Common Pediatric Injuries

CDC data, more than 2.6 million kids under the age of 19 are treated in the emergency department every year for sports and recreation-related injuries.

The growing skeleton in the pediatric athlete puts them at risk for injuries and conditions that are different from adults.
Common Pediatric Soccer Injuries

Overuse Injuries

Acute Injuries
Overuse Injuries

Estimated to account for 45.9% to 54% of all youth sport injuries

Result from an imbalance between training and load to the tissues and recovery time

The apophyses and physes (growth plates) are the “weak link” of the musculoskeletal system in kids
Case 1

13 year-old male soccer player with anterior knee pain

Symptoms present for 6 weeks, worsening

Reports swelling in the anterior knee and pain worse with activity

Plays on 2 soccer teams in the fall and spring and 2 basketball teams in the winter

No history of specific injury

Physical exam:
- Non-antalgic gait
- Swelling over the distal aspect of the anterior knee, no knee effusion
- Range of motion is full
- Tenderness to palpation over the tibial tubercle
- Quadriceps tightness on flexibility testing (Ely testing)
Osgood-Schlatter Disease

Common causes of anterior knee pain in an active adolescent

20% of active adolescents

Traction at the tibial tubercle, the insertion site for the patellar tendon

Typical age group:
Girls 10-13 years old
Boys 12-14 years old
Osgood-Schlatter Disease

Sports involving explosive running and jumping, ie soccer

Self limited, 12-18 months until closure of the apophysis

May require activity modification if symptoms severe, ice, stretching
Sinding Larsen Johansson (SLJ) Syndrome

Persistent traction at the apophysis at the inferior pole of the patella

Also affects the growing adolescent

Age group: 10-14 years old

Most common in sports requiring explosive running and jumping, ie soccer

Treatment: icing, NSAIDs, quadriceps stretching, bracing/knee pad for comfort, may require activity modification
Case 2

9 year old female with right heel pain
Symptoms started 3 weeks ago
Plays soccer year round and does gymnastics
Does not recall a specific injury
Pain significantly worse with running and jumping

Physical exam:
Slight limp
No swelling of the ankle or foot
Has tenderness with bilateral squeeze over the calcaneus
Tight heel cord with passive dorsiflexion
Sever’s Disease

Calcaneal apophysitis

Most common cause of heel pain in the growing pediatric athlete

Repetitive microtrauma

Incidence of 3.7 in 1000

School-aged athletes

Bilateral 60%

Heel squeeze test 97% sensitive
Sever’s Disease

Universally conservative treatment:

Short-term activity modification

Long-term use of stretching and strengthening to address biomechanical risk factors, such as Achilles contracture or relative calf weakness

Cryotherapy and a regimen of non-steroidal anti-inflammatory medication

Heel cups

Short term walking boot can be considered in refractory cases
Case 3

15 year old female soccer player
Anterior left hip pain for 2 weeks
No pain with walking
Has pain when striking the ball and with sprinting
Does not recall a specific injury or recall a pop

Physical exam:
Non-antalgic gait
No pain with single leg hop
No pain with passive log roll
No visible swelling
Has pain with palpation directly over the AIIS with exacerbation of pain with resisted hip flexion
Apophysitis Hip/Pelvis

Traction at the apophysis of muscular insertion sites around the hip and pelvis

Treatment:
Relative rest
Activity modification
  - May participate in sport at a level that does not produce pain
Anti-inflammatories
Cross training
Trunk and pelvis flexibility
Core and hip strengthening
Case 4

15 year-old male soccer player
2 month history of midline low back pain that radiates slightly to the right
No radiating pain into the legs
Does not recall a specific injury
Has progressed over the last 2 months and now is having constant pain
Plays club soccer all year

Physical exam:
Pain with palpation midline down the lumbar spine
Exacerbation of pain with extension through the low back
Good strength and normal sensation in the bilateral lower extremities
Spondylolysis

Stress fracture of the pars interarticularis
Common in sports with repetitive extension through the low back.
Typically present with midline extension based low back pain
Treatment regimens vary
Bracing versus non-bracing protocols
Can be out of sports 4-6 months
High risk of non-union
Red Flags

Most overuse injuries improve with rest, stretching, and icing.
Some overuse injuries that require more extensive intervention like - prolonged time out of play
• eg osteochondral defects of the knee and ankle, bony stress fractures
Red Flags

Swelling
Persistent Limping
Limitations with range of motion
Lack of improvement with rest, stretching, icing
Back pain

When in doubt, refer for further evaluation to make sure the athlete is safe to continue playing

Have a low threshold for sending any acute injury for evaluation in which there is pain or difficulty bearing weight or significant swelling
Trauma

• THINK Growth plates!
• Ankle sprains in the soccer player
References