

# Risk of Serious Injury for Young Baseball Pitchers: A 10-Year Prospective Study

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## Abstract

**Background:** The risk of elbow or shoulder injury for young baseball pitchers is unknown.

**Purpose/Hypothesis:** The purpose of this study was to quantify the cumulative incidence of throwing injuries in young baseball pitchers who were followed for 10 years. Three hypotheses were tested: Increased amount of pitching, throwing curveballs at a young age, and concomitantly playing catcher increase a young pitcher's risk of injury.

**Study Design:** Cohort study; Level of evidence, 3.

**Methods:** In sum, 481 youth pitchers (aged 9 to 14 years) were enrolled in a 10-year follow-up study. Participants were interviewed annually. Injury was defined as elbow surgery, shoulder surgery, or retirement due to throwing injury. Fisher exact test compared the risk of injury between participants who pitched at least 4 years during the study and those who pitched less. Fisher exact tests were used to investigate risks of injury for pitching more than 100 innings in at least 1 calendar year, starting curveballs before age 13 years, and playing catcher for at least 3 years.

**Results:** The cumulative incidence of injury was 5.0%. Participants who pitched more than 100 innings in a year were 3.5 times more likely to be injured (95% confidence interval = 1.16 to 10.44). Pitchers who concomitantly played catcher seemed to be injured more frequently, but this trend was not significant with the study sample size.

**Conclusion:** Pitching more than 100 innings in a year significantly increases risk of injury. Playing catcher appears to increase a pitcher's risk of injury, although this trend is not significant. The study was unable to demonstrate that curveballs before age 13 years increase risk of injury.

**Clinical Relevance:** The risk of a youth pitcher sustaining a serious throwing injury within 10 years is 5%. Limiting the number of innings pitched per year may reduce the risk of injury. Young baseball pitchers are encouraged to play other positions as well but might avoid playing catcher.

## **Keywords**

[shoulder](#), [elbow](#), [Little League](#), [high school](#), [throwing](#), [ulnar collateral ligament reconstruction](#)