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HEADLINE: Too much, too soon?

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As a baseball player at Barrington High School, Bobby Brignola threw more than 100 pitches in one game. He warmed up in the bullpen the day after that, and again the day after that.

Afterward, he felt like a knife was plunged into his shoulder.

A doctor found the young Brignola had torn his labrum, the cuff of cartilage around the shoulder. His playing days were over before he graduated in 2005. It was a classic case of an overuse injury: putting too much repeated stress on a single body part.

Doctors say they are seeing an epidemic of young athletes with overuse injuries — breakdowns caused by repetitive stress on a single body part.

Similar to carpal tunnel syndrome among adults who work at keyboards, overuse injuries in young athletes include painful conditions like bursitis, tendinitis, shin splints and stress fractures.

With more students seeking scholarships by focusing on one sport year-round, with more intense and frequent training and games, they are getting hurt more often and more seriously.

One study by the University of Connecticut Health Center found the percentage of injuries due to overuse among young athletes rose from 10 percent in 1980 to 70 percent by 2005. Another study found that "Tommy John" surgeries to replace a damaged elbow ligament in young pitchers has increased to the point that almost one-third of such patients younger than 18.

The phenomenon is primarily a result of coaches and parents pushing kids too hard, too young. At the same time, kids want to emulate successful athletes like Olympic gold medal swimmer Michael Phelps who endure years of grueling workouts.

Many young bodies can't handle that level of training and end up with an injury that may curtail their participation in that sport the rest of their lives.

A more realistic goal for most athletes is to do their best, have fun and stay healthy. Doctors and trainers say it can be done if athletes, coaches and parents follow programs that strengthen key areas while giving growing bodies plenty of time for rest and recovery.

Kid K

Perhaps the poster boy for overuse injury is Chicago Cubs pitcher Kerry Wood. His high school coach worked him heavily, once even pitching him in both games of a doubleheader. The Cubs later rode him hard, and he's had arm troubles throughout his career.

With so many kids developing arm problems, the condition came to be known as Little Leaguer's Elbow. After an outcry from parents and doctors, such misuse of young pitchers led Little League Baseball to limit the number of games and pitches for each player.

Despite the improvement, overuse injuries remain common among pitchers.

Doctors and trainers blame traveling clubs that extend the baseball season from a couple of months in high school to half the year or more. They also blame coaches who have kids throw breaking balls too young.

Overuse injuries are also common in other sports that require overhead arm movements, such as swimming, tennis and volleyball. Yet no similar limits on activity exist in those sports.

Andrew Kushner, a physical therapist who manages Athletico in Wheeling, says he sees 14-year-old swimmers who only swim 100 or 200 yards in competition, but get in the water at 5 a.m. to get in 4,000 yards of practice laps.

Despite advances in sports training and medicine, he said, many swim coaches are stuck in the same practice methods from the 1930s. Not only does it grind down the shoulder joint, such overtraining is prone to diminishing performance.

Compounding the problem is that young athletes often have pain for months before bringing it up with coaches or parents. Any pain that continues for more than a week or two requires a stop to the activity and should be checked out by a doctor.

Vulnerable age

Kids are vulnerable to overuse injuries in part because their bones are not fully developed. Growth plates at the ends of bones haven't yet hardened, and the spongelike cells where tendons attach can develop tiny ruptures.

In addition, bones grow faster than muscles and tendons, so the connecting tissues get stretched tight and stressed by running and jumping.

This can lead to conditions like Sever's Disease, a common cause of heel pain in pre-pubescent gymnasts, dancers and soccer players. The Achilles tendon pulls on the back of the heel and creates chronic inflammation.

A similar situation involving the patellar tendon can cause pain just below the knee in a condition known as Osgood-Schlatter Disease, also common in preteen athletes.

If caught early, rest, stretching, ice and cushioning heel cups can alleviate such problems, which can fade as the child grows up.

More serious injuries, such as osteochondritis, in which blood supply to the end of a bone is cut off, can lead to surgery.

Dr. Cynthia LaBella, director of the Institute for Sports Medicine at Children's Memorial Hospital in Chicago, runs seminars in preventing youth sports injuries, and says most of her patients' injuries are due to overuse.

As a member of the American Academy of Pediatrics Council on Sports Medicine and Fitness, she urges parents to follow its guidelines to avoid overuse.

"The heartbreaking thing for me is all of these overuse injuries are preventable," she said. "If people would follow our guidelines, we could really make some progress."

Preventing injuries

Doctors and sports trainers say the proper training in strength, flexibility, coordination and mechanics, combined with enough rest, can help avoid most overuse injuries.

Pitchers, for instance, often need more strength around the shoulder blade and in the rotator cuff to stabilize the shoulder. Kushner recommends exercises such as rowing, rubber band stretches and pull-downs to work the shoulder blade.

Female athletes often have knee instability in part because their quadriceps muscles on the front of their thighs are not as strong as the hamstrings on the back of the thigh. Exercises to strengthen the quads, such as dead lifts and leg curls, help maintain the proper balance.

Stung by criticism that club teams overwork their athletes, some clubs say they recognize the importance of rest and all-around conditioning.

Marc Brignola, executive director of The Sports Academy Northwest in Buffalo Grove, is the father of Bobby Brignola, the pitcher who tore up his shoulder.

Wary of such injuries because of his son, Brignola says his clubs rotate their pitchers with four days of rest and don't let kids throw curve balls until they're physically mature enough to shave.

Club athletes also work out at Superior Athletic Advantage, which emphasizes weightlifting and isometrics to develop core and extremity strength.

Training facilities like Superior and Athletico also offer video or motion analysis to see if an athlete's pitching mechanics or other repetitive motions may be causing injury, and warmups and cool downs to facilitate flexibility and blood flow.

When Brignola's second son Anthony, a 16-year-old junior who also plays baseball at Barrington, recently developed tendinitis in his shoulder, coaches gave him time off.

He also started exercising at Superior Athletic Advantage, doing handstands against a wall and Olympic-style weightlifting to increase his strength.

"You really feel a lot stronger afterward," Anthony said, "so I know it's working."

Still, athletic trainers warn parents that they need to take it easy on their kids.

As Prospect High School trainer Matt Guth put it, parents have to quit looking for dollar signs out of their kids.

"Instead of being kids they're becoming little athletes," he said. "Sometimes they need to be kids and play for fun, and not for scholarships when they're only 12 years old."