

Little League® may need more restrictive guidelines, additional conditioning to prevent overuse and return to play injuries



According to a recent study on Little League® baseball players, the current Little League pitching guidelines, last modified in 2007, may not be sufficient to prevent shoulder and elbow injuries. New data suggests that the endorsed guidelines, along with all-around compliance, still results in a high number of shoulder and elbow injuries in young pitchers.

Thirty-four Little League pitchers ages 10 to 13 were the subject of the study. Athletes had an MRI before and after the season to examine the radiologic effect on their shoulders and elbows over a single season. MRI findings were categorized as ‘abnormal’ if there was evidence of tissue injury. According to the researchers, abnormalities were noted on the medial side of the elbow and included fragmentation of the bony medial epicondyle, edema (swelling), and partial tearing of the ulnar collateral ligament (UCL). At the beginning of the season, 35 percent of the

players had an abnormal MRI finding. At the end of the season, 48 percent of players had an abnormal MRI finding. Of the players with an abnormal MRI finding at the end of the season, 75 percent had new findings and/or a progression of an abnormal finding that was found before the start of the season.

Each player also underwent a physical examination at the beginning and the end of the season. In comparison, the researchers noted a loss of approximately 11.2 degrees of shoulder internal rotation per athlete, a loss of 10.8 degrees of the shoulder total arc of motion, and the development of 1.4 degrees of elbow hyperextension. There was a positive correlation between the pre- and post-season abnormal MRI findings and the loss of range of motion and the development of elbow hyperextension.

The study’s authors reported that players demonstrated “excellent” compliance with the Little League regulations, which consist of pitch count limits and mandatory rest days; however, players did not comply as well with other nonmandatory, but recommended regulations. These recommendations include restrictions on throwing off-speed pitches such as curveballs and sliders, resting from baseball play for at least three months per year, and restrictions on how many teams an athlete may be on during one season. Of the 25 athletes in the study, 56 percent threw off-speed pitches, 68 percent did not rest for at least three months per year, and eight percent played on more than one team during the same season.

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When the researchers examined the 12 players with an abnormality in their post-season MRI, 83 percent had not complied with at least one of the nonmandatory recommendations, compared to 62 percent of the players who did not have a post-season abnormality. Of the eight players who had a worsened and/or new abnormality at the end of the season, 88 percent had not followed at least one of the three nonmandatory recommendations, compared to 65 percent of the players who had no new and/or worsening abnormalities. Athletes who did not comply with the nonmandatory recommendations had a greater likelihood of injuring their shoulder/elbow.

According to the researchers, their findings underscore the importance of complying with both mandatory and nonmandatory Little League pitching guidelines in order to optimize injury prevention. "These numbers are very high and certainly raise a question about the overall effectiveness of the Little League pitching guidelines," Dr. Steven Chudik said. "It also is a testament to the unnatural and damaging forces pitching places on the shoulders and elbows of our developing youth. We should focus more on instruction and free play and less on competitive organized sports," he added.

Part of the instruction, according to Dr. Chudik, should be teaching athletes the importance of good biomechanics and following an Interval Throwing Program (ITP) as part of their training and return to play after time off or an injury.

An ITP is based on throwing at an incremental speed and distance to gradually prepare a throwers' arm for the season. Typically, ITPs are age-specific and incorporate pitch statistics, field dimensions, performance restrictions and throwing endurance. They start with short tosses and progress in intensity and number of throws, as well as distance in a safe manner. The ITP should be completed in the preseason prior to returning to throwing following time off, or after rehabilitating an injury.

Dr. Chudik uses three age-specific ITP programs for throwers recovering from an injury or time-off that are designed to work in conjunction with a research-based, in-season stretching and conditioning program created by Dr. Chudik and his health performance team through his foundation, the Orthopaedic Surgery and Sports Medicine Teaching and Research Foundation (OTRF) featured on page six. To receive a copy of an age-specific ITP program, email the age of the player(s) to contactus.chudikmd.com/.

