Musculoskeletal System – Lower Extremities

Instructor Lesson Plan

Time Required: 2 Hours

**Table of Contents**

[Lesson Description 2](#_Toc504572110)

[Introduction to Musculoskeletal System – Lower extremities 4](#_Toc504572111)

[Practical Exercise 13](#_Toc504572112)

[Lesson Review, Assessment, and Wrap-up 14](#_Toc504572113)

|  |
| --- |
| Lesson Description |
| The information below provides the instructor with an overview of the lesson and the materials that are required to effectively present this instruction. |
| TMS # | 4411240 |
| Prerequisites | N/A |
| target audience | The target audience for Musculoskeletal System - Lower Extremities is Entry Level RVSRs.Although this lesson is targeted to teach the entry level RVSR employee, it may be taught to other VA personnel as mandatory or refresher type training. |
| Time Required | 2 Hours |
| Materials/TRAINING AIDS | Lesson materials:* Musculoskeletal System – Lower Extremities PowerPoint
* Musculoskeletal System – Lower Extremities Lesson Plan
 |
| Training Area/Tools  | The following are required to ensure the trainees are able to meet the lesson objectives: * Classroom or private area suitable for participatory discussions
* Seating, writing materials, and writing surfaces for trainee note taking and participation
* Handouts, which include a practical exercise
* Large writing surface (easel pad, chalkboard, dry erase board, overhead projector, etc.) with appropriate writing materials
* Computer with PowerPoint software to present the lesson material

Trainees require access to the following tools: * Compensation and Pension Knowledge Management Portal
 |
| Pre-Planning  | * Become familiar with all training materials by reading the Instructor Lesson Plan while simultaneously reviewing the corresponding PowerPoint slides. This will provide you the opportunity to see the connection between the Lesson Plan and the slides, which will allow for a more structured presentation during the training session.
* Become familiar with the content of the trainee handouts and their association to the Lesson Plan.
* Practice is the best guarantee of providing a quality presentation. At a minimum, do a complete walkthrough of the presentation to practice coordination between this Lesson Plan, the trainee handouts, and the PowerPoint slides and ensure your timing is on track with the length of the lesson.
* Ensure that there are copies of all handouts before the training session.
* When required, reserve the training room.
* Arrange for equipment such as flip charts, an overhead projector, and any other equipment (as needed).
* Talk to people in your office who are most familiar with this topic to collect experiences that you can include as examples in the lesson.
* This lesson plan belongs to you. Feel free to highlight headings, key phrases, or other information to help the instruction flow smoothly. Feel free to add any notes or information that you need in the margins.
 |
| Training Day  | * Arrive as early as possible to ensure access to the facility and computers.
* Become familiar with the location of restrooms and other facilities that the trainees will require.
* Test the computer and projector to ensure they are working properly.
* Before class begins, open the PowerPoint presentation to the first slide. This will help to ensure the presentation is functioning properly.
* Make sure that a whiteboard or flip chart and the associated markers are available.
* The instructor completes a roll call attendance sheet or provides a sign-in sheet to the students. The attendance records are forwarded to the Regional Office Training Managers.
 |

