DMA Musculoskeletal Examination (Joints)

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Introduction and Review

Welcome and Course Overview

This course is a joint presentation of the Disability Examination Management Office (DEMO) and the Veteran Health Administration (VHA) Employee Education System (EES). This program will focus on the compensation and pension (C&P) musculoskeletal examination.

What You Will Learn

The purpose of this Web-based training (WBT) course is to provide an overview of the C&P process. It will address a knowledge gap by providing updated information including procedures regarding how to prepare for, conduct, and properly document a thorough and legally defensible C&P musculoskeletal examination. Learners will be successful in addressing the knowledge gap if they successfully pass the end-of-course assessment with a minimum score of 80%. In addition to the DEMO General Certification Overview course, this course is required for certification as an examiner for C&P musculoskeletal examinations.

Target Audience

This training is designed for physicians, nurses, psychologists, Integrated Disability Evaluation System (IDES) providers and other health care providers seeking certification to conduct C&P examinations.

Length of the Course

This course will take you approximately one hour to complete.

Please complete each lesson in the order presented. By doing so, you will be able to build on that knowledge in subsequent lessons. Your knowledge will be checked periodically using quizzes and case studies designed to help you apply information you have just learned.

Course Purpose, Terminal and Enabling Objectives

Terminal Learning Objective

At the completion of this training, you should be able to identify the criteria and recall the general process for opening, conducting, closing, and documenting a C&P musculoskeletal examination. This includes the use of a condition-specific Disability Benefits Questionnaire (DBQ) or other documentation protocol in order to assess the presence and extent of impairment due to service-connected conditions according to Disability and Medical Assessment (DMA) and DEMO policy guidance consistent with the Veterans Benefits Administration's regulations, manuals, policies, directives, and guidelines.

Enabling Learning Objectives

To help the learner meet this terminal learning objective, there are six enabling learning objectives (ELOs):

1. Explain the difference between C&P musculoskeletal examinations for forensic legal purposes and clinical examinations for treatment purposes.
2. Identify the factors that constitute musculoskeletal system disability.
3. Execute best practices for activities performed prior to conducting a C&P musculoskeletal examination.
4. Apply best practices for opening, conducting, and closing a C&P musculoskeletal examination.
5. Apply best practices for guiding the Veteran or Servicemember through the examination and properly answering questions.
6. Apply the best practices for documenting a C&P musculoskeletal examination.

All C&P examiners must take the DEMO General Certification Overview course. If you perform one or more of the five specialty examinations, you are required to take additional appropriate courses in order to obtain DEMO certification. All courses are available via Department of Veterans Affair and Department of Defense learning systems.

Introduction to the Case Study

Important Note:

This case study is of a fictitious Veteran. It is not intended to reflect the life or situations of any Veteran or Servicemember

Mr. Miller is a 46 year-old Veteran of Desert Storm who filed a claim for left knee pain. Following best practices, you will review his Request for Examination (VA Form 21-2507), commonly referred to as the 2507, information from his claims file (C-file), and the documentation protocol for the exam as though you were his examiner. You will view highlights from his examination and will have opportunities to compare your documentation from this exam with the documentation that the examiner produces. The Request for Examination and the documentation protocols used for this case study may be accessed at any time from the Resources page.

Musculoskeletal Examinations

Learning Objectives

Your role as a disability examiner is a critical step in a process that starts and ends with the Veteran or Servicemember in front of you. Consistent, high-quality compensation and pension (C&P) examinations are essential to ensure that Veterans' and Servicemembers' claims are evaluated fairly – and consistently – as part of the benefits claims process. When you complete this lesson, you should be able to achieve the following objectives:

- Explain the difference between C&P musculoskeletal examinations and clinical examinations for treatment purposes.
- Identify the factors that constitute musculoskeletal system disability.

Purpose of the Musculoskeletal Examination

Disability of the musculoskeletal system is primarily 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. — 38 CFR 4.40

The musculoskeletal examination is the most commonly conducted C&P examination. A musculoskeletal examination for C&P purposes requires specific, detailed assessment of functional limitations, or impairment, related to the claimed condition.

Musculoskeletal examinations evaluate impairment in all aspects of the musculoskeletal system. Since disabilities of the musculoskeletal system affect the ability of the body to perform normal working movements, VA regulations from part 4 of Title 38 of the Code of Federal Regulations (38 CFR part 4), the "Rating Schedule," require most musculoskeletal examinations to include the degrees of functional loss or impairment of motion due to pain, weakened movement, excess fatigability, and incoordination. The CFR also lists specific criteria that you must consider while evaluating joints.

38 CFR 4.40

Disability of the musculoskeletal system is primarily 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. It is essential that the examination on which ratings are based adequately portrays the anatomical damage, and the functional loss, with respect to all these elements. The functional loss may be due to absence of part, or all, of the necessary bones, joints and muscles, or associated structures, or to deformity, adhesions, defective innervation, or other pathology, or it may be due to pain, supported by adequate pathology and evidenced by the visible behavior of the claimant undertaking the motion. Weakness is as important as limitation of motion, and a part which becomes painful on use must be regarded as seriously disabled. A little used part of the musculoskeletal system may be expected to show evidence of disuse, either through atrophy, the condition of the skin, absence of normal callosity or the like.

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:

a. Less movement than normal (due to ankylosis, limitation or blocking, adhesions, tendon-tie-up, contracted scars, etc.).
b. More movement than normal (from flail joint, resections, nonunion of fracture, relaxation of ligaments, etc.).
c. Weakened movement (due to muscle injury, disease or injury of peripheral nerves, divided or lengthened tendons, etc.).
d. Excess fatigability.
e. Incoordination, impaired ability to execute skilled movements smoothly.
f. 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 disability from arthritis, the shoulder, elbow, wrist, hip, knee, and ankle are considered major joints; multiple involvements of the interphalangeal, metacarpal and carpal joints of the upper extremities, 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.

Unique Aspects of the C&P Legal Forensic Examination

As you know, a clinical examination for treatment can be scheduled by a patient with the purpose of providing a diagnosis and appropriate treatment. The audience for the documentation you provide would be primarily other clinicians. By comparison, the C&P disability examination is requested by the Department of Defense (DOD) or the Veterans Benefits Administration (VBA) to determine the degree of functional loss or impairment related to a claimed condition and to provide clinical information that is needed to assist the Regional Office in determining a claimant's entitlement to benefits. The audience for the documentation you provide from a C&P examination is primarily VBA adjudicative staff and lawyers. The information requested from you, the examiner, is based on adjudication needs and not on treatment considerations. In fact, the C&P examination is a forensic tool, used only to determine if a disability exists, or to document the degree to which a disability affects functions for the Veteran or Servicemember.

Lesson Summary

This lesson discussed the difference between an examination for treatment and an examination for legal or forensic purposes. You should understand that the examination and the examination report are used in adjudicating a Veteran's or Servicemember's claim for disability benefits. You should also have the understanding that the C&P musculoskeletal examination's purpose is to document the functional limitations, or impairment, of a claimed condition.

The next lesson will take a look at the documentation you will need to review prior to conducting the examination.

Before the Examination

Learning Objectives

The time that is blocked for a disability exam includes time for you to prepare for the examination. This lesson will cover best practices in preparing for a disability exam. The focus will be on thoroughly reviewing any documentation provided to you, beginning with the Request for Examination (VA Form 21-2507) also known to contractors as a VERIS (Veterans Examination Information System) Request. At the completion of this lesson, you should be able to execute best practices for activities performed prior to conducting a compensation and pension (C&P) musculoskeletal examination.

Request for Examination (2507)

Sticky Note

If you have a question about an exam request, you should contact the Regional Office for clarification before beginning the exam, if possible, to avoid having the report being sent back for further information.

Every exam starts with the Request for Examination. You are expected to review this form prior to the examination to see what specific questions the Regional Office (RO) or Appeals Management Center (AMC) may need answered in your examination report. As you may recall, the Request provides information to you such as exam priority, which documentation protocols to use, and whether or not the claims file (C-file) has been forwarded for your review.

The most common priorities for the musculoskeletal examination are Original Service Connection (SC), Original Non Service Connection (NSC) Pension, Increase and Review. Please refer to the Resources to review the definitions of these exam priorities and the Appeals Management Center.

Case Study

At this point you will need to view the Request for Examination to determine what information you will need to provide to the RO, if you need to provide a medical opinion, the type of exams being requested and the documentation protocols that you will need to include in your examination report.

Sample Compensation and Pension Examination Inquiry for Fictitious Case Study

Name: REYNOLDS, ELMER F
SSN: [put SSN here]
C-Number: 34 125 349
DOB: APRIL 22, 1974
Address: 899 VALLY LANE
City, State, Zip+4: ANN ARBOR, MICHIGAN 48105
Country: UNITED STATES
Res Phone: (734) 555-0123
Bus Phone: (734) 555-3344
Entered active service: SEPT 25, 2007
Released from active service: JAN, 2011

>>>Future C&P Appointments<<<

No future C&P appointments found.

Requested exams currently on file:

INTERNAL GENERAL MEDICAL FOR COMPENSATION DBQ
Requested on MAY 15, 2011@ 08:43:17 by DETROIT-RO –Open

AUDIO HEARING LOSS AND TINNITUS DBQ
Requested on MAY 15, 2011@ 08:43:17 by DETROIT-RO –Open

MEDICAL OPINION DBQ
Requested on MAY 15, 2011@ 08:43:17 by DETROIT-RO –Open

This request was initiated on MAY 15, 2011@ 08:43:17
Requester: DOE, PAULA D.
Requesting Regional Office: DETROIT-RO
VHA Division Processing Request: ANN ARBOR VAMC

Exams on this request:

INTERNAL GENERAL MEDICAL FOR COMPENSATION DBQ
AUDIO HEARING LOSS AND TINNITUS DBQ
MEDICAL OPINION DBQ

**Status of this request:

New

No rated disabilities on file

Other Disabilities:

General Remarks:

CLAIMS FILE BEING SENT FOR REVIEW BY THE EXAMINER.

Disability claimed:

1. Ringing in both ears

Sample Compensation and Pension Examination Inquiry for Fictitious Case Study

NOTE TO EXAMINER: Veteran has been out of service less than one year. Please examine for all conditions claimed or noted.

MILITARY SERVICE: Army, 9/25/07 to 1/1/11

PERTINENT SERVICE TREATMENT RECORDS: None pertinent

PERTINENT VA RECORDS: Vet has no VA OPTs

PRIVATE TREATMENT RECORDS: None

OTHER PERTINENT RECORD: See Tab A – DD Form 214 show Veteran was deployed to Iraq and worked as an Artillery Technician. He claims noise exposure from being around large guns firing.

Requested Opinion:

The veteran is claiming service connection for ringing in the ears. Please determine whether it is at least as likely as not that the Veteran's current ringing in the ears, if found, is proximately due to his acoustic trauma in service.

NOTE TO EXAMINER – In Your Response Please:

1. Identify the specific evidence you reviewed and considered in forming your opinion.
2. Please provide a rationale (explanation/basis) for the opinion presented.
3. State your conclusions using one of the following legally recognized phrases:

a. _____ is caused by or a result of _____.
b. _____ is most likely caused by or a result of_____.
c. _____ is at least as likely as not (50:50 probability) caused by or a result of_____.
d. _____ is less likely as not (less than 50:50 probability) caused by or a result of_____.
e. _____ is not caused by or a result of _____.
f. _____ I cannot resolve this issue without resort to mere speculation (see below).

4. Even if the issue cannot be resolve without resort to speculation, you must still provide a valid rationale as to why this is so.

In addition, please conduct whatever additional testing is necessary based on your examination.

ALL OPINIONS expressed should be accompanied by a detailed rationale.

Thank you for your time and consideration.
POA: Veterans of Foreign Wars
We have the same address for this veteran as you.
If you have any questions, please contact Jill Doe, RVSR, at 000-555-5555.

