

# Treatment of Lateral Epicondylitis With Platelet-Rich Plasma, Glucocorticoid, or Saline

## A Randomized, Double-Blind, Placebo-Controlled Trial

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## Abstract

**Background:** Lateral epicondylitis (LE) is a common musculoskeletal disorder for which an effective treatment strategy remains unknown.

**Purpose:** To examine whether a single injection of platelet-rich plasma (PRP) is more effective than placebo (saline) or glucocorticoid in reducing pain in adults with LE after 3 months.

**Study Design:** Randomized controlled trial; Level of evidence, 1.

**Methods:** A total of 60 patients with chronic LE were randomized (1:1:1) to receive either a blinded injection of PRP, saline, or glucocorticoid. The primary end point was a change in pain using the Patient-Rated Tennis Elbow Evaluation (PRTEE) questionnaire at 3 months. Secondary outcomes were ultrasonographic changes in tendon thickness and color Doppler activity.

**Results:** Pain reduction at 3 months (primary end point) was observed in all 3 groups, with no statistically significant difference between the groups; mean differences were the following: glucocorticoid versus saline:  $-3.8$  (95% CI,  $-9.9$  to  $2.4$ ); PRP versus saline:  $-2.7$  (95% CI,  $-8.8$  to  $3.5$ ); and glucocorticoid versus PRP:  $-1.1$  (95% CI,  $-7.2$  to  $5.0$ ). At 1 month, however, glucocorticoid

reduced pain more effectively than did both saline and PRP; mean differences were the following: glucocorticoid versus saline:  $-8.1$  (95% CI,  $-14.3$  to  $-1.9$ ); and glucocorticoid versus PRP:  $-9.3$  (95% CI,  $-15.4$  to  $-3.2$ ). Among the secondary outcomes, at 3 months, glucocorticoid was more effective than PRP and saline in reducing color Doppler activity and tendon thickness. For color Doppler activity, mean differences were the following: glucocorticoid versus PRP:  $-2.6$  (95% CI,  $-3.1$  to  $-2.2$ ); and glucocorticoid versus saline:  $-2.0$  (95% CI,  $-2.5$  to  $-1.6$ ). For tendon thickness, mean differences were the following: glucocorticoid versus PRP:  $-0.5$  (95% CI,  $-0.8$  to  $-0.2$ ); and glucocorticoid versus saline:  $-0.8$  (95% CI,  $-1.2$  to  $-0.5$ ).

**Conclusion:** Neither injection of PRP nor glucocorticoid was superior to saline with regard to pain reduction in LE at the primary end point at 3 months. However, injection of glucocorticoid had a short-term pain-reducing effect at 1 month in contrast to the other therapies. Injection of glucocorticoid in LE reduces both color Doppler activity and tendon thickness compared with PRP and saline.

## Footnotes

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