



Body System: Musculoskeletal		
Session Topic: Bursitis and Tendonitis		
Educational Format		Faculty Expertise Required
REQUIRED	Interactive Lecture	Expertise in the field of study. Experience teaching in the field of study is desired. Preferred experience with audience response systems (ARS). Utilizing polling questions and engaging the learners in Q&A during the final 15 minutes of the session are required.
OPTIONAL	Problem-Based Learning (PBL)	Expertise teaching highly interactive, small group learning environments. Case-based, with experience developing and teaching case scenarios for simulation labs preferred. Other workshop-oriented designs may be accommodated. A typical PBL room is set for 50-100 participants, with 7-8 each per round table. <u>Please describe your interest and plan for teaching a PBL on your proposal form.</u>
Professional Practice Gap	Learning Objective(s) that will close the gap and meet the need	Outcome Being Measured
<ul style="list-style-type: none"> • A knowledge and practice gap exists to diagnose bursitis and tendinitis, and to identify complications and associated conditions. • A knowledge and practice gap exists to develop evidence-based treatment strategies specific to type, location, and severity of bursitis or tendinitis. • A knowledge and practice gap exists to counsel patients on self-management, prevention, and strategies for returning to work or return to play. • Data from a recent AAFP CME Needs Assessment survey indicates that family physicians have a statistically significant and meaningful gap in the knowledge and skill to effectively and efficiently utilize imaging studies for musculoskeletal 	<ol style="list-style-type: none"> 1. Use evidence-based practices to diagnose patients presenting with joint pain for bursitis or tendinitis, and assess for red flags indicating infection or other serious condition. 2. Develop an evidence-based treatment strategy for patients with bursitis or tendinitis. 3. Counsel patients diagnosed with bursitis or tendinitis on prevention and immediate self-treatment strategies. 4. Coordinate referral to physical therapy for overuse injuries. 	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.



<p>conditions, diseases, and injuries in the optimal management of their patients.</p> <ul style="list-style-type: none"> Family physicians perform musculoskeletal injections in practice, but of those who do not, 33% say it is because they lack the training. 		
---	--	--

ACGME Core Competencies Addressed (select all that apply)

X	Medical Knowledge	Patient Care
X	Interpersonal and Communication Skills	Practice-Based Learning and Improvement
	Professionalism	Systems-Based Practice

Faculty Instructional Goals

Faculty play a vital role in assisting the AAFP to achieve its mission by providing high-quality, innovative education for physicians, residents and medical students that will encompass the art, science, evidence and socio-economics of family medicine and to support the pursuit of lifelong learning. By achieving the instructional goals provided, faculty will facilitate the application of new knowledge and skills gained by learners to practice, so that they may optimize care provided to their patients.

- Provide up to 3 evidence-based recommended practice changes that can be immediately implemented, at the conclusion of the session; including SORT taxonomy & reference citations
- Facilitate learner engagement during the session
- Address related practice barriers to foster optimal patient management
- Provide recommended journal resources and tools, during the session, from the American Family Physician (AFP), Family Practice Management (FPM), and Familydoctor.org patient resources; those listed in the References section below are a good place to start
 - Visit <http://www.aafp.org/journals> for additional resources
 - Visit <http://familydoctor.org> for patient education and resources
- Provide recommendations regarding evidence-based practices to diagnose patients presenting with joint pain for bursitis or tendinitis, and assess for red flags indicating infection or other serious condition.
- Provide strategies for developing an evidence-based treatment strategy for patients with bursitis or tendinitis.
- Provide strategies and resources for counseling patients diagnosed with bursitis or tendinitis on prevention and immediate self-treatment strategies.
- Provide recommendations for coordinating referral to physical therapy for overuse injuries.
- Provide recommendations regarding guidelines for Medicare reimbursement.
- Provide recommendations to maximize office efficiency and guideline adherence to the diagnosis and management of
- Provide an overview of newly available treatments, including efficacy, safety, contraindications, and cost/benefit relative to existing treatments.