Review Mr. Miller's History

The Veteran's or Servicemember's C-file may be sent with a Request for Examination if the file contains pertinent information for the disability exam. As an examiner, you are required to review the C-file for musculoskeletal examinations when requested by the RO.

Mr. Miller's C-file contains the following information:

- Documentation of claimed condition to date
- Military service history
- Entrance examination and physical examination report
- Treatments during military service
- Exit examination and physical examination report
- Private medical information the Veteran or Servicemember submitted to the RO

This is the information the examiner gathered from a thorough review of Mr. Miller's C-file:

Background:

This is a 46 year-old white male with a complaint of left knee pain.

Pertinent Service History:

Veteran was active-duty U.S. Army June 2, 1990 - May 29, 1992. Veteran states that while deployed to the Persian Gulf during operation Desert Storm he sustained an injury to his left leg on February 26, 1991. He was working in the motor pool when a jeep rolled off a ramp pinning him against a wall and hyperextending his knee. He was transported to a field hospital where a diagnosis of a proximal tibial fracture was made. This was treated in a long leg cast for six weeks.

He was on crutches for an additional six weeks. He remained on a profile for three months until his rehabilitation was completed. No additional treatment or evaluation for this condition after completion of rehabilitation. Veteran was able to complete his remaining tour of duty without significant difficulty.

Present Medical History:

- Veteran states left knee symptoms are chronic and progressive.
- He experiences intermittent anterior and lateral knee pain on a daily basis. He describes the pain as an ache, and pain intensity may reach a 4/10. Pain is worsened by kneeling and squatting. Takes over-the-counter ibuprofen p.r.n. with some improvement. Medication is well tolerated.
- Intermittent stiffness worse in A.M. and after prolonged sitting.
- Intermittent low-grade swelling.
- Denies mechanical symptoms or locking.
- Denies instability.
- No knee brace.
- No assistive ambulatory aids.

- No additional injury.
- No surgery.
- Will experience knee pain when walking or with prolonged standing, but in general walking and standing are unlimited by knee condition.
- Pain/stiffness after two-hour car ride.
- Activities of daily living (ADLs) are mildly compromised with some difficulty bending knee to dress. Does not require assistance.

Employment:

Self-employed mechanic. Will experience knee pain at work when performing tasks such as changing a tire but overall work performance is not compromised.

Flare-ups:

Will experience flare-ups of left knee condition during rainy weather and after playing softball.

Frequency and duration of flare-ups is highly variable.

During a flare-up he experiences increased pain intensity (6/10), a sense of leg weakness and increased knee stiffness. During a flare-up he decreases his physical activity level, takes ibuprofen and applies ice to his knee. He is able to continue working during a flare-up.

Review the Appropriate Documentation Protocols

> The Disability Benefits Questionnaires (DBQs) used in this course are up-to-date as of the date this course was released. Keep in mind DBQs are living documents, and thus subject to change.

The Disability Benefits Questionnaires (DBQs) or other documentation protocols are used to guide the documentation of the examination report, but are not necessarily used to guide the examination itself. You need to ensure you obtain the information that is required in order to fulfill the purpose and address the needs of the examination, and to complete an adequate report.

As a practical matter, without the benefit of the DBQs, or other documentation protocols, it would be possible to have a perfect examination from a medical perspective, but an insufficient examination report from an adjudication perspective. When you follow a DBQ or other documentation protocol as instructed, you provide evidence necessary to adjudicate the Veteran's or Servicemember's claim. Remember, the

Veterans Benefits Administration (VBA) needs specific, legally required information that is in alignment with the Schedule for Rating Disabilities, often referred to as the Rating Schedule.

The C&P musculoskeletal DBQs or other documentation protocols guide the examiner in providing information obtained through inspection, palpation and functional assessment of the claimed MS conditions on the following key issues

- Scars (traumatic or surgical)
- Muscle atrophy (measured or observed)
- Deformity
- Alignment
- Soft tissue swelling/inflammation
- Effusion
- Tenderness (diffuse or reproducible localized)
- Range of motion:
    - Active range of motion including painful arcs
- Muscle strength
- Stability testing will vary from joint to joint and can be graded.

Lesson Summary

In this lesson we discussed the Request for Examination and the information that it contains. You also had a chance to view a sample Request for Examination. Remember to direct questions regarding the Request for Examination, DBQs and the C-file to the RO. By now you should understand that the DBQ is used to guide the documentation of the examination report, and that the Veteran's or Servicemember's military and medical history can be found in his or her C-file.

In the next lesson we will take a look at how to interact with the Veteran or Servicemember, how to conduct the examination and what you need to evaluate while conducting the examination.

The Examination

Learning Objectives

This lesson begins as you greet the Veteran or Servicemember. As a best practice, start guiding him or her through the disability exam when you introduce yourself. You will use the Request for Examination and The Disability Benefits Questionnaires (DBQs) or other documentation protocol to ensure you collect all of the requested and required information. This lesson also provides pointers on what you should or should not discuss with the Veteran or Servicemember as you close the disability exam. When you complete this lesson, you should be able to perform these objectives:

- Apply best practices for opening, conducting, and closing a compensation and pension (C&P) musculoskeletal examination.
- Apply best practices for guiding the Veteran or Servicemember through the examination and properly answering questions.

Greet the Veteran or Servicemember

Notice how the examiner follows these best practices:

- Introduces himself to Mr. Miller
- Explains why he is here
- Explains the focus of the exam
- Explains the purpose of the documentation protocol
- Tells the claimant to feel free to ask questions at any time during the examination

In addition, you'll find it helpful to explain the difference between a disability exam and a treatment exam.

Video Transcript

Greet the Veteran or Servicemember
[Dr. Coulson waits at the door to greet the claimant as he limps down the hall.]
Dr. Coulson: Hi Mr. Miller I'm Dr. Coulson. Come on in and have a seat in the right chair please.
[Observes the claimant's gait and posture as he walks to the chair.]
Dr. Coulson: Uh, I'd like to explain what we're gonna do today Mr. Miller.
Mr. Miller: OK.
Dr. Coulson: Uh, today we're gonna do a compensation and pension examination. Uh, you had put in a claim for your knee. Uh, I've already reviewed your claims file, which is has all the information you had in the military service and your claim itself. Uh, we'll also be using something we call a worksheet. Uh, and the worksheet actually makes sure that I remember to ask you everything and do everything that you need for your final rating.
[Claimant nods.]
Dr. Coulson: So as we go through this today if you have any questions please let me know.
Mr. Miller: OK.
Dr. Coulson: Uh, during the examination we'll also be using an instrument called a goniometer and I'll explain that to you a little bit later. Uh, do you have any questions about what we are going to be doing today?
Mr. Miller: No, it's clear so far.

Conduct the Interview

This segment of the interview covers a complete chronological history of the onset of the condition claimed, its course, including treatment and response. Note how the examiner asks Mr. Miller about the condition's effects on occupational activities. For some conditions you may also need to record relevant family history.

The video transcript is intended to highlight how a typical musculoskeletal history is obtained.

List of information to collect in the history section of the DBQ

- Chief complaint and date of onset
- Status of condition (better, worse or stable)
- Progression or change of the condition
- Origin, frequency, severity, and duration of pain, it's response to treatment, and effects on activities
- Frequency and duration of flare-ups, and Mr. Miller's report of how they affect him
- Previous diagnostic workup, surgeries, therapies, or other treatments, whether they improved the condition or caused any side effects or complications
- History of any musculoskeletal conditions as it relates to any degenerative, traumatic, metabolic, infectious, inflammatory and neoplastic etiologies that may have caused or exacerbated the chief complaint

Special Notes:

- Keep in mind that a chief complaint may have occurred secondarily as a result of another condition.
- Document the history of each claimed condition on an individual basis, separately and systematically, on the appropriate condition-specific documentation protocol.

Video Transcript

Interview Part 1: Establishing In-service Connection
Dr. Coulson: Alright. Uh, let's start then and let's talk about your knee injury because it's the knee that you're claiming, correct?
Mr. Miller: Um hmm.
Dr. Coulson: OK. Tell me what happened.
Mr. Miller: Uh, back in Desert Storm I was working car pool at the time and um and you know we had a jeep up on a ramp and the guy that parked it up there didn't put the brake on so the second that he got out of the jeep it started rolling off the ramp. I had my back turned at the moment and so by the time it was brought to my attention I turned around and it pinned me up against the wall so hyperextended the knee and uh broke the tibia.
Dr. Coulson: And what happened at that time? Did they take you to the hospital, to the emergency room...
Mr. Miller: Yeah, yeah went to the hospital.
Mr. Miller: You know they took X-rays and what not and...
Dr. Coulson: Took X-ray and they found that you did have a fracture?
Mr. Miller: Yeah, did have a fracture.
Dr. Coulson: And again where was the fracture?
Mr. Miller: The tibia.
Dr. Coulson: Tibia. Can you point to the point in your knee where it was?
Mr. Miller: Yeah, like right here.
Dr. Coulson: Right below the knee cap.
Mr. Miller: Yeah just below the knee cap.
Dr. Coulson: I see, OK. And they put a cast on?
Mr. Miller: Yeah I got a cast from you know the knee down to the ankle.
Dr. Coulson: OK, and how long was the cast on?
Mr. Miller: I was in the cast for um, six weeks.
Dr. Coulson: OK, and then what happened?
Mr. Miller: Well you know I didn't hardly do anything for six weeks. I did a little... little work here and there um; you know what I could do. I mean I was on crutches. And then I guess after six weeks um they put me on light duty for four weeks. And then after that you know I was bouncin' around again so...
Dr. Coulson: OK, so after the four weeks of light duty then you were back to basically normal after that?
Mr. Miller: Yeah, yeah I healed really well. Yeah I was younger, stronger...fit.
Dr. Coulson: OK. And you finished your military career and really had no problems?
Mr. Miller: Not really. No.

Dr. Coulson: No. OK, well tell me what kind of problems did you have?
Mr. Miller: Well just this uh kind of a slight limp kind of always had, but it seems have gotten worse lately and that's why I'm here now.
Dr. Coulson: OK. I saw a little limp as you walked in the office here. Uh, is that the limp that you're talking about?
Mr. Miller: Yes sir.
Dr. Coulson: OK. Uh, is that limp recent? You say it's been there for quite a while. Uh, did that start right after the cast was taken off or was it many years later?
Mr. Miller: Um, you know I guess I didn't even notice it so much when I was younger, but I would say that over the years it's progressed.
Dr. Coulson: OK, now tell me what's happened after you've been out of the military. What have you been doing? What kind of work do you do?
Mr. Miller: Um, I've done a little bit of construction.
Dr. Coulson: OK.
Mr. Miller: So odd jobs. Um you know I was a mechanic so I was able to pick up some work there too.
Dr. Coulson: So you're physically active?
Mr. Miller: Yeah, yeah in fact I play slow pitch still.
Dr. Coulson: I see.
Mr. Miller: But the reason I'm here is because it's been bothering me a lot lately and uh...
Dr. Coulson: OK, well let's talk about how it's been bothering you. How does it bother you with work? What does it keep you from doing or allow you to do or does it affect your work at all?
Mr. Miller: Um, you know I get the work done, but it's uh not as easy as it used to be you know.
Dr. Coulson: OK. Uh, is there anything special about the knee that you find?
Mr. Miller: Well you know when I gotta when I gotta crouch down to do a tire change, you know something as simple as that, you know standing back up is gonna be a little bit more difficult.
Dr. Coulson: Uh, tell me, difficult how?
Mr. Miller: Um, well I know that I rely on the right half of my body more and and so I'm feeling a lot of...you know, more pain I guess here behind the knee left side.
Dr. Coulson: Right behind the knee on the left side?
Mr. Miller: Yeah back here.
Dr. Coulson: OK. Uh, but not right on the anterior portion of the tibia that you showed me before right below the uh cap, below the knee cap?
Mr. Miller: Not, not at the break per say, no.
Dr. Coulson: I see, OK. So a little weakness um and some pain.
Mr. Miller: Um hmm.
Dr. Coulson: Um pain if we had to put it on a pain scale of zero to one with zero being no pain and ten being the worst pain you've ever had, could you give me a number between zero and ten?
Mr. Miller: Four, four and a half.

