

# VARIATION IN SIZE AND LOCATION OF THE ECRB TENDON MEASURED WITH ULTRASOUND. IS BLIND INJECTION OF LATERAL EPICONDYLITIS STILL JUSTIFIED?

## AUTHORS

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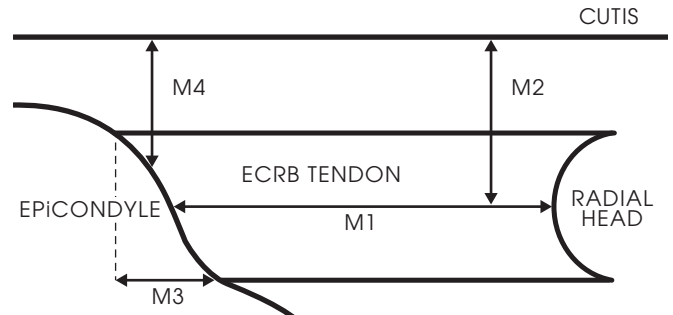
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## INTRODUCTION

In Lateral Epicondylitis (LE), or Tennis Elbow, the Extensor Carpi Radialis Brevis (ECRB) tendon is affected in most cases. In the treatment of LE, injection therapy is frequently used; usually performed manually, without ultrasound (US) guidance. For adequate treatment the injection should be aimed at the location of the ECRB tendon.

What is the variation in location and size of the ECRB tendon?



*M1 = ECRB; distance radial head to epicondyle  
M2 = Depth cutis to center of ECRB tendon  
M3 = Length osteotendinous junction on epicondyle  
M4 = Depth cutis to epicondyle, centre of M3*

## RESULTS

Average measurements:

- M1** tendon length 1.68cm (range 1.27-1.98) SD 0.177, with a male-female difference of 0.12cm (p=0.03).
- M2** depth 0.75cm (range 0.50-1.46) SD 0.210.
- M3** length junction 0.55cm (range 0.35-0.87) SD 0.130.
- M4** depth 0.73cm (range 0.40-1.25) SD 0.210.

## CONCLUSION

The variation in size and location of the ECRB is large, partially explained by the variation in thickness of the overlying soft tissues and the variation in osseous anatomy.

Consequently, manual injections performed blindly for the treatment of LE do not seem an appropriate technique; US depth determination or US guidance during injection is recommended. For adequate perfusion, the depth of perforations needs to vary, according to the slope of the lateral epicondyle.

## REFERENCES

Krogh et al. Comparative Effectiveness of Injection Therapies in Lateral Epicondylitis: A Systematic Review and Network Meta-analysis of Randomized Controlled Trials. *Am J Sports Med* 2013 Jun;41 (6):1435-46.

Verhaar JA. Tennis elbow: anatomical, epidemiological and therapeutic aspects. *Int Orthop*. 1994;18:263-267.



## METHODS

Observational US study of the ECRB tendon was performed in 40 patients with LE

Measurements:

- Length of the ECRB tendon (M1)
- Distance from cutis to the center of the ECRB tendon (M2)
- Length of the osteotendinous junction on the epicondyle (M3)
- Distance from cutis to middle of the osteotendinous junction (M4)