



**TITLE:** Total Contact Casts for Diabetic Foot Ulcers: Cost-Effectiveness

**DATE:** 24 June 2013

## **RESEARCH QUESTION**

What is the evidence for the cost-effectiveness of total contact casts or instant total contact casts for the treatment of diabetic foot ulcers in adults?

## **KEY MESSAGE**

Two randomized controlled trials, one non-randomized study, and one economic evaluation were identified regarding the cost-effectiveness of total contact casts or instant total contact casts for the treatment of diabetic foot ulcers in adults.

## **METHODS**

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2013, Issue 5), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2003 and June 10, 2013. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

## **RESULTS**

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by economic evaluations.

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Two randomized controlled trials (RCTs), one non-randomized study, and one economic evaluation regarding the cost-effectiveness of total contact casts or instant total contact casts for the treatment of diabetic foot ulcers in adults were identified. No health technology assessments, systematic reviews, or meta-analyses were identified regarding the cost-effectiveness of total contact casts for this indication. Additional references of potential interest are provided in the appendix.

## **OVERALL SUMMARY OF FINDINGS**

Two RCTs<sup>1,2</sup> compared total contact casts (TCC) with instant total contact casts (iTCC). No significant difference was found in the two types of casts for healing rates, healing time, or adverse events. The iTCC was found to be significantly less expensive than TCC in one trial<sup>1</sup> and associated with overall lower cost in the second trial.<sup>2</sup>

One non-randomized study<sup>3</sup> compared a modified sandal, a modified plaster of Paris cast, and a Scotchcast boot. There was no significant difference amongst the three devices for median healing time or cumulative wound survival at 12 weeks. The modified sandal was the more cost-effective treatment.

One economic evaluation<sup>4</sup> explored a model for the offloading of diabetic foot ulcers. For the patients who had received treatment with TCC (6% of all patients in the registry), the average total cost of treatment was half the cost of those patients who did not receive TCC.

## REFERENCES SUMMARIZED

### Health Technology Assessments

No literature identified.

### Systematic Reviews and Meta-analyses

No literature identified.

### Randomized Controlled Trials

1. Piaggese A, Macchiarini S, Rizzo L, Palumbo F, Tedeschi A, Nobili LA, et al. An off-the-shelf instant contact casting device for the management of diabetic foot ulcers: a randomized prospective trial versus traditional fiberglass cast. *Diabetes Care*. 2007 Mar;30(3):586-90.  
[PubMed: PM17327325](#)
2. Katz IA, Harlan A, Miranda-Palma B, Prieto-Sanchez L, Armstrong DG, Bowker JH, et al. A randomized trial of two irremovable off-loading devices in the management of plantar neuropathic diabetic foot ulcers. *Diabetes Care*. 2005 Mar;28(3):555-9.  
[PubMed: PM15735187](#)

### Non-Randomized Studies

3. Miyan Z, Ahmed J, Zaidi SI, Ahmedani MY, Fawwad A, Basit A. Use of locally made off-loading techniques for diabetic plantar foot ulcer in Karachi, Pakistan. *Int Wound J*. 2013 Feb 1.  
[PubMed: PM23369009](#)

### Economic Evaluations

4. Fife CE, Carter MJ, Walker D. Why is it so hard to do the right thing in wound care? *Wound Repair Regen*. 2010 Mar;18(2):154-8.  
[PubMed: PM20163568](#)

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**APPENDIX – FURTHER INFORMATION:**

**Systematic Reviews – Cost-effectiveness not addressed**

5. Lewis J, Lipp A. Pressure-relieving interventions for treating diabetic foot ulcers. *Cochrane Database Syst Rev.* 2013;1:CD002302.  
[PubMed: PM23440787](#)
6. Bus SA, Valk GD, van Deursen RW, Armstrong DG, Caravaggi C, Hlavacek P, et al. The effectiveness of footwear and offloading interventions to prevent and heal foot ulcers and reduce plantar pressure in diabetes: a systematic review. *Diabetes Metab Res Rev.* 2008 May;24 Suppl 1:S162-S180.  
[PubMed: PM18442178](#)

**Review Articles**

7. Desrochers C. Total contact casting for treatment of the diabetic foot in Ste. Rose du Lac [Internet]. Winnipeg (MB): University of Manitoba; 2011[cited 2013 Jun 12]. Available from: [http://umanitoba.ca/faculties/medicine/units/family\\_medicine/media/SteRose.Desrochers.2011.pdf](http://umanitoba.ca/faculties/medicine/units/family_medicine/media/SteRose.Desrochers.2011.pdf)

**Additional References**

8. Dotson P. Efficacious treatment of diabetic foot ulceration with total contact casting: coding for procedure and product. *Today's Wound Clinic* [Internet]. 2012 Nov/Dec [cited 2013 Jun 12]:17-22. Available from: [http://www.todayswoundclinic.com/files/TWC\\_NovDec2012\\_Dotson.pdf](http://www.todayswoundclinic.com/files/TWC_NovDec2012_Dotson.pdf)
9. Kari SV. The economical way to off-load diabetic foot ulcers [Mandakini off-loading device]. *Indian J Surg* [Internet]. 2010 Apr [cited 2013 Jun 12];72(2):133-4. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3452512>  
[PubMed: PM23133224](#)