



# A clinical evaluation of a specifically designed alternating support surface device for achieving the 30 degree tilt in older individuals at risk of pressure ulcer development

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## Introduction

Pressure ulcers are a common and debilitating concern arising due to unrelieved pressure and shearing forces. Therefore, pressure ulcers are largely seen in those with activity and mobility problems<sup>1</sup>. Although any one of any age could develop a pressure ulcer should their condition be sufficiently poor, pressure ulcers are more common in the older population. Indeed, it is this population that shows the greatest propensity for mobility and activity problems<sup>1</sup>. For those who cannot reposition themselves, they will require assistance in order to redistribute pressure and shear<sup>2</sup>. The EPUAP/NPUAP guidelines state that repositioning should be undertaken using the 30 degree tilt<sup>2</sup>. However, achieving planned goals in repositioning can be challenging in a climate of reduced staffing combined with increased demand due to poor nurse/patient ratios<sup>1</sup>. Advances in technology have seen a change in the type of equipment available for pressure ulcer prevention. One such advancement is a pressure redistribution alternating support surface with an additional modality which moves the patient into the 30 degree tilt position. This clinical evaluation aimed to determine patient and staff acceptance of this device specifically among older individuals at risk of pressure ulcer development.

## Methods

This clinical evaluation took place in a Health Service Executive long stay nursing home setting in Ireland, from April – May 2014. Approval to undertake the evaluation was granted by the hospital's clinical governance team. Participants were included if they were at risk of pressure ulcer development, using the activity and mobility components of the Braden scale; consented to be nursed on the positioning support surface and had no medical condition that would preclude the use of the 30 degree tilt. The patient was nursed on the device and repositioned every 3 hours; follow up was for a period of 2 weeks. Daily skin assessments were undertaken by the tissue viability nurse. The primary outcome of interest was the ability of the device to maintain the individual in a 30 degree tilt. The secondary outcomes of interest were: patient comfort, patient acceptability, staff acceptability and pressure ulcer development

## Results

Twenty patients participated in the evaluation, 11 men and 9 women with a mean age 85.3 years (SD 9.9 years). Of the participants, 50% were completely immobile, whilst 50% had very limited activity;

furthermore, 30% were bedfast, whereas, 70% were chairfast. Scores for all outcomes were recorded between 1-10, with 1 being the worst score and 10 being the best. The following are the results:

1. Ability of the device to maintain the individual in a 30 degree tilt: Mean 8.5 (mode 9; SD 1.5; min 5, max 10)
2. Patient comfort: Mean 8.10 (mode 9, SD 1.4; min 5, max 10)
3. Patient acceptability: Mean 8.56 (mode 10. SD 1.4; min 5, max 10)
4. Staff acceptability: Mean 8.15 (mode 8. SD 1.3; min 5, max 10)

Other comments received included, two patients preferred their original bed, and, in three patients with contractures, it was difficult to centre them in the bed. Over the evaluation period no patient developed a pressure ulcer of grade 2-4.

## Discussion

Overall, the device maintained the individual in the 30 degree tilt. Furthermore, the device was comfortable for the individual and was acceptable to both patients and staff. Bearing in mind the importance of repositioning using the 30 degree tilt as a component of pressure ulcer prevention, this device has potential to contribute to achieving goals of care. However, for those with contractures the mattress may not be suitable due to difficulties in centering the individual in the bed.

## Clinical relevance

This device positioned individuals at risk of pressure ulcer development into the 30 degree tilt in a safe and acceptable manner. The indication for use of the mattress is specifically for those who are immobile and thus cannot reposition themselves independently.

## Acknowledgements

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## Conflict of Interest

The repositioning devices were supplied by Meditec Medical, Ireland.

## References

1. MOORE, Z., COWMAN, S. & CONROY, R. M. 2011. A randomised controlled clinical trial of repositioning, using the 30° tilt, for the prevention of pressure ulcers. *J Clin Nurs*, 20, 2633-44.
2. EUROPEAN PRESSURE ULCER ADVISORY PANEL & NATIONAL PRESSURE ULCER ADVISORY PANEL 2009. Prevention and treatment of pressure ulcers: quick reference guide. Washington DC: National Pressure Ulcer Advisory Panel.