Dr. Coulson: Four and a half. Uh, all the time or just some of the time?
Mr. Miller: Well as I'm getting older now it seems like even the change of seasons...
Dr. Coulson: Um hmm.
Mr. Miller: You know if it's stormy outside. Things like that it's...
Dr. Coulson: OK, so there are certain times which it's worse than others? Is that what you're saying?
Mr. Miller: Yes sir.
Dr. Coulson: OK.
Mr. Miller: It'll feel weaker or um um even maybe a little tender even.
Dr. Coulson: OK. So you have periods of time? Now how long does this last when it seems to be worse?
Mr. Miller: Uh depends on the activity.
Dr. Coulson: Um hmm.
Mr. Miller: And you know certainly if it's uh raining for a couple days then I'm going to feel it kind of for the duration.
Dr. Coulson: I see, OK.
Mr. Miller: Um, you know if I'm playing slow pitch or whatever um...it's kind of odd, but it's it's uh. You know when I get warmed up it's OK. When I play and it's good, games over it's still pretty decent, the next day even it's not too bad, but the day after that uh it's pretty stiff you know. When I'm done playing now I'm icing my knee and you know the leg I'll put a wrap around the whole knee here just above the knee to below it. Um put a big ice pack um you know and I'm taking Ibuprofen uh just kind of at work.
Dr. Coulson: Uh were you prescribed Ibuprofen or are you just doing that...?
Mr. Miller: No, I guess I just did it.
Dr. Coulson: ...you just buy that in the store? Have you had any side effects from taking the Ibuprofen at all?
Mr. Miller: Um, I don't know what would they be?
Dr. Coulson: Well you could have stomach upset or uh heartburn or something like that.
Dr. Coulson: No?
Mr. Miller: Um, no.
Mr. Miller: None.
Dr. Coulson: Nothing like that. Um have you had any other hospitalizations, any surgery, any other injuries that you can think of other than that knee?
Mr. Miller: Umm um.

Conduct the Interview (Cont.)

In the previous segment of the interview, Dr. Coulson reviewed the history of Mr. Miller's in-service injury and how it affects his job performance. In this segment, Dr. Coulson reviews flare-ups and pertinent medical history before and after Mr. Miller's military service. Note how the examiner asks about how the claimed condition affects Mr. Miller's activities of daily living.

Again, take notes as you watch the interview. On the next page you'll have an opportunity to compare your notes to the information found in the medical history section of the DBQ.

Video Transcript

Interview Part 2: Determining Non-service Connected Injuries
Dr. Coulson: Uh, did you ever have a injury to that knee before you were in the service?
Mr. Miller: No.
Dr. Coulson: Did you have an injury to the knee after you've come out of the service?
Mr. Miller: No.
Dr. Coulson: OK, so then really just that one injury and that's really what we're talking about right now.
[Claimant nods.]
Dr. Coulson: Uh, now we talked about your problems when you're getting up, how 'bout when you're walking? Are you having any problems when you're walking down the street, climbing stairs, anything else?
Mr. Miller: Uh, no just like I said just seems to be getting progressively worse...
Dr. Coulson: OK.
Mr. Miller: ...as I'm getting older and...
Dr. Coulson: Just slowly getting worse?
Mr. Miller: Yeah like when I play the slow pitch and what not um you know it'll be OK when I put the ice on there and what not, but um it's even you know because I'm warmed up. You know I get moving and it's OK. Even the next day it's not too bad, but the day after that I'll start feeling that stiffness come back. You know it's like the less activity that I have the further downhill I go.
Dr. Coulson: So we talked about what makes it worse and it usually is some kind of activity or bending down, standing up. Uh we know what makes it better because you kind of slow down, rest, or take Ibuprofen. Uh, anything else make it better or worse that you can think of?
[Claimant shakes his head.]
Dr. Coulson: We've also talked about times in which it gets worse. You mentioned when the weather changes. Uh we kind of call that a flare-up, a period in which it gets worse and then afterwards it kind of goes back to its original condition. Is that correct?
Mr. Miller: Yeah it just takes a lot longer than it used to so...
Dr. Coulson: Right now let's talk about the pain that you have. On a scale of zero to ten, zero being no pain, ten being the worst pain you could possibly think of, can you give me a estimate about what the pain is today?
[Claimant exhales.]
Mr. Miller: I guess about four and a half.

Dr. Coulson: Four and a half. OK, that's about half way up the scale. Now during these flare-ups, the times when it really gets worse, can you give me an estimate of how bad it is at that time?
Mr. Miller: Hmm, I don't know maybe six.
Dr. Coulson: A six OK. So only a little bit worse, so the the flare-up is just a mild worsening obviously from what you normally have?
Mr. Miller: Yeah.
Dr. Coulson: Yeah, OK that's fine. You don't use any crutches now, there's no braces. Uh, do you use anything else to help you uh, get around? You don't have a cane?
Mr. Miller: I've been considering using like a compression you know for when I'm playing sports.
Dr. Coulson: A compression...
Mr. Miller: A wrap.
Dr. Coulson: ...a Ace bandage...
Mr. Miller: Yeah, yeah.
Dr. Coulson: ..wrapped around.
Mr. Miller: Yeah.
Dr. Coulson: Now you do that for what? Just when you're playing?
Mr. Miller: Um hmm.
Dr. Coulson: Are you doing that to make you feel better or just protect yourself so you don't injure yourself again?
Mr. Miller: Well I guess, I guess uh I'm not really sure...
Dr. Coulson: OK.
Mr. Miller: ...I just feel the instinct to do it...
Dr. Coulson: Alright.
Mr. Miller: ...and uh that's kind of why I'm here is to get your advice.
Dr. Coulson: OK. That's very good. Anything else you want to tell me about your knee?
[Claimant shakes his head and shrugs.]
Dr. Coulson: OK, the next part of the examination is going to be a physical examination. Uh, I'm going to ask you to remove your trousers and put on a gown and sit up on the examining table and I'll be back in a couple of minutes. OK?
Mr. Miller: Alright.
Dr. Coulson: Good thanks.

Case Study

Take a look at the information the examiner has recorded in the history section of the DBQ. Compare it with your notes to see if you might have missed something.

Select the image to view the Medical History section of the MUSCULO Knee and lower leg DBQ.

Interview Notes

Medical History: Case Study MUSCULO Knee and Lower Leg DBQ

2. Medical history

a. Describe the history (including onset and course) of the Veteran's knee and/or lower leg condition (brief summary):

This is a 46-year-old white male with a complaint of left knee pain.

Pertinent service history:
Sustained a lateral tibial plateau fracture while deployed during operation Desert Storm on 2/26/91.This was treated in a long leg cast for six weeks followed by an additional six weeks non-weight-bearing on crutches. After recovery from the fracture veteran did not have further evaluation or treatment for left knee condition.

Present medical history:
Veteran states left knee symptoms are chronic and progressive.
He experiences intermittent anterior, lateral, and posterior knee pain on a daily basis.
He describes the pain as an ache and pain intensity may reach a 4/10.
Pain worsened by kneeling and squatting.
Takes over-the-counter ibuprofen p.r.n. with some improvement. Medication is well tolerated.
Intermittent stiffness worse in AM and after prolonged sitting.
Intermittent low-grade swelling.
Denies mechanical symptoms or locking.
Denies instability.
No knee brace or assistive ambulatory aids.
No additional injury.
No surgery.
Will experience knee pain when walking or with prolonged standing but in general walking and standing are unlimited.
ADLs are mildly compromised with some difficulty bending knee to dress. Does not require assistance.

Employment::
Self-employed mechanic. Will experience knee pain at work when performing tasks such as changing a tire. However, overall work performance is not compromised.

The Physical Examination

Important Note:

If, during the examination, an emergency situation arises, whether it be physical or mental, take the appropriate steps to mitigate the situation. If during the examination the examinee claims that you are hurting him or her, immediately stop the examination.

After conducting the interview and gathering a detailed history that is appropriate for the type of exam being requested, the examiner is ready to begin the physical examination. Before you view the physical examination, you need some background information on how to conduct the exam and what things you need to evaluate. After reviewing the information you'll be able to follow the examiner as he examines Mr. Miller.

Most musculoskeletal examinations are for joint or spine conditions, but occasionally other exams are requested. In this case the examiner will be examining Mr. Miller's knee. You'll notice in the video that the examiner carefully observes Mr. Miller's posture and gait. In fact, a best practice is to observe and record a Veteran's or Servicemember's gait and posture before, during and after the physical examination.

In general there are three basic components of the C&P musculoskeletal examination:

- Inspection (scars, muscle atrophy, or other anomalies)
- Palpation
- Functional Assessment (range of motion, DeLuca Criteria, ability to engage in activities of daily living, and work performance)

You'll have a chance to review best practices common to most C&P musculoskeletal examinations on the next page.

C&P Musculoskeletal Best Practices

Select an item to learn more about it. You may be tested on this material.

Upper Extremity

For all examinations of the upper extremity, it is important to record hand dominance in that it is medically sound and important in the Rating Schedule.

Lower Extremity

For some examinations, among other things, gait, shoe wear, leg length, and neurologic impairment are specific items that need to be reported.

Gait:

Some gait abnormalities are important for rating purposes and for providing opinions regarding secondary orthopedic conditions.

Leg length discrepancy:

Measurement of both true and apparent leg length discrepancies are important from a medical standpoint, but arguably only true leg length discrepancy is useful for rating purposes.

Spine

Document any spinal deformity such as scoliosis, kyphosis or lordosis. Additionally, note whether the deformity is flexible or rigid. If ankylosis is present record the spinal segment involved and the position of the ankylosed spinal segment. Document the presence of trigger points, muscle spasm or guarded motion. Perform an appropriate neurologic examination.

Muscle Atrophy

The presence of muscle atrophy is a rating criterion for both muscle and nerve conditions. If noted, measure the circumference of the affected and non-affected limb at the same level with a tape measure. This provides objective evidence of muscle atrophy. For example, quadriceps or thigh atrophy may be noticeable, but comparing and measuring the affected and unaffected thigh circumference provides objective data. This is commonly seen with knee injury or surgery. It would be reasonable to use 15 cm above the medial tibial plateau for thigh atrophy and 10 cm below the medial tibial plateau for calf atrophy.

Additionally, some muscle atrophy may be obvious on examination but cannot be readily measured. Examples include supraspinatus atrophy or thenar atrophy. In such cases simply report the observation of atrophy.

Scars

Note any scars, surgical or otherwise, related to any conditions or to the treatment of any conditions found during the examination. If there are painful or unstable scars or if the total area of all related scars is greater than 39 square cm (6 square inches) refer to the Scars DBQ or other documentation protocol for scars.

Flare-ups

In general the symptoms of a chronic musculoskeletal condition fluctuate throughout the day or week, but overall remain relatively consistent over time with the exception of flare-ups.

A flare-up is generally regarded as any temporary or recurring significant increase in symptoms or complaints associated with the condition. For musculoskeletal conditions, this would include, but not be limited to, increased pain, decreased motion, or lack of endurance. What is important is to discuss fully the reported frequency, duration, and severity of the symptoms or complaints which occur during the flare-up and to report the Veteran's or Servicemember's description of the impact of flare-ups on activities of daily living and work performance.

Examination: Cervical Spine

Important Note:

These tests should not be performed on anyone with a potentially unstable spine.

There are several C&P musculoskeletal examination components. On the last page we discussed best practices for C&P musculoskeletal examinations in general. Starting with the Cervical Spine Examination, the next few pages will discuss best practices for specific components.

During your interview with the Veteran or Servicemember, ask him or her if bowel or bladder problems are an issue. If bowel or bladder problems are related to the spine condition, provide more details on the appropriate DBQ or other documentation protocol. Also, if the claimant has or may have disc disease, record in your detailed history any incapacitating episodes. Note the total duration in days of incapacitating episodes during the past 12 months due only to intervertebral disc syndrome. An incapacitating episode is defined as a period of acute signs and symptoms that requires both treatment and bed rest prescribed by a physician. Indicate whether assistive ambulatory aids such as, crutches, cane, walker, or wheelchair are needed full-time or part-time when in the community or at home.

