

# Epidemiology of Medial Ulnar Collateral Ligament Reconstruction: A 10-Year Study of New York State

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## BACKGROUND

- Research has documented that as many as 10% of active Major League Baseball pitchers have undergone UCL reconstruction, and there has been an estimated 10-fold increase in reconstruction in the first decade of the 21<sup>st</sup> century.
- Despite an increase in the prevalence of medial ulnar collateral ligament (UCL) reconstruction within the media, there have are no population-based studies examining the incidence of UCL reconstruction.
- Furthermore, concomitant ulnar nerve management during UCL reconstruction of the elbow remains somewhat controversial
- The primary purpose was to examine the epidemiology of trends of UCL reconstruction on a statewide level over a 10-year period.
- The secondary purpose was to examine the rate of concomitant ulnar nerve procedures performed at the time of UCL reconstruction.

## MATERIALS & METHODS

- The New York Statewide Planning and Research Cooperative System (SPARCS) database was used to identify all UCL reconstructions in New York State (NYS) from 2002 – 2011 using CPT codes.
- Patient age, sex, ethnicity, insurance, associated procedures and hospital volume were recorded.
- The primary endpoint was the yearly rate of UCL reconstruction over time in NYS, and secondary endpoints included patient demographics, institution volumes and concomitant ulnar nerve procedures.

## RESULTS

- There was a significant yearly increase in the number of UCL reconstructions ( $p < 0.001$ ) performed in NYS from 2002 to 2011.
- The volume of UCL reconstructions increased by 193% and the rate per 100,000 population tripled from 0.15 to 0.45.
- The mean age was 21.6 years ( $SD \pm 8.89$ ) and there was a significant trend for an increased frequency in UCL reconstruction in 17-18 and 19-20 year-olds ( $p < 0.001$ ).

- Males were 11.8 times more likely to have a UCL reconstruction than women ( $p < 0.001$ ) and individuals with private insurance were 25 times more likely to have a UCL reconstruction than those with Medicaid ( $p = 0.0014$ ).
- There was a 400% increase in concomitant ulnar nerve release/transposition performed over time in the study period, representing a significant increase in the frequency of ulnar nerve procedures at the time of UCL reconstruction ( $p < 0.001$ ).

## DISCUSSION

- The frequency of UCL reconstruction in NYS is steadily rising, especially in adolescent athletes.
- Despite previous research showing decreased ulnar nerve complications with avoidance of routine ulnar nerve transposition, the present data showed a disproportionate increase in ulnar nerve procedures.
- Education on risks of overuse throwing injuries and the importance of adhering to preventative guidelines is essential in youth baseball today.

**Figure 1.** The volume of NYS ambulatory surgery procedures using CPT= 24346, (Reconstruction Medial Collateral Ligament Elbow MCL) from 2002-2011 increased significantly over a 10 year period

