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YOUR HEALTH

Guidelines for Young Athletes to Reduce Injuries

How Parents Can Set Age-Specific Time Limits



The Doyle family children of Oak Park, Ill. Simon, 11, left, dropped baseball to focus on soccer and recently added cross-country running. Claudia, 5, center, does ballet and gymnastics and will start soccer next summer as she figures out what she likes best. For Cecilia, 13, right, gymnastics is the sole sport and she has occasional overuse injuries in her wrists, feet and ankles. Injuries are 'just something that comes with so much gymnastics,' she says. *SARA STATHAS FOR THE WALL STREET JOURNAL (3)*

By **SUMATHI REDDY**

Updated Nov. 24, 2014 8:58 p.m. ET

Children are dedicating themselves to a single sport too early and spending too much time playing it, say doctors who are seeing more children coming in with overuse injuries.

Playing multiple sports leads to fewer overuse injuries, lower burnout rates and better overall athletes, experts say. Focusing on a single sport should only begin around the age of puberty or even later, when a child's body has developed enough to handle the stress.

“The perception is you train early and only do a single sport and do as much as you can until you're better than everyone else,” says Neeru Jayanthi, medical director of primary care sports medicine at Loyola University Health System in Chicago. “I think it's pretty clear from the injury and performance-data side that that's a terrible developmental model.”

In addition to acute injuries, such as concussions, doctors say they are seeing an increase in serious overuse injuries, such as stress fractures in the back, elbow-ligament injuries and damage to cartilage and underlying bone, known as osteochondral injuries. Such incidents can sideline athletes for one to six months or more.


Overuse injuries develop over time due to the repeated stress on the same bone, muscle or tendon. Children are at greater risk in part because their bones are still growing. Experts say as much as 50% or 60% of injuries in young athletes are due to overuse.


Enrollment in youth-sports programs is high, although participation in some team sports, including basketball, soccer and football, appears to have declined in recent years. A National Council of Youth Sports survey in 2008, the latest available, found that 60 million children between the ages of 6 and 18 years participated in an organized sport; 44 million of them did more than one sport.


Dr. Jayanthi and co-investigators have followed a group of 1,200 young athletes in the Chicago area, ages 7 to 18 years, since 2010. The research found that young athletes who are highly specialized in a single sport were 1.5 times more likely to develop injuries of any type compared with diversified athletes, even when the results were controlled for age and the number of hours spent playing. Serious overuse injuries were 2.3 times more common in highly specialized athletes than in others.


EASY DOES IT
To minimize risk of overuse injury and burnout, experts say hours per week spent on a sport shouldn't exceed the age of the athlete.

 **Ages 2 to 5:** Children may have difficulty catching, throwing, and hitting because the brain's vision centers aren't fully developed. **T ball** makes a good entry sport and free play can help develop fundamental skills of hopping, skipping and jumping.

 **Ages 6 to 9:** This is a time of significant development of visual and balance skills. Most activities at basic levels are good, such as swimming and **soccer**.

 **Ages 10 to 12:** Visual judgment, balance and strength improve. Children can better play sports requiring memory strategies and rapid decision making, such as **football**.

 **Puberty (11 to 15, depending on gender):** Rapid physical growth may bring a temporary decline in balance skills and body control, and improved performance in aerobic sports activities.

 **Mid to late teens:** Endurance conditioning and strength training can improve aerobic and strength performance, but **heavy weights** should be avoided until the skeleton fully matures.

Source: Paul Stricker, Scripps Clinic.

Dr. Jayanthi's study also highlighted the risk of spending too many hours a week at sports. When the number of hours exceeded the age of the athletes, they were more likely to get injured and to suffer serious overuse injuries. And for young children, spending more than twice the time playing organized sports than in free play led to greater rates of injuries. The research, parts of which have been presented at medical conferences, has been accepted for publication in the American Journal of Sports Medicine, he said.

"This adult-driven, organized environment doesn't allow a kid to self-regulate and say, 'OK, I'm tired, I'm hurt, I don't want to play right now,' " says Dr. Jayanthi.

Paul Stricker, a pediatrics sports medicine specialist at Scripps Clinic in San Diego, estimates he has seen a 25% to 30% jump in overuse injuries in athletes between the ages of 8 and 12 over the past five years. He recalls the first time an 8-year-old came in with a stress fracture to the shinbone, the youngest he had seen. The boy played soccer on four different teams. "It was complete overload," says Dr. Stricker. "He was running and running constantly and the bone cracked."