Needs Assessment

There are more than 9.6 million office visits to family physicians from patients presenting with neck, shoulder, or leg pain annually.¹ Bursitis can result from injury or overuse and repetitive stress, or from certain diseases (e.g. arthritis, gout), and can sometimes occur with tendinitis. Older persons are more prone to bursitis and tendinitis. On rare occasions, some drugs such as fluoroquinolone antibiotics and statins can cause tendinitis.² Bursitis and tendinitis are common causes of joint and arthritic pain. Family physicians must be knowledgeable of complications and associated conditions in order to develop effective treatment strategies.

Most musculoskeletal injuries occur in the home, as a result of an accident or during a sports activity; however, the latter is a significant source of hospitalizations, rehabilitation and lost productivity. Additionally, sprains, strains and dislocations together account for nearly 50% of all musculoskeletal-related injuries, incurring significant economic costs due to ambulatory visits and hospitalizations. Sprains and strains accounted for nearly 18.4 million musculoskeletal injury treatment episodes in 2006-2007 (the last year for which such estimates were available); most commonly among patients aged 18-44. Dislocations occur most frequently in the 45-64 year age range, and although they're less common, they are more likely to be treated in physician offices.³

Consider the following statistics from the CDC:

- The *2009 Health of the U.S.* publication reported that arthritis and other musculoskeletal conditions were the leading causes of activity limitation among working-age adults 18–64 years of age in 2006–2007.⁴
- The *2009 National Health Interview Survey* reported 5.9 million injuries occurred playing sports (3.8 million, or 26%, among men and 1.7 million, or 12%, among women – particularly teenagers).⁵
- The most recent *National Ambulatory Medical Care Survey* reported that family physicians provide patient education on “injury prevention” in over 4.4 million office visits.¹

Family physicians must be prepared to evaluate a variety of musculoskeletal injuries, including sprains, cartilage and ligament tears, fractures and other traumas. When patients present with acute or chronic musculoskeletal injuries, family physicians can employ a number of examination techniques to assess such factors as range of motion, stability, bone alignment and soft tissue swelling or masses. Although the type of exam depends on the injury and area affected, some of the typical clinical indications in upper and lower extremities include: joint effusion, locking, popping or cracking; pain or stiffness upon movement; crepitation; localized tenderness; and a palpable enlarged mass and/or warmth.^{6,7} The increasing burden of musculoskeletal diseases indicates a need for enhanced training in a number of areas for family physicians, such as proficiency in casting, splinting and joint injections, in order to help patients regain functioning for “everyday activities” or returning to vigorous physical activity.

Additionally, when patients present with acute or chronic musculoskeletal injuries, family physicians can employ a number of examination techniques to assess such factors as range of motion, stability, bone alignment and soft tissue swelling or masses. In the event that injured



bones or soft tissue require immobilization to reduce pain, swelling and/or muscle spasms, casting or splinting is often the most appropriate form of treatment.^{8,9} In some cases, patients may benefit from wrapping and taping as a form of stabilization or a prophylactic mechanism for injury prevention.¹⁰ However, a physician should first thoroughly assess the injured area – including skin, bony structures and neurovascular status – as well as the stage and severity of the injury, potential for instability and functionality, and risk of complications. These steps should be followed to diagnose the injury before determining which mechanism is more suitable, as each has its own advantages and disadvantages.^{8,10}

In their interpretation of various imaging tests, family physicians should be able to recognize the pathology of joint and muscle swelling, trauma, fractures, tears, dislocations and nerve injuries. While diagnosis of an injury typically requires more than just an imaging test, it is one mechanism that family physicians can use to help assess a patient’s clinical problem. Some patients may require referral to sub-specialists for further assessment or diagnostic testing, but many family physicians choose to offer certain imaging modalities, such as x-rays, in their office, and can help mitigate a patient’s condition prior to referring them.

