

## **Injection with autologous conditioned serum has better clinical results than eccentric training for chronic Achilles tendinopathy**

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### **Abstract**

**Purpose** Chronic Achilles tendinopathy is one of the most common causes of malfunction and pain, which can lead to a significant reduction of the quality of life. The hypothesis of this study argues that autologous conditioned serum (i.e. Orthokine) injections in chronic midportion Achilles tendinopathy have a better outcome than eccentric training.

### **Methods**

This study investigates, retrospectively, the effects of peritendinous autologous conditioned serum injections as compared to standard eccentric training in 50 patients with chronic Achilles tendinopathy between 2012 and 2015. Before injection or eccentric training and 6 weeks, 12 weeks and 6 months thereafter, the patients were assessed by means of the VISA-A-G score (Victorian Institute of Sport Assessment-Achilles questionnaire-German). An MRI was also performed before and 6 months after injection and eccentric training.

### **Results**

Both patient groups had statistically significant better VISA-A-G scores after injection or eccentric training compared to the baseline before injection (90 vs 40, respectively,  $P < 0.001$ ) or eccentric training (81 vs 47, respectively,  $P < 0.001$ ). Comparing the baseline corrected VISA-A-G scores, patients in the autologous-conditioned-serum-group had significantly higher changes in VISA-A-G scores than the eccentric-training-group after 12 weeks (40 vs 36,  $P = 0.018$ ) and 6 months (50 vs 34,  $P = 0.034$ ). Both patient groups had statistically significant ( $P < 0.001$ ) reduction of tendon thickness (autologous conditioned serum: 0.32; eccentric training: 0.24) and length of bursa (autologous conditioned serum: 0.24; eccentric training: 0.21) as well as significant ( $P < 0.001$ ) improvement of tendon quality in MRI (autologous conditioned serum: 14 vs 1; eccentric training: 14 vs 2). There were no statistical differences in MRI-findings between the two groups.

### **Conclusion**

Both therapies led to improvement of MRI-findings, including reduction of tendon thickness and tendon quality. Autologous-conditioned-serum-injections show greater clinical long-term benefit as compared to eccentric training and, therefore, offers a good alternative to eccentric training. Level of evidence Therapeutic studies, Level III.