



Reducing the risk of seating acquired pressure ulcers: An update on the society of tissue viability clinical guide

1. Preface

Colleagues from the Society of Tissue Viability have drafted the latest version of a seating guidelines, titled 'Understanding the association between pressure ulcers and sitting in adults: What does it mean for all of us?' The Seating guidelines for people, carers, and health & social care professionals. This third iteration of the seating guidelines aims to deliver a practical guide, using the most up to date research and evidence-based practice on pressure ulcer prevention and management. This guide can be applied to those who remain seated for extended periods of time across health and social care settings. The guidelines will be published later this year and we welcome engagement from the Tissue Viability community who will support its application in practice.

2. Seating acquired pressure ulcers

The estimated costs of managing pressure ulcers varies across different countries, with recently cited annual expenditures of approximately \$26.8 billion in the US [1] and £531 million in the UK [2]. Remaining seated for extended periods of time increases the risk of pressure ulcers development over the buttocks, as the soft tissue in this area is squashed between two surfaces: the seat and the bones of the pelvis [3]. This leads to soft tissue distortion and deformity which can impair blood perfusion and lymphatic function [4]. How long this destruction to the skin takes can often be irrelevant as some pressure ulcers develop quickly and others take longer [5]. The process is dependent on other factors such as health status, disability, ability to change position, and maintaining an upright-seated position without slumping or sliding. Someone who is sitting upright typically shows three main sites of higher intensity pressure: under the two ischial tuberosities and the sacral bones, with the ischial tuberosities taking the majority of the load [6]. There are approximately 131,800,000 wheelchair users worldwide who are not ambulant and are at increased risk for the development of a pressure ulcer [7]. Also at risk of ulceration are those who have limited mobility and sit in static chairs for extended periods of time, for example elderly and frail populations: the number of people in this at-risk group is difficult to estimate but is likely to be very large.

3. Clinical priorities

As part of the guidelines the editorial team have surveyed the members of the Society of Tissue Viability and associated groups to understand the priorities for the prevention of seating acquired pressure

ulcers. The survey simply asked respondents to rank their priorities for guidelines to support clinical practice, where patients and their carers need education and support to prevent pressure ulcers. The survey revealed the following priorities:

- Posture/Support/Function when sat on the cushion/in the chair
- Patient Comfort
- Cost
- Evidence base from the manufacturer
- Ease of Transfers/Ease of use
- Professional opinion of the cushion/chair
- Maintenance of the cushion/chair
- Material/Durability
- Aesthetics/Appearance
- Size/Weight of Cushion

The full results of this survey will be written for publication in the *Journal of Tissue Viability*, to share clinical priorities in this field.

4. Latest seating guidelines for people, carers and health & social care professionals

The team of authors have worked closely with clinical communities as well as patient representatives to draft the latest seating guidelines. These are aimed at providing a practical guide for chair users, carers and health and care professionals. It will provide an update on the latest evidence for seating pressure ulcer risk, skin assessment and interventions. The guide will also detail information regarding cushion selection, wheelchair settings (tilt, recline, leg rests) and relevant standards which can be used to benchmark seating devices.

It is of note that there are a number of areas which require further research. Indeed, there is no current high-quality evidence that supports or refutes the role of pressure redistributing static chairs for preventing or managing pressure ulcers [8]. Thus more work is required to engage those who deliver care to those who remain seated for extended periods of time, including health and social care professionals who assess and prescribe pressure redistributing static chairs [9].

References

- [1] Padula WV, Delarmente BA. The national cost of hospital-acquired pressure injuries in the United States. *Int Wound J* 2019;16(3):634–40.
- [2] Guest JF, Fuller GW, Vowden P, Vowden KR. Cohort study evaluating pressure ulcer management in clinical practice in the UK following initial presentation in the community: costs and outcomes. *BMJ Open* 2018;8(7):e021769.

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- [3] Wounds UK Expert Working Group. International review. Pressure ulcer prevention: pressure, shear, friction and microclimate in context. A consensus document. London: Wounds International; 2010.
- [4] Slomka N, Gefen A. Relationship between strain levels and permeability of the plasma membrane in statically stretched myoblasts. *Ann Biomed Eng* 2012;40(3): 606–18.
- [5] Gefen A. How much time does it take to get a pressure ulcer? Integrated evidence from human, animal, and in vitro studies. *Ostomy/Wound Manag* 2008;54(10): 26–8. 30–35.
- [6] Reenalda J, Van Geffen P, Nederhand M, Jannink M, Ijzerman M, Rietman H. Analysis of healthy sitting behavior: interface pressure distribution and subcutaneous tissue oxygenation. *J Rehabil Res Dev* 2009;46(5):577–86.
- [7] Wheelchair Foundation. Wheelchair needs in the world. www.wheelchairfoundation.org/fth/analysis-of-wheelchair-need; 2016.
- [8] Stephens M, Bartley C, Dumville JC. Pressure redistributing static chairs for preventing pressure ulcers. *Cochrane Database Syst Rev* 2022;(2):CD013644. <https://doi.org/10.1002/14651858.CD013644.pub2>. [Accessed 1 October 2024].
- [9] Wood J, Brown B, Bartley A, Margarida Batista Custódio Cavaco A, Roberts AP, Santon K, Coo S. Reducing pressure ulcers across multiple care settings using a collaborative approach. *BMJ Open Qual* 2019;8(3):e000409.

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