

SPORTS MEDICINE TRACK (PGY 1, 2, 3)

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DESCRIPTION OF EDUCATIONAL EXPERIENCE

The Sports Medicine Track for primary care sports medicine has been developed to provide education, training, and exposure to primary care sports medicine endeavors that surpass the required core education and training during residency. Those residents who are considering fellowship education and training in primary care sports medicine can pursue it.

EDUCATIONAL GOAL

This track gives residents the opportunity to understand the primary care sports medicine endeavors that surround him/her in residency. These opportunities may include additional sports medicine training, for example, in event coverage, journal club, sports medicine workshops, or scholarly activities, etc. By completing the sports medicine track, residents will exceed core requirements during residency, develop a strong foundation in sports medicine in preparation for their future careers, and be able to provide a portfolio that can be given to their residency program directors prior to graduation.

Specific aims:

Educational Goals and Learning Objectives

- To provide structured and intensive training in musculoskeletal and primary care sports medicine
- To act as a team physician and provide mass event coverage under the guidance of sports medicine faculty
- To provide on-site clinical exposure in the assessment and management of acute musculoskeletal injuries
- To enhance skills in areas such as:
 - Musculoskeletal and pre-participation exams
 - Musculoskeletal radiology/ultrasound
 - Casting and splinting
 - Joint and soft tissue injections
 - Rehabilitation
- To pursue scholarly activity in sports medicine:
 - Original research
 - Clinical or educational quality improvement projects
 - Case studies
 - Podium presentation
 - Poster presentation
 - Written case report
 - Systematic review
- To offer longitudinal didactic sports medicine exposure:
 - Reading groups
 - Journal clubs
 - Sports medicine conferences related to the residency program
 - Didactic lectures
 - Hands-on workshops using models/simulations
- To provide longitudinal mentoring by sports medicine faculty for:
 - Game, event, and mass event coverage
 - Scholarly activity
 - Assistance in selecting elective rotations in musculoskeletal and sports medicine
 - Membership to a professional sports medicine organizations
 - Attendance at a national sports medicine CME conference(s)

LEARNING OBJECTIVES

PATIENT CARE

Goal

Residents will be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. The resident is expected to:

Competencies

- Perform an appropriate musculoskeletal history and physical examination; formulate an appropriate differential diagnosis; and recommend treatment, including requisite subspecialty referrals
- Perform an evidence-based, age-appropriate and activity-specific pre-participation physical examination
- Demonstrate the provision of care to athletes involved in athletic competition and events within the context of team-based care, including event risk assessment, and support, collaborative work with trainers and other health care professionals, and post-event follow-up
- Understand the limitations of evidence associated with the pre-participation physical examination
- Understand how exercise impacts disease states such as obesity, diabetes, and hypertension, and formulate an appropriate individualized exercise prescription
- Understand that sports medicine involves caring for the whole athlete, including medical and psychological conditions, in addition to their musculoskeletal conditions.

Objectives

- Perform orthopedic physical exam to evaluate patients with pain (neck, back, shoulder, elbow, wrist, hip, knee, and ankle)
- Cast and splint common fractures
- Interpret diagnostic radiographs and X-rays
- Diagnose and treat or appropriately refer common overuse syndromes, arthropathies, bone and joint infections
- Perform selective joint aspiration or injection
- Counsel and educate patients regarding functional rehabilitation
- Manage and treat upper and lower extremity injuries in athletes
- Assess and manage ligament sprains
- Perform bracing and taping of athletes' joints
- Educate athletes and their families about injury prevention
- Conduct a pre-participation examination and exercise prescription for student- athletes
- Develop exercise prescriptions for injured athletes
- Recognize and stabilize patients experiencing orthopedic emergencies

MEDICAL KNOWLEDGE

Goal

Residents must demonstrate knowledge of established and evolving biomedical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. The resident is expected to:

Competencies

- Perform an appropriate musculoskeletal history and physical examination; formulate an appropriate differential diagnosis; and recommend treatment, including requisite subspecialty referrals
- Perform an evidence-based, age-appropriate and activity-specific pre-participation physical examination
- Demonstrate the provision of care to athletes involved in athletic competition and events within the context of team-based care, including event risk assessment, and support, collaborative work with trainers and other health care professionals, and post-event follow-up
- Understand the limitations of evidence associated with the pre-participation physical examination
- Understand how exercise impact disease states such as obesity, diabetes, and hypertension, and formulate an appropriate individualized exercise prescription

