

The University of Arizona Pediatric Residency Program

Primary Goals for Rotation

Sports Medicine

1. **GOAL:** Understand the pediatrician's role in preventing sports-related injuries, disorders and dysfunction in children and adolescents.
2. **GOAL:** Differentiate normal physical examination variants from pathological conditions requiring further evaluation and subspecialty referral.
3. **GOAL:** Evaluate and appropriately treat or refer sports-related signs and symptoms.
4. **GOAL:** Participate and collaborate with other specialists in the management of sports-related injuries.
5. **GOAL:** Special Issues in Sports Medicine. Coordinate the management of special issues in pediatric/adolescent patients who participate in athletic activity.
6. **GOAL:** Demonstrate high standards of professional competence while working with patients under the care of a subspecialist.

1. GOAL: Understand the pediatrician's role in preventing sports-related injuries, disorders and dysfunction in children and adolescents.

- A. Perform a comprehensive pre-participation sports physical examination, including screening history, exam, interpretation, record keeping and communication with schools about eligibility and limitations.
- B. Discuss the role of the pediatrician as school physician and team physician, especially efforts in prevention and early identification of sports related health problems, and emergency response to sports injuries.
- C. Discuss strategies for preparing for medical emergencies during sporting events (e.g., on-field medical summaries, access to phone and emergency medical services).
- D. Counsel patients and families regarding athletic participation, including:
 - 1. Psychosocial, physical, and health-related value of exercise and sports participation
 - 2. Importance of matching children/adolescents with a suitable sport
 - 3. Role of physical growth, cognitive growth and motor development in a child's readiness to participate in sports
 - 4. Ways to prevent excessive stress and burnout
 - 5. Importance of having realistic expectations for a child/adolescent based on their developmental status
- E. Discuss nutrition and body composition with athletes and their families.
- F. Educate patients and families about basic pediatric exercise physiology, aerobic/anaerobic exercise, and strength and flexibility training, with special emphasis on understanding the effects of puberty on performance.
- G. Counsel patients and families regarding safety equipment (e.g., helmets, eye protection, mouth guards, protective cups for adolescent males) and adult supervision.
- H. Counsel patients, families and coaches about modifying or discontinuing activities in adverse field, playing and weather conditions, and how to prevent heat-related illness (dehydration, heat illness, heat stroke).

2. GOAL: Differentiate normal physical examination variants from pathological conditions requiring further evaluation and subspecialty referral.

- A. Perform and interpret a musculoskeletal examination with major emphasis on the large joints (ankle, knee, hip, back, wrist, elbow, shoulder), using specific joint tests (e.g., Lachman, Neer, McMurray) and recognizing potentially pathologic physical findings.
- B. Distinguish a physiologic heart murmur from a pathologic heart murmur.
- C. Identify physical stigmata suggestive of Marfan's syndrome.
- D. Identify organomegaly (spleen, liver, heart) in determining eligibility for athletic participation.
- E. Identify dermatologic conditions that may limit athletic participation (herpes, impetigo, tinea corporis, molluscum contagiosum).
- F. Recognize and manage conditions associated with normal physical growth (e.g., Osgood-Schlatter disease).

G. Interpret historical and clinical findings in a manner that allows for selected testing and referral, including electrocardiogram, echocardiogram, spirometry, imaging studies, orthopedic consultation, physical therapy evaluations, and neuropsychological or laboratory testing.

H. Refer patients with significant medical issues (e.g., single kidney, legally blind in one eye) for specialty physician clearance and for appropriate safety gear. Know which sports are not safe or suitable for children with a given medical condition.

3. GOAL: Evaluate and appropriately treat or refer sports-related signs and symptoms.

A. Create a strategy to determine if the following presenting signs and symptoms are caused or exacerbated by athletic participation or sports trauma and then treat or refer appropriately:

1. Limp
2. Musculoskeletal pain
3. Overuse syndromes
4. Headaches, post-concussion
5. Amenorrhea
6. Near-syncope or syncope
7. Chest pain
8. Hematuria
9. Excessive weight loss
10. Joint swelling
11. Wheezing, shortness of breath
12. Joint instability or laxity

4. GOAL: Participate and collaborate with other specialists in the management of sports-related injuries.

A. Evaluate and stabilize patients with sports-related injuries on the field, in emergency departments, or in the office setting (e.g., fractures, cervical spine injuries, sprains, strains, dislocations).

B. Evaluate, treat and follow up on sports-related conditions and injuries, including:

1. Uncomplicated, acute sports-related injuries (e.g., ankle or finger sprains, radial buckle fractures, contusions, hip pointer, turf toe)
2. Minor overuse conditions (e.g., stress fractures, apophysitis, femoral-patella malalignment syndrome or tendonitis)
3. Acute/chronic medical conditions (e.g., heat stroke, dehydration, concussion, asthma, syncope with exercise, female athlete triad)

C. Recognize sports-related problems that require orthopedic consultation.

D. Participate in management of the rehabilitation process.

E. Provide evaluation and stabilization of sports injuries at the scene, including the unique considerations of cervical spine injuries and concussions.