For further information regarding how to conduct certain aspects of the cervical spine examination refer to the Resources page.

The cervical spine assessment checks for:

- Paraspinal tenderness
- Muscle spasm
- Trigger points
- Axial compression test
- Spurling's test
- Range of motion:
    - Flexion
    - Extension
    - Right and left lateral flexion
    - Right and left rotation
- Sensation to light touch in the C5 through T1 dermatomes
- Deep tendon reflexes (DTRs):
    - Biceps
    - Brachioradialis
    - Triceps
- Pathologic reflexes:
    - Hoffman's reflex
- Motor (see thoracolumbar spine for lower extremity neurologic examination when applicable)
    - Elbow flexion (C5)
    - Wrist extension (C6)
    - Elbow extension (C7)
    - DIP flexion of long finger (C8)
    - Abduction of little finger (T1)
- Radicular group:
    - Upper radicular group (C5, C6)
    - Middle radicular group (C7)
    - Lower radicular group (C8, T1)
- Cervical myelopathy

Examination: Thoracolumbar Spine

If neurological abnormalities other than radiculapathy are found on examination, follow the appropriate DBQ or other documentation protocol.

During your interview with the Veteran or Servicemember, ask him or her if bowel or bladder problems are an issue. If bowel or bladder problems are related to the spine condition, provide more details on the appropriate DBQ or other documentation protocol. Also, if the claimant has or may have disc disease, record in your detailed history any incapacitating episodes. Note the total duration in days of incapacitating episodes during the past 12 months due only to intervertebral disc syndrome. An incapacitating episode is defined as a period of acute signs and symptoms that requires both treatment and bed rest prescribed by a physician. Indicate whether assistive ambulatory aids such as, crutches, cane, walker, or wheelchair are needed full-time or part-time when in the community or at home.

For further information regarding how to conduct certain aspects of the thoracolumbar spine examination refer to the Resources page.

Thoracolumbar spine physical assessments should include:

- Paraspinal and interspinous tenderness
- Muscle spasms
- SI joint tenderness
- Range of motion:
    - Flexion
    - Extension
    - Right and left lateral flexion
    - Right and left rotation
- Lasegue's sign and straight leg raising test
- Sensation to light touch in the L1 through S1 dermatomes for lumbosacral spine conditions
- Sensation to light touch in the T1 through T12 dermatomes for thoracic spine conditions
- DTRs:
    - Knee and ankle
- Pathological reflexes:
    - Plantar reflex
- Motor:
    - Hip flexion (L2)
    - Knee extension (L3)
    - Ankle dorsiflexion (L4)
    - Great toe extension (L5)
    - Ankle plantarflexion (S1)
- Radiculopathy:
    - Affected peripheral nerve. This is usually the sciatic nerve (L4, L5, S1, S2, and S3). Occasionally the femoral or obturator nerves (L2, L3, and L4) are affected.

Examination: Residuals of Amputations

General information:

- Report type and exact level of amputation, including, whether above or below the insertion of the deltoid muscle for an arm amputation; whether above or below the insertion of the pronator teres for a forearm amputation; whether a forefoot amputation is proximal to the metatarsals, meaning more than one-half of metatarsal loss; whether a thigh amputation is at the upper one-third, middle one-third, or lower one-third level; and whether there is a defective below-the-knee amputation stump such that an above-the-knee amputation is recommended.
- Report hand dominance for upper extremity amputations.
- Indicate whether the amputation site allows the use of a suitable prosthetic appliance. For a below-the-knee amputation, state whether it is improvable by a prosthesis controlled by natural knee action.

Stump examination:

- Report status of scar, whether painful or unstable, tenderness, deformity, soft tissue inflammation, swelling, or skin breakdown.
- Describe neuroma if present.

Examination of the major joint or group of lesser joints proximal to the amputation site:

- If there is limited motion, instability, or other abnormality in the joint(s) above the amputation site, additionally follow the appropriate joint DBQ.

Describe flare-ups: for example, periodic stump breakdown.

Functional impact:

- Provide information concerning the impact of the amputation on Veteran's ability to work.
- Provide information concerning the impact of the amputation on Veteran's ADLs (activities of daily living).
- Indicate whether assistive ambulatory aids such as, crutches, cane, walker, or wheelchair are needed full-time or part-time when in the community or at home.

Examination: Muscles

Side Note

Medical Research Council (MRC) scale for muscle strength:

The patient's effort is graded on a scale of 0 - 5.

Grade 5: Muscle contracts normally against full resistance.

Grade 4: Muscle strength is reduced but muscle contraction can still move joint against resistance.

Grade 3: Muscle strength is further reduced such that the joint can be moved only against gravity with the examiner's resistance completely removed.

Grade 2: Muscle can move joint only if the resistance of gravity is removed.

Grade 1: Only a trace or flicker of movement is seen or felt in the muscle or fasciculations are observed in the muscle.

Grade 0: No movement is observed.

Examples of how to record muscle strength:

A normal motor examination would be documented as 5/5 muscle strength and complete paralysis would be recorded as 0/5 muscle strength.

When examining muscles, take a detailed history including:

- Type and date of injury or infection
- Treatment and response
- Pain and inflammation
- Stiffness and fatigue
- Frequency and severity of flare-ups
- Residuals of wounds; describe both entrance and exit wounds, the history of the initial injury, whether or not hospitalization was required, and whether there was debridement or other surgery, etc.

When conducting the physical muscle exam:

- Identify each specific muscle affected by tissue loss, penetrating injuries, scar formation, adhesions, or damage to tendons. Also identify the muscle group involved.
- When there is muscle atrophy, record the circumference of the involved extremity and compare the opposite extremity.
- If the injured muscle acts upon a joint or joints, follow the appropriate DBQ.
- Report any effects on gait, posture, or functions of adjacent joints, muscles, or nerves, and interference with sitting, standing, walking, weight-bearing, balance, and working.

Muscle Groups

What are the major muscle groups and what is their significance?

a. The Rating Schedule lists the following 23 muscle groups, provided for your reference, and the rating percentage evaluations to be assigned for different degrees of muscle injury (slight, moderate, etc.) vary depending upon which muscle group is affected. Therefore, specify each individual muscle affected so that the rater can select the appropriate group(s) under which to evaluate.
b. For the sake of clarity, and to avoid returned exams or questions, use muscle terminology as it is given below (e.g., “adductor of thumb” instead of “adductor pollicis,” but “extensor hallucis longus” instead of “long extensor of the great toe”), because this is the terminology used in the Rating Schedule regulations.
c. With penetrating wounds, including chest and abdominal wounds, identify each muscle traversed by the projectile.
d. Unless the report is precise, it may be returned, especially in complex cases, to clarify the exact

muscles or muscle group(s) involved in an injury.
Group I. Extrinsic muscles of shoulder girdle, which rotate scapula upward and elevate the arm above shoulder level. (1) trapezium (2) levator scapulae (3) serratus magnus.
Group II. Extrinsic muscles of shoulder girdle, which lower the arm from a vertical overhead position to hanging at side and act with Group III in forward and backward swing of the arm. (1) pectoralis major, costosternal origin; (2) latissimus dorsi and teres major; (3) pectoralis minor; (4) rhomboid, major and minor.
Group III. Intrinsic muscles of shoulder girdle, which elevate and abduct arm to level of shoulder and act with Group II in forward and backward swing of the arm. (1) pectoralis major, clavicular origin (2) deltoid.
Group IV. Intrinsic muscles of shoulder girdle, which stabilize shoulder against injury in strong movements, hold head of humerus in socket, and abduct, outwardly rotate, and inwardly rotate arm. (1) supraspinatus; (2) infraspinatus and teres minor; (3) subscapularis; (4) coracobrachialis.
Group V. Flexor muscles of the elbow, which flex and supinate the elbow and help stabilize the shoulder joint. (1) biceps (2) brachial (3) brachioradialis.
Group VI. Extensor muscles of the elbow, which extend the elbow and help stabilize the shoulder joint. (1) triceps (2) anconeus.
Group VII. Muscles arising from medial condyle of humerus, which flex wrist and fingers. Flexors of the carpus and long flexors of fingers and thumb; pronator teres and quadratus.
Group VIII. Muscles arising mainly from lateral condyle of humerus, which extend wrist, fingers and thumb and abduct thumb. Extensor of carpus, fingers and thumb; supinator.
Group IX. Intrinsic muscles of the hand, which perform the delicate manipulative movements of the hand. Thenar eminence; short flexor, opponens, abductor, and adductor of the thumb; hypothenar eminence; short flexor, opponens, and abductor of the little finger; 4 lumbricales and 4 dorsal and 3 palmar interrossei.
Group X. Intrinsic muscles of the foot, for movement of forefoot and toes, propulsive thrust in walking. Plantar: (1) flexor digitorum brevis; (2) abductor hallucis; (3) abductor digiti minimi; (4) quadratus plantae; (5) lumbricales; (6) flexor hallucis brevis; (7) adductor hallucis; (8) flexor digiti minimi brevis; (9) dorsal and plantar interossei. Other important plantar structures include the plantar aponeurosis, long plantar and calcaneonavicular ligament, tendons of posterior tibial, peroneus longus, and long flexors of great and little toes. Dorsal: (1) extensor hallucis brevis (2) extensor digitorum brevis. Other important dorsal structures include the cruciate, crural, deltoid and other ligaments, tendons of long extensors of toes and peroneal muscles.
Group XI. Posterior and lateral crural muscles and muscles of the calf, which produce propulsion, plantar flexion of foot, stabilization of the arch, flexion of toes, and flexion of knee. (1) triceps surae (gastrocnemius and soleus); (2) tibialis posterior; (3) peroneus longus; (4) peroneus brevis; (5) flexor hallucis longus; (6) flexor digitorum longus; (7) popliteus; (8) plantaris.
Group XII. Anterior muscles of the leg, which dorsiflex the foot, extend the toes, and stabilize the arch. (1) tibialis anterior (2) extensor digitorum longus; (3) extensor hallucis longus; (4) peroneus tertius.
Group XIII. Posterior thigh group, hamstring complex, which extend the hip, flex the knee, and outwardly and inwardly rotate the flexed knee, help synchronize simultaneous flexion or extension of hip and knee. (1) biceps femoris (2) semimembranous (3) semitendinosus.
Group XIV. Anterior thigh group, which extends knee, aids simultaneous flexion of hip and knee, produces tension of fascia lata and iliotibial band, acting with Group XVII in postural support of the body, helps synchronize hip and knee. (1) sartorius (2) rectus femoris (3) vastus externus; (4) vastus intermedius (5) vastus internus (6) tensor vaginae femoris (tensor fasciae latae).
Group XV. Mesial thigh group, which adducts hip, flexes hip, and flexes knee. (1) adductor longus; (2) adductor brevis; (3) adductor magnus; (4) gracilis.
Group XVI. Pelvic girdle group 1, which flexes hip. (1) psoas (2) iliacus (3) pectineus.
Group XVII. Pelvic girdle group 2, which extends hip, abducts thigh, elevates opposite side of pelvis, and produces tension of fascia lata and iliotibial band, aiding postural support by steadying pelvis. (1) gluteus maximus (2) gluteus medius (3) gluteus minimus.
Group XVIII. Pelvic girdle group 3, which outwardly rotates thigh and stabilizes hip joint. (1) piriformis (2) gemellus, superior or inferior (3) obturator, external or internal (4) quadratus femoris.
Group XIX. Muscles of the abdominal wall, which support and compress abdominal wall and lower thorax, produce flexion and lateral motions of spine, act as synergists in strong downward motion of arm. (1) rectus abdominis (2) external oblique (3) internal oblique (4) transversalis (5) quadratus lumborum.

