

Progressive elbow abnormalities are common on MRI in asymptomatic Little League baseball players

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Video Abstract

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Abstract

Throwing injuries among Little League players are currently on the rise. While studies have evaluated the risk factors for throwing injury among these competitive young athletes, no study to date has resorted to serial MRI among asymptomatic Little League players over time. Using this technique, researchers have now discovered several risk factors that predispose youth baseball players to elbow injuries. The team examined the dominant and non-dominant elbows of 26 Little League baseball players. Before the study, each player reported no symptoms of injury and had undergone both pre- and postseason MRI 3 years prior. In addition to conducting repeat elbow MRI at their 3-year follow-up visit, the researchers assessed the players' shoulders and elbows, throwing history, playing status, and arm pain. MRI results revealed abnormalities in the dominant elbow of 15 players—more than half of the cohort. Among those players, 12 showed new or progressive lesions, including tearing of the ulnar collateral ligament, or UCL, and swelling of the olecranon, the pointed tip of the elbow. Exam results also showed that external rotation of the dominant shoulder was significantly greater in players who continued playing baseball over the 3-year follow-up period compared with those who no longer played. Players with prior postseason MRI pathology were significantly more likely to have MRI pathology at the 3-year follow-up versus players with no prior postseason pathology. Year-round play, defined as at least 8 months of play per year, was the biggest risk factor for elbow pain upon manual examination, increased external rotation, and positive MRI findings 3 years later. Nearly 80% of year-round players showed MRI abnormalities in their dominant elbow. Playing the catcher or pitcher position was also a predictor of increased shoulder rotation. Although the sample size was small and the long-term significance of the MRI abnormalities are largely unknown, the study's findings are meaningful. They provide evidence that year-round play is harmful to the throwing arm of developing athletes. The authors stress that a revised guideline is needed in Little League baseball to give players at least 3 months of rest per year to prevent elbow injuries due to overuse.