

Sports Medicine Elective

Elective rotation available for all Pediatric and Medicine-Pediatric residents.

Value of the Rotation:

- o Exposure to concepts utilized in the evaluation and initial treatment of common sports medicine conditions.

Broad Goals:

This clinical rotation is designed to introduce pediatric residents to the basic concepts in the evaluation and initial treatment of common sports medicine conditions. Many individuals of all ages participate in sporting activities. Sports-related musculoskeletal complaints are very common in primary care and are treated by a variety of medical specialties. Mastery of the basics in musculoskeletal medicine is therefore quite important for all pediatric residents.

Objectives:

The following *learning objectives* were specifically designed for this course:

- 1.) By the end of the primary care sports medicine rotation, each pediatric resident will have demonstrated at least once, the appropriate technique for performing a spine, shoulder, elbow, wrist, hip, knee, ankle, and foot exam.
- 2.) By the end of the primary care sports medicine rotation, each pediatric resident will have observed at least once, the proper technique of two of the following: ultrasound guided injection, intra-articular knee injection, subacromial bursa injection, on-the-field cervical spine stabilization, short arm/leg splinting, and/or short arm/leg casting.
- 3.) By the end of the primary care sports medicine rotation, each pediatric resident will be able to describe the initial evaluation, diagnosis, and treatment of common sports related spine, shoulder, elbow, wrist, hip, knee, ankle, and foot injuries as demonstrated by their patient presentations in sports clinic.
- 4.) By the end of the primary care sports medicine rotation, each pediatric resident will be able to discuss the evaluation, diagnosis, and treatment of sports medicine conditions such as concussion, environmental illness (heat illness, cold injury), and sudden cardiac death as demonstrated by their performance during weekly educational sessions.
- 5.) By the end of the primary care sports medicine rotation, each pediatric resident will have seen or discussed with their preceptor, or in case conference/journal club, at least one currently debated aspect of the pre-participation physical examination.
- 6.) By the end of the primary care sports medicine rotation, each pediatric resident will be able to list the most common sports supplements used by athletes and understand their proposed benefits and possible risks.
- 7.) By the end of the primary care sports medicine rotation, each pediatric resident will have observed sports physical therapy and the different modalities offered to injured athletes.
- 8.) By the end of the primary care sports medicine rotation, each pediatric resident will have observed and/or discussed the various imaging studies utilized in sports medicine including radiography, ultrasound, bone scan, computed tomography, magnetic resonance imaging, and magnetic resonance arthrography.

9.) By the end of the primary care sports medicine rotation, each pediatric resident will be able to discuss the multiple disciplines of the sports medicine team and how their collaboration benefits care of the injured athlete.

Rotation Description:

This clinical rotation will introduce pediatric residents to the basic concepts in the evaluation and initial treatment of common sports medicine conditions. Residents will care for both pediatric and adult sports medicine patients (with a focus on adolescents). The learning environment will include a variety of clinical arenas including: primary care sports medicine, orthopedic sports medicine, musculoskeletal radiology, sports physical therapy, and training rooms/event coverage. Residents will be evaluated through direct observation of skills including examinations of the spine, shoulder, elbow, wrist, hip, knee, ankle, and foot. Residents will also be evaluated by their participation in weekly didactic sessions as well as assigned weekly sports medicine topic reviews. They will be assessed on their fund of knowledge, patient care skills, professionalism, and interpersonal skills as noted during their clinical interactions.

Topics which will be covered include:

- 1.) Initial evaluation, diagnosis, and treatment of common sports related spine, shoulder, elbow, wrist, hip, knee, ankle, and foot injuries and their expected outcomes.
- 2.) The proper technique of ultrasound guided injection, intra-articular knee injection, subacromial bursa injection, on-the-field cervical spine stabilization, short arm/leg splinting, and/or short arm/leg casting.
- 3.) Evaluation, diagnosis, and treatment of sports medicine conditions such as concussion, environmental illness (heat illness, cold injury), and sudden cardiac death.
- 4.) Currently debated aspects of the pre-participation physical examination.
- 5.) Sports supplements and performance enhancing drugs.
- 6.) Sports physical therapy and the different modalities offered to injured athletes.
- 7.) Various imaging studies utilized in sports medicine including radiography, ultrasound, bone scan, computed tomography, magnetic resonance imaging, and magnetic resonance arthrography.

