Pediatric Sports Injuries

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Objectives

pediatric athlete

- Intro
- Recognize Trends
- Understand Injuries
- Pearls
Overuse Injuries and Burnout in Youth Sports
A Position Statement from the American Medical Society for Sports Medicine

Clin J Sport Med 2014;24:3-20
John DiFiori MD, Holly Benjamin MD, J Brenner MD, Andrew Gregory MD
Pediatric Athlete Overuse Injuries

1. Underreported in the current literature.
2. Preparticipation exams may assess sport readiness.
3. History of prior injury is an established risk factor.
4. Adolescent female athlete triad predisposing factor.
5. Parents & coaches should be educated to sport readiness.
Encourage:
- Multiple sports
- Multiple positions
- Rest breaks
- Keep it fun!
- *Skill development

Discourage:
- “Win-at-all-costs”
- Position-specific
- Overtraining!
- Burnout
- Abusive parents/coaches
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Youth sports injuries

- 60% overuse (apophysitis)
- 40% traumatic (fx, avn, epiph)
- Immature musc-skel system

**Emphasis on:**
- proper technique
- training habits
- nutrition
- attitude
Youth sports ACSM Recommendations

- **Running**: No greater than 30 min. or 5 kilometers prior to age 14 yrs.
- **Ballet**: No pointe position prior to ages 8 – 10. Limited “explosive” maneuvers (ie vaulting).
- **Weight training**: Limited and supervised.
High volume of repetitive, sport specific movements predispose injury

Injury decreases with each additional year of multi-sport participation

Athletes that specialize LATER in their high school careers do not appear to be more likely to become injured during their collegiate careers.
Some degree of sports specialization is necessary to develop elite-level skill development.

However, for most sports, such intense single-sport training should be delayed until late adolescence to optimize success while minimizing injury, psychological stress, and burnout.
-Highly specialized athletes were more likely to report a history of overuse lower extremity injuries.

-Highly specialized single sport athletes who participate >8 mos/year = increased injury risk
Injuries are one of the major reasons for youth athletes to drop out of sports.

Systematic injury surveillance:
* monitor injuries
* identify high risk sports
* ensure new knowledge on injury trends
* guide research on risk factors, mechanism, and prevention.
Chronic lack of sleep is associated with increased sports injuries in adolescent athletes.


- 160 student athletes grades 7-12
- Sleep deprivation:
  - <8hr/night were 1.7x risk to have had an injury, vs. those ≥8hrs.
- Increasing grade in school:
  - athletes were 1.4x risk to have had an injury
The association of sport specialization and training volume in youth athletes participating in youth sports tournaments.


-Sport specialization + high volumes of sports training = significantly risk of overuse injuries

-Highly specialized youth athletes were 1.59x more likely to report injury vs. less-specialized counterparts

-Athletes who played one sport > 8mos./year were 1.85x more likely to report injury
*Runners who participate during childhood and adolescence in ball sports may develop bone with greater and more symmetrically distributed bone mass, and with enhanced protection from future stress fractures.*

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Calcaneal Apophysitis
Sever’s disease

# 1 pediatric overuse injury
Insiduous onset posterior heel pain
Males(10-12) > Females(8-10)
Soccer cleats, baseball cleats = “negative heel”
Calcaneal Apophysitis

- Pain posterior/plantar heel
- Ankle equinus
- R/O neoplasm, fx, infection
- Rest, ice, massage, heel lift, achilles stretching
- Casting, orthoses, analgesics: occasionally
“Factors associated with pain severity in children with calcaneal apophysitis”
J Pediatr May 19, 2015 James AM, Williams CM et al. Cheltenham, Australia

Sever’s disease patient vs. healthy athlete:
1. BMI increased
2. Taller
3. Pronation increased (higher foot posture index)
AVN Metatarsal Head
Freiberg's infraction
Fractures
Youth Sports

More commonly misdiagnosed due to physis
5th metatarsal base apophysitis
Islen's Disease

- Ages 10 - 14 yr
- Females > males
- Insidious onset lateral foot pain
- Tight shoes may contribute

- TTP styloid process
- Rearfoot varus, metatarsus adductus may contribute
- R/O fracture
- Rest, ice massage, shoe modification / padding
- Casting, analgesics prn
Tarsal coalition

- Insidious onset flatfoot / sinus tarsi / ankle pain
- Chronic lateral ankle sprains
- Limited (< 10 degrees) subtalar joint motion
- Age group correlation
Proximal Tibial Apophysitis

Osgood - Schlatter’s disease

- Males > females; 11 – 17 yrs.
- Insidious onset anterior knee pain (tibial tuberosity)
- Pain with palpation of tibial tuberosity
- Deformity / edema may be present
- Quadriceps, hamstring inflexibility
- R/O neoplasm
- Rest, ice massage
Neoplasm

- Night pain
- More common in children than in adults
- Pathological fracture
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Foot and ankle problems in children often go unnoticed. Signs and symptoms can be subtle, and sometimes children can’t explain what’s wrong. It’s important to protect growing feet and have problems checked out early. Here are five warning signs that parents should watch for.

1. Your kids can’t keep up with their peers. If your child has trouble participating in physical activities or sports, or appears to walk or run awkwardly, it may be due to Pediatric Flatfoot. This condition can cause muscles in the feet and legs to tire easily because the feet are not functioning as they should. It may also cause pain or cramping in their feet, legs, or knees. Any pain or difficulty should be evaluated by a podiatrist, who may recommend a custom orthotic device, stretching exercises, or physical therapy.

2. Children voluntarily withdraw from activities they usually enjoy. If they are reluctant to participate, it may be due to heel pain — a problem seen in children between the ages of 8 and 14.

3. They don’t want to show you their feet. Children may feel pain or notice a change in the appearance of their feet or nails but don’t tell their parents because they fear a trip to the doctor’s office.

Known as Calcaneal Apophysitis, or Seaver’s Disease, it is a painful inflammation of the heel’s growth plate. When there is too much repetitive stress on the growth plate, inflammation can develop. Children involved in soccer, track, or basketball are especially vulnerable. A podiatrist may suggest your child needs to reduce activity, support the heel with an insert or custom orthotic, begin taking a non-steroidal anti-inflammatory medication, begin physical therapy, or even immobilize the heel with a cast.

How Can You Treat Plantar Fasciitis at Home?

- Stretching exercises. Stretch out the calf muscles to ease pain.
- Strengthening exercises. Try barefooted marble pick-ups and towel-gripping exercises.
- Avoid going barefoot.
- Ice. Put an ice pack on your heel for 20 minutes several times a day.
- Limit activities. Cut down on extended physical activities.
- Shoe modifications. Wear supportive shoes that have good arch support and a slightly raised heel.
- Medications. Oral non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, may be recommended.
- Take Preventive Measures. Wear supportive shoes, stretch, and use supportive insoles.

Is Medical Treatment Needed?

If you suffer from symptoms of Plantar Fasciitis, contact Foot and Ankle Associates to have your heel pain properly diagnosed. Many medical treatments are available, including:

- Padding and strapping
- Night splint
- Topical medications
- Physical therapy
- Orthotic devices
- ESWT (Shock Wave)
- Injection therapy
- Surgery
- Removable walking cast

Our Medical Products Store

Some medical products to help your condition may be purchased directly on-line from the Foot and Ankle Associates Medical Products Store. Go to our website, www.FloridaFootandAnkle.com, and click on the “Our Store” link to browse and ship products directly to your home.

To schedule an appointment, please call (863) 687-3404.
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