Objectives

- Demonstrate knowledge in Musculoskeletal Medicine on the In-Training Exam (ITE) by scoring >60th percentile
- Apply decision making skills while caring for athletes both in the clinic and on the field
- Identify deviations from normal growth and development of the musculoskeletal system
- Support assessment of patients with an explanation of underlying pathogenesis / pathophysiology
- Compare the indications and contraindications for different types of joint injections
- Compare the indications and contraindications for different types of radiographs and scans and diagnostic studies
- Create patient education approaches based on knowledge of nutrition and electrolyte metabolism
- Evaluate proper fit and maintenance of sports equipment for athletes
- Evaluate environmental factors affecting participant and spectator safety at athletic events
- Formulate exercise prescriptions incorporating principles of aerobic and resistance training

PRACTICE-BASED LEARNING AND IMPROVEMENT

Goal

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning. The resident is expected to develop skills and habits and be able to:

Competencies

- Describe performance metrics regarding patient referrals for musculoskeletal conditions and explain how to use those data to improve delivery of care to your patient populations

Objectives

- Asks for feedback and uses feedback to improve learning
- Uses evidence-based guidelines to practice sports medicine
- Identify individual and system based limitations in patient care and propose solutions for improvement

SYSTEMS-BASED PRACTICE

Goal

Residents must demonstrate an awareness and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. The resident is expected to:

Competencies

- Perform an appropriate musculoskeletal history and physical examination; formulate an appropriate differential diagnosis; and recommend treatment, including requisite subspecialty referrals
- Demonstrate the provision of care to athletes involved in athletic competition and events within the context of team-based care, including event risk assessment, and support, collaborative work with trainers and other health care professionals, and post-event follow-up

Objectives

- Refer to specialty clinics appropriately
- Work with coaches and athletic trainers regarding injury prevention and treatment of athletes
- Recognize medical errors and their potential causes in order to prevent errors
- Develop plans to improve patient safety and patient care
- Establishes an ongoing relationship with athletes
- Accepts responsibility for patients and coordinates care with appropriate team members
- Accepts responsibility for personal errors and actively engages to prevent future recurrences

PROFESSIONALISM

Goal

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. The resident is expected to demonstrate:

Competencies

- Perform an evidence-based, age-appropriate and activity-specific pre-participation physical examination

Objectives

- Presents himself/herself in a respectful and professional manner
- Completes responsibilities related to patient care
- Completes clinical and administrative tasks promptly
- Negotiates professionally within an interdisciplinary team to provide quality patient care
- Recognizes the impact of culture on health in patients
- Incorporates patients' beliefs and values into patient care plans
- Partners with patients to meet their health care needs

INTERPERSONAL AND COMMUNICATION SKILLS

Goal

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. The resident is expected to:

Competencies

- Perform an evidence-based, age-appropriate and activity-specific pre-participation physical examination
- Communicate effectively regarding musculoskeletal health care with a wide range of individuals, including patients, their families, coaches, school administrators, and employers
- Understand how exercise impacts disease states such as obesity, diabetes, and hypertension and formulate an appropriate individualized exercise prescription

Objectives

- Use open ended questions
- Demonstrate empathy
- Offer information in a neutral, nonjudgmental manner
- Builds rapport with a growing panel of continuity patients and families
- Maintains a commitment to patient-centered care by demonstrating respect of patient health care goals
- Interact collaboratively with the medical team demonstrating respect evidenced by listening attentively, sharing information, and giving and receiving constructive feedback
- Complete medical records within 24 hours of the encounter that reflect the depth of the service provided

TEACHING METHODS

The primary venues for this content and these competencies include:

Educational Goals and Learning Objectives

- Longitudinal clinical sessions throughout the PGY 1, 2, 3 years
- Didactic sessions and procedure workshops on sports medicine topics
- Sports Medicine Journal Club in PGY 2
- A 4 week elective block rotation during PGY 2 with the Director of Sports Medicine
- A 4 week away elective block rotation during PGY 3 at a program with a sports medicine Fellowship

The resident should identify one core primary care sports medicine mentor who will guide him/her during residency. Ideally, the primary care sports medicine faculty teamed with the resident will have regular contact through the course of residency to provide feedback and guidance regarding the progress of their scholarly activity project. If a sports medicine faculty is not available within the resident's program or city, the AMSSM Find-A-Member service may be used to help identify an AMSSM member in the resident's geographical area to serve as a mentor: <http://www.amssm.org/Find-a-Doc.html>. The primary care sports medicine faculty also will be chiefly responsible for assisting the resident in identifying appropriate elective rotations, CME conferences, and periodically reviewing the resident's progress towards acquiring advanced skills in musculoskeletal and sports medicine care.

