

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Natural Sheepskins for Prevention or Treatment of Pressure Ulcers: Clinical Effectiveness. Cost- Effectiveness and Guidelines

Service Line: Rapid Response Service
Version: 1.0
Publication Date: December 8, 2017
Report Length: 8 Pages

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Cite As: Natural sheepskins for prevention or treatment of pressure ulcers: clinical effectiveness, cost-effectiveness, and guidelines. Ottawa: CADTH; 2017 Dec. (CADTH rapid response report: summary of abstracts).

Acknowledgments:

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Research Questions

1. What is the clinical effectiveness of natural sheepskins for the prevention or treatment of pressure ulcers in adults with impaired mobility?
2. What is the cost-effectiveness of natural sheepskins for the prevention or treatment of pressure ulcers in adults with impaired mobility?
3. What are the evidence-based guidelines regarding the use of natural sheepskins for the treatment of pressure ulcers in adults with impaired mobility?

Key Findings

Four systematic reviews and three evidence-based guidelines were identified regarding natural sheepskins for the prevention or treatment of pressure ulcers in adults with impaired mobility.

Methods

A limited literature search was conducted on key resources PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases and a focused Internet search. No methodological filters were applied to limit retrieval by publication type. The search was limited to English language documents published between January 1, 2012 and November 27, 2017. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Adults with impaired mobility in long-term care facilities
Intervention	Natural sheepskins (e.g., Australian sheepskins)
Comparators	Q1-2: Other treatment protocols for treatment of pressure ulcers (standard of wound care); No intervention Q2: No comparator
Outcomes	Q1: Clinical effectiveness (e.g., improved healing, reduction in pressure ulcers), harms Q2: Cost-effectiveness Q3: Guidelines
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations, evidence-based guidelines

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 randomized controlled trials, non-randomized studies, economic evaluations, and evidence-based guidelines.

Four systematic reviews and three evidence-based guidelines were identified regarding natural sheepskins for the prevention or treatment of pressure ulcers in adults with impaired mobility. No relevant health technology assessments, randomized controlled trials, non-randomized studies, or economic analyses were identified.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

Three systematic reviews (SRs)¹⁻³ were identified regarding the prevention of pressure ulcers and one SR⁴ was identified regarding treatment. Low quality evidence was identified regarding the use of sheepskins for pressure ulcers.¹ Fewer pressure ulcers were observed with the use of sheepskin²⁻³ and the only reported harm was heat discomfort.³

The characteristics and results of the reviews are summarized in Table 2.

Table 2: Summary of Included Systematic Reviews

First Author (Year)	Interventions	Number of Included Studies	Results and Authors' Conclusions
Pressure Ulcer Prevention			
Lozano-Montoya (2016)¹	<ul style="list-style-type: none"> • Support surfaces (including sheepskin) • Repositioning • Nutrition interventions 	110 systematic reviews <ul style="list-style-type: none"> • 65 primary studies 	The authors reported there was low quality evidence to support the use of Australian sheepskin versus traditional mattresses
McInnes (2015)²	Any support surface for pressure ulcer prevention	59 primary studies <ul style="list-style-type: none"> • 3 trials of Australian sheepskin 	Results of a meta-analysis showed a reduction in pressure ulcer incidence when Australia sheepskin was used
Chou (2013)³	Any preventive interventions to decrease incidence or severity of pressure ulcers	120 primary studies	<ul style="list-style-type: none"> • The use of Australian sheepskin was associated with a lower incidence of pressure ulcers than standard mattresses alone • Heat discomfort was the only reported harm associated with the use of sheepskin
Pressure Ulcer Treatment			
McInnes (2013)⁴	Pressure relieving support surfaces in the treatment of pressure injury	18 primary studies <ul style="list-style-type: none"> • 1 trial of sheepskin 	<ul style="list-style-type: none"> • The authors determined the one identified trial was at high risk of bias • Sheepskin used under the legs significantly reduced redness

Three evidence-based guidelines were identified.⁵⁻⁷ The National Pressure Ulcer Advisory Panel⁵ and the Winnipeg Regional Health Authority⁷ recommend against the use of synthetic sheepskin pads for heel elevation. These guidelines also recommend that natural sheepskins may be useful for the prevention of pressure ulcers.^{5,7}

The Pan Pacific Clinical Practice Guideline for the Prevention and Management of Pressure Injury⁶ recommends that medical grade sheepskin should only be considered as an addition to traditional pressure ulcer management or when low or alternating pressure support surfaces are unavailable or not tolerated by the patient.

