

Lower Extremity

Osteoarthritis and Pain of the Lower Extremity

- A 2015 review on osteoarthritis (OA) found that land-based exercise for the hip reduced pain and improved physical function immediately after treatment with improvements sustained for 3-6 months. Additionally, exercise is recommended for the treatment of knee OA with improvement in muscle strength, short-term pain benefits and physical function including walking ability. This review also discusses biomechanical interventions for knee OA including braces and orthoses but did not report substantive evidence for their use.¹
- A 2013 systematic review evaluated the effectiveness of manual therapy and therapeutic exercise in the treatment of OA of the hip and found moderate evidence with for improvement of function with therapeutic exercise, particularly with utilization of booster sessions. With regard to manual therapy, this review reported that “joint mobilization of known dosage showed short-term reduction of pain and decreased disability”.²
- A 2012 systematic review found fair evidence for manipulative therapy (MT) combined with multiple modalities or exercise therapy for short-term treatment of hip osteoarthritis; but limited evidence for long-term treatment for the hip. Additionally, they found fair evidence for support of MT of the knee kinetic chain and ankle/foot, combined with additional modalities or exercise therapy for short-term treatment of knee OA and patellofemoral pain syndrome.³

Ankle sprains

- A 2015 systematic review found that lower extremity mobilization in addition to home exercise and advice provided “short-term improvements in activities and function” for grade I-II ankle sprains of variable duration for adults.⁴
- A 2014 systematic review on treatment for chronic ankle sprains found limited to moderate evidence for the effectiveness of a functional training program for improving function and pain and preventing recurrence of ankle sprains.⁵
- A 2014 systematic review on the efficacy of joint mobilization on lateral ankle sprains found that for acute, subacute and chronic ankle sprains, manual joint mobilization increased ankle range of motion, especially dorsiflexion, and decreased pain. Additionally, for subacute and chronic lateral ankle strains, they also found improvement in short-term functional outcomes.⁶
- A 2013 systematic review found that “static-stretching intervention as a part of standardized care yielded the strongest effects on dorsiflexion after acute ankle sprains.”⁷ The authors also found moderate support for passive joint-mobilization interventions for restoring normal ankle dorsiflexion after ankle sprains.⁷
- A 2012 systematic review found fair evidence for manipulative therapy (MT) of the knee kinetic chain and ankle/foot, combined with additional modalities or exercise therapy for short-term treatment of ankle inversion sprain.³

Plantar Fasciitis & Heel Pain

- A 2015 systematic review found short-term benefits with plantar fascia stretching for plantar heel pain.⁸
- A 2016 systematic review supports the use of myofascial release for management of persistent plantar heel pain.⁹
- A 2012 systematic review found fair evidence in support of short-term manipulative therapy treatment of the ankle and/or foot combined with multimodal or exercise therapy for plantar fasciitis.³

Achilles Tendinopathy

A 2012 mixed methods study integrating a systematic review with clinical reasoning found strong evidence for eccentric loading exercises and moderate evidence for splinting/bracing, active rest, low-level laser therapy and concentric exercises.¹⁰

References

1. Bennell KL, Hall M, Hinman RS. Osteoarthritis year in review 2015: rehabilitation and outcomes. *Osteoarthritis Cartilage*. 2016 Jan;24(1):58-70. <https://www.ncbi.nlm.nih.gov/pubmed/26707993>
2. Romeo A, Parazza S, Boschi M, Nava T, Vanti C. Manual therapy and therapeutic exercise in the treatment of osteoarthritis of the hip: a systematic review. *Reumatismo*. 2013 May 27;65(2):63-74. <https://www.ncbi.nlm.nih.gov/pubmed/23877410>
3. Brantingham JW, Bonnefin D, Perle SM, et al. Manipulative therapy for lower extremity conditions: update of a literature review. *J Manipulative Physiol Ther*. Feb 2012;35(2):127-166. <https://www.ncbi.nlm.nih.gov/pubmed/22325966>
4. Southerst D, Yu H, Randhawa K et al. The effectiveness of manual therapy for the management of musculoskeletal disorders of the upper and lower extremities: a systematic review by the Ontario Protocol for Traffic Injury Management (OPTiMa) Collaboration. *Chiropr Man Therap*. 2015 Oct 27;23:30. **FREE FULL TEXT** <https://www.ncbi.nlm.nih.gov/pubmed/26512315>
5. van Ochten JM, van Middelkoop M, Meuffels D, Bierma-Zeinstra SM. Chronic complaints after ankle sprains: a systematic review on effectiveness of treatments. *J Orthop Sports Phys Ther*. 2014 Nov;44(11):862-71, C1-23. <https://www.ncbi.nlm.nih.gov/pubmed/25299494>
6. Loudon JK1, Reiman MP, Sylvain J. The efficacy of manual joint mobilisation/manipulation in treatment of lateral ankle sprains: a systematic review. *Br J Sports Med*. 2014 Mar;48(5):365-70. <https://www.ncbi.nlm.nih.gov/pubmed/23980032>
7. Terada M, Pietrosimone BG, Gribble PA. Therapeutic interventions for increasing ankle dorsiflexion after ankle sprain: a systematic review. *J Athl Train*. 2013 Sep-Oct;48(5):696-709. **FREE FULL TEXT** <https://www.ncbi.nlm.nih.gov/pubmed/23914912>
8. Woitzik E, Jacobs C, Wong JJ et al. The effectiveness of exercise on recovery and clinical outcomes of soft tissue injuries of the leg, ankle, and foot: A systematic review by the Ontario Protocol for Traffic Injury Management (OPTiMa) Collaboration. *Man Ther*. 2015 Oct;20(5):633-45. <https://www.ncbi.nlm.nih.gov/pubmed/25892707>
9. Piper S, Shearer HM, Côté P et al. The effectiveness of soft-tissue therapy for the management of musculoskeletal disorders and injuries of the upper and lower extremities: A systematic review by the Ontario Protocol for Traffic Injury management (OPTiMa) collaboration. *Man Ther*. 2016 Feb;21:18-34. <https://www.ncbi.nlm.nih.gov/pubmed/26386912>
10. Rowe V, Hemmings S, Barton C et al. Conservative management of midportion Achilles tendinopathy: a mixed methods study, integrating systematic review and clinical reasoning. *Sports Med*. 2012 Nov 1;42(11):941-67. <https://www.ncbi.nlm.nih.gov/pubmed/23006143>