The Musculoskeletal System – Lower Body

Instructor Lesson Plan

Time Required: 8 Hours

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| 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 # | 4193568 |
| Prerequisites | Prior to this lesson, the Rating Veteran Service Representatives (RVSRs) should have 24 months of RVSR experience. Trainees should also have completed the basic Rating Veterans Service Representatives class. |
| target audience | The target audience for the Musculoskeletal System is Journey Level RVSR.  Although this lesson is targeted to teach the Journey Level RVSR employee, it may be taught to other VA personnel as mandatory or refresher type training. |
| Time Required | 8 hours |
| Materials/ TRAINING AIDS | Lesson materials:   * **The Musculoskeletal System – Lower Body** PowerPoint Presentation * **The Musculoskeletal System - Lower Body** Trainee Handouts * **The Musculoskeletal System – Lower Body** Level II Assessment |
| 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:   * VA TMS to complete the assessment |

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| 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. |

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| Introduction to the Musculoskeletal System – Lower Body | | |
| INSTRUCTOR INTRODUCTION | | Complete the following:   * Introduce yourself * Orient learners to the facilities * Ensure that all learners have the required handouts |
| time required | | .5 hours |
| Purpose of Lesson  Explain the following: | | This lesson is intended to continue developing the Rating Veterans Service Representatives abilities to identify basic concepts for rating joints and muscle injuries within the musculoskeletal system, while enhancing understanding surrounding the musculoskeletal disabilities of the lower extremities. This lesson will contain discussions and exercises that will allow you to gain a better understanding of:   * The Musculoskeletal System – Lower Body |
| Lesson Objectives  Discuss the following:  Slide 2  Handout 2 | In order to accomplish the purpose of this lesson, the RVSR will be required to accomplish the following lesson objectives.  TheRVSRwill be able to:   * Demonstrate an understanding of the basic principles for applying the Rating Schedule while evaluating Lower Body musculoskeletal disabilities * Identify the circumstances in which separate evaluations are permissible for the same joint * Recognize the rules and regulations surrounding musculoskeletal disabilities * Determine appropriate evaluation levels based on the evidence surrounding the disabilities of 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 | The most common claimed disabilities involve the musculoskeletal system, and proper evaluations will impact a large segment of our Veteran population. | |
| STAR Error code(s) | A1, B2, C1, C2, D1 | |

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| References  Slide 3  Handout 3 | Explain where these references are located in the workplace.   * [38 CFR 4.14 – Avoidance of pyramiding](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_14.htm) * [38 CFR 4.25 – Combined ratings table](http://www.ecfr.gov/cgi-bin/text-idx?SID=ad275643432556b9dda942343fb89296&mc=true&node=pt38.1.4&rgn=div5#se38.1.4_125) * [38 CFR 4.30 – Convalescent ratings](http://www.ecfr.gov/cgi-bin/text-idx?SID=ad275643432556b9dda942343fb89296&mc=true&node=pt38.1.4&rgn=div5#se38.1.4_130) * [38 CFR 4.40 – Functional Loss](http://www.benefits.va.gov/warms/docs/regs/38CFR/BOOKC/PART4/S4_40.doc) * [38 CFR 4.43 - Osteomyelitis](http://www.ecfr.gov/cgi-bin/text-idx?SID=ad275643432556b9dda942343fb89296&mc=true&node=pt38.1.4&rgn=div5#se38.1.4_143) * [38 CFR 4.45 – The Joints](http://www.benefits.va.gov/warms/docs/regs/38CFR/BOOKC/PART4/S4_45.doc) * [38 CFR 4.46 – Accurate Measurement](http://www.benefits.va.gov/warms/docs/regs/38CFR/BOOKC/PART4/S4_46.doc) * [38 CFR 4.55 – Principles of combined ratings for muscle injuries](http://www.ecfr.gov/cgi-bin/text-idx?SID=ad275643432556b9dda942343fb89296&mc=true&node=pt38.1.4&rgn=div5#se38.1.4_155) * [38 CFR 4.56 – Evaluation of muscle disabilities](http://www.ecfr.gov/cgi-bin/text-idx?SID=ad275643432556b9dda942343fb89296&mc=true&node=pt38.1.4&rgn=div5#se38.1.4_155) * [38 CFR 4.57 – Static foot deformities](http://www.ecfr.gov/cgi-bin/text-idx?SID=ad275643432556b9dda942343fb89296&mc=true&node=pt38.1.4&rgn=div5" \l "se38.1.4_155) * [38 CFR 4.58 – Arthritis due to strain](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_58.htm) * [38 CFR 4.62 – Circulatory disturbances](http://www.ecfr.gov/cgi-bin/text-idx?SID=ad275643432556b9dda942343fb89296&mc=true&node=pt38.1.4&rgn=div5" \l "se38.1.4_162) * [38 CFR 4.63 – Loss of use of hand or foot](http://www.ecfr.gov/cgi-bin/text-idx?SID=ad275643432556b9dda942343fb89296&mc=true&node=pt38.1.4&rgn=div5" \l "se38.1.4_162) * [38 CFR 4.64 – Loss of use of both buttocks](http://www.ecfr.gov/cgi-bin/text-idx?SID=ad275643432556b9dda942343fb89296&mc=true&node=pt38.1.4&rgn=div5" \l "se38.1.4_162) * [38 CFR 4.68 – Amputation Rule](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_68.htm) * [38 CFR 4.59 – Painful Motion](http://www.benefits.va.gov/warms/docs/regs/38CFR/BOOKC/PART4/S4_59.doc) * [38 CFR 4.71 – Measurement of Ankylosis and Joint Motion](http://www.benefits.va.gov/warms/docs/regs/38CFR/BOOKC/PART4/S4_71.doc) * [38 CFR 4.71a – Rating Schedule of Musculoskeletal Disabilities](http://www.benefits.va.gov/warms/docs/regs/38CFR/BOOKC/PART4/S4_71a.doc) * [M21-1, Part III, Subpart iv, 4.A – Musculoskeletal Conditions](http://www.benefits.va.gov/WARMS/docs/admin21/m21_1/mr/part3/subptiv/ch04/M21-1MRIII_iv_4_SecA.docx) * [M21-1, Part III, Subpart iv, 3.D – Examination Reports](https://ssologon.iam.va.gov/CentralLogin/Default.aspx?appname=core&URL=https://ssologon.iam.va.gov/CentralLogin/core/redirect.aspx&TYPE=33619969&REALMOID=06-d403f59d-c057-477f-9c49-c0d2a2d13e2b&GUID=&SMAUTHREASON=0&METHOD=GET&SMAGENTNAME=$SM$Dc1iJnfj0EDnZgoGbQhY8pxQ5cSvKdwMq%2fM4NhznJAhElAp4fDXcFkTew7jYCcYk&TARGET=$SM$HTTPS%3a%2f%2fvaww%2ecompensation%2epension%2ekm%2eva%2egov%2fsystem%2ftemplates%2fselfservice%2fva_ka%2fportal%2ehtml%3fportalid%3d554400000001034) * [VSCM Conference Calls – July 2011 & April 2014](http://vbacodmoint1.vba.va.gov/bl/21/vscmcalls/CallList.asp?cYear=2014) * [MEPSS – Medical EPSS](http://epss.vba.va.gov/mepss) * [VBN Broadcast – September 2004](http://vbaw.vba.va.gov/bl/21/Calendar/vbn/transcripts.htm) * [Deluca v. Brown](http://vbaw.vba.va.gov/bl/21/advisory/DADS/1995dads/Deluca.doc) and [Mitchell v. Shinseki](http://vbaw.vba.va.gov/bl/21/advisory/DADS/2011dads/Mitchell.doc) * [VAOPGCPREC 9-2004 – Rating Limitation of Flexion and Extension of the Leg](http://vbaw.vba.va.gov/bl/21/advisory/PRECOP/98op/Prc09_98.doc) * [VAOPGCPREC 23-97](http://vbaw.vba.va.gov/bl/21/Advisory/PGCOP.htm) – Multiple Ratings for Knee Disabilities * [Musculoskeletal DBQs](http://vbaw.vba.va.gov/bl/21/rating/Medical/exams/exam_home.htm) |

