

Designated Doctor and MMI/IR Doctor

Pre-course Cases

Lower Extremity Maximum Medical Improvement and Impairment Rating

Case 1 – Lower Extremity MMI/IR

History of Injury

- 25-year-old firefighter jumped down some steps, twisted his right knee, and “heard a pop”
- Immediate right knee pain
- Difficulty bearing weight and walking
- Seen by family physician next day
- Diagnosed with knee sprain

Treatment History

- Initial treatment included rest, ice, compression, elevation and ibuprofen
- Off work for one week
- Returned for follow up in one week; no better with persistent swelling and loss of range of motion
- Sent for MRI scan of right knee
- MRI scan showed oblique tear of posterior horn of medial meniscus and partial tear of anterior cruciate ligament
- Family physician referred him to orthopaedic surgeon
- **4 weeks post injury** seen by orthopaedic surgeon who recommended arthroscopic partial medial meniscectomy and ACL reconstruction
- Patient wanted to avoid surgery and the surgeon prescribed physical therapy 3 times a week for 4 weeks
- Completed 12 visits of physical therapy **10 weeks post injury**
 - less swelling, improved range of motion, strength, and better functional activity
- Returned to work with restrictions in light capacity, however his knee continued to “lock” and “give out”
- Returned to orthopaedic surgeon **12 weeks post injury**

- performed arthroscopic ACL reconstruction and partial medial meniscectomy
- Began physical therapy at **16 weeks post injury**

DD Medical History – 33 Weeks Post Injury

- Completed 24 visits of post-operative PT 16-32 weeks post injury with “slow progress”
- PT discharge 32 weeks post injury shows
 - active knee ROM 100° to -5°
 - flexion contracture -5°
 - exercise capacity
 - resisted knee flexion right 15#, left 30#
 - unable to sustain wall-sit, full unilateral weight bearing endurance exercises with RLE, or half squat on right leg due to pain and weakness
- Has RTW with restrictions (medium physical demand level)
- “Has made progress, but due to remaining deficits, especially in light of job demands as firefighter, recommend 8 additional visits of PT over 8 weeks in conjunction with home and gym program.”
- “Scheduled to see the orthopedic surgeon next week.”

DD Physical Exam – 33 Weeks Post Injury

- Stable vital signs, height 6 feet 1 inch, weight 180 pounds
- Right knee shows healed surgical wounds and arthroscopic portals
- Gait shows slightly shortened swing and stance phase on right, but no assistive device used
- No obvious swelling or effusion
- Atrophy of right quadriceps
 - right thigh circumference 51 cm
 - left thigh circumference 53 cm
- 4+/5 strength of right knee extension and flexion
- Right knee ROM extension -5° and flexion 100°

Question for DD: Based on medical records and physical examination of injured employee, what is the compensable injury for certifying MMI and IR?

Question for DD to consider in the exam: Has MMI been reached? If so, on what date? *(May not be greater than statutory MMI date shown on DWC Form-032)*

- a) Yes, 10 weeks post injury, date completed pre-op PT
- b) Yes, 32 weeks post injury, date completed 24 visits post-op PT
- c) Yes, 33 weeks post injury, date of DD exam
- d) No, not at MMI

Case 1 – Lower Extremity MMI/IR - The Sequel

DD Medical History – 45 Weeks Post Injury

- Injured employee returns for subsequent DD exam 3 months later after right knee arthroscopic ACL reconstruction with partial medial meniscectomy and additional post-op PT
- Returned to full duty work 4 weeks ago
 - 41 weeks post injury
- Completed 8 additional PT visits
 - 43 weeks post injury
- PT discharge records 43 weeks post injury document
 - good progress with PT, HEP/gym program
 - 5/5 right LE strength
 - full extension and flexion 135°
 - continue HEP and gym program
- Back to work as firefighter the last 4 weeks
- Reports minimal right knee pain with resisted knee flexion activities such as going up steps, which he rates as “1/10”
- Well-healed surgical scars
- No right knee swelling or effusion
- No weakness to right quad set
- Manual muscle testing shows 5/5 strength to right knee flexion and extension
- Mildly positive anterior drawer
- 1+ Lachman’s
- Right knee ROM
 - extension 0°
 - flexion 140°
- No atrophy
 - both thighs circumferences measure 53 cm

Question for DD: Based on medical records and physical examination of injured employee, what is the compensable injury for certifying MMI and IR?