EVALUATION METHODS (RESIDENTS)

The resident will be evaluated by the primary faculty, based on the standard six levels of competency. The attending faculty will observe the resident's skill and competence directly in the patient care context and in the learning environment as the source of information for faculty evaluation. An evaluation form is completed at the end of the rotation by each of the supervising faculty. Other methods include, but are not limited to:

- Global clinical performance rating
- Direct observation of patient encounters
- Performance on cognitive test (in-training exam)
- Presentations
- Patient procedure Logs

The procedure log will be evaluated by the primary care sports medicine faculty member towards the final months of residency and during the end of each post-graduate year as one measure of competency in joint and soft tissue injections, casting and splinting. With successful completion of the sports medicine track, a formal letter will be placed in the resident's permanent file to document the additional training and skills achieved. This summary letter will include a listing of musculoskeletal and sports medicine related items: elective rotations, journal club article(s) presented, didactic and case conference(s) presented, a brief description of the scholarly activity project, CME conference(s) attended, and procedure log.

EVALUATION METHODS (PROGRAM)

Assessment methods used to evaluate the program will include:

Educational Goals and Learning Objectives

- Evaluation of Track form
- Information feedback sessions, such as resident meetings, resident representation on curriculum committee, and annual retreat
- Track acceptance rates into Sports Medicine Fellowships

LEVEL OF SUPERVISION

Residents are under continuous direct and indirect supervision of the rotation supervisor and the Director of Sports Medicine

EVENT COVERAGE

Primary care residents can begin providing event coverage under direct supervision of faculty during their R1 year and continue this exposure throughout residency progressing through indirect supervision by faculty, fellows, and senior residents to oversight by faculty as knowledge, attitudes and skills progress over time as assessed by supervising physicians and competency is determined by primary care sports medicine faculty. The resident is expected to develop a longitudinal team physician experience covering a local area high school football team through at least one full season. The resident is also encouraged to assist in medical coverage at mass sporting events such as a 5K/10K road race, marathon, triathlon, wrestling tournament, or other local opportunities.

SCHOLARLY ACTIVITY

Interested residents should identify and contact a potential primary care sports medicine faculty mentor to express an interest in pursuing the sports medicine track. After an initial meeting, the resident and mentor can formulate and direct a scholarly activity project related to sports medicine. The academic project may include: participating in original research; presenting or authoring a case study, authoring a review article or textbook chapter; leading a musculoskeletal education quality improvement project; leading a clinic or system-based quality improvement project; or some other scholarly activity project related to sports medicine. The resident will be encouraged to conceptualize their project within their R1 year, carry out the project in their R2 and R3 years, present his/her scholarly work locally, regionally and/or nationally, or submit his/her work to a peer-reviewed journal towards the conclusion of his/her residency

SPORTS MEDICINE CHECKLIST

PGY 1:

- Join AMSSM
- Scholarly Project Ideas
- Attend 1 Football Game/Mass Participation Event
- Attend 1 Sports Physicals
- CDC Heads Up To Concussion Training (1 hour)

PGY 2:

- Sports Medicine Journal Club
- Didactics Presentation (Sports Medicine Lecture or Workshop)
- Sports Medicine Elective at UTMB with Director of Sports Medicine
- Attend at least 5 Football Games (Schedule permitting)
- Attend Sports Physicals (2 of 3)
- One Mass Participation Event
- 2 Saturday AM Clinics at League City
- Develop/Work on Scholarly Project
- Maintain AMSSM membership

PGY 3:

- Team Physician at Ball High School (attend at least 8 games, schedule permitting)
- Away Sports Medicine Elective at a program with a Sports Medicine Fellowship
- Sports Physicals (3 of 3)
- One mass participation event
- Present scholarly project
- Lecture to Sports Medicine Interest Group
- Lecture to Parents of Student Athletes
- Two solo game coverages (non-football)
- 3 Saturday AM Clinics at League City
- Maintain AMSSM membership