In cases in which patients have imaging tests conducted at facilities outside of a family physician’s office – such as an emergency department – it is imperative that the results of the tests be communicated between providers. A journal article reported that “34% of U.S. patients reported some kind of medical error. Over half of these patients claimed that their primary care physicians did not communicate directly with them about their treatment options or care decisions. In addition, 9-23% of patients who underwent blood testing, radiography or other diagnostic examinations experienced a delay in being notified about abnormal test results.”¹¹ Of course, the onus of responsibility of relaying such results ultimately lies with the provider who interprets them, but family physicians can help to ensure that both they and their patients receive the necessary information to understand the diagnosis and move forward with treatment options.

The 2010 AAFP *Practice Profile Survey* reports that the most common imaging modalities used in family physicians’ practices are electrocardiography tests (which 94% of respondents offer) and x-rays (which 46% offer). Respondents cite the most common reasons for not having these mechanisms available as the equipment being too expensive and not desiring the diagnostic procedures.¹² Qualitative research indicates, however, that “patient convenience and satisfaction are improved by the presence of on-site radiography. Traveling to another facility, especially for the elderly and the disabled, places an addition burden on patients and caretakers.”¹³ The AAFP confirms that family physicians are not only well trained and well positioned to offer initial diagnostic imaging and interpretation, but their use of imaging modalities enhances patient access and care.¹⁴

Family physicians frequently order imaging studies in the diagnosis and management of various musculoskeletal conditions and diseases; however, the American Academy of Family Physicians (AAFP) CME Needs Assessment Survey indicates that family physicians have knowledge and practice gaps with regard to performing efficacious musculoskeletal exam techniques, as well as a statistically significant and meaningful gap in the knowledge and skill to effectively and efficiently utilize imaging studies for musculoskeletal conditions, diseases, and injuries in the optimal management of their patients.¹⁵ CME outcomes data from 2013-2015 AAFP FMX



(formerly Assembly) musculoskeletal sessions, including *Bursitis and Tendonitis* sessions, suggest that physicians have knowledge and practice gaps with regard to the use of appropriate exam techniques and maneuvers; ordering lab and diagnostic tests; evidence-based recommendations for steroid injections and other treatments; and the recognition and management of specific syndromes.¹⁶⁻¹⁹

In its recommended residency curriculum guidelines, the American Academy of Family Physicians advises that family physicians have skills and competence to prepare them for treatment and management of patients who require casting or splinting, joint injections or aspirations, dislocation reduction and emergency recognition and stabilization.¹⁰ However, family physicians should also be aware of the differences in treating injuries in pediatric and adult patients; because of children's growth plates, some injuries may be more traumatic than others and thus require more careful treatment to avoid complications. As part of a musculoskeletal exam, family physicians should be prepared to stabilize and mitigate a patient's pain in the event of a traumatic injury and offer appropriate treatment recommendations, such as NSAIDs, pain medication and the "RICE" (rest, ice, compression, elevation) strategy.¹¹ They should also recognize when imaging studies are needed or referral to a specialist is required, in which case they should still coordinate patient care to ensure compliance with treatment and any follow-up protocols.

Joint injection is a commonly used procedure for many patients who require pain relief for a variety of reasons. AAFP Practice Profile data indicates that 87% of family physicians perform musculoskeletal injections in practice, but of those who do not, 33% say it is because they lack the training. Enhanced training (through educational sessions and hands-on demonstrations) in this area and others will help family physicians gain the confidence and competence to offer their patients pain relief, joint/extremity stability, and an overall improvement in their quality of life.^{12,20-22}

Physicians may want to consider the following evidence-based practice recommendations:²³⁻²⁶