PREVENTING INJURY

Youth-sports medical experts say overuse injuries are growing. Here are some rules of thumb to reduce risk:

- Specializing in a single sport should be avoided until around puberty, when the body has matured. Earlier specialization can boost risk for overuse injuries and burnout and isn't linked to better performance later.

Children shouldn't participate in sports more hours a week than their age. They should also take off at least one to two days a week for physical and psychological recovery.

Young athletes should take at least two to three months away from a specific sport during the year and a week to two weeks off between seasons.

Free play should be encouraged. Studies show children and teens who spend twice as many hours a week in organized sports than in free play are prone to injuries at a greater rate.

By the age of puberty, around 12 to 14, children who have been playing various sports have multiple skill sets that can be transferred from one sport to another. Their physical motor skills have developed, their vision has matured to fully track objects and their physiological growth gives them greater aerobic capacity and endurance, Dr. Stricker says.

"The body is much more capable of specializing at that age for multiple reasons," he says.

A few sports are exceptions. In gymnastics and figure skating, for instance, peak athletic performance is often reached before full physical maturity.

Still, injuries are common for young people in these sports.

"I know I get injured a lot and I know that it's just something that comes with so much gymnastics," says Cecilia Doyle, a 13-year-old in Oak Park, Ill. "But I get really disappointed when I get injured because I don't like taking a break from practice."

Cecilia's mother, Ana Garcia Doyle, last week brought her to Dr. Jayanthi because of suspected injuries. The doctor told her to take it easy for a while because of a strained back. She left the office with a cast on her right hand because of a stress fracture on the growth plate in her wrist, a problem she has had before. She has also had ankle issues. Cecilia does 15 hours of gymnastics a week, in addition to competitions.

Dr. Jayanthi has talked with Ms. Doyle and her husband, Jim, a corporate senior finance director, about the importance of the children playing a variety of sports. But Cecilia is “not going to pick up tennis at this point, she’s just not,” says the 44-year-old digital-media consultant. “She loves gymnastics.”



The Doyle family of Oak Park, Ill. Clockwise from left, Claudia, 5; Cecilia, 13; Ana; Simon, 11; and Jim. The family’s sports-medicine physician has talked with parents Ana and Jim about the importance of the children playing a variety of sports. SARAH STATHAS FOR THE WALL STREET JOURNAL

Ms. Doyle’s middle child—11-year-old Simon—is an avid soccer player, on a travel team. He has also taken up running. Dr. Jayanthi told the Doyles running can be considered diversification even though it is using many of the same muscle groups.

“I worry about my soccer player,” Ms. Doyle says. “He hasn’t had any serious injuries. But can he get all the way to high school without one? I really doubt it.”

The youngest child, Claudia, 5 years old, is enrolled in ballet and gymnastics, and will probably start soccer this summer, as she figures out what she likes.

“People often think overuse injuries are relatively benign and get better on their own,” says John P. DiFiori, chief of the division of sports medicine and nonoperative orthopaedics at the David Geffen School of Medicine at the University of California, Los Angeles and a past president of the American Medical Society for Sports Medicine. “In some cases the recovery time is quite prolonged and they can have long term growth complications.”

Dr. DiFiori, who wrote the medical society’s first position paper on overuse injuries and burnout in youth sports, published this year in the *Clinical Journal of Sport Medicine*, said athletes who excel in youth sports often are children who mature earlier. They may be taller and stronger than others their age and have advanced



Nyah Brown, 11, of Chicago, focuses on tennis, which she plays year-round, four to five days a week. An overuse injury to her shoulder sidelined her last year. *MIKE BROWN*

behavioral or cognitive abilities, which help in following instructions and making swift decisions.

For parents, it can be difficult to balance between encouraging children to pursue what they love and worrying about injuries.

WSJ Radio

Sumathi Reddy discusses with WSJ's Hank Weisbecker.

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Mike Brown, an attorney in Chicago, introduced his children—Nyah, 11, and Kaden, 8—to tennis at age 3. They both love the sport, and Nyah by age 7 decided she wanted to focus on tennis, he says. Now she plays tennis year-round, four to five days a week. She suffered an overuse injury on her

shoulder last year, which kept her out of competitions for a month. Kaden plays about the same amount of tennis but also plays other sports at various times of the year.

“I definitely worry about overuse injuries,” says Mr. Brown, who played tennis competitively in college. “But it’s tough. If you want to be good at tennis you really have to put in a lot of time and there are only so many hours.”

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