Longitudinal study of elbow and shoulder pain in youth baseball pitchers.

PURPOSE: Previous studies among young pitchers have focused on the frequency and description of elbow injuries. The purpose of this study was to evaluate the frequency of elbow and shoulder complaints in young pitchers and to identify the associations between pitch types, pitch volume, and other risk factors for these conditions.

METHODS: A prospective cohort study of 298 youth pitchers was conducted over two seasons. Each participant was contacted via telephone after each game pitched to identify arm complaints. Generalized estimating equations were used to assess associations between arm complaints and independent variables.

RESULTS: The frequency of elbow pain was 26%; that of shoulder pain, 32%. Risk factors for elbow pain were increased age, increased weight, decreased height, lifting weights during the season, playing baseball outside the league, decreased self-satisfaction, arm fatigue during the game pitched, and throwing fewer than 300 or more than 600 pitches during the season. Risk factors for shoulder pain included decreased satisfaction, arm fatigue during the game pitched, throwing more than 75 pitches in a game, and throwing fewer than 300 pitches during the season.

CONCLUSION: Arm complaints are common, with nearly half of the subjects reporting pain.
The factors associated with elbow and shoulder pain were different, suggesting differing etiologies. Developmental factors may be important in both. To lower the risk of pain at both locations, young pitchers probably should not throw more than 75 pitches in a game. Other recommendations are to remove pitchers from a game if they demonstrate arm fatigue and limit pitching in nonleague games.