Group XX. Spinal muscles, which produce postural support of body, extension and lateral movements of spine. Sacrospinalis (erector spinae and its prolongations in thoracic and cervical regions).
Group XXI. Muscles of respiration. Thoracic muscle group.
Group XXII. Muscles of the front of the neck, which produce rotary and forward movements of the head, respiration, deglutition. Lateral, suprahyoid and infrahyoid group, which rotates and moves head forward; respiration; deglutition. (1.) trapezius 1 (clavicular insertion) (2) sternocleidomastoid (3) the "hyoid" muscles (4) sternothyroid (5) digastric.
Group XXIII. Muscles of the side and back of the neck, which produce movements of the head, fixation of shoulder movements. Suboccipital, lateral vertebral and anterior vertebral muscles.

Examination: Bones

You may be asked to do a bones exam for conditions affecting only the bones, such as a bone infection, tumor or a fracture. For such conditions, also examine the joint above and below the affected bone. If the bone condition affects joint function, you will need to follow the appropriate DBQ or other documentation protocol.

Joints

Which Joints Should be Examined?

In a C&P musculoskeletal examination, examine the joints that are claimed, and the contralateral joints of those claimed. Examining contralateral joints is important, especially with older Veterans or Servicemembers, to determine how much of the disability is due to the aging process rather than the original service-related injury.

Joint Range of Motion Testing

Record point where pain begins and point where range of motion ends using a goniometer and record the measurement again after at least three repetitive movements (See additional requirements commonly known as the DeLuca Criteria)

DeLuca Criteria

Because the United States Court of Appeals for Veterans' Claims (CAVC) found that the traditional VA method of assessing disabilities for rating purposes – one-time measurement of active and passive range of motion (ROM) – was inadequate under VA regulations, as functional impairment may be underestimated, additional factors must be considered for each joint examined. These include:

1. pain which limits function during:
    a. repetitive use
    b. flare-ups
2. weakness against varying resistance
3. excess fatigability
4. incoordination

Each of these issues should be assessed and the amount the joint is additionally limited, if any, resulting from one or more of these factors should – if possible –be reported in degrees of additional loss of motion. The absence of any or all of these factors should also be noted. You must be specific as to where (i.e., from flexion or extension) any additional losses should be subtracted. For example, if knee pain on ROM testing prevents full flexion and an additional ROM loss for pain of 20 degrees is warranted, you must specifically state the additional limitation of flexion due to pain (e.g., "An additional 20 degrees loss

of knee flexion occurs because of pain on movement" or, better and clearer, "Because of pain on movement, the ROM is estimated to be 0 to X rather than 0 to Y found on range of motion without taking pain into consideration."). After initially measuring ROM, record ROM again after at least three repetitive movements. At present there are no guidelines as to which tests should be used to determine the strength and endurance for the various joints. These tests should be individualized, keeping in mind claimant safety.

Using the Goniometer

The Rating Schedule requires the use of a goniometer to measure joint and spine movement. A goniometer is a tool used to measure angles. It has movable arms and a scale at the center.

To use the goniometer, hold it over the fulcrum of the joint (joint axis), about 1-2 inches in front of the body part being measured. Align the stationary arm over the stationary line of the spine or joint being measured. Align the moveable arm with the moving limb or spinal segment. Ask the Veteran or Servicemember to move the joint or spine in the desired direction to the fullest extent of motion he or she can perform comfortably without risk of injury. Follow this movement with the moveable arm of the goniometer. Without changing the angle of the goniometer, read the degrees of motion. Repeat for all joint movements. You must assess and report all ranges of motion for each joint and spine condition at issue.

Examination: Knees

Physical examination of the knee should assess the following conditions:

- Masses
- Tenderness
- Effusions
- Inflammation
- Joint alignment and function

Conduct specific tests, as appropriate, such as McMurray, Lachman, anterior and posterior drawer, valgus and varus stress, and patellar compression tests. For additional information on how to conduct these tests please refer to the Resources page.

Video Transcript

Physical Examination
[Claimant is seated on the examining table wearing a hospital gown. Dr. Coulson is standing in front of him holding a worksheet.]
Dr. Coulson: Uh, now Mr. Miller we're gonna do the physical exam and again I'm gonna follow the worksheet here. Uh, I'm going to examine your good knee first and then your bad knee. Is that alright?
Mr. Miller: Yeah, sure.
Dr. Coulson: OK.
[Puts worksheet down.]
Dr. Coulson: So what I'm gonna do is I'm gonna have you lie back. I'll pull out the table extender to support your legs.
[Rolls claimant's gown up exposing his legs.]

Dr. Coulson: OK, now for your good knee. What I'd like for you to do is to bend it. This is flexing and flex it as far as you can. OK, good and extend it out all the way. Good, do it the second time. Flex all the way back and extend and flex again and extend. OK, that knee had a perfectly normal range of motion.
Mr. Miller: OK.
Dr. Coulson: So we'll call that a normal knee, alright. We'll do the same thing for the left, bad knee OK?
Mr. Miller: Um hmm.
Dr. Coulson: Now I want you to bend, or flex, it. And start bending and bend, and bend, and bend as far as you can.
Mr. Miller: Whoa whoa whoa.
Dr. Coulson: What's the matter?
Mr. Miller: Just right about there is when...
Dr. Coulson: You have some what?
Mr. Miller: Pain.
Dr. Coulson: You have some pain?
Mr. Miller: Yeah.
Dr. Coulson: OK, so keep bending, bending. Bend as far as you possibly can.
[Claimant exhales.]
Dr. Coulson: OK, is that as far as you can flex?
Mr. Miller: Yes sir.
Dr. Coulson: OK, straighten it out, extend it all the way. OK, you can extend it all the way. We're gonna do the same thing again. Flex it the second time as far as you can.
Dr. Coulson: And how are things now? Pain again?
Mr. Miller: Yeah.
Dr. Coulson: OK. And extend it out as far as you can. And a third time. Flex it again and keep flexing and flex as much as you can.
Mr. Miller: Umm.
Dr. Coulson: Is that as far as you can go?
Mr. Miller: Yes sir.
Dr. Coulson: OK, I'm gonna hold it there just a minute; I'm actually going to measure that angle. OK, I'm gonna have you extend it out all the way alright.
Mr. Miller: Yeah, it feels weaker.
Dr. Coulson: It felt weaker as you did it?
Mr. Miller: Yeah just either having to maintain the position or when I brought the leg back out you know.
Dr. Coulson: OK, so the reason that you couldn't bend it all of the way, you couldn't flex it all the way, was because of weakness after the third time, is that correct?

Mr. Miller: Yeah, I mean each time it seemed you know progressively...
Dr. Coulson: Weaker and weaker, so the last time it was the weakest?
Mr. Miller: Yeah, yeah.
Dr. Coulson: Ok, the next thing I'm gonna do is I'm gonna bend your knee and with a little pressure against it and I want to actually feel for any grinding in the knee, which we call crepitus alright?
Mr. Miller: Alright.
Dr. Coulson: I'll do it with your right knee first. So if you bend your right knee as far as you can and extend it. OK, once, twice; this is your right knee. Bend your right knee again. OK, that's perfectly normal. I didn't feel any grinding in there, which we call crepitus, OK?
Mr. Miller: OK.
Dr. Coulson: I'm gonna check your left knee now.
Dr. Coulson: Alright, now I want you to flex it as much as you can. OK,
Mr. Miller: Alright.
extend it out all the way. Do the same thing again; flex, extend, flex and extend. OK, now that time I felt a little grinding in there, so you have probably just a little bit of calcium in there, OK?
Mr. Miller: Alright.
Dr. Coulson: Probably from the damage. I'm also gonna check your knees to see if there's any warmth there and they feel perfectly normal. I'm gonna check for tenderness. Is there any pain or tenderness in the left knee?
Mr. Miller: Yeah, yeah.
Dr. Coulson: OK, I'm pushing in the top lateral area right above the patella.
Mr. Miller: Yeah.
Dr. Coulson: And how about down here?
Mr. Miller: Not so much.
Dr. Coulson: No? OK, that's the inferior left part of the patella, and how about over here?
Mr. Miller: No.
Dr. Coulson: This is the superior medial part of the patella, and how about over here? That's the inferior medial, so only right in this area...
Mr. Miller: Yeah above the knee.
Dr. Coulson: ...are you having any...
Mr. Miller: Above the knee...on the left there.
Dr. Coulson: ...pain...or tenderness right now?
Mr. Miller: Yeah, yeah.
Dr. Coulson: Alright, now I'm gonna actually check the stability of your knee. OK? So I'm gonna bend your knee just a little bit here and I'm going to pull on it and I'm gonna push on it and twist a little bit to the side,

a little bit to this side and pop it. And your knee is perfectly stable, which means all the ligaments and menisci in there are perfectly normal.
Mr. Miller: Alright.
Dr. Coulson: I'm gonna have you sit up with me help you here. And I'll push the table extender back in again so I can have your feet down all the way. Uh, the last thing I'm gonna do I'm gonna check the soles of your feet and I want to check for wear. That would be callosities, calluses, OK? I'll check your right foot first, which is perfectly normal. And I'll check your left foot, which also is normal, which means you really don't have a terribly abnormal gait in in motion. I'm also going to check your shoes and if I look at the soles of your shoes, I want to see if there's abnormal wear on one side or the other. As I look at the soles they look like they're worn equally on both feet and on both sides, which means that you really don't have an abnormal gait. Uh, so that's a good thing to know. That's the end of our physical examination do you have any more questions for me?
Mr. Miller: No, I'm good.
Dr. Coulson: OK, if not I'll have you get dressed and come over and sit by the desk and we'll finish the examination.
Mr. Miller: Yep.
Dr. Coulson: Alright? Good.

Case Study

Even though you're only viewing highlights from Mr. Miller's exam, keep in mind that the examiner will be conducting a comprehensive examination, which includes these topics.

Physical Examination:

This is a well-developed/well-nourished 46-year-old white male in no acute distress.

- He is alert and cooperative.
- Gait: He has a mild antalgic limp, left.
- Veteran ambulates unassisted.
- Lower extremity alignment is unremarkable.
- Shoe wear pattern is unremarkable.

Examination of left knee:

- No deformity.
- No soft tissue swelling/inflammation.
- No effusion.
- No popliteal cyst.
- Patellar tracking is unremarkable.
- Positive patellar compression test.
- Tender lateral patellar facet.
- Quadriceps 5/5. No thigh atrophy.
- Tender lateral joint line with negative McMurray test.
- No medial joint line tenderness.

- Stable to varus and valgus stress in extension and 30 degrees of flexion.
- Anterior drawer and Lachman are negative.
- Posterior drawer is negative.
- Range of motion: 0-135 degrees/active equals passive/painful terminal flexion. Range of motion of right knee is similar but without pain.

DeLuca Criteria:

- Veteran performed three repetitions of maximum active left knee flexion.
- During the first repetition he reported pain as described in the physical examination.
- Pain did not intensify with additional repetitions.
- Range of motion was unchanged.
- Veteran reported weakness when holding knee in place to measure range of motion and when extending the left knee during the three repetitions.
- Lack of endurance, incoordination are not factors.

Flare-ups:

Any additional limitation of left knee flexion expressed in degrees, which may or may not occur during a flare-up, cannot be addressed without resorting to speculation.

Select the image to view sections 6 through 8 of the Case Study MUSCULO Knee and lower leg DBQ.

Partial Case Study MUSCULO Knee and Lower Leg DBQ

6. Functional loss and additional limitation in ROM

The following section addresses reasons for functional loss, if present, and additional loss of ROM after repetitive-use testing, if present. The VA defines functional loss as the inability to perform normal working movements of the body with normal excursion, strength, speed, coordination and/or endurance.

a. Does the Veteran have additional limitation in ROM of the knee and lower leg following repetitive-use testing?

☐ Yes ☒ No

b. Does the Veteran have any functional loss and/or functional impairment of the knee and lower leg?