Question for DD to consider in the exam: Has MMI been reached? If so, on what date? *(May not be greater than statutory MMI date shown on DWC Form-032)*

- a) Yes, 41 weeks post injury, date returned to work full duty
- b) Yes, 43 weeks post injury, date discharged from PT
- c) Yes, 45 weeks post injury, date of subsequent DDE
- d) No, not at MMI

Question for DD to consider in the exam: On the date of MMI, what is whole person IR?

- a) 0%
- b) 1%
- c) 3%
- d) 4%

Case 1 – Lower Extremity MMI/IR - The Sequel Additional Scenario 1

Condition at MMI

- ROM
 - extension 0°
 - flexion 105°
- Partial medial meniscectomy
- No cruciate ligament laxity

Question for DD: What is the whole person IR?

Case 1 – Lower Extremity MMI/IR - The Sequel Additional Scenario 2

Condition at MMI

- ROM

- extension 0°
- flexion 130°
- No cruciate ligament laxity
- DD notes that operative note describes surgical procedure as “arthroscopic medial meniscus **repair and ACL reconstruction**”

Question for DD: What is the whole person IR?

Case 1 – Lower Extremity MMI/IR - The Sequel Additional Scenario 3

Condition at MMI

- ROM
 - extension (flexion contracture) -5°
 - flexion 100°
- No cruciate ligament laxity
- DD notes that operative note describes surgical procedure as “arthroscopic partial medial meniscectomy **and ACL reconstruction**”

Question for DD: What is the whole person IR?

Case 1 – Lower Extremity MMI/IR - The Sequel Additional Scenario 4

Condition at MMI

- ROM
 - extension (flexion contracture) 0°
 - flexion 100°
- No cruciate ligament laxity
- 1 cm of right thigh atrophy
- DD notes that operative note describes surgical procedure as “arthroscopic partial **medial meniscectomy and ACL reconstruction**”

Question for DD: What is the whole person IR?

Case 1 – Lower Extremity MMI/IR - The Sequel Additional Scenario 5

Condition at MMI

- Antalgic gait with moderate knee OA
- ROM
 - flexion 120°
 - extension 0°
- No cruciate ligament laxity
- 1 cm of right thigh atrophy
- DD notes that operative note describes surgical procedure as “**arthroscopic partial medial meniscectomy and ACL reconstruction**”

Question for DD: What is the whole person IR?

Case 2 – Lower Extremity MMI/IR

Work-related injury resulted in left total knee replacement and left ankle fusion

At DD exam determined to be at MMI

Physical Exam Shows

- Knee
 - “6/10” continual pain
 - unable to walk without cane
 - difficulty ascending/descending stairs
 - ROM extension -10° and flexion 85°
 - A-P instability 8 mm, M-L instability 7°
 - flexion contracture 5° and extension lag 10°
 - alignment 7°
- Ankle
 - fused dorsiflexion 15°
 - varus 7°

Question for DD: On the date of MMI, what is whole person IR?

- a) 20%
- b) 30%
- c) 40%
- d) 44%

Case 3 – Lower Extremity MMI/IR

Treatment History

- 25-year-old furniture delivery driver involved in frontal impact motor vehicle accident
- Injured left knee
- Seen in ER
- X-rays and CT showed non-displaced lateral tibial plateau fracture
- Orthopaedic surgeon recommended non-operative treatment with cast-brace immobilization and non-weight-bearing
- MMI/IR - Lower Extremity Case 3
- Underwent 24 visits PT during 12-30 weeks post injury
- Follow-up x-rays of left knee **18 weeks post injury** showed healed fracture without displacement

30 Weeks Post Injury

- PT notes
 - Performing resisted left knee flexion/extension exercises
 - 5/5 strength bilateral knee flexion/extension
 - Full knee ROM
 - Discharged to home exercise program, follow-up with treating doctor
- Orthopedic surgeon documents “doing well, has progressed with PT, released to RTW as a furniture delivery driver without restrictions, follow-up prn”

92 Weeks Post Injury

Orthopedic surgeon follow up “persistent knee pain with prolonged standing and walking, x-rays and MRI scan show evidence of post-traumatic arthritis of the left knee secondary to intra-articular fracture”

