

Part 2: Evidence and References

[\(Policy Part 1\)](#) Foot Care Interventions: Podiatry, Laser Injections and Surgery

Surgical Threshold Policy

Rational and Evidence

Conservative management has been shown to reduce pain and improve function in foot conditions such as hallux valgus, clubfoot and metatarsalgia.¹⁻¹⁰

Surgery can be effective in correcting foot deformity for hallux valgus¹¹, but it is associated with a high rate of complications, long recovery time, and high rate of recurrence.^{12,13} NICE CKS¹⁴ and UpToDate^{15, 16} recommend surgical referral if patients have debilitating symptoms despite a period of conservative management. Surgery may be effective for other foot conditions¹⁷⁻²⁴, but the evidence comes largely from case series studies and rates of recurrence and complications are unclear.

NICE recommend podiatry for people with type 2 diabetes who have neuropathy, absent pulses or another risk factor (NICE 2014).²⁵ For patients who also have deformity or skin changes or previous ulcer, they recommend more intensive follow up. For low risk people (normal sensation, palpable pulses) with type 2 diabetes, NICE recommend advice for self-care.

The evidence for low level laser therapy (LLLT)²⁶ or high intensity therapy²⁷ is weak but suggests that laser treatment may have some benefit for the treatment of diabetic ulcers. RCTs suggest short-term effectiveness of laser treatment for onychomycosis (fungal nail infection)²⁸⁻³⁰, but not in the longer-term³¹⁻³³ and possible effectiveness for skin conditions such as warts³⁴ and verrucae.³⁵

However, where conditions are only of cosmetic concern, treatments will not be funded. RCTs suggest that laser treatment may improve reported pain from plantar fasciitis in the short-term³⁶⁻⁴⁰ (all trials <3 months), but the long-term effectiveness is unclear and no change in walking speed has been demonstrated.

References

1. Torkki Markus, et al. Surgery vs Orthosis vs Watchful Waiting for Hallux Valgus - A Randomized Controlled Trial [Journal]// JAMA. 2001;285(19):2474-2480. doi:10.1001/jama.285.19.2474.
2. Abdalbary S A. Foot Mobilization and Exercise Program Combined with Toe Separator Improves Outcomes in Women with Moderate Hallux Valgus at 1-Year Follow-up. Journal of the American Podiatric Medical Association 2018; 108(6):478-486.
3. Chadchavalpanichaya N, Prakotmongkol V, Polhan N, Rayothee P, Seng-lad S. Effectiveness of the custom-mold room temperature vulcanizing silicone toe separator on hallux valgus: A prospective, randomized single-blinded controlled trial. Prosthet Orthot Int. 2018; 42(2):163-170.
4. Kim M H, Yi C H, Weon J H, et al. Effect of toe-spread-out exercise on hallux valgus angle and cross-sectional area of abductor hallucis muscle in subjects with hallux valgus. J. Phys. Ther. Sci. 2015; 27:1019-1022.
5. Tehraninasr A, Saeedi H, Forogh B, et al. Effects of insole with toe-separator and night splint on patients with painful hallux valgus: A comparative study. Prosthetics and Orthotics International 2008; 32(1): 79 – 83.
6. Plaass C, Karch A, Koch A, et al. Short term results of dynamic splinting for hallux valgus - A prospective randomized study. Foot Ankle Surg 2019. pii:S1268-7731(18)30246-7.
7. Reina M, Lafuente G, Munuera P V. Effect of custom-made foot orthoses in female hallux valgus after one-year follow up. Prosthetics and Orthotics International 2012; 37(2):113-119.
8. Gray K, Pacey V, Gibbons P, Little D, Burns J. Interventions for congenital talipes equinovarus (clubfoot). Cochrane Database of Systematic Reviews 2014, Issue 8. Art. No.: CD008602.
9. Federer A E, Tainter D M, Adams S B, Schweitzer K M. Conservative Management of Metatarsalgia and Lesser Toe Deformities. Foot Ankle Clin. 2018 Mar;23(1):9-20.
10. Hamid K S, Parekh S G. Clinical Presentation and Management of Hallux Rigidus. Foot Ankle Clin. 2015 Sep;20(3):391-9.
11. Klugarova J, Hood V, Bath-Hextall F, et al. Effectiveness of surgery for adults with hallux valgus deformity: a systematic review. JBI Database System Rev Implement Rep. 2017; 15(6):1671-1710

