

Struijs PAA, Assendelft WJJ, Kerkhoffs GMMJ, Souer S, Dijk CNv. The Predictive Value of the Extensor Grip Test for the Effectiveness of Bracing for Tennis Elbow. *Am J Sports Med.* 2005;33:1905-1909.

A variety of treatment strategies for tennis elbow have been identified over the years including corticosteroid injections, physical therapy, bracing (orthotic devices), and surgery. This article recognizes that the effectiveness of orthotic devices has yet to be proven. In order to accommodate for the lack of investigation, Struijs et al. (2005) incorporated the extensor grip test into a randomized clinical trial to investigate the different nonoperative treatment strategies for tennis elbow. The purpose of this study was to determine the predictive value of the extensor grip test for effectiveness of bracing as a treatment strategy in patients with subacute and chronic tennis elbow.

This study used a cohort study design in which patients (n=177) with tennis elbow complaints underwent baseline assessments for outcomes measures (including success rate, severity of complaints, pain, disability, inconvenience during daily life, and satisfaction) and the extensor grip test before randomization in a blinded setting. Patients were then randomized into three treatment groups: brace only, physical therapy, and combination brace and physical therapy. Patients in the brace-only group immediately received the brace and instructions following placement. Patients in the physical therapy or combination group received instructions by a physical therapist according to a standardized protocol. The outcomes measures were assessed by a blinded assessor.

Significant differences were identified between patients with a positive test and patients with a negative test in the brace-only group. The success rate in the test-negative group was 23% (5/22) compared to 47% (21/45) in the test-positive group. The mean decrease in pain for the patient's main complaint was 23 (95% confidence interval [CI]) in the test-positive group compared to 11 (95% CI) in the test-negative group. Other outcomes measures were not found to be statistically significant. No side effects were noted in either the brace or the physical therapy group. No statistically significant differences were found between the test-positive and test-negative patients in the physical therapy or combination group. Therefore, no predictive value of the test for success of these treatment strategies could be identified.

As the study design was previously reported, the level of evidence was determined with the *AAOS Levels of Evidence for Primary Research Question*. At least half of the outcomes in this article were statistically significant, there was a 100% follow-up as well as blinding of subjects and assessors, therefore this article's level of evidence has been determined to be a Level 1.

In this study, the extensor grip test was used in an attempt to predict the effectiveness of a brace in a patient with tennis elbow. The test is easy to administer, and this article has shown that it is able to discriminate between patients expected to have a successful result or not, therefore indicating that this test can implicate direction for treatment choice. These results show this test to be feasible for clinicians and acceptable to patients. Though there aren't diagnostic values such as specificity and sensitivity to present to the patient, it may be of equal value to them that the predictive values help determine whether the patient needs an activity-restricting brace or not.