☒ Yes ☐ No

c. If the Veteran has functional loss, functional impairment or additional limitation of ROM of the knee and lower leg after repetitive use, indicate the contributing factors of disability below (check all that apply and indicate side affected):

☐ No functional loss for right lower extremity
☐ No functional loss for left lower extremity
☒ Less movement than normal ☐ Right ☒ Left ☐ Both
☐ More movement than normal ☐ Right ☐ Left ☐ Both
☐ Weakened movement ☐ Right ☐ Left ☐ Both
☐ Excess fatigability ☐ Right ☐ Left ☐ Both
☐ Incoordination, impaired ability to execute skilled movements smoothly ☐ Right ☐ Left ☐ Both
☒ Pain on movement ☐ Right ☒ Left ☐ Both
☐ Swelling ☐ Right ☐ Left ☐ Both
☐ Deformity ☐ Right ☐ Left ☐ Both
☐ Atrophy of disuse ☐ Right ☐ Left ☐ Both
☐ Instability of station ☐ Right ☐ Left ☐ Both
☒ Disturbance of locomotion ☐ Right ☒ Left ☐ Both
☐ Interference with sitting, standing and weight-bearing ☐ Right ☐ Left ☐ Both
☐ Other, describe: _____

7. Pain (pain on palpation)

Does the Veteran have tenderness or pain to palpation for joint line or soft tissues of either knee?

☒ Yes ☐ No

If yes, side affected: ☐ Right ☒ Left ☐ Both

8. Muscle strength testing

Rate strength according to the following scale:
0/5 No muscle movement
1/5 Palpable or visible muscle contraction, but no joint movement
2/5 Active movement with gravity eliminated
3/5 Active movement against gravity
4/5 Active movement against some resistance
5/5 Normal strength

Knee flexion:	Right:	☒ 5/5	☐ 4/5	☐ 3/5	☐ 2/5	☐ 1/5	☐ 0/5
	Left:	☒ 5/5	☐ 4/5	☐ 3/5	☐ 2/5	☐ 1/5	☐ 0/5
Knee extension:	Right:	☒ 5/5	☐ 4/5	☐ 3/5	☐ 2/5	☐ 1/5	☐ 0/5
	Left:	☒ 5/5	☐ 4/5	☐ 3/5	☐ 2/5	☐ 1/5	☐ 0/5

Close the Examination

At the conclusion of the exam, the examiner asks Mr. Miller if he has any questions. He provides clear instructions on what's next, an X-ray appointment, without expressing legal opinions.

If your examinee asks you what the outcome of the claim will be, explain that this is not a decision that you, the examiner, will make. Inform him or her that your role is to perform the examination and send the findings to the Veterans Benefits Administration (VBA). In turn, VBA will determine the final rating and mail the decision to him or her. DO NOT speculate on a claim outcome.

In many instances, the appointment with you is the claimant's first in-person contact with the U.S. Department of Veteran Affairs (VA). If you leave a good impression with the claimant, he or she may be more inclined to return to VA for other needed services. Notice that the examiner escorts Mr. Miller to the door and directs him to the way out. This is a best practice for closing the examination.

Topics to Avoid

Avoid discussing any of these topics with your examinee during any point of the disability exam:

- The merits of the claim
- Percentage of service-connected disability to be granted
- Likely outcome or benefits as a result of examination
- Your opinion regarding relationship of the disability to service
- Correctness of a previous determination
- Whether or not a disability is service-connected
- Treatment recommendations for other than emergent conditions

Video Transcript

Closing the Examination
[The scene begins with claimant dressed and seated across from Dr. Coulson.]
Dr. Coulson: Uh, Mr. Miller do you have any other questions for me?
Mr. Miller: Uh, no, no. I appreciate your time, thanks.
Dr. Coulson: OK, we'll go out and get your X-ray and we'll see our clerk.
Mr. Miller: OK.
Dr. Coulson: OK? Thank you very much for coming today.
Mr. Miller: Thanks.
[Shakes Dr. Coulson's hand.]

[Dr. Coulson leads claimant out to the door and shakes his hand.]
Dr. Coulson: You have a good day.
Mr. Miller: Thanks. Dr. Coulson: Bye.
[Dr. Coulson watches as claimant limps down the hall. The scene fades.]

Learning Summary

You have completed this lesson. You should now recognize best practices for interacting with the Veteran or Servicemember, both before and after the physical examination. You should recall what to look for in a C&P musculoskeletal examination. You were given instructions on how to conduct key aspects of C&P musculoskeletal examinations including knees, muscles, bones, scars, spine, residuals of amputations, and the neurological system as it pertains to the musculoskeletal system. You should be able to describe the difference between a flare-up and an incapacitating episode. Remember it is mandatory to use a goniometer to assess any functional limitations or impairments in terms of the degrees of joint range of motion.

The next, and final lesson covers how to document an examination using a DBQ or other documentation protocol.

Document the Examination

Learning Objectives

As an examiner, it is your responsibility to complete your documentation based on the Veterans Benefits Administration's (VBA) needs. Your report findings should be documented immediately after the examination, in appropriate fields on the Disability Benefits Questionnaire (DBQ) or other documentation protocol. At the end of this lesson, you should be able to apply best practices for documenting a compensation and pension (C&P) musculoskeletal examination.

Diagnostics and Clinical Tests

You'll need to complete your documentation in a timely fashion, so a best practice is to order any clinical and diagnostic tests necessary for making any diagnosis. Also, arrange the necessary test appointments for the Veteran or Servicemember.

In general, use the least invasive means of objectively documenting pathology, such as arthritic changes and structural defects. For example, the diagnosis of degenerative or post-traumatic arthritis of a joint requires X-ray confirmation one time only. Once the diagnosis of arthritis has been confirmed, further imaging studies of that joint are generally not required because benefits are determined by the amount of functional limitation or impairment, and not by the severity of X-ray or other imaging study findings.

One such situation would be, if the Request for Examination specifies a Veteran's or Servicemember's left knee for examination, and the Request notes that he or she is already service-connected (SC) for "left knee degenerative arthritis," then additional X-rays are not required. On the other hand, if the Veteran or Servicemember is only claiming service-connection for left knee degenerative arthritis and is not yet service-connected, and no past imaging studies are available documenting arthritic changes, then appropriate X-ray studies should be obtained and the results included with the final examination report.

Review and Interpret Diagnostic Reports

Remember, you are providing evidence, not providing treatment

Reporting Discrepancies

Review all requested imaging tests, include them in the examination report, and correlate them with clinical findings before finalizing the diagnosis and returning the report to VBA.

As a professional examiner, you may find conditions that differ from or contradict previous diagnoses in the claimant's records. If this situation arises, document the diagnoses and provide a complete rationale, including any pertinent examination or test results.

If you feel that the claimant's symptoms are not consistent with physical signs, test results, or observations, state that the physical examination or laboratory tests do not support the severity of disability suggested by the complaints. In this case, complaints should be recorded in the Veteran's or Servicemember's own unprompted language within quotation marks, so that it will be clear that they are complaints and not your opinions as the examiner.

Making the Diagnostic Conclusion

Your final report should only include a final diagnosis for each musculoskeletal condition, concern or symptom listed on the Request for Examination. Remember your examination report is evidence and must be accurate and consistent.

- Pay particular attention that the body part is correctly identified (left vs. right vs. bilateral) throughout the history, physical examination and final diagnosis
- Support final diagnoses by appropriate diagnostic studies.
- In your final diagnosis identify a pathologic process if present. If no diagnosis can be made regarding a claimed complaint or symptom, such as low back pain, provide a statement under diagnosis such as: "No objective findings to support a diagnosis of a condition related to the symptom of low back pain." Or, if no diagnosis can be made regarding a claimed condition, such as knee arthritis, state: "No objective findings to support a diagnosis of the claimed knee arthritis. Explain in detail the reason why a diagnosis cannot be established for the condition claimed.

Diagnosis Dos and Don'ts table

Diagnosis Dos	Diagnosis Don’ts
Here are a few things you should do when documenting your diagnosis: • Provide a specific diagnosis: Do provide a specific diagnosis if known rather than using symptoms, such as pain, or signs, such as tenderness. • Provide an opinion when requested: Do provide an appropriately worded opinion when requested and include a complete rationale for your opinion. • Diagnostic terminology: Do use the diagnostic terminology or format required on the documentation protocol.	Here are a few other things you should NOT do when documenting your diagnosis: • Non-committal diagnosis: Don't provide a differential diagnosis (rather than a specific diagnosis) or use phrases such as "differential diagnosis" or "rule out". • Diagnostic tests: Don't give an opinion prior to performing and evaluating further required tests; otherwise the examination will be considered incomplete and returned as insufficient. • Change the previously established service connected diagnoses: Don't change previously established diagnoses, unless you carefully explain the discrepancy and adequately substantiate the new diagnoses

Complete Your Documentation

Complete your documentation as soon as possible after an exam to ensure accurate reporting. Your documentation is not complete until you address claimed conditions with your exam findings, pertinent test results, diagnoses, and functional limitations or impairments. Include all the important history, including any current treatment and any side effects. If a diagnosis is already well established, describe current signs and symptoms and physical findings, especially functional limitations or impairments, related to the musculoskeletal conditions, as well as any current treatment and side effects.

Ideally, you'll document most of your findings in appropriate fields on a Disability Benefits Questionnaire (DBQ) or other documentation protocol immediately after the examination. Best practices dictate that you keep the DBQ or other documentation protocol available during the examination, as well as when writing your final report to ensure all VA Regional Office (RO) or Board of Veterans Appeals (BVA) needs are met.

Answer all questions in the Remarks section of the Request for Examination. In particular, document whether the claims file (C-file) was available and required for you to review.

Case Study

This section of the case study will focus on the documentation, testing, and the diagnosis based on the Veteran's or Servicemember's outcomes. This information is documented in section 17 of the DBQ.

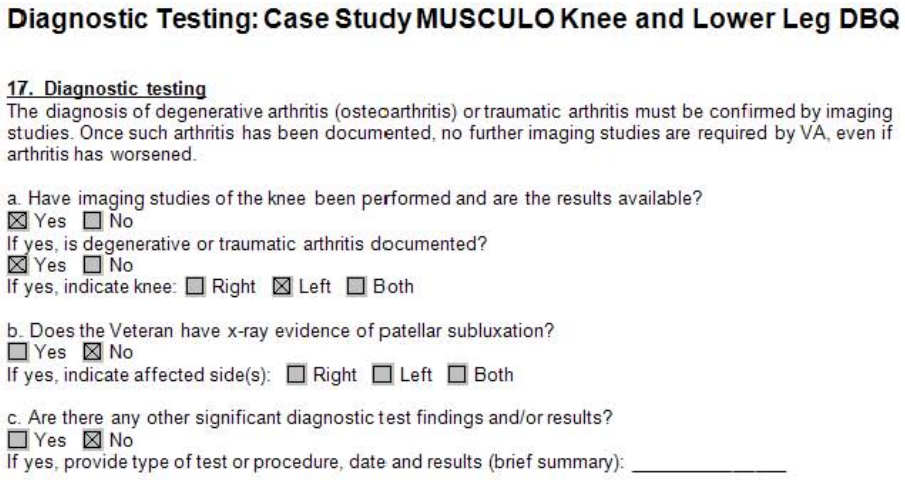
Select the image to view section 17 of the DBQ.

Diagnostic Studies:

X-rays from 5/5/11 from VAMC are reviewed.

Findings:

Degenerative changes involving primarily the patellofemoral and lateral compartments.
No loose bodies.
No soft tissue calcifications.