- Anatomic snuffbox swelling, scaphoid tubercle tenderness and pain with axial pressure on the first metacarpal bone are sensitive but not specific tests for diagnosing scaphoid fractures.
- If plain radiography results are negative in a suspected scaphoid fracture, then the wrist should be protected in a thumb spica cast with repeat plain radiography in 10 to 14 days or a bone scan one to two days after injury.
- The Finkelstein test has good sensitivity and specificity for diagnosing de Quervain tenosynovitis.
- If an ulnar collateral ligament injury is suspected, the medial joint space of the symptomatic elbow should be compared with the asymptomatic side for the amount of opening, the subjective quality of the end point while a valgus force is applied across the joint, and pain.
- Scapular motion and position should be evaluated in overhead athletes with shoulder pain, and physical therapy should be initiated if dyskinesis is present.
- Physical examination maneuvers and magnetic resonance arthrography accurately identify intra-articular shoulder injuries, but their diagnostic effectiveness is limited for partial-thickness rotator cuff tears.



- The Jobe relocation and O'Brien tests are the most reliable for identifying labral pathology.
- The primary treatment for internal impingement of the shoulder is rehabilitation and physiotherapy consisting of stretching, strengthening, and sport-specific exercises.
- In patients with signs of compressive ulnar neuropathy at the cubital tunnel, a physical examination of the upper extremities and cervical spine is essential to rule out other compressive neuropathies.
- To avoid introducing infection, aspiration of olecranon bursitis should be performed only when the diagnosis is uncertain or to relieve symptoms in refractory cases.
- Magnetic resonance imaging is the preferred imaging modality for chronic elbow pain.
- Corticosteroid injections in the shoulder have only short-term benefits in adhesive capsulitis and subacromial impingement syndrome.
- Corticosteroid injections for lateral and medial epicondylitis lead to short-term improvement but have a high rate of recurrence and are no better than other options in the long term.
- Corticosteroid injections can be considered for patients with carpal tunnel syndrome who wish to avoid or delay surgical treatment.
- Corticosteroid injections for de Quervain tenosynovitis and trigger finger are effective early in therapy.
- Corticosteroid injections provide short-term relief from symptoms of knee and hip osteoarthritis in patients who wish to delay surgery.

Resources: Evidence-Based Practice Recommendations/Guidelines/Performance Measures

- Splints and casts: indications and methods⁸
- Principles of casting and splinting⁹
- Update on acute ankle sprains¹⁰
- Common conditions in the overhead athlete²³
- Corticosteroid Injections for Common Musculoskeletal Conditions²⁴
- Evaluation of elbow pain in adults²⁵
- Evaluation and diagnosis of wrist pain: a case-based approach²⁶
- Appropriate and safe use of diagnostic imaging²⁷
- ABIM Choosing Wisely: Lists²⁸
- Diagnostic imaging practice guidelines for musculoskeletal complaints in adults--an evidence-based approach. Part 1. Lower extremity disorders⁶
- Diagnostic imaging guideline for musculoskeletal complaints in adults-an evidence-based approach-part 2: upper extremity disorders⁷
- Diagnostic imaging practice guidelines for musculoskeletal complaints in adults-an evidence-based approach-part 3: spinal disorders²⁹
- AAFP American Family Physician: Musculoskeletal Care (multiple evidence-based journal articles with recommendations for diagnostic imaging)³⁰
- Exam documentation: charting within the guidelines³¹
- ACR Appropriateness Criteria: Musculoskeletal Imaging Criteria³²
- ACR Practice Guidelines: Musculoskeletal³³
- Adding health education specialists to your practice³⁴



- Envisioning new roles for medical assistants: strategies from patient-centered medical homes³⁵
- The benefits of using care coordinators in primary care: a case study³⁶
- Engaging Patients in Collaborative Care Plans³⁷
- Health Coaching: Teaching Patients to Fish³⁸
- Medication adherence: we didn't ask and they didn't tell³⁹
- Encouraging patients to change unhealthy behaviors with motivational interviewing⁴⁰
- Integrating a behavioral health specialist into your practice⁴¹
- Simple tools to increase patient satisfaction with the referral process⁴²
- FamilyDoctor.org. Ankle Sprains: Healing and Preventing Injury (patient resource)¹⁶
- FamilyDoctor.org. Hand/Wrist/Arm Problems - Symptom Chart (patient resource)²⁰
- FamilyDoctor.org. Dealing With Sports Injuries (patient education)⁴³