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| Topic 1: Musculoskeletal Evaluations | |
| Introduction | This topic will allow the trainee to recognize the general considerations when evaluating the musculoskeletal system. |
| Time Required | 3 hours |
| OBJECTIVES/ Teaching Points | Topic objectives:   * Demonstrate an understanding of the basic principles for applying the Rating Schedule while evaluating musculoskeletal disabilities. * Recognize the rules and regulations surrounding the musculoskeletal disabilities.   The following topic teaching points support the topic objectives:   * Functional loss * Examinations * Major and minor joints * Painful motion * Circulatory disturbances * Amputation rule * Arthritis * Acute, subacute, and chronic diseases * Disabilities of bones and joint * Prosthetic Implants * Anatomical loss and loss of use * Muscle injuries |
| Functional Loss  Slide 4-6  Handout 4-5 | *38 CFR 4.40 Functional Loss / 38 CFR 4.45 The Joints*  Functional loss describes the degree to which a joint is damaged. Damage is expressed as the joint’s inability to perform its normal working movement.  Explain the importance of considering functional loss in determining the assigned evaluation. Emphasize the importance of having the examiner consider the provisions of *DeLuca v. Brown*, 1995, and *Mitchell v. Shinseki,* 2011, in reporting clinical findings and range of motion studies.  Consider entitlement to an increased evaluation due to additional loss of range of motion caused by such factors as weakened movement, excess fatigability, incoordination, and pain when evaluating functional loss.  Tell the trainees that according to the Rating Schedule, there are several different causes of functional loss, such as:   * Absence of part, or all, of the necessary bones, joints and muscles, or associated structures * Deformity, adhesions, nerve problems, or other pathology, or * Pain, supported by adequate pathology and evidenced by the visible behavior of the claimant undertaking the motion. |
| Major and Groups of Minor Joints  Slide 7-8  Handout 5 | Explain the difference between major joints and groups of minor joints when rating disabilities of arthritis.  Major Joints:   * Hip * Knee * Ankle   Minor Joints:   * Interphalangeal, metatarsal and tarsal joints of the Lower Extremities * Lumbosacral articulation and both sacroiliac joints (are to be rated on disturbance of lumbar spine functions) |
| Painful Motion  Slide 9–10  Handout 6 | *38 CFR 4.59 Painful Motion*  Review 38 CFR 4.59 which provides that findings of painful, unstable, or malaligned joints due to healed injury should be entitled to at least the minimum compensable evaluation for the joint.  Explain the inability, due to damage or infection in parts of the system, to perform the normal working movements of the body with normal excursion, strength, speed, coordination and endurance.  Tell the trainees that the majority of musculoskeletal disabilities do not result in obvious physical deformities.  Our joints, including the spine, are prone to permanent injury from trauma.  Some examples of trauma can be a serious single event, such as stepping in a hole and twisting an ankle or knee, or it can be the result of repetitive use, such as repeated overhead lifting injuries to a shoulder.  Both types of musculoskeletal disabilities, whether trauma or disease, may result in functional loss of a joint. |
| **Circulatory Disturbances**  Slide 11  Handout 6 | *38 CFR 4.62 Circulatory Disturbances*  Review 38 CFR 4.62 which provides that any circulatory disturbance, especially of the lower extremity following injury in the popliteal space, must not be overlooked, and requires rating generally as phlebitis. |
| **Acute, Subacute, or Chronic Diseases**  Slide 12–16  Handout 6–10 | For a joint or group of joints affected by degenerative arthritis, use the diagnostic code which justifies the assigned evaluation.  For example, when the requirements for compensable LOM of a joint are met under a DC other than [38 CFR 4.71a, DC 5003](http://www.ecfr.gov/cgi-bin/text-idx?SID=13bcad22732de2e24d3da7cad62932d5&node=se38.1.4_171a&rgn=div8), hyphenate that DC in the conclusion with a proceeding “5003-.” Then list the appropriate DC, such as [38 CFR 4.71a, DC 5261](http://www.ecfr.gov/cgi-bin/text-idx?SID=13bcad22732de2e24d3da7cad62932d5&node=se38.1.4_171a&rgn=div8), limited extension of the knee, 10 percent, creating the DC “5003-5261.”  However, if other joints affected by arthritis are compensably evaluated in the same rating decision, use only the DC appropriate to these particular joints which supports the assigned evaluation and omit the modifying “5003.”  **NOTE:** If the arthritis is caused by a traumatic incident do not use DC 5003.  Whenever LOM due to arthritis is noncompensable under codes appropriate to a particular joint, assign 10-percent under [38 CFR 4.71a, DC 5003](http://www.ecfr.gov/cgi-bin/text-idx?SID=70df8a154d2bdffaab9f94956057a637&node=pt38.1.4&rgn=div5#se38.1.4_171a) for each major joint or group of minor joints affected by limited or painful motion as prescribed under [38 CFR 4.71a, DC 5003](http://www.ecfr.gov/cgi-bin/text-idx?SID=70df8a154d2bdffaab9f94956057a637&node=pt38.1.4&rgn=div5#se38.1.4_171a).  