References cont'd

12. Akman Y E, Yalçınkaya M, Çirci E, et al. Modified Simmonds-Menelaus procedure for moderate or severe adult hallux valgus. *Acta Orthop Traumatol Turc* 2015; 49(6):648–653.
13. Bock P, Kluger R, Kristen KH, et al. The Scarf Osteotomy with Minimally Invasive Lateral Release for Treatment of Hallux Valgus Deformity Intermediate and Long-Term Results. *J Bone Joint Surg Am.* 2015; 97:1238-45.
14. NICE CKS - Bunions [Online]. August 2016. <http://cks.nice.org.uk/bunions>.
15. Ferrari Jill UpToDate - Hallux valgus deformity (bunion) [Online]. 11 May 2015. Accessed August 2016. https://www.uptodate.com/contents/hallux-valgus-deformity-bunion?source=search_result&search=bunions&selectedTitle=1~23
16. Ferrari Jill Bunions [Journal]// *BMJ Clinical Evidence*, 2009, 1112.. [s.l.]: *BMJ Clin Evid*; 2009:1112.
17. Kumara S, Sonanis S V. Lateral column lengthening for adolescent idiopathic pes planovalgus deformity – Systematic review. *Journal of Orthopaedics* 14 (2017) 571–576.
18. Wheeler P, Boyd K, Shipton M. Surgery for Patients with Recalcitrant Plantar Fasciitis Good Results at Short-, Medium-, and Long-term Follow-up. *The Orthopaedic Journal of Sports Medicine* 2014; 2(3), 2325967114527901.
19. Poratt D, Rome K. Surgical Management of Gout in the Foot and Ankle A Systematic Review. *J Am Podiatr Med Assoc.* 2016; 106(3):182-8.
20. Ceccarini P, Ceccarini A, Rinonapoli G, Caraffa A. Correction of Hammer Toe Deformity of Lateral Toes with Subtraction Osteotomy of the Proximal Phalanx Neck. *J Foot Ankle Surg.* 2015 Jul-Aug;54(4):601-6.
21. Rivero-Santana A, Perestelo-Pérez L, Garcés G, et al. Clinical effectiveness and safety of Weil's osteotomy and distal metatarsal mini-invasive osteotomy (DMMO) in the treatment of metatarsalgia: A systematic review. *Foot Ankle Surg.* 2018: S1268-7731(18)30269-8.
22. Valisena S, Petri G J, Ferrero A. Treatment of Morton's neuroma: A systematic review. *Foot and Ankle Surgery* 24 (2018) 271–281.
23. Roukis T S. Clinical outcomes after isolated periarticular osteotomies of the first metatarsal for hallux rigidus: a systematic review. *J Foot Ankle Surg.* 2010; 49(6):553-60.
24. Patel H A, Kalra R, Johnson J L, et al. Is interposition arthroplasty a viable option for treatment of moderate to severe hallux rigidus? A systematic review and meta-analysis. *Foot Ankle Surg* (2018), <https://doi.org/10.1016/j.fas.2018.07.006>
25. National Institute for Health and Care Excellence Clinical Guidance 10: Type 2 diabetes foot problems (2014).
26. Wang H T, Yuan J Q, Zhang B, Dong M L, Mao C, Hu D. Phototherapy for treating foot ulcers in people with diabetes. *Cochrane Database of Systematic Reviews* 2017, Issue 6. Art. No.: CD011979.
27. Salaheldien Alayat M, Mohamed El-Sodany A, Abdelgayed Ebid A, et al. Efficacy of high intensity laser therapy in the management of foot ulcers: a systematic review. *J. Phys. Ther. Sci.* 30: 1341–1345, 2018.
28. El-Tatawy R A, Abd El-Naby N M, El-Hawary E E & Talaat R A Z. A comparative clinical and mycological study of Nd-YAG laser versus topical terbinafine in the treatment of onychomycosis. *Journal of Dermatological Treatment*, 26:5, 461-464.
29. Kim T I, Shin M K, Jeong K H, et al. A randomised comparative study of 1064 nm Neodymium-doped yttrium aluminium garnet (Nd:YAG) laser and topical antifungal treatment of onychomycosis. *Mycoses* 2016; 59:803–810.
30. Park K Y, Suh J H, Kim B J, et al. Randomized Clinical Trial to Evaluate the Efficacy and Safety of Combination Therapy with Short-Pulsed 1,064-nm Neodymium-Doped Yttrium Aluminium Garnet Laser and Amorolfine Nail Lacquer for Onychomycosis. *Ann Dermatol* 2017; 29(6):699-705.
31. Hollmig S T, Rahman Z, Henderson M T, et al. Lack of efficacy with 1064-nm neodymium:yttrium-aluminum-garnet laser for the treatment of onychomycosis: a randomized, controlled trial. *J Am Acad Dermatol.* 2014 May;70(5):911-7.
32. Karsai S, Jager M, Oesterhelt A, et al. Treating onychomycosis with the short-pulsed 1064-nm-Nd: YAG laser: results of a prospective randomized controlled trial. *JEADV* 2017; 31:175–180.
33. Nijenhuis-Rosien L, Kleefstra N, van Dijk P R, et al. Laser therapy for onychomycosis in patients with diabetes at risk for foot ulcers: A randomised, quadruple-blind, sham controlled trial (LASER-1). *J Eur Acad Dermatol Venereol.* 2019 Mar 28. doi: 10.1111/jdv.15601.
34. Kimura U, Takeuchi K, Kinoshita A, Takamori K, Suga Y. Long-pulsed 1064-nm neodymium:yttrium–aluminum–garnet laser treatment for refractory warts on hands and feet. *Journal of Dermatology* 2014; 41: 252–257.
35. Smith E A, Patel S B, Whiteley M S. Evaluating the success of Nd: YAG laser ablation in the treatment of recalcitrant verruca plantaris and a cautionary note about local anaesthesia on the plantar aspect of the foot. *JEADV* 2015, 29, 463–467
36. Macias D M, Coughlin M J, Zang K. Low-Level Laser Therapy at 635 nm for Treatment of Chronic Plantar Fasciitis: A Placebo-Controlled, Randomized Study. *J Foot Ankle Surg.* 2015; 54(5):768-72.