Diagnostic Testing: Case Study MUSCULO Knee and Lower Leg DBQ

17. Diagnostic testing
The diagnosis of degenerative arthritis (osteoarthritis) or traumatic arthritis must be confirmed by imaging studies. Once such arthritis has been documented, no further imaging studies are required by VA, even if arthritis has worsened.

a. Have imaging studies of the knee been performed and are the results available?
☒ Yes ☐ No
If yes, is degenerative or traumatic arthritis documented?
☒ Yes ☐ No
If yes, indicate knee: ☐ Right ☒ Left ☐ Both

b. Does the Veteran have x-ray evidence of patellar subluxation?
☐ Yes ☒ No
If yes, indicate affected side(s): ☐ Right ☐ Left ☐ Both

c. Are there any other significant diagnostic test findings and/or results?
☐ Yes ☒ No
If yes, provide type of test or procedure, date and results (brief summary): _____

Effects on Employability

Every examination requires you to describe the functional effects of the Veteran's or Servicemember's conditions or disabilities, that is, the impact on his or her ability to work, whether or not employed, since average impairment of earning capacity is the basis of disability compensation.

When a claim for unemployability has been made, explain in detail the effects of any functional loss or impairment due to the service-connected disabilities that have been claimed or reasonably raised by the evidence of record to cause unemployability. This should be without consideration as to whether or not the Veteran or Servicemember is currently employed, or is retired. Regulations require that the Veteran's or Servicemember's age and any nonservice-connected disabilities not be taken into account in making this determination. You must provide a description of functional impairment due to the disabilities and how that impairment impacts physical and sedentary employment.

Record Opinions

Generally, an opinion should be given only when the Request for Examination requires it. Review the Request carefully to be sure all requested information is supplied and an opinion is not rendered on something the Request did not ask for. Avoid expressing an opinion regarding the merits of any claim or the percentage evaluation that should be assigned for a disability.

If a medical opinion is requested or is medically indicated for a claim, you should:

- identify the specific evidence reviewed and considered in forming the opinion,
- provide a rationale for the opinion presented, and
- state the opinion in the legally acceptable format.

Case Study

Let's take a look at the rationale and opinion that the examiner provided the RO.

Rationale:

Veteran's knee pain can be attributed to post-traumatic arthritis. Degenerative arthritis (osteoarthritis) of the knee is common in the general population, but primary osteoarthritis of the knee is usually bilateral. Veteran has no right knee symptoms. Additionally, Veteran is relatively young for primary knee osteoarthritis. Veteran sustained a fracture of the lateral tibial plateau. This is an interarticular fracture. It is well recognized that post-traumatic arthritis may develop after an interarticular fracture. Tab B in the C-file is an X-ray report from VAMC (5/5/11), which provides a diagnosis of degenerative arthritis of left knee (which has an identical appearance to traumatic arthritis). Tab A in service treatment records is an orthopedic consultation from the 5601 field hospital. This provides a diagnosis of a minimally displaced lateral tibial plateau fracture. A long leg cast was applied at that time and Veteran was non-weight-bearing on crutches.

Medical Opinion:

It is at least as likely as not that Veteran's post-traumatic arthritis of his left knee was caused by the left tibia fracture sustained while in service.

Release the Documentation Protocol

The C-file contains the Veteran's or Servicemember's service medical records, claim correspondence, evidence including medical records and documentation of all benefit awards. The C-file is a legal file that contains legal documents. The C-file is the property of the VBA. It is the only file the Veteran or Servicemember has for his or her claim. This folder is confidential and the Veteran or Servicemember may not have access to this C-file without the presence of an adjudicative staff member. The C-file should not be given to Veterans or Servicemembers to carry from one clinic to another or from the medical center to the Veterans Service Center. Here are a few additional precautions you should take regarding the C-file:

- Do not take a C-file home.
- Do not remove anything from the file.
- Do not give a C-file to the Veteran or Servicemember to return.
- Do not leave C-files lying about the office unsecured. Protect the Veteran's or Servicemember's privacy.
- Do not add anything to the C-file.

Lesson Summary

This lesson gave you instructions on how to document an exam. You should be able to recall how to record opinions and things you should and should not do when providing a diagnosis. You should also remember that you must provide information about the Veteran's or Servicemember's functional limitations or impairments due to his or her claimed conditions and how they might affect his or her ability to work.

Next, is a summary of what you should have learned from this course and a test of your knowledge of the material presented.

Course Summary

Review of Learning Objectives

Now that you have completed this course, you should be able to identify the criteria and recall the general process for opening, conducting, closing, and documenting a compensation and pension (C&P) musculoskeletal examination. In order to do so you should also be able to:

1. Explain the difference between C&P musculoskeletal examinations and clinical examinations for treatment purposes.
2. Identify the factors that constitute musculoskeletal system disability.
3. Execute best practices for activities performed prior to conducting a C&P musculoskeletal examination.
4. Apply best practices for opening, conducting, and closing a C&P musculoskeletal examination.
5. Apply best practices for guiding the Veteran or Servicemember through the examination and properly answering questions.
6. Apply the best practices for documenting a C&P musculoskeletal examination.

Summary of Course

Let's review what was covered in this course on the C&P musculoskeletal examination. The course began by discussing how a C&P forensic legal exam is different from a treatment exam and the purpose of the C&P musculoskeletal examination. Then, the documentation that you need to review prior to conducting the examination was discussed. Remember to record any functional limitations or impairments that the claimed conditions cause the Veteran or Servicemember. You should also remember that Disability Benefits Questionnaires (DBQs) do not guide the examination; they are used to guide the documentation of the exam findings.

The course proceeded with the examination and how to interact with the Veteran or Servicemember during the process. The course concentrated on the major segments of the musculoskeletal examination and the criteria to which you must pay attention while conducting the exam.

The final lesson covered your responsibilities after you've conducted the examination and what you should include in your written report. Remember, your written report includes the findings from all additional clinical tests ordered, and your judgment of the Veteran's or Servicemember's capacity to work.

Appendix

Case Study Request for Examination
List of Musculoskeletal DBQs
Additional Information for the Cervical Spine Examination
Additional Information for the Thoracolumbar Spine Examination
Additional Information for the Knee Examination
Extracts from Title 38 of the Code of Federal Regulations part 4
Muscle Groups
DeLuca Criteria

Resources

Documents

•Case Study Request for Examination (see Appendix)
•List of Musculoskeletal DBQs (see Appendix)
•Additional Information for the Cervical Spine Examination (see Appendix)
•Additional Information for the Thoracolumbar Spine Examination (see Appendix)
•Additional Information for the Knee Examination (see Appendix)
•Extracts from Title 38 of the Code of Federal Regulations part 4 (see Appendix)
•Muscle Groups (see Appendix)
•DeLuca Criteria (see Appendix)

Sample Compensation and Pension Examination Inquiry for Fictitious Case Study

Name: MILLER, JASON LEE
SSN: XXX-XX-XXXX
C-Number: 38 345 678
DOB: OCTOBER 11, 1963
Address: 375 HILLTOP CT
City, State, Zip+4: SMITHFIELD, ILLINOIS 62030
Country: UNITED STATES
Res Phone: (312) 555-5678
Bus Phone: (312) 555-2789
Entered active service: June 2, 1990
Released from active service: MAY 29, 1992

>>>Future C&P Appointments<<<

No future C&P appointments found.

Requested exams currently on file:
MUSCULO KNEE AND LOWER LEG DBQ
Requested on JUL 5, 2010@ 08:43:17 by CHICAGO-RO –Open

MEDICAL OPINION DBQ
Requested on JUL 5, 2010@ 08:43:17 by CHICAGO-RO –Open

This request was initiated on JUL 5, 2010 at 08:43:17
Requester: DOE, VBA1
Requesting Regional Office: CHICAGO-RO
VHA Division Processing Request: WESTSIDE VAMC

Exams on this request:
MUSCULO KNEE AND LOWER LEG DBQ
MEDICAL OPINION DBQ

** Status of this request:
New
No rated disabilities on file

Other Disabilities:

General Remarks:
CLAIMS FILE BEING SENT FOR REVIEW BY THE EXAMINER.

Disabilities claimed:
1. Left knee arthritis (claimed as left knee condition)

MILITARY SERVICE: Army 6/02/1990 to 5/29/1992

Sample Compensation and Pension Examination Inquiry for Fictitious Case Study

PERTINENT SERVICE TREATMENT RECORDS: See Tab A, where STRs show fracture of Left tibia, just below the knee, while on active duty, February 26, 1991. Veteran was treated with cast and light duty for 6 weeks.

PERTINENT VA RECORDS: see Tab B in C-file: X-ray report from VAMC (5/5/11) which provides a diagnosis of post-traumatic arthritis of left knee.

Requested Opinion: The Veteran is claiming service connection for a left knee condition. Please determine whether it is at least as likely as not that the Veteran's claimed left knee arthritis, if found, is proximately due to his fracture of the left tibia (claimed as left knee condition).

NOTE TO EXAMINER – In Your Response Please:

1. Identify the specific evidence you reviewed and considered in forming your opinion.
2. Please provide a rationale (explanation/basis) for the opinion presented.
3. State your conclusions using one of the following legally recognized phrases:

a. _____ is caused by or a result of _____.
b. _____ is most likely caused by or a result of_____.
c. _____ is at least as likely as not (50:50 probability) caused by or a result of_____.
d. _____ is less likely as not (less than 50:50 probability) caused by or a result of_____.
e. _____ is not caused by or a result of _____.
f. _____ I cannot resolve this issue without resort to mere speculation (see below).

4. Even if the issue cannot be resolve without resort to speculation, you must still provide a valid rationale as to why this is so.

In addition, please conduct whatever additional testing is necessary based on your examination.

OPINION expressed must be accompanied by a detailed rationale.

Thank you for your time and consideration.
POA: Disabled American Veterans
We have the same address for this veteran as you.
If you have any questions, please contact John Doe, RVSR, at 000-555-3415.

DEMO MUSCULOSKELETAL DBQS

Below is a partial list of DBQs that are specific to a DEMO musculoskeletal examination to give you an idea of the numerous MUSCULO DBQs that VBA may request for a disability exam. The most up-to-date versions of MUSCULO worksheets can be viewed and downloaded from the DEMO Intranet website at this address: http://vaww.demo.va.gov.

- DEMO MUSCULO Amputations
- DEMO MUSCULO Ankle
- DEMO MUSCULO Arthritis
- DEMO MUSCULO Back (Thoracolumbar Spine)
- DEMO MUSCULO Elbow and Forearm
- DEMO MUSCULO Flatfoot
- DEMO MUSCULO Foot miscellaneous
- DEMO MUSCULO Hand and Finger
- DEMO MUSCULO Hip and Thigh
- DEMO MUSCULO Knee and lower leg
- DEMO MUSCULO Muscle Injuries
- DEMO MUSCULO Neck (Cervical Spine)
- DEMO MUSCULO Osteomyelitis
- DEMO MUSCULO Shoulder and Arm
- DEMO MUSCULO Temporomandibular Joint
- DEMO MUSCULO Wrist

Additional Information for the Cervical Spine Examination

Axial Compression Test:

Downward pressure is applied on the examinee's head with the neck in neutral position. Test is positive if neck pain is elicited or exacerbated.

Spurling's Test:

Examinee's neck is extended and rotated to the side of the arm pain. Test is positive if radicular pain is elicited or exacerbated.

Grading of the Deep Tendon Reflexes:

0	Absent
1+	Hypoactive (decreased)
2+	Normal
3+	Hyperactive (increased) without sustained clonus
4+	Hyperactive with sustained clonus (five beats or more)

Hoffman's Reflex:

This is a pathologic reflex used to assess upper motor neuron pathology. When considering the cervical spine alone it is a test for cervical myelopathy. It is performed by tapping the nail or "flicking" the distal phalanx of the long finger. If this causes flexion of the distal phalanx of the thumb the test is positive.

Cervical Myelopathy:

If cervical myelopathy is found or suspected, perform a neurologic examination of lower extremities in addition to the cervical spine examination including neurologic examination of the upper extremities. Incontinence, if present should also be addressed.

Additional Information for the Thoracolumbar Spine Examination

Straight Leg Raise/Lasegue's Sign:

These tests are used to assess the presence of nerve compression.

Laseque:

Hip is flexed with knee flexed. Then the knee is extended. Reproduction of sciatic pain is a positive test.

Straight Leg Raising:

Hip is flexed with knee in full extension. Reproduction of sciatic pain (pain extending below the knee usually into the foot) between 30 and 70° of flexion is a positive test.

