



Letter to the Editor

The role of proprioception in the management of lateral elbow tendinopathy

*To the Editor:*

Lateral elbow tendinopathy (LET), commonly referred as tennis elbow or lateral epicondylitis, is a common musculoskeletal and/or sports injury. LET is usually defined as a syndrome of pain in the area of the lateral epicondyle, which may be degenerative rather than inflammatory. The main complaints of patients with LET are pain and decreased function, both of which may affect daily activities. Physiotherapy is usually recommended for the management of LET. A plethora of physiotherapy techniques as well as electrotherapeutic and nonelectrotherapeutic modalities has been recommended for the management of LET. These treatments have different theoretical mechanisms of action, but all have the same aim, to reduce pain and improve function. Therefore, more research is needed to find out the most effective treatment approach in LET patients because this variety of treatment techniques suggests that the most proper treatment technique is not known.

The question that arises is why the optimal treatment of LET is still unknown, symptoms may persist for many years, and recurrence is common. One possible answer is that therapists use techniques to improve symptoms (pain and function), whereas LET patients have also reduced proprioception.¹ Recommended factors affecting LET proprioception maybe are as follows:

- ✓ Pain and reduced function
- ✓ Degenerative changes
- ✓ Fatigue
- ✓ Overuse
- ✓ Reduced flexibility
- ✓ Reduced strength
- ✓ Duration of symptoms
- ✓ Age of patients
- ✓ Sex
- ✓ Instability
- ✓ Previous injuries
- ✓ Wrist, elbow, neck, or shoulder stiffness
- ✓ Anatomic predicting factors such as valgus elbow

Therapists ignore the reduced proprioception in the management of LET. If therapists use modalities to improve the proprioception, the results will be effective sooner. Do physiotherapists have techniques to improve proprioception in LET patients?

Systematic review² and randomized controlled trial³ favor eccentric over other types of contractions in the management of LET. Malliaras et al⁴ concluded that clinicians should consider eccentric-

concentric loading alongside or instead of eccentric loading in tendinopathy. Martinez-Silvestrini et al⁵ stated that, unlike lower limb tendinopathy, LET is often related to forceful grip activities requiring isometric contraction, which would be more beneficial than eccentric contraction in LET, reducing and managing tendon pain increasing the strength at the angle of contraction without producing inflammatory signs. Comparing the effectiveness of eccentric-concentric training combined with isometric contraction, eccentric training, and eccentric-concentric training in LET patients, the eccentric-concentric training combined with isometric contraction produced the largest effect at the end of the treatment and follow-up.⁶ The aforementioned finding can be explained by the fact that isometric contractions increase the proprioception.

External support such as bracing/taping/kinesiotaping is recommended for the management of LET. The evidence for the effectiveness of external support in the improvement of symptoms is conflicted.⁷ There was no compelling evidence that any one kind of bracing/any type of taping is superior to another in the short or long term.⁷ On the other hand, sensorimotor and proprioceptive feedback mechanisms are responsible for the positive effects of external support.⁸ In addition, another study explains that improved functionality results from the increased recruitment of motor muscles required responding to an increased proprioceptive stimulus.⁹ Therefore, there are some evidence that external support can improve the proprioception. However, external support cannot apply as a sole treatment approach, but adding an external support to another treatment, a positive effect is expected.

Closed kinetic chain exercises (CKCEs) can be used to improve proprioception in the management of LET patients. The approximation of joint surfaces and the multiple joint loading inherent in CKCE are reported to increase mechanoreceptor stimulation and produce muscular cocontraction. However, more research is needed to find out specific recommended CKCE for the management of LET.

More research is needed to find out the factors for the development and progression of proprioception in LET patients. In addition, future studies are needed to investigate which treatment is the most effective to increase LET proprioception and if this treatment is effective for all LET patients; for example, LET patients with neck stiffness or patients with acute LET will have benefit from proprioception training. More research is also needed to find out which joint, wrist, elbow, or shoulder has poor proprioception in LET patients, and how this reduced proprioception affects the management of LET. Finally, further trials are needed to clarify whether reduced proprioception plays a role in the development of LET, the progression of the degenerative changes found in LET, and in the large recurrence rate of LET.

References

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