|  |
| --- |
| Introduction to Musculoskeletal System – Lower extremities |
| INSTRUCTOR INTRODUCTION | Complete the following:* Introduce yourself
* Orient learners to the facilities
* Ensure that all learners have the required handouts
 |
| time required | 2 hours |
| Purpose of LessonExplain the following: | This lesson is intended to provide an overview of evaluating musculoskeletal disabilities of the lower extremities. This lesson will contain discussions and exercises that will allow you to gain a better understanding of: * The Evaluation Builder pertaining to the knees, hips, ankles, and feet
* Disability Benefits Questionnaires for the knees, hips, ankles, and feet
* Discussions of flexion, extension and instability of the knee
* Multiple evaluations of the knee
* Evaluating total knee arthroplasty
* Discussions of how to evaluate the hips and ankles
* Explainations of Moderate and Marked
 |
| Lesson ObjectivesDiscuss the following:Slide 2 | In order to accomplish the purpose of this lesson, the RVSR will be required to accomplish the following lesson objectives.Upon conclusion of the lesson and given available references, the RVSR will accurately identify, adjudicate, and evaluate musculoskeletal contentions for the lower extremities. |
| Explain the following: | Each learning objective is covered in the associated topic. At the conclusion of the lesson, the learning objectives will be reviewed.  |
| Motivation | Knee, ankle, and hip, and foot injuries are common in military service, as servicemembers carry heavy loads on the battlefield and during training. Knowing how to properly evaluated these disabilities will prevent over or underpaymants. |
| STAR Error code(s) | A1; B1; B2; C2; D1 |
| ReferencesSlides 3-4 | Explain where these references are located in the workplace.All M21-1 references are found in the [Live Manual Website](https://vaww.compensation.pension.km.va.gov/).All CFR references are found in the [eCFR Website](https://www.ecfr.gov/cgi-bin/text-idx?SID=ad275643432556b9dda942343fb89296&mc=true&node=pt38.1.3&rgn=div58).All Court references are found in the [Live Manual Website](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?encodedHash=%23!agent%2Fportal%2F554400000001034%2Ftopic%2F554400000003330%2FDecision-Assessment-Document-DAD-Court-Decisions).* [38 CFR 3.808 - Automobiles or other conveyances and adaptive equipment; certification](http://www.ecfr.gov/cgi-bin/text-idx?SID=cac7849deeb781717700a2f10e51d58e&mc=true&node=se38.1.3_1808&rgn=div8)
* [38 CFR §4.40 – Functional Loss](http://www.ecfr.gov/cgi-bin/text-idx?SID=29bc81e6125f8aed7c77a6bd629f36e4&mc=true&node=se38.1.4_140&rgn=div8)
* [38 CFR §4.45 – The Joints](http://www.ecfr.gov/cgi-bin/text-idx?SID=29bc81e6125f8aed7c77a6bd629f36e4&mc=true&node=se38.1.4_145&rgn=div8)
* [38 CFR §4.46 – Accurate Measurement](http://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=29bc81e6125f8aed7c77a6bd629f36e4&mc=true&r=SECTION&n=se38.1.4_146)
* [38 CFR §4.59 – Painful Motion](http://www.ecfr.gov/cgi-bin/text-idx?SID=29bc81e6125f8aed7c77a6bd629f36e4&mc=true&node=se38.1.4_159&rgn=div8)
* [38 CFR §4.71 – Measurement of Ankylosis and Joint Motion](http://www.ecfr.gov/cgi-bin/text-idx?SID=29bc81e6125f8aed7c77a6bd629f36e4&mc=true&node=se38.1.4_171&rgn=div8)
* [38 CFR §4.71a – Rating Schedule of Musculoskeletal Disabilities](http://www.ecfr.gov/cgi-bin/text-idx?SID=29bc81e6125f8aed7c77a6bd629f36e4&mc=true&node=se38.1.4_171a&rgn=div8)
* [M21-1 Part III, Subpart iv, Chapter 4, Section A – Musculoskeletal Conditions](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?encodedHash=)
* [*DeLuca v. Brown*, 8 Vet.App. 202 (1995)](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?encodedHash=)
* [*Burton v. Shinseki*, 25 Vet.App. 1 (2011)](https://vaww.vrm.km.va.gov/system/templates/selfservice/va_kanew/help/agent/locale/en-US/portal/554400000001034/content/554400000014386/Burton-v.-Shinseki%2C-Aug-4%2C-2011%2C-25-Vet.App.-1)
* [*Mitchell v. Shinseki*, 25 Vet.App. 32 (2011)](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?encodedHash=)
* [*Petitti v. McDonald*, 27 Vet.App. 415 (2015)](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?encodedHash=)
* [*Sowers v. McDonald*, 27 Vet.App. 472 (2016)](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?encodedHash=)
* [*Correia v. McDonald,* 28 Vet.App. 158 (2016)](https://vaww.vrm.km.va.gov/system/templates/selfservice/va_kanew/help/agent/locale/en-US/portal/554400000001034/content/554400000045411/Correia-v-McDonald-Jul-5-2016-28-VetApp-158)
* [*Southall-Norman v. McDonald*, 28 Vet.App. 346 (2016)](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?encodedHash=)
 |
| Knee OverviewSlide 5 | The knee joint is made up of bone, cartilage, ligaments and fluid. Muscles and tendons help the knee joint move. When any of these structures is hurt or diseased, knee problems occur. Knee problems can cause pain and difficulty walking.Knee problems are very common, and they occur in people of all ages. Knee problems can interfere with many things, from participation in sports to simply getting up from a chair and walking. This can have a big impact on a Veterans life.Common knee-related diagnoses include, but not limited to:* patellofemoral pain syndrome
* chondromalacia patella
* degenerative joint disease (5003)/traumatic arthritis (5010)