If there is no limited or painful motion, but there is x-ray evidence of degenerative arthritis, assign under [38 CFR 4.71a, DC 5003](http://www.ecfr.gov/cgi-bin/text-idx?SID=13bcad22732de2e24d3da7cad62932d5&node=se38.1.4_171a&rgn=div8) either a 10-percent evaluation or a 20-percent for occasional incapacitating exacerbations, based on the involvement of two or more major joints or two or more groups of minor joints.  **Important**: Do not combine under [38 CFR 4.25](http://www.ecfr.gov/cgi-bin/text-idx?SID=40fc1e088ec92f168f9d24242bd432e7&mc=true&node=se38.1.4_125&rgn=div8) a 10- or 20-percent evaluation that is based solely on x-ray findings with evaluation that are based on limited or painful motion. See example in [M21-1, Part III, Subpart iv, 4.A.8.d](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/#8d).  **Osteomyelitis**  Use *The Merck Manual* to define osteomyelitis and describe its signs and symptoms.  Discuss 38 CFR 4.43, which provides that once established, osteomyelitis should be considered as a continuously disabling process, unless the affected part is removed by amputation or radical resection.  **Rheumatoid Arthritis**  Use *The Merck Manual* to define rheumatoid arthritis and describe its signs and symptoms.  Review the Rating Schedule, 4.71a, as it pertains to evaluating disabilities of rheumatoid arthritis, DC 5002, explaining that like osteomyelitis, this condition is evaluated as an active or inactive process.  **Degenerative Arthritis (hypertrophic or osteoarthritis)**  Use *The Merck Manual* to define degenerative arthritis and describe its signs and symptoms.  Review the Rating Schedule evaluation criteria as it pertains to evaluating disabilities of degenerative arthritis, DC 5003. Explain that x-ray evidence should be used to substantiate a diagnosis.   * Refer the student to M21-1, III.iv.4.A.5&6 for examples of rating degenerative arthritis.   **Disposition of Arthritis**  Assign separate evaluations for each joint affected by arthritis. Rating specialists may encounter cases where arthritis was previously rated as a single disability.  These cases will need to be re-rated with each joint separately assigned an evaluation as appropriate.  Refer the students to M21-1 III.iv.4.A.6.d for further information on these procedures.  **Other Types of Arthritis**  Review other types of arthritis under DC 5004 through 5009. Explain that these are not truly rheumatoid arthritis, but are rated as one would rate rheumatoid arthritis.  Arthritis due to trauma, DC 5010, results from a direct wound or injury; and like degenerative arthritis, should be substantiated by x-ray findings.  Furnish a general definition of each, and discuss how these are evaluated using the Rating Schedule. |
| **Arthritis due to Strain**  Slide 17-18  Handout 10 | *38 CFR 4.58 Arthritis due to strain*  Review 38 CFR 4.58, which provides for establishment of service connection for secondary disabilities that may develop as a result of strain caused by the service connected disability.  Note: When there is a lower extremity shortening or amputation, an associated arthritis that subsequently develops **will** be service connected. (Lower extremity shortening will be explained further, later on.)  The rating activity may encounter cases for which arthritis of multiple joints is rated as a single disability.  Use the information in the table below to process cases for which arthritis was previously evaluated as a single disability but the criteria for assignment of separate evaluations for affected joints was met at the time of the prior decision.   |  |  | | --- | --- | | **If …** | **Then …** | | * the separate evaluation of the arthritic disability results in no change in the combined degree previously assigned, and * a rating decision is required | Reevaluate using the current procedure with the same effective date as previously assigned. | | reevaluating the arthritic joint separately results in an increased combined evaluation | Apply [38 CFR 3.105(a)](http://www.ecfr.gov/cgi-bin/text-idx?SID=92932f5845e33fcc776900678bb1dec3&mc=true&node=se38.1.3_1105&rgn=div8) to retroactively increase the assigned evaluation. | | reevaluating the arthritic joint separately results in a reduced combined evaluation | * request an examination, and * if still appropriate, propose reduction under [38 CFR 3.105(a)](http://www.ecfr.gov/cgi-bin/text-idx?SID=92932f5845e33fcc776900678bb1dec3&mc=true&node=se38.1.3_1105&rgn=div8) and [38 CFR 3.105(e)](http://www.ecfr.gov/cgi-bin/text-idx?SID=92932f5845e33fcc776900678bb1dec3&mc=true&node=se38.1.3_1105&rgn=div8).   **Exception**: Do not apply [38 CFR 3.105(a)](http://www.ecfr.gov/cgi-bin/text-idx?SID=92932f5845e33fcc776900678bb1dec3&mc=true&node=se38.1.3_1105&rgn=div8) if the assigned percentage is protected under [38 CFR 3.951](http://www.ecfr.gov/cgi-bin/text-idx?SID=f468c4d563a96e488587dc5a693b1846&mc=true&node=se38.1.3_1951&rgn=div8).  **Reference**: For more information on protected rating decisions, see [M21-1, Part III, Subpart iv, 8.C](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/#!agent/portal/554400000001034/article/554400000014213/M21-1, Part III, Subpart iv, Chapter 8, Section C - Protected Ratings). | |
