. *Man Ther.* 1996;1(2):65–73.
- [53] Bisset L, Beller E, Jull G, Brooks P, Darnell R, Vicenzino B. MWM and exercise vs corticosteroid injection vs wait-and-see for tennis elbow: RCT. *BMJ.* 2006;333:939.