Regardless of diagnosis, functional impairments native to knee conditions routinely involve instability, limitation of flexion, and/or limitation of extension, evaluated under DC 5257, 5260, and/or 5261, respectively. |
| Limitation of Knee (Leg) Flexion (DC 5260)Slide 6 | Explain what flexion is, and if needed show the MEPSS animation from the MEPSS website. (Flexion is the process of bending or the state of being bent.)Discuss the DBQ and the Evaluation Builder and explain the difference between where pain begins versus actual range of motion (ROM) versus repetitive motion.Explain the DeLuca/Mitchell sections of the evaluation builder, and explain the relevance of those decisions.*Talking Points*: *The DeLuca section of the evaluation builder is completed using ROM testing following three repetitions. Mitchell and Flare-Up boxes are completed using opinion evidence from the examiner for limitation of motion due to pain on use over time or during a flare-up, respectively.*  |
| Limitation of Knee (Leg) Extension (DC 5261)Slide 7 | Explain what extension is, and if needed show the MEPSS animation from the MEPSS website. (Extension is the movement that brings the limb into or toward a straight position.)Discuss the DBQ and the Evaluation Builder and explain the difference between where pain begins versus actual range of motion (ROM) versus repetitive motion.Explain the Deluca/Mitchell part of the Evaluation Builder, and explain the relevance of those decisions.*Talking Points: The DeLuca section of the evaluation builder is completed using ROM testing following three repetitions. Mitchell and Flare-Up boxes are completed using opinion evidence from the examiner for limitation of motion due to pain on use over time or during a flare-up, respectively.* |
| Multiple Evaluations for Limited Motion of the KneeSlide 8 | Though, knee flexion and extension both occur in the same plane of motion, limitation of flexion (bending the knee) and limitation of extension (straightening the knee) represent distinct disabilities.Where a Veteran meets the requirements for a 0% or higher evaluation under DC 5260 (limitation of flexion) and under DC 5261 (limitation of extension), an evaluation under each diagnostic code may be assigned. We must ensure that all knee examinations record range of motion findings in both flexion and extensionAlthough it is permissible to assign multiple evaluations under multiple diagnostic codes for a single knee, you must always abide by the amputation rule (38 CFR § 4.68).Emphasize that painful motion cannot be rated separately if a 10% schedular evaluation is granted for a joint, as it includes the consideration of pain.***Talking Points:*** *Because the knee has a defined 0% criteria, the criteria must be met for a 0% evaluation to be granted. Limitation of flexion or extension not reaching the schedular criteria for a 0% evaluation does not warrant a 0% grant.* |
| Knee Subluxation/Instability (DC 5257)Slide 9 | Explain the schedular criteria for instability and compare the criteria to the Evaluation Builder.Explain that the DBQ provides detailed information to assist us in making our decision.***Talking Points:*** *Note that procedural guidance indicates that lateral knee instability include anterior and posterior instability. The presence of any of these warrants a single, compensable evaluation under DC 5257.*  |
| Multiple Compensable Evaluations for Limited Motion AND InstabilitySlide 10 | Discuss the ability to have three evaluations of the same knee as long as we don’t exceed the Amputation Rule – one for flexion, extension and instability.The disabilities do not have to be compensable for flexion and extension, but must meet a 0% evaluation under DC 5260 and DC 5261.***Talking Points:*** *Though painful motion cannot be granted in addition to a schedular 10% evaluation based on limitation of flexion/extension, it can be granted in addition to an evaluation based on DC 5257 criteria.* |
| Knee Replacements (DC 5055)Slide 11 | Knee replacements are total knee replacements or total knee arthroplasty (TKR or TKA), not a partial knee replacement.Partial knee replacement is a surgical treatment option that replaces (or resurfaces) only the damaged portion of the knee while conserving knee ligaments and unaffected cartilage. “Patients with unicompartmental knee arthritis have cartilage degeneration in only one section or compartment of the knee.Discuss the rating criteria, and the number of months for convalescence, and the reduction to the minimum evaluation.***Talking Points:*** *VBMS-R requires staging to accurately evaluate a knee status post TKA. The TKA should be treated as a progression in diagnosis, with a single month of convalescence and twelve months of schedular, 100 percent entitlement, for a total of thirteen months following hospital admission for surgery.* |
| **Hip Overview**Slide 12 | The hip is a ball-and-socket joint; the head of the femur fits into the acetabulum of the hip bone.Common hip diagnoses include:* + trochanteric bursitis,
	+ degenerative joint disease, and
	+ traumatic arthritis