| **Examinations**  Slide 19-20  Handout 11 | Have the students read this section in the Handout.  Emphasize the importance of adequate examinations, and discuss local procedures for returning inadequate VA examination reports (VAE). Explain that we need the examiner to not only fully report the Veteran’s subjective complaints, objective clinical findings, and results of range of motion studies, but also furnish evidence of any additional loss of range of motion due to weakness, fatigue, incoordination, and pain.  Emphasize the importance of VA examiner correlation of x-ray studies, lab work, or other tests done in conjunction with a VAE. Explain that often, the examination report lacks the examiner’s comments on the results of such additional studies.  *38 CFR 4.45 The Joints*  As regards the joints the factors of disability reside in reductions of their normal excursion of movements in different planes. Inquiry will be directed to these considerations:   1. Less movement than normal (due to ankylosis, limitation or blocking, adhesions, tendon-tie-up, contracted scars, etc.). 2. More movement than normal (from flail joint, resections, nonunion of fracture, relaxation of ligaments, etc.). 3. Weakened movement (due to muscle injury, disease or injury of peripheral nerves, divided or lengthened tendons, etc.). 4. Excess fatigability. 5. Incoordination, impaired ability to execute skilled movements smoothly. 6. Pain on movement, swelling, deformity or atrophy of disuse. Instability of station, disturbance of locomotion, interference with sitting, standing and weight-bearing are related considerations. For the purpose of rating lower extremity disabilities from arthritis, the, hip, knee, and ankle are considered major joints; multiple involvements of, the interphalangeal, metatarsal and tarsal joints of the lower extremities, the cervical vertebrae, the dorsal vertebrae, and the lumbar vertebrae, are considered groups of minor joints, ratable on a parity with major joints. The lumbosacral articulation and both sacroiliac joints are considered to be a group of minor joints, ratable on disturbance of lumbar spine functions.   Evaluation of these disabilities requires specific evidence regarding active and passive range of motion and detailed description of symptoms and flare-ups.  In all but the exceptional case, these disabilities require a VA examination to obtain all the necessary evidence to evaluate. Post service medical evidence will rarely be sufficient for rating purposes for evaluating functional loss, because treating physicians rarely have a need to document actual range of motion and may not provide any details regarding additional limitation. These requirements are unique to the VA disability evaluations.  The Joints Exam Worksheet is primarily the one used to evaluate functional loss involving musculoskeletal disabilities  DeLuca Considerations: Tell the trainees that the requirements imposed by the Court of Appeals for Veterans’ Claims’ (CAVC) *DeLuca* decision have been incorporated into the Joints Examination Worksheet.  The worksheet requires that the examiner provide **actual range of motion**, which is measured using an instrument called a goniometer.  If the examiner cannot determine any additional functional loss, they would need to so state.  For example: “I cannot determine any additional limitation due to repetitive motion **without resorting to speculation**.”  If either actual range of motion or additional limitation of motion is not addressed, the exam is not sufficient for rating purposes. |
| **Amputation**  Slide 21  Handout 11 | *38 CFR 4.68 Amputation Rule*  Emphasize that a combined evaluation for disabilities affecting a certain extremity shall not exceed the evaluation assigned for the amputation of that extremity were such amputation performed.  Explain that this rule applies to musculoskeletal conditions only and that other, unrelated disabilities affecting the extremity can combine at a rate higher than the elective amputation site.  Evaluate amputations of the lower extremities using Diagnostic Codes 5160 through 5173. Special monthly compensation is payable for certain of these conditions. |
| **Prosthetic Implants**  Slide 22  Handout 11-12 | Have the students read this section of the Handout.  Explain that prosthetic implants of joints are artificial, fabricated metal and plastic devices used to replace lost or severely impaired joints and may also be used to relieve pain and restore function and mobility.  Describe how the Rating Schedule allows for assignment of a one year temporary total 100 percent evaluation following the replacement (prosthetic implant) of **all** major joints.  The one year period begins after the end of at least a one month total temporary convalescent period following hospital discharge allowed under 38 CFR 4.30.  At the conclusion of the one-year period (usually a total of 13 months at 100 percent when entitlement to paragraph 30 benefits is considered), evaluate the residual level of impairment or the minimum level following prosthetic implants, *whichever is higher.* |