References

1. Centers for Disease Control and Prevention (CDC). National Ambulatory Medical Care Survey (NAMCS). 2009; http://www.cdc.gov/nchs/ahcd/web_tables.htm#2009. Accessed August, 2013.
2. Sheon RP. Tendinitis and Bursitis. 2012; http://www.rheumatology.org/practice/clinical/patients/diseases_and_conditions/tendonitis.asp. Accessed July, 2012.
3. Gunnar A. The Burden of Musculoskeletal Diseases in the U.S.: Prevalence, Societal and Economic Cost. Rosemont, IL: American Academy of Orthopaedic Surgeons; 2008: <http://www.boneandjointburden.org/>. Accessed July 2012.
4. U.S. Department of Health & Human Services. Health - United States - 2009 With Special Feature on Medical Technology. In: Prevention CfDCa, ed2009:574.
5. Adams PF, Heyman KM, Vickerie JL. Summary health statistics for the U.S. population: National Health Interview Survey, 2008. *Vital and health statistics. Series 10, Data from the National Health Survey*. Dec 2009(243):1-104.
6. Bussieres AE, Taylor JA, Peterson C. Diagnostic imaging practice guidelines for musculoskeletal complaints in adults--an evidence-based approach. Part 1. Lower extremity disorders. *Journal of manipulative and physiological therapeutics*. Nov-Dec 2007;30(9):684-717.
7. Bussieres AE, Peterson C, Taylor JA. Diagnostic imaging guideline for musculoskeletal complaints in adults-an evidence-based approach-part 2: upper extremity disorders. *Journal of manipulative and physiological therapeutics*. Jan 2008;31(1):2-32.
8. Boyd AS, Benjamin HJ, Asplund C. Splints and casts: indications and methods. *American family physician*. Sep 1 2009;80(5):491-499.
9. Boyd AS, Benjamin HJ, Asplund C. Principles of casting and splinting. *American family physician*. Jan 1 2009;79(1):16-22.
10. Tiemstra JD. Update on acute ankle sprains. *American family physician*. Jun 15 2012;85(12):1170-1176.
11. Ruiz JA, Glazer GM. The state of radiology in 2006: very high spatial resolution but no visibility. *Radiology*. Oct 2006;241(1):11-16.