F. Manage and appropriately refer patients with concussions, second-impact syndrome, and post-concussive syndrome.

G. Monitor for overuse syndromes and counsel on strategies for prevention and management.

H. Describe the role of physical therapists and certified athletic trainers in the rehabilitation process and work effectively with these professionals in the care of the pediatric/adolescent athlete.

I. Define sideline and office criteria for return to play after either medical or orthopedic injuries (e.g., concussion, heat stroke, ankle sprain, finger dislocation). Be familiar with the latest recommendations (AAP, American Heart Association, American Academy of Neurologists, American College of Sports Medicine, and American Academy of Orthopedic Surgeons).

5. GOAL: Special Issues in Sports Medicine. Coordinate the management of special issues in pediatric/adolescent patients who participate in athletic activity.

A. Recognize the optimal potential of children/adolescents with special health care needs (Special Olympics, Disability Games, Para Olympics).

B. Provide careful management of children/adolescents with chronic medical conditions (cystic fibrosis, diabetes, asthma, sickle-cell disease) in order to optimize athletic participation.

C. Advise patients and families about the risks of use and abuse of anabolic steroids and other nutritional supplements, including performance-enhancing drugs.

D. Advise patients, families and coaches about the risks of transmission of blood-borne pathogens and the use of universal precautions.

E. Advise patients and families about the risks of repetitive mild traumatic brain injury (MTBI).

F. Consider unique issues relating to female athletes (e.g., eating disorders, amenorrhea, osteoporosis, Title IX regulations).

6. GOAL: Demonstrate high standards of professional competence while working with patients under the care of a subspecialist.

A. **Competency 1:** Patient Care. Provide family-centered patient care that is development- and age-appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

1. Use a logical and appropriate clinical approach to the care of patients presenting for specialty care, applying principles of evidence-based decision-making and problem-solving.

2. Describe general indications for subspecialty procedures and interpret results for families.

B. **Competency 2:** Medical Knowledge. Understand the scope of established and evolving biomedical, clinical, epidemiological and social-behavioral knowledge needed by a pediatrician; demonstrate the ability to acquire, critically interpret and apply this knowledge in patient care.

1. Acquire, interpret and apply the knowledge appropriate for the generalist regarding the core content of this subspecialty area.

2. Critically evaluate current medical information and scientific evidence related to this subspecialty area and modify your knowledge base accordingly.

C. Competency 3: Interpersonal Skills and Communication. Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

1. Provide effective patient education, including reassurance, for a condition(s) common to this subspecialty area.

2. Communicate effectively with primary care and other physicians, other health professionals, and health-related agencies to create and sustain information exchange and teamwork for patient care.

3. Maintain accurate, legible, timely and legally appropriate medical records, including referral forms and letters, for subspecialty patients in the outpatient and inpatient setting.

D. Competency 4: Practice-based Learning and Improvement. Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

1. Identify standardized guidelines for diagnosis and treatment of conditions common to this subspecialty area and adapt them to the individual needs of specific patients.

2. Identify personal learning needs related to this subspecialty; systematically organize relevant information resources for future reference; and plan for continuing acquisition of knowledge and skills.

E. Competency 5: Professionalism. Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.

1. Demonstrate personal accountability to the well-being of patients (e.g., following up on lab results, writing comprehensive notes, and seeking answers to patient care questions).

2. Demonstrate a commitment to carrying out professional responsibilities.

3. Adhere to ethical and legal principles, and be sensitive to diversity.

F. Competency 6: Systems-based Practice. Understand how to practice high-quality health care and advocate for patients within the context of the health care system.

1. Identify key aspects of health care systems as they apply to specialty care, including the referral process, and differentiate between consultation and referral.

2. Demonstrate sensitivity to the costs of clinical care in this subspecialty setting, and take steps to minimize costs without compromising quality.

3. Recognize and advocate for families who need assistance to deal with systems complexities, such as the referral process, lack of insurance, multiple medication refills, multiple appointments with long transport times, or inconvenient hours of service.
4. Recognize one's limits and those of the system; take steps to avoid medical errors.

Procedures

A. GOAL: Technical and therapeutic procedures. Describe the following procedures, including how they work and when they should be used; competently perform those commonly used by the pediatrician in practice.

1. Immobilization techniques for common fractures & sprains
2. Reduction/splinting of simple dislocation

B. GOAL: Diagnostic and screening procedures. Describe the following tests or procedures, including how they work and when they should be used; competently perform those commonly used by the pediatrician in practice.

1. Radiologic interpretation: extremity X-ray

Adapted From

Kittredge, D., Baldwin, C. D., Bar-on, M. E., Beach, P. S., Trimm, R. F. (Eds.). (2004). APA Educational Guidelines for Pediatric Residency. Ambulatory Pediatric Association Website. Available online: www.ambpeds.org/egweb.