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| **Anatomical Loss and Loss of Use**  Slide 23-26  Handout 12 | **Loss of Use of Hand or Foot**  Review 38 CFR 4.63, which defines the criteria for loss of use of a hand or foot as it applies to special monthly compensation.  **Loss of Use of Both Buttocks**  Review 38 CFR 4.64, which defines the criteria for loss of both buttocks for the purpose of special monthly compensation.  **Combinations of Anatomical Loss and Loss of Use Disabilities**  Describe how DC 5104 through DC 5111 provide for a total 100% evaluation based on combinations of disabilities related to the anatomical loss or loss of use of certain combinations of disabilities.  NOTE: Entitlement to special monthly compensation is established for these combinations. |
| **Evaluating Non-Amputation Disabilities of the Lower Extremities**  Slide 27  Handout 13 | Review the evaluation criteria used for DC 5250 through DC 5274. Using Plate II, describe the normal ranges of motion of the hip, knee and ankle.  Have the student read this section of the Handout and review the list of terms contained therein.  Discuss the application of VAOPCPREC’s 23-97 and 9-2004 in evaluating knee disabilities. |
| **Shortening of the Lower Extremity**  Slide 28  Handout 14 | DC 5275 provides for assigning a separate evaluation of leg length discrepancy in length of lower extremities resulting from disease or injury depending on the difference in leg lengths.  However, do not combine this evaluation with other ratings for fracture or faulty union in the same extremity.  The Veteran may be entitled to Special Monthly Compensation when there is more than a 3.5 inch difference in the extremity length.  Explain that the note under DC 5275 provides that the measurement of both lower extremities should be from the anterior supine spine of the ilium to the internal malleolus of the tibia. |
| **Other Disabilities of Bones and Joints**  Slide 29-30  Handout 14-16 | **Fibromyalgia**  Use *The Merck Manual* to define this condition and describe its signs and symptoms. Explain that DC 5025 was included in the Rating Schedule effective May 7, 1996. Discuss the rating schedule provisions for evaluating fibromyalgia.  **New Growths of Bones**  Malignant new growth of bones, DC 5012, allows for assigning a total of 100% evaluation for one year following the cessation of surgical, x-ray, antineoplastic chemotherapy, or other therapeutic procedure. If there is no recurrence or metastases, the evaluation is based on residual disability.  **Other Disabilities of the Bones and Joints**  Discuss DC 5013 through DC 5024 using definitions found in the Handout and *The Merck Manual.* Explain that, except for gout, we evaluate these conditions on the same basis as for degenerative arthritis (DC 5003), based on limitation of motion of affected part. The 10 and 20 percent evaluations based solely on x-ray findings do not apply.  Gout, DC 5017, is to be rated as for rheumatoid arthritis (DC 5002) |
| **Muscle Injuries**  Slide 31-35  Handout 16-20 | Review the following:  *38 CFR 4.55 Principles of combined ratings for muscle injuries*  *38 CFR 4.56 Evaluation of muscle disabilities*  Explain that the Rating Schedule breaks down the muscle groups into five anatomical regions:   * \*the shoulder girdle and arm (DC 5301 through DC 5306) * \*the forearm and hand (DC 5307 through DC 5309) * the foot and leg (DC 5310 through DC 5312), * the pelvic girdle and thigh (DC 5313 through DC 5318), and * \*the torso and neck (DC 5319 through DC 5323)   \* These Muscle groups are covered under the Musculoskeltal System - Upper Body training session.  Muscle groups identified by Roman numerals, Group I through Group XXIII, with each having its own diagnostic code.  Emphasize that muscles do not usually work in isolation, but may have overlapping functions working in conjunction with other groups of muscles. Consider this in determining evaluations for muscle disabilities.  Explain that under DC 5301 through DC 5323, classifications of disabilities resulting from muscle injuries are slight, moderate, moderately severe, or severe.  Review the provisions of 38 CFR 4.56 for a description of the evaluation of muscle disabilities.  REMINDER: Injuries that cause damage to muscles can also damage bones and nerves… **DO NOT** pyramid on these conditions. |

