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Living Well: How much is too much in youth sports?

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The young gymnast and her mother were sitting across from Dr. Gregory Schmale at Children's Hospital and Medical Center in Seattle. There was no easy way for Schmale to give his news. He talked directly to the 12-year-old girl.

Your body is not cut out for gymnastics, Schmale said. The most recent injury to the girl's wrist was severe enough to warrant not only full rest but retirement from elite competitive gymnastics.

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She was still in middle school.

Otherwise, Schmale explained, issues with the growth plate in the wrist would likely cause lifelong problems. It might mean the bone would stop growing, shortening the arm, or develop crooked. Schmale was the third doctor to tell the girl and mother the same bad news about the wrist and further participation in gymnastics.

What came next surprised Schmale.

"The girl looked happy and relieved," said Schmale. "She almost audibly sighed."

In stark contrast, the mother was distraught about the abrupt halt to medals and ribbons and Olympic dreams.

"Oh, all these years we put into the sport," the mother said. She lamented the long hours and family sacrifices. You have to guess, but privately, the mom was probably thinking about the money, too, for team fees, instruction, travel, leotards, you name it.

Here is a case where a young athlete has pushed all the limits of participation -- physical pain, lost childhood, missed opportunities to play other sports or play an instrument or, well, just play -- and finally pushed too hard. Her sports life has broken and no one can fix it.

The athlete is happy. The parent is inconsolable.

Something is wrong with that picture and its lithograph hangs in many more Puget Sound area households. Pushing the limits is part of playing sports, especially as the level of competition improves. But understanding just how far is too far is vital for parents and their sports-playing kids. This three-part P-I series (today, Thursday and Saturday) will explore the physical and emotional limits in sports, then provide some answers to guide children, parents and coaches alike.

"I see kids in my office all the time on the verge of tears (from the physical pain of injury)," said Richard Bouche, a podiatrist with the Sports Medicine Clinic at Northwest Hospital and Medical Center. "The parental input can be very surprising. Lots of parents come here and tell me, 'We want our kid to play this weekend.' Those parents would do better to respect what their kids' bodies are saying."

Bouche is not unsympathetic to parents' hopes for their children's athletic success. His son played on a "select" or all-star basketball team as a middle schooler to prepare for this year's high school tryouts. Bouche's daughter is 12 and plays select basketball too. She struggled with growth-plate inflammation and pain last year and "would be in tears after games because her knees and feet were killing her."

Bouche estimated that "about 75 percent" of his daughter's teammates made a professional visit to his office last season. He took it upon himself to suggest some preventive training methods to the team coaches.

"Lots of these injuries are preventable with some preconditioning (such as the bike riding and light weight training that Bouche's daughter used to be pain-free in practices so far this fall)," said Bouche.

In an opinion shared by other physicians and researchers interviewed for this series, Dr. John O'Kane, head team physician for the University of Washington athletic department and an associate professor of orthopedics and sports medicine at the UW Medical School, said overtraining injuries are "more relevant to today's generation" of young athletes. Playing one sport year-round comes with the built-in peril of stress fractures, growth-plate disruption and other overuse injuries.

A quick anatomy lesson: Children, most especially pre-adolescents in the 8- to 12-year-old range, have growth-plate bone in the joints with less mineral content. Consequently, it is weaker and more vulnerable to injury. In fact, kids' bones will give out faster than ligaments, a situation that reverses for adult athletes.

Those growth plates close up as we complete puberty. Adults and even a number of older high school athletes don't suffer growth-plate injuries, including stress fractures and chronic joint pain. For his part, O'Kane doesn't think there would be such an epidemic of overtraining injuries in kids without parents and coaches pushing kids -- and their limits.

"If kids were really allowed to participate at the level they choose for a sport, it is highly unlikely they would be showing up in our office with stress fractures," said O'Kane, who played 10 years of organized football himself.

"One issue I see time and again is that youth sports situations seem more designed for the adults (parents and coaches) than the kids. Children aren't enjoying the camaraderie or fun. There is a huge disconnect from the fun."

Bouche said he always tries to speak privately with the young athletes in his office with injuries.

"I try to get the kid alone because usually the parents do all of the talking," said Bouche. "There are indirect ways to ask, but I try to find out if the athlete is playing sports because he or she likes it or because parents want it."

In his own family's case, Bouche makes a point of reiterating his perspective whenever one of his children decides to re-up on a select team.

"When my son played for the middle school select team we talked about it as the best way to get ready for high school basketball, that it is the system," said Bouche. "But I told him, do it because you want it. Don't do it for me."

Not every child is so fortunate or engaged in open dialogue about sports. Bouche said he regularly sees patients with what appears to be fantasy ankle or foot pain with a real-life purpose.

"The exam is benign," explains Bouche. "There is no history of injury, nothing is red-hot or swollen, there is no sentinel event. The patient simply tells me the ankle hurts too much to play sports. It can be a very difficult thing to discuss with parents."