12. AAFP. 2010 Practice Profile I. American Academy of Family Physicians; 2011:31.
13. American Academy of Family Physicians (AAFP). Radiology (Position Paper). 2012; <http://www.aafp.org/about/policies/all/radiology.html>. Accessed June, 2013.
14. American Academy of Family Physicians (AAFP). Imaging Personnel. 1977; <http://www.aafp.org/about/policies/all/imaging.html>. Accessed July, 2013.
15. AAFP. 2012 CME Needs Assessment: Clinical Topics. American Academy of Family Physicians; 2012.
16. American Academy of Family Physicians (AAFP). 2012 AAFP Scientific Assembly: CME Outcomes Report. Leawood KS: AAFP; 2012.
17. American Academy of Family Physicians (AAFP). 2013 AAFP Scientific Assembly: CME Outcomes Report. Leawood KS: AAFP; 2013.
18. American Academy of Family Physicians (AAFP). AAFP Assembly CME Outcomes Report. Leawood KS: AAFP; 2014.
19. American Academy of Family Physicians (AAFP). AAFP FMX CME Outcomes Report. Leawood KS: AAFP; 2015.
20. Hochberg MC, Altman RD, April KT, et al. American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. *Arthritis care & research*. Apr 2012;64(4):455-474.
21. American College of Rheumatology. Clinical Practice Guidelines. 2014; http://www.rheumatology.org/Practice/Clinical/Guidelines/Clinical_Practice_Guidelines/. Accessed October, 2014.
22. American Academy of Family Physicians (AAFP). Practice Profile II. unpublished: American Academy of Family Physicians; 2009.
23. Edmonds EW, Dengerink DD. Common conditions in the overhead athlete. *American family physician*. Apr 1 2014;89(7):537-541.
24. Foster ZJ, Voss TT, Hatch J, Frimodig A. Corticosteroid Injections for Common Musculoskeletal Conditions. *American family physician*. Oct 15 2015;92(8):694-699.
25. Kane SF, Lynch JH, Taylor JC. Evaluation of elbow pain in adults. *American family physician*. Apr 15 2014;89(8):649-657.
26. Shehab R, Mirabelli MH. Evaluation and diagnosis of wrist pain: a case-based approach. *American family physician*. Apr 15 2013;87(8):568-573.
27. Crownover BK, Bepko JL. Appropriate and safe use of diagnostic imaging. *American family physician*. Apr 1 2013;87(7):494-501.
28. American Board of Internal Medicine (ABIM). Choosing Wisely: Lists. 2013; <http://www.choosingwisely.org/doctor-patient-lists/>. Accessed July, 2013.
29. Bussieres AE, Taylor JA, Peterson C. Diagnostic imaging practice guidelines for musculoskeletal complaints in adults-an evidence-based approach-part 3: spinal disorders. *Journal of manipulative and physiological therapeutics*. Jan 2008;31(1):33-88.
30. American Academy of Family Physicians (AAFP). American Family Physician: Musculoskeletal Care. 2013; <http://www.aafp.org/afp/topicModules/viewTopicModule.htm?topicModuleId=17>. Accessed July, 2013.
31. Moore KJ. Exam documentation: charting within the guidelines. *Family practice management*. May-Jun 2010;17(3):24-29.



32. American College of Radiology (ACR). ACR Appropriateness Criteria: Musculoskeletal Imaging Criteria. 2013; <http://www.acr.org/Quality-Safety/Appropriateness-Criteria/Diagnostic/Musculoskeletal-Imaging>. Accessed July, 2013.
33. American College of Radiology (ACR). Practice Guidelines: Musculoskeletal. 2013; <http://www.acr.org/Quality-Safety/Standards-Guidelines/Practice-Guidelines-by-Modality/Musculoskeletal>. Accessed July, 2013.
34. Chambliss ML, Lineberry S, Evans WM, Bibeau DL. Adding health education specialists to your practice. *Family practice management*. Mar-Apr 2014;21(2):10-15.
35. Naughton D, Adelman AM, Bricker P, Miller-Day M, Gabbay R. Envisioning new roles for medical assistants: strategies from patient-centered medical homes. *Family practice management*. Mar-Apr 2013;20(2):7-12.
36. Mullins A, Mooney J, Fowler R. The benefits of using care coordinators in primary care: a case study. *Family practice management*. Nov-Dec 2013;20(6):18-21.
37. Mauksch L, Safford B. Engaging Patients in Collaborative Care Plans. *Family practice management*. 2013;20(3):35-39.
38. Ghorob A. Health Coaching: Teaching Patients to Fish. *Family practice management*. 2013;20(3):40-42.
39. Brown M, Sinsky CA. Medication adherence: we didn't ask and they didn't tell. *Family practice management*. Mar-Apr 2013;20(2):25-30.
40. Stewart EE, Fox CH. Encouraging patients to change unhealthy behaviors with motivational interviewing. *Family practice management*. May-Jun 2011;18(3):21-25.
41. Reitz R, Fifield P, Whistler P. Integrating a behavioral health specialist into your practice. *Family practice management*. Jan-Feb 2011;18(1):18-21.
42. Jarve RK, Dool DW. Simple tools to increase patient satisfaction with the referral process. *Family practice management*. Nov-Dec 2011;18(6):9-14.
43. FamilyDoctor.org. Dealing With Sports Injuries. 2000; <http://familydoctor.org/familydoctor/en/teens/food-fitness/dealing-with-sports-injuries.html>. Accessed July, 2013.