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| Topic 2: Disabilities of the Lower Extremities | |
| Introduction | This topic will allow the trainee to recognize the general considerations when evaluating the lower extremities of the musculoskeletal system. |
| Time Required | 3 hours |
| OBJECTIVES/ Teaching Points | Topic objectives:   * Identify the circumstances in which separate evaluations are permissible for the same joint * Determine appropriate evaluation levels based on the evidence surrounding the disabilities of the lower extremities.   The following topic teaching points support the topic objectives:   * Spine conditions * Hip conditions * Knee conditions * Ankle conditions * Foot conditions |
| The Spine  Slide 36  Handout 21 | Have the student read this section of the Handout.  Explain the basic function of the spine and review the spinal conditions defined in the Handout (lumbar strains and sprains, herniated or prolapsed disc, scoliosis, spina bifida, etc.).  The Rating Schedule was amended effective September 26, 2003 (Fast letter 03-28) to provide new diagnostic codes and criteria for the evaluation of the spine. When evaluating conditions of the spine previously evaluated under old criteria, remember that we cannot reduce the evaluation solely because of changes in the rating schedule. |
| Evaluation Considerations  Slide 37  Handout 21 | *Low Back Pain (LBP), Lumbosacral Strain (LS) and Subsequently Developing Herniation of a Nucleus Pulposus (HNP)*  Explain that a common theme in low back claims exists where the Veteran establishes service connection for LS with LBP (DC 5237) and develops after service, a herniation of nucleus pulposus, which may possibly lead to more severe complications as contemplated under DC 5243, intervertebral disc syndrome.  Discuss that although the HNP developed after service, the rating specialist should not rush to deny service connection for this condition as not incurred in or aggravated by service. It is possible that the Veteran’s service connected LS or LBP disablement progressed to the point of causing muscle spasm, spinal listing and degenerative changes (DC 5237), which ultimately caused the disc herniation. However, medical evidence showing a causal relationship between the veteran’s HNP and his service connected LS or LBP condition is required before entitlement may be established.  *Residuals of Fracture of the Vertebra*  DC 5235 provides evaluation criteria for vertebral fracture or dislocation. Explain the criteria for evaluating this condition. Emphasize to the students that a 10 percent evaluation for vertebral deformity alone requires evidence of a vertebral body fracture with loss of 50 percent or more of the height. X-ray evidence is usually required to show evidence of vertebral deformity.  *Sacroiliac Injury and Weakness*  Explain that this refers to an injury or weakness at the point of articulation between the sacrum and the ilium (the wide upper portion of the hip bone), and that it should be rated under DC 5236.  *Lumbosacral Strain*  Explain that a lumbosacral strain involves injury to the associated muscles, ligaments or tendons of the lumbosacral spine, and will be rated under DC 5237.  Discuss Goldthwaite’s sign, which is a test used to determine the location of a lesion affecting the low back. With the veteran lying supine, the examiner raises the leg with one hand, while the other hand is placed under the lower back. Leverage is then applied to the side of the pelvis. If the veteran feels pain before the lumbar spine is moved, the lesion is a sprain of the sacroiliac joint. If pain does not appear until after the lumbar spine moves, the lesion is in the sacroiliac or lumbosacral articulation (joint).  Discuss the evaluation criteria used for lumbosacral strain under DC 5237.  *Removal of the Coccyx*  Explain that DC 5298 is for removal of the coccyx (or tailbone). Review evaluation criteria for this condition in the Rating Schedule. |
| Ankylosis and Limitation of Motion of the Spine  Slide 38  Handout 22 | Explain that ankylosis is the abnormal mobility of a joint. Complete ankylosis means there is no movement possible. The revised DC 5235 through DC 5243 apply the same criteria when considering limitation of motion and ankylosis in the evaluation criteria of the spine  Refer the student to *the Disability Examination Worksheets*, which provide a chart with the normal ranges of motion for the spine. Review the various planes of motion of the spine. |
| Intervertebral Disc Syndrome (IVDS)  Slide 39  *Handout 22-23* | Explain that intervertebral disc syndrome, DC 5243, is a condition affecting the layer of fibrocartilage discs between the bodies of the vertebrae. These discs act as cushions absorbing the shocks occurring between vertebrae. Sciatic neuropathy refers to the neurologic impairment due to nerve root impingement or pathology.  The Rating Schedule for IVDS was amended effective September 23, 2002. Evaluate under the General Rating Formula for Diseases and Injuries of the Spine or under the formula for Rating Intervertebral Disc Syndrome based on incapacitating episodes, whichever method results in the higher evaluation. Discuss the evaluation criteria for DC 5243. |