DD Exam - 116 Weeks Post Injury

- Ordered exam from DWC Hearing Officer via Presiding Officer Directive
- Compensable injury determined at CCH
 - non-displaced lateral tibial plateau fracture left knee
 - post-traumatic arthritis left knee
- Statutory MMI 105 weeks post injury
- DD ordered to address MMI/IR

DD Medical History - 116 Weeks Post Injury

- Chief complaint
 - Left knee pain “5-6/10”
- Working full time with restrictions
- Difficulty walking and performing weight bearing daily activities

DD Physical Exam – 116 Weeks Post Injury

- Vitals: Height 66 inches, weight 140 pounds, BP 120/78, pulse 64,
 - respiration 14
- Pleasant affect
- Cooperative with history and exam; oriented to time, person and place, with normal attention span and concentration
- Walks with limp
- Does not require use of assistive device to walk
- 1 cm of left thigh atrophy
- Normal lower extremity sensation
- Left knee range of motion
 - flexion 120°
 - extension 0°
- Manual muscle testing 5/5 strength of knee flexion and extension
- DD additional testing
 - weight bearing knee x-rays show 3 mm cartilage interval

Question for DD to consider in the exam: Has MMI been reached? If so, on what date? *(May not be greater than statutory MMI date shown on DWC Form-032)*

- a) Yes, 30 weeks post injury, date completed 24 visits PT and released to prn by orthopedic surgeon
- b) Yes, 92 weeks post injury, date of follow-up with orthopedic surgeon
- c) Yes, 105 weeks post injury, statutory MMI date
- d) Yes, 116 weeks post injury, date of DD exam
- e) No, not at MMI

Question for DD to consider in the exam:

On date of MMI, what is whole person IR?

- a) 2%
- b) 4%
- c) 5%
- d) 6%

Case 3 – Lower Extremity MMI/IR Additional Scenario 1

What if ...

- 1 cm thigh atrophy
- Knee ROM is -8° to 100°
- DBE undisplaced tibial plateau fracture
- Post traumatic arthritis

Question for DD: What is the whole person IR?

Case 4 – Lower Extremity MMI/IR

History of Injury

25-year-old laborer sustained non-displaced left lateral malleolar fracture, with injury to superficial peroneal nerve

Treatment History

- Seen in ER
 - X-rays and CT show isolated non-displaced mid to distal fibular fracture

- Orthopaedic surgeon treated with a boot
- Developed numbness in the dorsum of the foot
- Weakness in the ankle everter muscles
- 8-18 weeks **post injury**
 - 24 visits of PT
- **16 weeks post injury**
 - Follow-up x-rays showed healed fracture
- **Orthopedic surgeon 24 weeks post injury**
 - Minimally decreased ankle ROM
 - Ankle eversion 4/5, all other muscles 5/5
 - Released RTW with restrictions
 - 3 month follow-up to evaluate nerve healing

DD Medical History - 36 Weeks Post Injury

- Left ankle pain “2-3/10” chief complaint
- Worked full time with restrictions for 12 weeks, then without restrictions the last 2 weeks

DD Physical Exam - 36 Weeks Post Injury

- Vitals: Height 66 inches, weight 140 pounds, BP 120/78, pulse 64, respiration 14
- Walks without limp
- Does not require use of assistive device to walk
- Decreased sensation dorsum of left foot that is forgotten with activity
- No abnormal or painful sensation
- Manual muscle testing shows 4/5 strength of ankle eversion
- Ankle plantar flexion, dorsiflexion, and inversion are 5/5
- Bilaterally symmetric calf and thigh circumference
- Knee flexion 120° and extension 0°
- Plantar flexion 30° and dorsiflexion 12°
- Inversion 25° and eversion 15°

Question for DD: Based on medical records and physical examination of injured employee, what is the compensable injury for certifying MMI and IR?

Question for DD to consider in the exam: Has MMI been reached? If so, on what date? *(May not be greater than statutory MMI date shown on DWC Form-032)*

- a) Yes, 18 weeks post injury, date completed 24 visits PT
- b) Yes, 24 weeks post injury, date last saw orthopedic surgeon
- c) Yes, 36 weeks post injury, date of DD exam
- d) No, not at MMI

Question for DD to consider in the exam: On MMI date, what is whole person IR?

- a) 0%
- b) 1%
- c) 2%
- d) 3%