Rotation Expectations:

The learning environment will include a variety of clinical arenas including: primary care sports medicine, orthopedic sports medicine, musculoskeletal radiology, sports physical therapy, and training room/event coverage. Pediatric residents will care for both pediatric and adult sports medicine patients (with a focus on adolescents).

The focus of this rotation will be clinical time spent in primary care and orthopedic sports medicine where the residents will be expected to achieve an understanding of the initial evaluation, diagnosis, and treatment of common sports related spine, shoulder, elbow, wrist, hip, knee, ankle, and foot injuries as demonstrated by their patient presentations in sports clinic. Active engagement will be promoted throughout the rotation consistent with the goals of a resident rotation.

Residents will be expected to practice their musculoskeletal examination skills under supervision in order to become competent by the end of the four week elective. Residents will also be expected to complete assigned readings on sports medicine topics (pre-participation physical examination, concussion, environmental illness, sudden cardiac death, and sports supplements) and to actively participate in weekly didactic sessions. Throughout the rotation, residents will develop an understanding of the multiple disciplines of the sports medicine team and how their collaboration benefits care of the injured athlete.

In addition, the residents are expected to attend Thursday afternoon lecture, personal continuity clinics, Pediatric noon conference lectures and Pediatric grand rounds unless offsite for that day.

Reading/Resources:

Current, evidence-based, peer reviewed literature on the following topics will be required: the pre-participation physical evaluation, concussion, environmental illness, sudden cardiac death, and sports supplements. See required readings below:

Pre-participation physical examination:

Miller D, *et al.* Preparticipation Evaluation of the Young Athlete: What an Orthopaedic Surgeon Needs to Know. *Am J Sport Med* 2016; 44 (6): 1605-15.

Concussion:

McCrory P, *et al.* Consensus statement on concussion in sport – the 5th international conference on concussion in sports held in Berlin, October 2016. *Br J Sports Med* 2017; 51 (11): 838-847.

Environmental illness:

Mangus C, *et al.* Heat-related illness in children in an era of extreme temperatures. *Pediatrics in Review* 2019; 40 (3): 97-107.

Sudden cardiac death:

Sharma S, *et al.* International recommendations for electrocardiographic interpretation in athletes. *Eur Heart J* 2018; 39 (16): 1466-1480.

Maron B, *et al.* Eligibility and disqualification recommendations for competitive athletes with cardiovascular abnormalities: task force : preparticipation screening for cardiovascular disease in competitive athletes. *Circulation* 2015; 132: e267-272.

Sports supplements:

Butts J, Jacobs B, Silvis M. Creatine use in sports. *Sports Health* 2018; 10 (1): 31-34.

Individualized Curriculum:

Residents interested in Sports Medicine will be exposed to a wide breadth of MSK injuries and complications. This rotation is also beneficial for residents pursuing primary care who will frequently see patients for pre-participation physical examinations as well as sports medicine related acute visits. Other subspecialties including Adolescent Medicine and Emergency Medicine will also benefit from the Sports Medicine elective in a variety of ways.

Feedback and Evaluation:

Residents will be graded as Pass/Fail. Residents will be assessed on their ability to perform standardized spine, shoulder, elbow, wrist, hip, knee, ankle, and foot examinations, fund of knowledge, patient care skills, and preparedness and involvement in assigned weekly sports medicine topic reviews. Evaluation methods will include: clinical evaluations by at least two attending sports medicine faculty based on resident's fund of knowledge, patient care skills, professionalism, interpersonal skills and weekly preparation and participation in weekly didactic sessions. Residents are encouraged to seek out verbal feedback regarding their performance in the aforementioned areas. Formal evaluations will occur upon completion of the rotation at the request of the Pediatric Residency Program.

Questions and Concerns:**Matthew Silvis, MD, FAMSSM**

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