Completion over three years:

- 20 knee injections
- 10 shoulder injections
- 10 casts
- 10 splints
- 10 additional procedures (joint injections, casts, splints)
- AAFP Sports Medicine Online Self-Study Curriculum (23.5 hours).
 - 12 hours must be completed by the end of PGY 2 year
- Attend AMSSM

Honors:

- Publication of peer-reviewed article
- Presentation/poster at AMSSM

Curriculum Timeline

| | Summer | Fall | Winter | Spring |
|----|--|--|--|---|
| R1 | <p>R1 Sports Medicine/electives Identify interest in Sports Medicine AOC</p> <p>Meet with Mentor</p> <p>Event Coverage</p> | <p>Identify interest in Sports Medicine AOC</p> <p>Early on-the-field/mass event experience</p> <p>Consider HS football coverage under supervision of sports medicine attending physicians, fellows, or senior residents</p> <p>Consider topics for an academic enrichment project</p> | <p>Identify interest in Sports Medicine AOC</p> <p>Early on-the-field/mass event experience</p> <p>Meet with Mentor</p> <p>Identify Specific Curricular interests</p> | <p>Identify interest in Sports Medicine AOC</p> <p>Early on-the-field/mass event experience</p> <p>Timeline/design of academic enrichment project</p> |
| R2 | <p>R2 Sports Medicine*</p> <p>Elective Time In Sports Medicine (2-4 wks)</p> <p>Sports Medicine Reading Group Participation</p> <p>Meet with Mentor</p> <p>Academic enrichment project</p> <p>Mass event coverage/ PPE participation</p> | <p>Begin academic enrichment project</p> <p>Team physician coverage (high school football)</p> <p>Mass event coverage/ PPE participation</p> | <p>Meet with Mentor</p> <p>Academic Enrichment Project- consider abstract submission to AMSSM?</p> <p>Optional event coverage with Sports Medicine faculty</p> <p>Mass event coverage/ PPE participation</p> | <p>Academic Enrichment Project- present at AMSSM?</p> <p>Optional event coverage with Sports Medicine faculty</p> <p>Mass event coverage/ PPE participation</p> |
| R3 | <p>Elective Time In Sports Medicine Topics (4 wks; possible away elective)</p> <p>Coordinate Sports Medicine Reading Group</p> <p>Meet with Mentor</p> <p>Academic Enrichment Project</p> <p>Mass event coverage/ PPE participation</p> <p>Begin Sports Medicine Fellowship Applications</p> | <p>Academic Enrichment Project</p> <p>Team physician coverage (high school football)</p> <p>Mass event coverage/ PPE participation</p> <p>Complete Sports Medicine Fellowship Applications / Interview for Fellowship</p> | <p>Meet with Mentor</p> <p>Academic Enrichment Project- AMSSM submission?</p> <p>Optional / Misc event coverage</p> <p>Mass event coverage/ PPE participation</p> | <p>Conclude & present Academic Enrichment Project</p> <p>Optional / Misc event coverage</p> <p>Mass event coverage/ PPE participation</p> |

RESOURCES

Articles

American Family Physician (AFP) by Topic: Musculoskeletal Care. (Multiple articles)

www.aafp.org/afp/topicModules/viewTopicModule.htm?topicModuleId=17.

Cassas KJ, Cassettari-Wayhs A. Childhood and adolescent sports-related overuse injuries. *Am Fam Physician*. 2006;73(6):1014-1022. www.aafp.org/afp/2006/0315/p1014.pdf. Accessed October 20, 2017.

Freedman KB, Bernstein J. The adequacy of medical school education in musculoskeletal medicine. *J Bone Joint Surg Am*. 1998;80(10):1421-1427.

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

Mirabelli MH, Devine MJ, Singh J, Mendoza M. The preparticipation sports evaluation. *Am Fam Physician*. 2015;92(5):371-376. <http://www.aafp.org/afp/2015/0901/p371.html>. Accessed October 20, 2017.

Swartz EE, Boden BP, Courson RW, et al. National Athletic Trainers' Association position statement: acute management of the cervical spine-injured athlete. *J Athl Train*. 2009;44(3):306-331. www.nata.org/sites/default/files/AcuteMgmtOfCervicalSpineInjuredAthlete.pdf. Accessed October 20, 2017.