References Summarized

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

1. Lozano-Montoya I, Velez-Diaz-Pallares M, Abraha I, Cherubini A, Soiza RL, O'Mahony D, et al. Nonpharmacologic interventions to prevent pressure ulcers in older patients: an overview of systematic reviews (The Software ENgine for the Assessment and optimization of drug and non-drug Therapy in Older peRsons [SENATOR] Definition of Optimal Evidence-Based Non-drug Therapies in Older People [ONTOP] Series). J Am Med Dir Assoc. 2016 Apr 1;17(4):370-10.
[PubMed: PM26857298](#)
2. McInnes E, Jammali-Blasi A, Bell-Syer SE, Dumville JC, Middleton V, Cullum N. Support surfaces for pressure ulcer prevention. Cochrane Database Syst Rev. 2015 Sep 3;(9):CD001735.
[PubMed: PM26333288](#)
3. Oregon Evidence-based Practice Center, Chou R, Dana T, Bougatsos C, Blazina I, Starmer A, Reitel K, Buckley D. Pressure ulcer risk assessment and prevention: comparative effectiveness [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2013 May [cited 2017 Dec 8]. (Comparative Effectiveness Review; no. 87). Available from:
https://effectivehealthcare.ahrq.gov/sites/default/files/pdf/pressure-ulcer-prevention_research.pdf
4. McInnes E, Jammali-Blasi A, Cullum N, Bell-Syer S, Dumville J. Support surfaces for treating pressure injury: a Cochrane systematic review. Int J Nurs Stud. 2013 Mar;50(3):419-30.
[PubMed: PM22698733](#)

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

No literature identified.

Economic Evaluations

No literature identified.

Guidelines and Recommendations

5. National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel. Pressure ulcer prevention recommendations. In: Prevention and treatment of pressure ulcers: clinical practice guideline. Washington (DC): National Pressure Ulcer Advisory Panel; 2014.
Summary available from: <http://www.npuap.org/resources/educational-and-clinical-resources/prevention-and-treatment-of-pressure-ulcers-clinical-practice-guideline/>

6. Pan Pacific clinical practice guideline for the prevention and management of pressure injury [Internet]. Cambridge Media Osborne Park (AU): Australian Wound Management Association Inc.; 2012. [cited 2017 Dec 8]. Available from: http://www.awma.com.au/publications/2012_AWMA_Pan_Pacific_Guidelines.pdf
See: Recommendation 14, page 14 and 6.4.5 Sheepskins, page 47
7. Pressure ulcer prevention and treatment: clinical practice guideline [Internet]. Winnipeg (MB): Winnipeg Regional Health Authority; 2012. [cited 2017 Dec 8]. Available from: <http://www.wrha.mb.ca/extranet/eipt/files/EIPT-013-004.pdf>
See: Use of other support surfaces in pressure ulcer prevention, page 39

Appendix — Further Information

Previous CADTH Reports

8. Natural sheepskins for the treatment of pressure ulcers: clinical effectiveness, cost-effectiveness, and guidelines [Internet]. Ottawa: CADTH; 2014. [cited 2017 Dec 8]. Available from: <https://www.cadth.ca/sites/default/files/pdf/htis/dec-2014/RB0728%20Australian%20Sheepskin%20for%20Ulcers%20Update%20Final.pdf>
9. Australian sheepskins for the management of pressure ulcers: a review of the clinical-effectiveness, cost-effectiveness, and guidelines [Internet]. Ottawa: CADTH; 2009. [cited 2017 Dec 8]. Available from: https://www.cadth.ca/media/pdf/L0112_Australian_SheepskinUlcers.pdf

Systematic Reviews – Population Not Specified in Abstract

10. Colin D, Rochet JM, Ribinik P, Barrois B, Passadori Y, Michel JM. What is the best support surface in prevention and treatment, as of 2012, for a patient at risk and/or suffering from pressure ulcer sore? Developing French guidelines for clinical practice. *Ann Phys Rehabil Med*. 2012 Oct;55(7):466-81. [PubMed: PM23063356](#)

Economic Analyses – Sheepskin Not Specified in Abstract

11. Demarré L, Van Lancker A, Van Hecke A, Verhaeghe S, Grypdonck M, Lemey J, et al. The cost of prevention and treatment of pressure ulcers: A systematic review. *Int J Nurs Stud*; 2015. [PubMed: PM26231383](#)
12. Ackroyd-Stolarz S. Improving the prevention of pressure ulcers as a way to reduce health care expenditures [Internet]. *CMAJ*. 2014. [cited 2017 Dec 8]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4081234/>

Qualitative Studies

13. van Rijswijk L, Beitz JM. Pressure ulcer prevention algorithm content validation: a mixed-methods, quantitative study. *Ostomy Wound Manage*. 2015 Apr;61(4):48-57. [PubMed: PM25853377](#)

Additional References

14. Zhou J, Xu B, Tang Q, Chen W. Application of the sheepskin mattress in clinical care for pressure relieving: a quantitative experimental evaluation. *Appl Nurs Res*. 2014 Feb;27(1):47-52. [PubMed: PM24411476](#)