| Hip Conditions  Slide 40-44  *Handout 23-24* | Have the student read this section of the Handout. Explain the basic function of the hip and review the hip disabilities defined in the Handout (ankyloses, thigh impairment, degenerative joint disease, traumatic arthritis, etc.).  Go through the various ranges of motion, and identify when multiple evaluations are appropriate without pyramiding.  Discuss the various ways that we can evaluate the hips, and go over the scheduler criteria for the hips, including diagnostic codes 5251 – 5253.  Provide the motion animations in MEPSS and note that the DBQ for the hips match the Evaluation Builder.  NOTE: The Evaluation Builder will help in determining if more than one evaluation is warranted. |
| Knee Conditions  Slide 45-46  *Handout 24-25* | Knee and leg injuries are common, and as RVSRs, we need to know how to properly evaluate these types of disabilities.  Explain the knee in general terms, with basic anatomy of the knee:   * Femur * Tibia * Patella   Have the student read this section of the Handout.  Explain the basic function of the knee and review knee conditions defined in the Handout. Knee conditions routinely involve limitation of flexion, limitation of extension, and / or instability.  Emphasize that the list provided is not all that can go wrong with the knee. |
| Ankylosis / Limitation of Knee Flexion  Slide 47  *Handout 25* | Explain what flexion is, and if needed show the MEPSS animation for visual confirmation.  Discuss the DBQ and the Evaluation Builder and explain the difference between where pain begins versus actual range of motion (ROM) versus repetitive motion.  Note: The normal range of motion for the knee is 0 to 140 degrees.  Explain DeLuca / Mitchell part of the Evaluation Builder, and explain the relevance of those decisions. |
| Ankylosis / Limitation of Knee Extension  Slide 48  *Handout 25* | Explain what extension is, and if needed show the MEPSS animation for visual confirmation.  Discuss the DBQ and the Evaluation Builder and explain the difference between where pain begins versus actual range of motion (ROM) versus repetitive motion.  Note: The normal range of motion for the knee is 0 to 140 degrees.  Explain DeLuca / Mitchell part of the Evaluation Builder, and explain the relevance of those decisions. |
| Separate Evaluations for the Knee  Slide 49-51  *Handout 25-28* | Describe that entitlement to two separate evaluations, one for arthritis and the other for instability of the knee, may be established in accordance with the provisions of General Counsel Opinion 23-97 dated July 1, 1997. Describe the findings of this opinion.  Further, explain the scheduler 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.  Discuss the ability to have three evaluations of the same knee (as long as we don’t exceed the amputation rule). One for flexion, one for extension, and one for instability.  Explain that where a Veteran meets the requirements for a 0% or higher evaluation under diagnostic code DC 5260 (limitation of flexion) and under DC 5261 (limitation of extension), an evaluation under each diagnostic code may be assigned (**as long as the Veteran meets the scheduler requirements for 0%)**.  Emphasize that painful motion cannot be rated separately if 0% scheduler is granted for a joint, as it includes the consideration of pain. |
| Ankle Conditions  Slide 52-53  *Handout 28* | Have the student read this section of the Handout. Explain the basic function of the ankle and review the ankle disabilities defined in the Handout (ankyloses, limitation of motion, etc.).  Go through the various ranges of motion, and identify when multiple evaluations are appropriate without pyramiding.  Discuss the various ways that we can evaluate the ankles, and go over the scheduler criteria, including diagnostic codes 5270 - 5274.  Provide the motion animations in MEPSS and note that the DBQ for the ankles match the Evaluation Builder.  NOTE: The Evaluation Builder will help in determining if more than one evaluation is warranted. |
| Moderate vs. Marked  Slide 54  *Handout 28* | Explain that under DC 5271 (Limited motion of the ankle):   * 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. |
| Parting Reminders  Slide 55  *Handout 28* | Remind the trainees:   * Special monthly compensation for loss of use of a foot/lower extremity, or for statutory housebound * Ancillary decisions, to include automobile allowance |
| Foot Conditions  Slide 56-59  *Handout 29* | *Flat Foot*  Remind rating specialists that they should carefully review 38 CFR 4.57 to distinguish between developmental and acquired abnormalities of the feet.  Explain that this condition may be considered either congenital or an acquired disability incurred in service. We normally do not consider congenital flat foot as related to service. However, flat foot as a congenital abnormality is subject to service connection if the condition was permanently aggravated due to service.  Emphasize that under DC 5276, extreme tenderness of plantar surfaces of the feet results in a 50% evaluation. Walk the RVSR through Evaluation Builder to show the evaluation criteria in comparison to the DBQ. |
| Other Foot Conditions  Slide 60  *Handout 29* | Review the definition of these foot conditions and foot injuries as provided in the Handout and the Rating Schedule evaluation criteria for DC 5276 through DC 5284. |
| Regional Office Specific Topics | At this time add any information pertaining to:   * Station quality issues with this lesson * Additional State specific programs/guidance on this lesson |

