

# Factors Associated with Failure of Non-operative Treatment of Lateral Epicondylitis

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## Objective:

Identify baseline patient and disease factors associated with the failure of non-operative treatment of lateral epicondylitis (defined as progression to surgery).

## Methods:

- Retrospective review of 590 patients treated for lateral epicondylitis
- Disease-specific and patient demographic characteristics were compared between the groups with successful non-operative treatment versus failed non-operative treatment
- Univariate analysis performed on all variables (Student *t*-test for continuous and Chi-Square for categorical variables)
- Variables associated with failure of non-operative treatment ( $P < 0.1$ ) were entered into a multivariate logistic regression analysis using a forward, step-wise method
- Statistical significance was set at  $\alpha = 0.05$  level for all tests

Table 1. Baseline patient and disease-specific characteristics

### Variables included in the multivariate analysis ( $p < 0.1$ ):

Age	History of previous orthopedic surgery
Occupation (labor vs. non-labor)	Duration of symptoms
Smoking	Concomitant radial tunnel syndrome
Use of anti-depressant medication	Prior injection
Use of narcotic medication	Prior physical therapy
Workers compensation claim	Prior use of a splint

### Variables not included in the multivariate analysis ( $p > 0.1$ )

Sex  
BMI

Table 2. Baseline Characteristics Predictive of Failure of Non-operative Treatment

Risk Factor	Odds Ratio (95% CI)
Workers' compensation claim	9.0 (4.0, 20.4)
Prior injection	5.6 (2.7, 11.4)
Radial tunnel syndrome	3.1 (1.6, 6.0)
Prior orthopedic surgery	3.0 (1.6, 5.5)
Duration of symptoms > 12 mo	2.7 (1.3, 5.6)

## Results:

94 (16%) failed non-operative treatment

### Baseline patient characteristics:

248 males, 342 females  
Mean age: 48 years (SD 10 yrs)  
378 (64%) were non-laborers  
498 (84%) were non-smokers  
55 (9%) had Workers' Compensation Claim  
77 (13%) used narcotic medication  
111 (19%) used anti-depressant medication  
54 (9%) used anti-anxiety medication

### Baseline disease characteristics:

Mean duration of symptoms: 8 mo (SD 16 mo)  
Prior treatment: splint (148, 25%), physical therapy (126 pts, 21%), injection (96, 16%), 99 (17%) had ipsilateral radial tunnel syndrome

Results of the univariate analysis are shown in Table 1. Overall model, shown in Table 2, was statistically significant (LR Chi-square=160.542,  $df=7$ ,  $p < .001$ ).

**Conclusions:** While only 16% of patients ultimately need surgery, the risk of needing surgery to relieve symptoms is significantly higher among patients with concomitant radial tunnel syndrome, a prior injection, history of prior orthopedic surgery or a workers' compensation claim.