Pathological Reflexes:

Pathological reflexes (Babinski response) are used to document injury to the corticospinal tracks.

Plantar Reflex:

The lateral side of the sole of foot is rubbed with a blunt instrument from heel to metatarsal pads. There are several possible responses:

1. No response: this is normal

2. Withdrawal: some will pull the foot away because they are very sensitive. This is normal.
3. Flexor: plantar flexion of the hallux and often the lesser toes. This is normal.
4. Extensor: the hallux dorsiflexes and the toes abduct, or fan out. This is Babinski‘s sign, or response, and indicates central nervous system damage.

McMurray Test

This test is used to assess meniscus tears.

Medial meniscus:
Test is performed with the examinee supine and the knee held by the examiner with one hand (thumb over medial joint line and fingers laterally, to stabilize the knee and provide a valgus stress, which is outward force, as the knee is flexed to 90° while the foot is held by the sole with the other hand with the foot in external rotation. The knee is then extended. If medial joint line pain or a click is elicited it is a positive McMurray test.

Lateral meniscus:
Performed in a similar manner but the thumb is over the lateral joint line and the fingers are placed medially to stabilize the knee and a varus stress, inward force, is applied and the foot is in internal rotation rather than external rotation. If lateral joint line pain or a click is elicited it is a positive McMurray test

Lachman Test

The Lachman test is used to assess anterior instability of the knee.

The knee is flexed to 30° and the examiner pulls on the tibia to assess the amount of anterior translation of the tibia in relation to the femur.

Anterior and Posterior Drawer Tests

The anterior drawer test is used to assess anterior instability of the knee and is performed similarly to the Lachman test, but instead of the knee being flexed to 30 degrees, it is flexed to 90 degrees. As with the Lachman test, the examiner pulls on the tibia to assess the amount of anterior translation of the tibia in relation to the femur.

The posterior drawer test is used to assess posterior instability of the knee and is performed in a similar manner as the anterior drawer test but the examiner pushes the tibia to assess the amount of posterior translation of the tibia in relation to the femur.

Valgus and Varus Stress Tests

The valgus stress test is used to assess the degree of medial instability of the knee. The leg is stabilized against the examiner's body and one hand is placed over the medial joint line and the other hand grasps the foot and ankle. A valgus stress, outward force, is applied to the knee joint. The fingers over the medial joint line palpate the degree of joint opening. The test is performed in 30 degrees of flexion and in extension.

The varus stress test is used to assess the degree of lateral instability of the knee. The knee is grasped with one hand with the thumb over the lateral joint line. The other hand grasps the foot and ankle. A varus stress, inward force, is applied to the knee joint. The thumb over the lateral joint line palpates the degree of joint opening. This test is performed in 30 degrees of flexion and in extension.

Patellar Compression Test

The patellar compression test is used to assess the presence of articular cartilage degeneration and is performed by applying pressure to the patella and then flexing/extending the knee. If pain is elicited the test is positive.

Grades of Knee Laxity

1+ 1-5mm

2+ 6-10mm

3+ >10mm

Note: relative to the contralateral, normal, knee.

38 CFR 4.40

Disability of the musculoskeletal system is primarily 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. It is essential that the examination on which ratings are based adequately portrays the anatomical damage, and the functional loss, with respect to all these elements. The functional loss may be due to absence of part, or all, of the necessary bones, joints and muscles, or associated structures, or to deformity, adhesions, defective innervation, or other pathology, or it may be due to pain, supported by adequate pathology and evidenced by the visible behavior of the claimant undertaking the motion. Weakness is as important as limitation of motion, and a part which becomes painful on use must be regarded as seriously disabled. A little used part of the musculoskeletal system may be expected to show evidence of disuse, either through atrophy, the condition of the skin, absence of normal callosity or the like.

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:

a. Less movement than normal (due to ankylosis, limitation or blocking, adhesions, tendon-tie-up, contracted scars, etc.).
b. More movement than normal (from flail joint, resections, nonunion of fracture, relaxation of ligaments, etc.).
c. Weakened movement (due to muscle injury, disease or injury of peripheral nerves, divided or lengthened tendons, etc.).
d. Excess fatigability.
e. Incoordination, impaired ability to execute skilled movements smoothly.
f. 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 disability from arthritis, the shoulder, elbow, wrist, hip, knee, and ankle are considered major joints; multiple involvements of the interphalangeal, metacarpal and carpal joints of the upper extremities, 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.

Muscle Groups

What are the major muscle groups and what is their significance?

a. The Rating Schedule lists the following 23 muscle groups, provided for your reference, and the rating percentage evaluations to be assigned for different degrees of muscle injury (slight, moderate, etc.) vary depending upon which muscle group is affected. Therefore, specify each individual muscle affected so that the rater can select the appropriate group(s) under which to evaluate.
b. For the sake of clarity, and to avoid returned exams or questions, use muscle terminology as it is given below (e.g., “adductor of thumb” instead of “adductor pollicis,” but “extensor hallucis longus” instead of “long extensor of the great toe”), because this is the terminology used in the Rating Schedule regulations.
c. With penetrating wounds, including chest and abdominal wounds, identify each muscle traversed by the projectile.
d. Unless the report is precise, it may be returned, especially in complex cases, to clarify the exact muscles or muscle group(s) involved in an injury.
Group I. Extrinsic muscles of shoulder girdle, which rotate scapula upward and elevate the arm above shoulder level. (1) trapezium (2) levator scapulae (3) serratus magnus.
Group II. Extrinsic muscles of shoulder girdle, which lower the arm from a vertical overhead position to hanging at side and act with Group III in forward and backward swing of the arm. (1) pectoralis major, costosternal origin; (2) latissimus dorsi and teres major; (3) pectoralis minor; (4) rhomboid, major and minor.
Group III. Intrinsic muscles of shoulder girdle, which elevate and abduct arm to level of shoulder and act with Group II in forward and backward swing of the arm. (1) pectoralis major, clavicular origin (2) deltoid.
Group IV. Intrinsic muscles of shoulder girdle, which stabilize shoulder against injury in strong movements, hold head of humerus in socket, and abduct, outwardly rotate, and inwardly rotate arm. (1) supraspinatus; (2) infraspinatus and teres minor; (3) subscapularis; (4) coracobrachialis.
Group V. Flexor muscles of the elbow, which flex and supinate the elbow and help stabilize the shoulder joint. (1) biceps (2) brachial (3) brachioradialis.
Group VI. Extensor muscles of the elbow, which extend the elbow and help stabilize the shoulder joint. (1) triceps (2) anconeus.
Group VII. Muscles arising from medial condyle of humerus, which flex wrist and fingers. Flexors of the carpus and long flexors of fingers and thumb; pronator teres and quadratus.
Group VIII. Muscles arising mainly from lateral condyle of humerus, which extend wrist, fingers and thumb and abduct thumb. Extensor of carpus, fingers and thumb; supinator.
Group IX. Intrinsic muscles of the hand, which perform the delicate manipulative movements of the hand. Thenar eminence; short flexor, opponens, abductor, and adductor of the thumb; hypothenar eminence; short flexor, opponens, and abductor of the little finger; 4 lumbricales and 4 dorsal and 3 palmar interrossei.
Group X. Intrinsic muscles of the foot, for movement of forefoot and toes, propulsive thrust in walking. Plantar: (1) flexor digitorum brevis; (2) abductor hallucis; (3) abductor digiti minimi; (4) quadratus plantae; (5) lumbricales; (6) flexor hallucis brevis; (7) adductor hallucis; (8) flexor digiti minimi brevis; (9) dorsal and plantar interossei. Other important plantar structures include the plantar aponeurosis, long plantar and calcaneonavicular ligament, tendons of posterior tibial, peroneus longus, and long flexors of great and little toes. Dorsal: (1) extensor hallucis brevis (2) extensor digitorum brevis. Other important dorsal structures include the cruciate, crural, deltoid and other ligaments, tendons of long extensors of toes and peroneal muscles.
Group XI. Posterior and lateral crural muscles and muscles of the calf, which produce propulsion, plantar

flexion of foot, stabilization of the arch, flexion of toes, and flexion of knee. (1) triceps surae (gastrocnemius and soleus); (2) tibialis posterior; (3) peroneus longus; (4) peroneus brevis; (5) flexor hallucis longus; (6) flexor digitorum longus; (7) popliteus; (8) plantaris.
Group XII. Anterior muscles of the leg, which dorsiflex the foot, extend the toes, and stabilize the arch. (1) tibialis anterior (2) extensor digitorum longus; (3) extensor hallucis longus; (4) peroneus tertius.
Group XIII. Posterior thigh group, hamstring complex, which extend the hip, flex the knee, and outwardly and inwardly rotate the flexed knee, help synchronize simultaneous flexion or extension of hip and knee. (1) biceps femoris (2) semimembranous (3) semitendinosus.
Group XIV. Anterior thigh group, which extends knee, aids simultaneous flexion of hip and knee, produces tension of fascia lata and iliotibial band, acting with Group XVII in postural support of the body, helps synchronize hip and knee. (1) sartorius (2) rectus femoris (3) vastus externus; (4) vastus intermedius (5) vastus internus (6) tensor vaginae femoris (tensor fasciae latae).
Group XV. Mesial thigh group, which adducts hip, flexes hip, and flexes knee. (1) adductor longus; (2) adductor brevis; (3) adductor magnus; (4) gracilis.
Group XVI. Pelvic girdle group 1, which flexes hip. (1) psoas (2) iliacus (3) pectineus.
Group XVII. Pelvic girdle group 2, which extends hip, abducts thigh, elevates opposite side of pelvis, and produces tension of fascia lata and iliotibial band, aiding postural support by steadying pelvis. (1) gluteus maximus (2) gluteus medius (3) gluteus minimus.
Group XVIII. Pelvic girdle group 3, which outwardly rotates thigh and stabilizes hip joint. (1) piriformis (2) gemellus, superior or inferior (3) obturator, external or internal (4) quadratus femoris.
Group XIX. Muscles of the abdominal wall, which support and compress abdominal wall and lower thorax, produce flexion and lateral motions of spine, act as synergists in strong downward motion of arm. (1) rectus abdominis (2) external oblique (3) internal oblique (4) transversalis (5) quadratus lumborum.
Group XX. Spinal muscles, which produce postural support of body, extension and lateral movements of spine. Sacrospinalis (erector spinae and its prolongations in thoracic and cervical regions).
Group XXI. Muscles of respiration. Thoracic muscle group.
Group XXII. Muscles of the front of the neck, which produce rotary and forward movements of the head, respiration, deglutition. Lateral, suprahyoid and infrahyoid group, which rotates and moves head forward; respiration; deglutition. (1.) trapezius 1 (clavicular insertion) (2) sternocleidomastoid (3) the "hyoid" muscles (4) sternothyroid (5) digastric.
Group XXIII. Muscles of the side and back of the neck, which produce movements of the head, fixation of shoulder movements. Suboccipital, lateral vertebral and anterior vertebral muscles.

DeLuca Criteria

Because the United States Court of Appeals for Veterans' Claims (CAVC) found that the traditional VA method of assessing disabilities for rating purposes – one-time measurement of active and passive range of motion (ROM) – was inadequate under VA regulations, as functional impairment may be underestimated, additional factors must be considered for each joint examined. These include:

1. pain which limits function during:
    a. repetitive use
    b. flare-ups
2. weakness against varying resistance
3. excess fatigability
4. incoordination

Each of these issues should be assessed and the amount the joint is additionally limited, if any, resulting from one or more of these factors should – if possible –be reported in degrees of additional loss of motion. The absence of any or all of these factors should also be noted. You must be specific as to where (i.e., from flexion or extension) any additional losses should be subtracted. For example, if knee pain on ROM testing prevents full flexion and an additional ROM loss for pain of 20 degrees is warranted, you must specifically state the additional limitation of flexion due to pain (e.g., "An additional 20 degrees loss of knee flexion occurs because of pain on movement" or, better and clearer, "Because of pain on