References cont'd

37. Ordahan B, Karahan A Y, Kaydok E. The effect of high-intensity versus low-level laser therapy in the management of plantar fasciitis: a randomized clinical trial. *Lasers Med Sci.* 2018 Aug;33(6):1363-1369.
38. Takla M K N, Rezk S S R. Clinical effectiveness of multi-wavelength photobiomodulation therapy as an adjunct to extracorporeal shock wave therapy in the management of plantar fasciitis: a randomized controlled trial. *Lasers Med Sci.* 2019 Apr;34(3):583-593.
39. Ulusoy A, Cerrahoglu L, Orguc S. Magnetic Resonance Imaging and Clinical Outcomes of Laser Therapy, Ultrasound Therapy, and Extracorporeal Shock Wave Therapy for Treatment of Plantar Fasciitis: A Randomized Controlled Trial. *J Foot Ankle Surg.* 2017 Jul - Aug;56(4):762-767.
40. Cinar E, Saxena S, Uygur F. Low-level laser therapy in the management of plantar fasciitis: a randomized controlled trial. *Lasers Med Sci.* 2018 Jul;33(5):949-958.

Policy effective from:	Policy ratified by CCG GG 3 November 2020 Policy approved by IPAC 27 October 2020 Policy approved by CPF 8 September 2020 November 2020
Policy to be reviewed:	November 2022
Reference:	<i>onedrive\CPF Pols & Working Area\Surgical Threshold Pols\CCG Policies\Foot Care\Agreed\</i> <i>FOOT CARE NOV 2020 V1 – EVIDNCE PART 2</i>