Functional impairments in the hip routinely involve limitation of extension, limitation of flexion, and/or limitation of abduction/adduction/rotation, evaluated under DC 5251, 5252, and/or 5253, respectively.***Talking Points:*** *The hip differs from the knee in that it results in multiple evaluations (many noncompensable) extremely often. In the next few slides, we’ll discover why.* |
| Limitation of Hip Motion (DCs 5251-5253)Slides 13-14 | Discuss the schedular criteria for the hip. *Have the MEPSS motion animations ready for demonstration.*Note that the DBQ matches with the Evaluation Builder and the Evaluation Builder will help in determining if more than one evaluation is warranted. |
| Multiple Evaluations for Limited Motion of the Hip*Slide 15*Ankle OverviewSlide 16**Limitation of Ankle Motion (DC 5271)**Slide 17 | Much like the knee, separate evaluations can be authorized for the distinct disabilities caused by limitation of flexion and/or extension, with a third evaluation possible for limitation of adduction/abduction/rotation contemplated in DC 5253.***Talking Points:*** *Because the hip does not have defined 0% criteria for DCs 5251, 5252, and 5253, any limitation of motion can be used to assign a 0% evaluation under 38 CFR 4.31.*The ankle is a major, hinged joint between the lower leg and foot where the tibia, fibula, and talus meet.Common ankle diagnoses include:* + tendonitis,
	+ lateral collateral ligament sprain,
	+ degenerative arthritis, and
	+ traumatic arthritis

Ankle impairment frequently involves limitation of motion, evaluated under DC 5271.***Talking Points:*** *Unlike the knee and hip, specific ROM measurements are not denoted in the rating schedule. Procedurally, moderate and marked are defined in the next few slides.* The vast majority of ankle conditions are evaluated based on limitation of motion; though the evaluative criteria does not indicate range of motion measurements, the evaluation builder and DBQ provide the same considerations for DeLuca, Mitchell, and flare-ups as for other joints. |
| **Ankle Considerations**Slide 18**Foot & Toes Overview**Slide 19**Common Foot Evaluations (DCs 5276 & 5284)**Slide 20 | * Moderate limitation of ankle motion will be present when there is less than 15 degrees dorsiflexion or less than 30 degrees plantar flexion.
* Marked limitation of motion is demonstrated when there is less than five degrees dorsiflexion or less than 10 degrees plantar flexion.

***Talking Points:*** *Unlike other joints, separate evaluations are not warranted for ankle disabilities presenting with both limited dorsiflexion and limited plantar flexion, as the evaluative criteria does not separate these planes of motion. A 0 percent evaluation is appropriate under 38 CFR 4.31 for range of motion loss not meeting the moderate or marked criteria.*The foot is a complex structure comprising numerous bones and joints.Common foot diagnoses include:* + pes planus,
	+ plantar fasciitis, and
	+ traumatic/degenerative arthritis