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| Practical Exercise | |
| Time Required | 1 hour |
| EXERCISE | The practical exercise consists of two scenarios with code sheets geared towards the RVSR and five follow up questions. Allow 30 minutes to read, assess and discuss the scenarios. Afterwards, discuss the decisions that the groups came to and review the reasoning.  Ask if there are any questions about the information presented in the exercise, and then proceed to the Review. |

Practical Exercise

**Musculoskeletal Questions**

Directions: Answer the following questions based on the training provided.

1. X-ray confirmation of a vertebral body fracture with loss of 50 percent or more of the height but with no limitation of motion found on physical examination will result in what rating action?

a. Elevation of the rating to the next higher evaluation.

b. Assignment of a 10% rating.

c. Assignment of a 20% rating.

2. Normal flexion and abduction of the shoulder is from 0 degrees to 180 degrees.

a. true

b. false

3. Dupuytren's contracture is evaluated based on limitation of:

a. wrist movement

b. elbow movement

c. finger movement

4. Gout is rated as:

a. rheumatoid arthritis

b. degenerative arthritis

c. bursitis

d. osteomalacia

5. What rating is provided for fibromyalgia when it requires continuous medication for control?

a. 0%

b. 10%

c. 20%

d. 30%

6. A minimum 10% rating will be established for lumbosacral arthritis when there is objective evidence of pain on motion.

a. True

b. False

Given the scenarios below, describe the actions you as the RVSR of record would take.

1. The veteran tore his right knee anterior cruciate ligament. He underwent arthroscopic repair of the torn ligament, and scraping of the patella. X-ray showed no arthritic changes. Physical examination showed that the veteran’s knee is slightly unstable, subject to recurring episodes of swelling and heat. No evidence of a recurring tear was shown. Arthroscopy scar was noted. Private physician report noted an acute exacerbation of the veteran's right knee condition, with pain on motion, slight swelling and clicking in the knee joint.

Based on the above fact pattern, what diagnostic code and evaluation would you assigned for the disability?

2. The service medical records show the veteran suffered a blow to his mid-low back area in November 1993 aboard ship when a refueling winch handle spun out of control. SMR's show that routine therapy and medication were not successful in easing the pain. He was boarded out on TDRL by a Physical Evaluation Board with a 10 percent disability. Current VA examination continued the diagnosis of lumbosacral strain. Range of motion studies showed slight limitation of the lumbosacral spine, with complaints of pain. He takes Motrin daily for control of the pain. Flexion of the lumbar spine was 85 degrees. Extension was 30 degrees. Lateral bending was 30 degrees, left and right. Rotation was 30 degrees, left and right.

Based on the above fact pattern, what diagnostic code and evaluation would you assigned for the disability?

3. Medical records note straight leg raising to 50 degrees on left. The veteran complains of low back pain radiating down the left leg with intermittent relief by Motrin. Diagnostic testing revealed no neurologic abnormalities. Private medical record gives history of lifting injury and confirms MRI finding of HNP. The veteran’s Physician indicates that he prescribed one week of bed rest during the past 12 months.

Based on the above fact pattern, what diagnostic code and evaluation would you assigned for the disability?

4. The veteran is service connected for right knee instability. The condition was rated 10% disabling from 02-22-89, under DC 5257. VAE at the time of the evaluation revealed mild instability of the right knee and complaints of pain on overuse.

On 06-21-00, the veteran filed a claim for increase. VAE of 07-26-00, revealed the veteran to complain of continued right knee pain and instability. The exam revealed decreased flexion of the knee to only 110 degrees as compared to 140 degrees on the left. There was pain on motion and mild swelling present. The examiner indicated mild instability of the right knee joint. Diagnosis was traumatic arthritis, right knee, following review of x-ray. Examiner stated the veteran has post-traumatic arthritic changes of the right knee with pain on motion, mild instability, and slight swelling.

How should the disability be evaluated?

5. A veteran is already service-connected for diabetes mellitus develops an ulcerated lesion on his right foot. The sore did not heal and gangrene developed necessitating a right below the knee amputation of the right leg.

What diagnostic code would you use for the right leg amputation? What evaluation would you assign?

Is the veteran entitled to special monthly compensation? If so, at what level would this be assigned and why?

6 If a major joint reveals x-ray evidence of arthritis and the veteran has pain on motion but the schedule fails to support a compensable evaluation under the appropriate diagnostic code for limitation of motion what evaluation should be assigned?

7. Furnish evaluation and diagnostic code or codes for the following disability. The veteran is suffering from residuals of fracture vertebra at L-3. Exam shows range of motion of lumbar spine to be forward flexion to 85 degrees, extension to 30 degrees, lateral flexion to 30 degrees and rotation to 30 degrees. X-ray at exam reveals evidence of spurring of L-3 vertebra and evidence of old fracture.

1. The veteran has a service connected multiple finger injury. Exam findings reveal an amputation of the ring finger through the middle phalanx and amputation of little finger through proximal phalanx. Determine the level at which this single hand multiple finger disability should be evaluated.
2. The veteran files a claim for a right knee disability on January 12, 2005. On examination he has full range of motion; but on repetitive motion, the knee is actually limited to10 degrees extension and 45 degrees flexion due to fatigue.

How should the disability be evaluated?

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| Lesson Review, Assessment, and Wrap-up | |
| Introduction  Discuss the following: | The Musculoskeletal System lesson is complete.  Review each lesson objective and ask the trainees for any questions or comments. |
| Time Required | .5 hours |
| Lesson Objectives | You have completed the Musculoskeletal System lesson.  The trainee should be able to:   * Demonstrate an understanding of the basic principles for applying the Rating Schedule while evaluating Lower Body musculoskeletal disabilities * Identify the circumstances in which separate evaluations are permissible for the same joint * Recognize the rules and regulations surrounding musculoskeletal disabilities * Determine appropriate evaluation levels based on the evidence surrounding the disabilities of the lower extremities |
| Assessment | Remind the trainees to complete the on-line assessment in TMS to receive credit for completion of the course.  The assessment will allow the participants to demonstrate their understanding of the information presented in this lesson. |