Orthopedic conditions surgical referral... immediately
- Slipped Capital Femoral Epiphysis (SCFE)
- Acute Septic Arthritis

Slipped Capital Femoral Epiphysis
- M>F, Obesity in 50%, near end of growth
- Pain, restricted internal rotation, abduction and flexion
- 36% will develop it on the opposite side
- X-ray, AP, frog leg, lateral. Mild slips: subtle changes on frog leg only
- Surgical: pin or screw placement
SCFE

Acute Septic Arthritis
- Pyogenic bacteria invade a synovial joint
- Think: S. aureus
- Most common: hip and knee
- Toxically ill, very tender,
- Ultrasound
- Immediate needle aspiration
- Gram stain and culture, and C&S blood
- 4-6 weeks of IV antibiotics
- Associated with Osteomyelitis

Acute Septic Arthritis

Orthopedic conditions
Refer or consult….eventually
- Developmental dysplasia of the hip (DDH)
- Club foot
- Scoliosis
- Perthes’ disease
- Back pain

Developmental Dysplasia of the Hip (DDH)
- Formally known as Congenital dislocation of the hip
- 12 per 1000 births
- Girls to boys, 7:1
- Left > Right, 1 out of 5 Bilateral
- Genetic component: Joint laxity, shallow acetabula
- Hormonal: high levels of maternal estrogens, progesterone and relaxin in last few weeks of pregnancy
- Breech presentation, increased frequency

Diagnosis
- Barlow test
- Ortolani test
Treatment
Pavlik Harness 2 months
Ultrasound or X ray

Club Foot
- 1 out of 1000 babies born in US
- Japan 50% less than US
- Hawaii 6x more than rest of US
- Genetic: 2nd child 4% chance (1:25 births)
- 40% involve both feet
- Orthopedic referral
- Surgery, casting

Scoliosis
- Lateral Curvature of the spine > 10 degrees by Cobb method
- Idiopathic
- Congenital
- Secondary
- Neuromuscular
- Other

Adolescent Idiopathic Scoliosis
- Lateral curvature with rotation > 11 years old with no obvious cause
- Most common type
- Typically right thoracic curve
- Frequency 1.9% to 3%
- Family history around 30%
- More common in females

Adolescent Idiopathic Scoliosis
- Adam’s forward bend test
- Radiographic exam, full length standing
- MRI if neurologic deficits
Need an X-ray!!

Risser classification
- 0 = no ossification of ileac crest apophysis
- 5 = complete ossification

Assessment of Risk

Remember this little kid

Perthes' Disease
- Childhood hip disorder characterized by necrosis of the femoral head
- 1 in 10,000 kids
- Boys > Girls, 4:1
- Usually 4-8 years old
- Referral, observe, hopefully recover

Back Pain
7 warning signs
- Less than 5 years old
- Duration >4 weeks
- Fever
- Night pain
- Postural shift or splinting
- Limitations in range of motion
- Neurologic abnormalities
Orthopedic conditions
No referral...usually
- In toeing
- Toe walking
- Transient synovitis of the hip

In toeing
- Most common question by parents by far
- Normal, they will outgrow it
- Tibial torsion
- Metatarsus adductus
- Femoral anteversion
- Reassurance, no bracing

Tibial torsion

Toe walking - no worries, they will outgrow it. “walk away from it”

Transient Synovitis
- Acute, self limited, inflammation of the synovial lining. ??? Viral, traumatic
- Pain, stiffness and limp.
- Common, Male > Female
- 3-8 year old
- Occasional low grade fever
- CBC, CRP, ESR, Ultrasound

Transient Synovitis vs. Acute Septic Arthritis
- Transient synovitis
  - severe pain = 11.5%
  - tenderness on palpation = 17.2%
  - T>38 degrees = 7.9%
  - ESR > 20 = 10.9%
- Septic Arthritis
  - severe pain = 61.9%
  - Tenderness on palpation = 85.7%
  - T>38 degrees = 81%
  - ESR > 20 = 90.5%
Sports Medicine in Pediatric

Children and young athletes
- Not the same as adults
- Thermoregulation immature systems do not control heat evaporation (30 minutes rule)
- Matching opponents

Someone could get hurt

Female athletes
- Eating disorders
- Iron deficiency

Classification of sports injuries
- Direct injury- from External Forces
- Indirect injury- from Intrinsic Forces
- Overuse injury- from Excessive and Repetitive Forces

Overuse injuries
- Osgood Schlatters disease
- Patellofemoral syndrome
- Costochondritis
- Sever’s disease
- Stress fracture
Overuse injuries
- Osgood Schlatters disease
- Severs’ Disease
- Patellofemoral syndrome
- Costochondritis

Soft Tissue injuries
- Strain = partial or complete tear of a muscle or tendon (bone to muscle)
- Sprain = partial or complete tear of a ligament (bone to bone)
Traditional management

- Rest
- Ice
- Ibuprofen
- Compression
- Elevation
- Physical therapy

For acute injury avoid:

- Heat
- Massage
- Activity

These things stimulate blood flow to the area of injury and increase swelling and inflammation, and increases healing time

Alternative methods of management

- Chiropractic care
- Accupuncture
- Massage therapy
- Other

Supplements to training

- Protein
- Creatine
- Others

Sports concussion

where are we “headed”?

Definition and Grading

- 27+ different grading systems in the literature
- No universal agreement with regards to injury definition and return to play guidelines
- Traumatic Brain Injury
- Do not have to have loss of consciousness
Why such increased awareness
- Number of high profile cases in professional athletes
- Much more common in high school athletes because of the large number of participants
- Bigger and Faster Kids
- Noticing more long term effects

Not just a football problem
injury rate per 100,000 high school athletes
- Football 47
- Hockey 42
- Girls soccer 36
- Boys soccer 22
- Girls basketball 21
- Wrestling 18
- Boys basketball 7

Second Impact Syndrome
- Repeat injury, while symptoms of first impact have not resolved
- Cerebral edema still present
- Axonal injury
- Biochemical injury
- Not due to bleeding
- NFL and NCAA taking the lead
- No return to play until symptom free (imPACT testing completed)

Post-Concussive Syndrome
- 85-90% of concussed young athletes will recover within 1-2 weeks
- The remainder may have symptoms for months
- No need for imaging (MRI)
- Brain Rest is the treatment

Chronic Traumatic Encephalopathy (CTE)
- Not just an adult condition
- Either way very serious
- Lifelong effects

Thank you