Watts SA, Zhang Z. Competency in musculoskeletal and sports medicine: evaluating a PGY-1 curriculum. *Fam Med*. 2011;43(9):659-663.

Whiteside JW. Management of head and neck injuries by the sideline physician. *Am Fam Physician*. 2006;74(8):1357-1362. www.aafp.org/afp/2006/1015/p1357.pdf. Accessed October 20, 2017.

Woodwell DA, Cherry DK. National Ambulatory Medical Care Survey: 2002 summary. *Adv Data*. 2004;(346):1-44.

Books Primary Resources (recommended for all residencies):

American College of Sports Medicine. *ACSM's Guidelines for Exercise Testing and Prescription*. 10th ed. Baltimore, Md.: Lippincott Williams & Wilkins; 2017.

Armstrong AD, Hubbard MC, eds. *Essentials of Musculoskeletal Care*. 5th ed. Rosemont, Ill.: American Academy of Orthopaedic Surgeons; 2015.

Bernhardt DT, Roberts WO, eds. *PreParticipation Physical Evaluation (PPE)*. 4th ed. Leawood, Ks.: American Academy of Family Physicians; 2010. <https://nf.aafp.org/Shop/forms-downloads/preparticipation-physican-evaluationmonograph>.

Eiff MP, Hatch RL. *Fracture Management for Primary Care*. 3rd ed. Philadelphia, Pa.: Elsevier; 2017.

McKeag DB, Moeller JL. *ACSM's Primary Care Sports Medicine*. 2nd ed. Philadelphia, Pa.: Lippincott Williams & Wilkins; 2007.

Secondary Resources (to supplement primary resources):

Miller MD, Thompson SR. *DeLee & Drez's Orthopaedic Sports Medicine: Principles and Practice*. 4th ed. Philadelphia, Pa.: Saunders; 2014.

O'Connor FG, ed. *ACSM's Sports Medicine: A Comprehensive Review*. Philadelphia, Pa.: Lippincott Williams & Wilkins; 2012.

Pfenninger JL, Fowler GC. Pfenninger and Fowler's Procedures for Primary Care. 3rd ed. Philadelphia, Pa.: Saunders; 2010.

Website Resources

American Board of Family Medicine. Sports Medicine Examination Content; 2007.
<https://www.theabfm.org/cert/SportsMedExaminationOutline.pdf>.

Bryan S, Heiman D, Hong E, Turner J, Trojian T. Evidence-based musculoskeletal examination: faculty development for competence in teaching musculoskeletal examination techniques; 2007. <http://slideplayer.com/slide/10282655/>.

Gentili A, Beller M, Masih S, Seeger LL. Interactive Atlas of Signs in Musculoskeletal Radiology. www.gentili.net/signs

National Athletic Trainer Association. Appropriate Prehospital Management of the Spine-Injured Athlete. Updated from 1998 document; 2015. <https://www.nata.org/sites/default/files/executive-summary-spine-injury-updated.pdf>.

University of California, San Diego (UCSD). A Practical Guide to Clinical Medicine: Musculo-Skeletal Examination; 2015.
<http://meded.ucsd.edu/clinicalmed/joints.htm>.

University of West Alabama Athletic Training & Sports Medicine Center. AH 323 Evaluation of Athletic Injuries I Laboratory. Shoulder Special Tests. Athletic Injury/Illness Special Tests. <http://at.uwa.edu/CurrHome/AH323/skillsshoulder.asp>.

Organizations

American Academy of Family Physicians. www.aafp.org

American Academy of Orthopaedic Surgeons. www.aaos.org

American College of Radiology. <http://acr.org>

American College of Rheumatology. www.rheumatology.org

American College of Sports Medicine. www.acsm.org

American Medical Society for Sports Medicine. www.amssm.org

American Orthopaedic Society for Sports Medicine. www.sportsmed.org

Arthritis Foundation. <http://arthritis.org>

Exercise is Medicine. Healthcare Providers. www.exerciseismedicine.org/support_page.php/healthcare-providers/

National Collegiate Athletic Association. 2017-18 NCAA Banned Drugs List. www.ncaa.org/2017-18-ncaa-banned-drugs-list

Society of Teachers of Family Medicine. www.stfm.org

World Anti-Doping Agency. www.wada-ama.org/