Proper stretching, warm-up exercises critical to preventing throwing injuries

In 2007, Little League Baseball changed its pitching rules opting to use pitch counts to determine when a pitcher should rest instead of innings pitched. The change occurred because of pressure from orthopaedic surgeons treating a growing number of pitchers for overuse injuries. Little League Baseball was the first youth organization to make the change and many other organizations and clubs have since followed suit.

How many innings should a child throw?

This is one of the most common questions asked of sports medicine professionals by parents of youth baseball players. However, the number of overall throws during a given period, rather than innings pitched, is more important. The USA Baseball Medical and Safety Advisory Committee commissioned a survey from baseball experts about pitching limits and other injury factors. Although the response rate was only 33 percent, the survey is the most reliable data available at this time and provided valuable insight and recommendations including:

- The number of pitches is more important than number of innings when determining rest requirements. See tables 1 and 2 on next page.
- The maximum number of pitches during a single outing should gradually increase with age.
- A pitcher should be limited to two appearances per week.
- Compared to younger pitchers, older pitchers can throw a few more pitches for a given number days of rest.
- Participation in multiple leagues, playing other positions, and practice pitching should be considered when defining and regulating rest.
- In general, a child can begin to throw a fastball at the age of eight, a change-up at age ten and a curveball at age 14. See table 3 on the next page.
- Improper technique is a major factor in injury potential. Learning proper pitching mechanics is critical.
- Conditioning of the throwing arm and entire body can reduce a young pitcher's risk of injury.
- While the number of pitches should be limited, the young pitcher should be encouraged to throw. This includes playing catch, playing other positions besides pitcher, and practicing pitching. Throwing is necessary for a young pitcher to strengthen and condition his/her arm and body.
- Symptoms of discomfort or fatigue should be respected and longer periods of rest are recommended.

Continued on next page

Continued from page 4

Table 1: Recommended maximum number of pitches (mean +/- standard deviation)

Age	Maximum Pitches/Game	Maximum Games/Week
8-10	52 +/- 15	2 +/- 0.6
11-12	68 +/- 18	2 +/- 0.5
13-14	76 +/- 16	2 +/- 0.4
15-16	91 +/- 16	2 +/- 0.4
17-18	106 +/- 16	2 +/- 0.6

Table 2: Recommended minimum rest periods for a given number of pitches (mean +/- standard deviation)

Age	One Day Rest	Two Days Rest	Three Days Rest	Four Days Rest
8-10	21 +/- 18	34 +/- 16	43 +/- 16	51 +/- 19
11-12	27 +/- 20	35 +/- 20	55+/- 23	58 +/- 18
13-14	30 +/- 22	36 +/- 21	56 +/- 20	70 +/- 21
15-16	25 +/- 20	38 +/- 23	62 +/- 23	77 +/- 20
17-18	27 +/- 22	45 +/- 25	62 +/- 21	89 +/- 22

Table 3: Recommended age for throwing various pitches*

Pitch	Age (Years)		Pitch	Age (Years)
Fastball	8 +/- 2		Slider	16 +/- 2
Change-Up	10 +/- 3		Forkball	16 +/- 2
Curveball	14 +/- 2		Screwball	17 +/- 2
Knuckleball	15 +/- 3			

*Although studies reveal higher injury rates for those who start throwing breaking pitches at younger ages, biomechanic studies fail to show greater detrimental forces with breaking balls versus fastballs.