Pes planus and plantar fasciitis are evaluated under DC 5276; traumatic injuries to the foot are evaluated under DC 5284.***Talking Points:*** *Foot evaluations are unique in that the application of corrective footwear can render some evaluations (under 5276) noncompensable.* Evaluations under 5276 are single evaluations, whether bilateral or unilateral involvement is noted. The evaluation changes both based on symptoms and whether one or both feet are involved.DC 5284 evaluations are based on severity of symptoms from 10 to 30 percent. Conditions that are not addressed in 38 CFR 4.71a can be rated under this code using an analogous rating (DC 5299-5284). |
| Foot Considerations*Slide 21*Impact of Court Holdings*Slide 22*Final ConsiderationsSlide 23 | Though DC 5299-5284 can be used to evaluate unlisted foot conditions, it must not be used to evaluate foot conditions that have a defined diagnostic code.Metatarsalgia cannot be evaluated separately from pes planus or plantar fasciitis without violating pyramiding regulation, as both contemplate foot pain as a symptom of disability in the foot.Painful motion of multiple toes of one foot warrants a minimal evaluation under DC 5284. ***Talking Points:*** *Though 5284 is a versatile code applicable for many disability diagnoses, it should not be regarded as a “default” code for any and all foot diagnoses.* This slide is animated – each holding flies in from the right to avoid overcrowding. Though many holdings appear similar, they often result in very different procedural changes in rating.***Talking Points:*** *The* DeLuca *and* Mitchell *holdings read very similarly; however, the first resulted in a DBQ change requiring three repetitions of motion for accurate measurement on examination. The second requires an opinion regarding functional impairment (including an estimated loss of ROM) during flare-ups or repeated use over time if painful motion is present.**The* Petitti *holding removes a previous procedural requirement for objective evidence of painful motion in evidence. Subjective reporting of painful motion is sufficient for a minimum evaluation under 38 CFR 4.59.**The* Sowers *holding, though mostly focused on requiring a minimum compensable evaluation under the most appropriate DC for a 38 CFR 4.59 evaluation, also includes a side note describing the minimum evaluation for the shoulder under 38 CFR 4.59 as 20 percent, resulting in a procedural change in evaluation for shoulder ratings.**The* Correia *holding resulted in the most recent changes to the examination request builder (ERB) for musculoskeletal disabilities, directing examiners to test for painful motion on weight-bearing and non weight-bearing with both active and passive ROM with a comparison to the uninjured joint, if present.**The* Southall-Norman *holding clarifies that 38 CFR 4.59 evaluations are not limited to DCs contemplating range of motion criteria – they are instead applicable for any DC that contemplates a joint and presents a compensable evaluation. This indicates that a minimum evaluation can be assigned for painful motion under DCs such as 5284 for painful motion of the toes of a foot.* Remind the trainees:* Consider presumption of service connection under 38 CFR 3.309(a) (for arthritis/degenerative joint disease)
* The term "prosthetic replacement" means a total replacement of the named joint, except that for DC 5054, the term means a total replacement of the head of the femur or of the acetabulum.
* Special monthly compensation is payable for loss of use of a foot/lower extremity
* Ancillary decisions, to include automobile allowance
	+ Discuss the lower extremity criteria for automobile allowance contained in 38 CFR 3.808
 |
| Questions?Slide 24 | Ask the trainees if they have questions concerning the class. |
| Exercise | N/A |
| note(s) | N/A |
| DEMONSTRATION | Demontrate how to rate a knee in VBMS-R Demo to prepare the trainees for their ecase assignment in IWT. |

|  |
| --- |
| Practical Exercise |
| Time Required | 0 hours |
| EXERCISE | No practical exercise for this course, as the trainee will complete an ecase based upon this course. |

|  |
| --- |
| Lesson Review, Assessment, and Wrap-up |
| IntroductionDiscuss the following: | The Musculoskeletal Conditions of the Knee and Leg lesson is complete. Review each lesson objective and ask the trainees for any questions or comments. |
| Time Required | 10 minutes  |
| Lesson Objectives | You have completed the Musculoskeletal Conditions of the Knee and Leg lesson. The trainee should be able to: * prepare a rating decision targeting a knee condition(s).
 |
| Assessment  | There is no TMS Assessment for this course. |