Preventing Overuse Injuries in Young Athletes: AAP Policy Explained

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An estimated 60 million kids across the U.S. enjoy soccer, track, basketball, swimming, football, tennis, gymnastics and other healthy activities. For the most part, these choices are great for social and physical development. But when kids train or play too hard, they can get hurt.

How overtraining can hurt kids in sports

Overuse (https://orthoinfo.aaos.org/en/diseases--conditions/overuse-injuries-in-children/) means a child's body can't keep up with the demands a certain activity places on them. For example, if a young baseball pitcher practices for hours every day and pitches several games each week, there may not be enough time in between for bones, muscles and other tissues to recover from the strain.

Overuse and overtraining can also leave young athletes feeling exhausted, physically and mentally. *(See "Burnout in Young Athletes: How to Keep the Fun in Sports (/English/health-issues/injuries-emergencies/sports-injuries/Pages/Too-Much-on-Overtraining.aspx).")*

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An estimated 50% of all sports-related injuries in kids result from overuse. That's why the American Academy of Pediatrics (AAP) examines how and why these injuries happen. Based on the latest evidence, we **recommend (/English/news/Pages/AAP-calls-out-causes-of-injury-overtraining-and-burnout-in-youth-sports.aspx)** steps that can protect young athletes from overuse and overtraining injuries that can keep them from participating in the sports they enjoy.

What is an overuse injury?

Young athletes and performers tend to make the same moves over and over again during practices, games and meets. They may also engage in focused training that puts even more strain on their bodies. The result is often strains, sprains, fatigue, pain—and sometimes, life-changing injuries.

The effect of overuse on growing kids

All bodies need time to heal after a serious workout. (You're probably familiar with this yourself if you've ever overdone it on the playing field or at the gym.)

But young, growing bodies are even more vulnerable to the stress that tough workouts place on bones, muscles, tendons, ligaments and other tissues. Tough training schedules can push young athletes past reasonable limits, opening the door for injuries that may require surgery (and even end athletic careers).

How exactly do sports overuse injuries happen?

Overuse injuries are different from acute sports injuries (/English/health-issues/injuries-emergencies/sports-injuries/Pages/After-a-Sports-Injury-When-to-See-the-Doctor.aspx) that involve a sudden fall or collision. They develop over time when a child's training load is out of balance. (*Training load* means the total duration, intensity and type of activity a young athlete's body must handle. For example, the training load for a cross-country runner (/English/healthy-living/sports/Pages/Running.aspx) might mean a certain number of miles each week at a particular pace.)

Young athletes in sports with a lot of running or jumping, for example, might feel pain in their knee because of too much
on the area where the kneecap tendon connects to the shinbone. This is known as Osgood-Schlatter disease
sh/health-issues/injuries-emergencies/sports-injuries/Pages/Knee-Pain-and-Osgood-Schlatter-Disease.aspx). Or, a

gymnast who does lots of moves that involve bending their wrist might get an injury where the wrist bone grows, called "gymnast's wrist (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6446364/)."

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Sometimes, the injuries might not seem like a big deal at first. A young baseball player might notice they're not throwing as fast or as accurately as before because of an injury called "little league shoulder (/English/healthy-living/sports/Pages/Baseball-and-Softball.aspx)." This happens when the shoulder joint gets stressed from throwing too much overhead.

Stages of overuse injuries

These injuries might not always show obvious signs like swelling or bruising, so athletes and their families might not realize they need medical care.

Generally, overuse injuries come on gradually, following stages like these:

- **Stage 1:** Pain in a specific area of the body after games or workouts.
- **Stage 2:** Pain while playing or practicing that doesn't hamper performance.
- **Stage 3:** More serious pain that keeps kids away from the sport.
- **Stage 4:** Chronic pain that happens even when kids aren't moving at all.

Are some kids at higher risk for overuse injuries?

Young athletes who work especially hard at sports, dance and other physical activities may suffer overuse injuries. Kids can easily reach the point where healthy exercise becomes harmful—a pattern exercise experts call overtraining syndrome.

Kids may be even more vulnerable to overuse sports injuries if:

- They specialize in one sport or activity that repetitively stresses specific areas of the body.
- ıey don't take in enough calories and nutrients to help their bodies recover.
- They don't learn healthy techniques and movements during training or practice.

- They don't warm up gradually and stretch properly after working out.

