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## Original articles

# Prolotherapy injections and eccentric loading exercises for painful Achilles tendinosis: a randomised trial

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## Abstract

**Objective** To compare the effectiveness and cost-effectiveness of eccentric loading exercises (ELE) with prolotherapy injections used singly and in combination for painful Achilles tendinosis.

**Design** A single-blinded randomised clinical trial. The primary outcome measure was the VISA-A questionnaire with a minimum clinically important change (MCIC) of 20 points.

**Setting** Five Australian primary care centres.

**Participants** 43 patients with painful mid-portion Achilles tendinosis commenced and 40 completed treatment protocols.

**Interventions** Participants were randomised to a 12-week program of ELE (n=15), or prolotherapy injections of hypertonic glucose with lignocaine alongside the affected tendon (n=14) or combined treatment (n=14).

**Main outcome measurements** VISA-A, pain, stiffness and limitation of activity scores; treatment costs.

**Results** At 12 months, proportions achieving the MCIC for VISA-A were 73% for ELE, 79% for prolotherapy and 86% for combined treatment. Mean (95% CI) increases in VISA-A scores at 12 months were 23.7 (15.6 to 31.9) for ELE, 27.5 (12.8 to 42.2) for prolotherapy and 41.1 (29.3 to 52.9) for combined treatment. At 6 weeks and 12 months, these increases were significantly less for ELE than for combined treatment. Compared with ELE, reductions in stiffness and limitation of activity occurred earlier with prolotherapy and reductions in pain, stiffness and limitation of activity occurred earlier with combined treatment. Combined treatment had the lowest incremental cost per additional responder (\$A1539) compared with ELE.

**Conclusions** For Achilles tendinosis, prolotherapy and particularly ELE combined with prolotherapy give more rapid improvements in symptoms than ELE alone but long-term VISA-A scores are similar.

**Trial registration number** ACTRN: 12606000179538



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