Both O'Kane and Western Washington University researcher Dennis Caine have found in separate research studies that competing at elite levels of youth sports significantly increases the risk of sports injury. O'Kane and colleagues have conducted a preliminary study monitoring the injuries of Puget Sound area elite soccer players in middle school. Eighth-graders suffered 40 percent of the injuries compared to merely 6 percent for fifth-graders. The sixth-graders incurred 25 percent and seventh-graders represented the remaining 29 percent.

O'Kane said the research group hopes to get federal funding for a larger study to help recommend ways to prevent injuries in soccer.

"There are a good number of studies showing foul play increases injuries," said O'Kane. "Older players slide-tackle more frequently and play more aggressively. Adults can play a role by teaching fair play and reinforcing the rules."

Caine has studied local elite gymnasts and is working on a federal grant to follow 300 Puget Sound area gymnasts between 7 and 18 years old for four years. His preliminary work, done at one club over three years in Bellingham, showed the more advanced girls turned up with more severe and frequent injuries.

"There are several reasons," said Caine on the phone one recent day while taking a break from grant writing. "One is intensity of training. The biomechanics are more difficult and load on the joints increases dramatically

"Another reason is more exposure time. It's not unusual for an elite gymnast to log 20 to 36 hours in a gym each week. It can all lead to chronic growth plate problems."

What surprised Caine was the finding that injury risk for these girls was four times greater during an actual competition than during practice. Thinking it through, practice time is still going to

produce the most injuries because of sheer volume of practice time versus the seconds or, at longest, minutes of competition. But the pressure to perform -- and get high scores from judges in an ultimately subjective sport -- puts the body at the greatest risk.

"One of the reasons we want to do the larger study is to see if there are ways to prevent injuries," said Caine. "One possibility that could apply to sports beyond gymnastics is regular balance training, such as kids using a wobble board."

As these research studies spin out, Schmale and others sit face to face with young athletes in various stages of pushing the limits. Sometimes entirely shutting down an athlete's sports activity is the best strategy. In this era of youth sports specialization -- "my son basically had to decide on which sport he was going to play in high school," said Bouche -- the do-not-play sign is harder for doctors to put up.

"I will tell baseball pitchers to stop throwing for six months," said Schmale. "The parents and coaches don't like to hear it even during the off-season."

Some area select baseball teams play 100 games or more in a season. They practice during the winter months. It's no wonder "Little League elbow" is a term that aptly describes an injury that adversely affects a growing number of 10- to 15-year-olds.

"The pitching motion is not a natural movement for the elbow and shoulder," said Schmale. "I think too many baseball and softball pitchers are pitching too many games. Some of these select teams play three games in a day and a kid pitches two of them. Even the underhanded pitching motion in softball puts a lot of force on the joint."

If he were commissioner of youth baseball and softball, Schmale would dictate pitching only once a week and no more than 70 pitches. And "no curve balls or sliders" for any pitcher still in the growth-plate years.

Schmale said most kids follow his orders and appreciate the effort to eliminate pain. A good number of parents consider it a wake-up call and modify a child's sports schedule. Nonetheless, other parents openly worry about missed games and other opportunities to show off a child's talents to, say, college or high school coaches or, can you believe it, select middle school team scouts who are watching the younger kids for top talent.

"My answer is always the same" said Schmale. "Nobody looks good playing in pain."

And nobody, at least none of the kids, is having fun.

WHO'S GETTING HURT?

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THURSDAY: The no-fun factor -- Emotional overload and burnout in youth sports.

COMING SATURDAY: Special forces -- deciding when and why a child focuses on one sport.

In the late 1990s, the federal Centers for Disease Control and Prevention conducted one of the most comprehensive sports injuries surveys to date. The CDC found Americans 5- to 24-years-old are most likely to be treated for sports-related injuries by health professionals. Kids 5 to 14 have the highest injury rate -- slightly higher than teenagers, more than twice as high as adults 25 to 44 and nine times higher than adults 45 and older. These stats squarely tag parents and coaches with a responsibility to watch out for the physical well being of young athletes.

Strains and sprains are by far the most common injuries, followed by fractures. Recreational bicycling is the "sport" most associated with injuries in the CDC survey, followed in order by basketball, football, the "sport" of playground equipment and baseball/softball. For 15- to 24-year-olds, basketball and football prompted the most medical visits.

The numbers are going up, researchers say, in part because more girls are playing, which means more broken arms and sprained ankles. Another documented trend: Girls are more susceptible to knee injury, especially the nasty tearing of the anterior cruciate ligament or ACL. "It's most likely biomechanical issues and not pure anatomy," said Dr. John O'Kane, head team physician for the University of Washington athletic department and an associate professor of orthopedics and sports medicine at the UW Medical School. "There is something to the way girls cut and land differently."