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- Their body-mass index (BMI (/English/health-issues/conditions/obesity/Pages/Body-Mass-Index-Formula.aspx)) is relatively high, placing extra stress on muscles and joints.
- They don't get enough sleep to recharge their bodies.
- They tend to be hard on themselves if they don't perform well.
- They fear what will happen if they slow down or worry about being forced off the team.

How can young athletes stay healthy and injury-free?

Preventing overuse injuries depends on our shared willingness to help kids balance activity with rest and healthy eating. As adults, we need to allow (or even require) student athletes to take good care of themselves. Coaches, trainers, school administrators and even sports fans can join with parents and caregivers to support healthy participation in physical activities.

8 tips to help prevent overuse injuries in children & teens

Here are specific tips for safe and healthy sports participation to keep in mind for your child – and the whole family.

- **Start with a sports physical before the season.** Take your child to the doctor for a preparation physical exam (PPE) at least 6 weeks before the season or class session begins. This helps your pediatrician make sure your child is ready for the sport or activity they've chosen. It also gives you the chance to ask questions about overuse, overtraining and other concerns you have about sports and health.
- **Encourage kids to vary their activities.** There's plenty of time to specialize in one sport later on, but younger kids can avoid injuries by trying different activities that work different muscle groups and parts of the body.
- **Know your child's training requirements.** Coaches, trainers and instructors can explain what's expected when your child signs up. These adults can be your best allies in making sure your child observes proper training limits.

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One recommendation is that student athletes do not add more than 10% to 20% to their weekly training loads at a time. So if your budding basketball star is practicing 1 hour daily, the following week's training time should not increase by more than 12 minutes. Gradual increases as the season moves forward can reduce the chances for overuse injuries.

- **Build in breaks.** Kids should not be required to play or train more than 5-6 days a week. They should also have at least 2 to 3 months off from any given sport during the year. These breaks can be divided into one-month breaks when they can focus on other activities or free play. Ask for coaching or team support when you're worried things are falling out of balance.
- **Aim for one team at a time.** Encourage your athlete to participate on only 1 team during a season. If they do play on more than 1 team, they should not have games or practices on the same day. Also make sure your child takes extra precautions if they participate in multigame tournaments in short periods of time.
- **Learn from experience.** If your child has had pain or injuries in the past, make sure coaches or instructors take this into account. Talk with your child about the mistaken idea that "playing through the pain" is safe. Some level of discomfort is part of athletics, but consistently ignoring the body's signals can lead to serious injuries.
- **Focus on healthy sleep.** Kids need plenty of rest each night to recover from athletic activities, so gear your family schedule around calming routines and healthy bedtimes. If you're not sure how much sleep your child needs, here are MyPlate.gov. (/English/healthy-living/sleep/Pages/healthy-sleep-habits-how-many-hours-does-your-child-need.aspx) Watch for signs of disordered eating, (/English/health-issues/conditions/emotional-problems/Pages/Treating-Eating-Disorders.aspx) which often can affect student athletes, gymnasts, dancers and other kids whose activities call for a certain body weight or appearance.
- **Set a healthy example for your child.** If you tend to train hard, burn the candle at both ends and aim for perfection in all things, your child may feel pressured to do the same. But if they see you practicing moderation and self-forgiveness, especially when you're tired or injured, they'll learn to respect their own limits.

Teens might resist any guidance you offer, since they're focused on building independence and making their own decisions. Here are open-ended suggestions (/English/healthy-living/emotional-wellness/Building-esilience/Pages/healthy-self-care-for-teens-how-families-can-help.aspx) your teen can use to design a self-care outine that fits their needs and preferences.

More information

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- Burnout in Young Athletes: 8 Ways to Keep the Fun in Sports (/English/health-issues/injuries-emergencies/sports-injuries/Pages/Too-Much-Too-Soon-Overtraining.aspx)
- AAP Calls Out Causes of Overuse Injuries & Burnout in Youth Sports (/English/news/Pages/AAP-calls-out-causes-of-injury-overtraining-and-burnout-in-youth-sports.aspx)
- Tips to Prevent Sports Injuries in Children and Teens (/English/health-issues/injuries-emergencies/sports-injuries/Pages/Sports-Injuries-Treatment.aspx)
- What to Do If Your Child Gets Hurt Playing Sports (/English/health-issues/injuries-emergencies/sports-injuries/Pages/After-a-Sports-Injury-When-to-See-the-Doctor.aspx)
- Keeping Kids in the Game (https://ncys.org/safety/stop-sports-injuries/) (National Council of Youth Sports)

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