

A POTENTIAL NEW SOLUTION FOR POSTURAL MANAGEMENT OF BEDBOUND PATIENTS?

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PostureCare.



Patient positioning and postural care should be used to promote optimal recovery amongst bed-bound patients^[1-2]. Benefits of correct positioning may include improved quality and volume of sleep, maintenance of body shape and form, the reduction or prevention of pressure ulcers and respiratory problems^[3]. The development of an effective postural correction sleep system that both reduces pressure and improves patient positioning has huge potential for both patients and health care services^[3]. A new postural correction sleep system (Hugga®) aims to provide effective postural support during bed rest, that is easy to apply for the carer without compromising patient care. The system aims to reduce the risk of developing body shape distortions due to limited mobility amongst numerous patient groups. This study aimed to measure contact pressures in side and supine lying with and without a postural correction sleep system amongst healthy participants.

METHOD

- **Participants:** Fifteen participants, age: 18-50 years, were screened using Red Flags Screening Form^[4].
- **Equipment:** A Conformat (Tekscan, USA) system (Figure 2) was used to analyse contact pressure under the shoulder/cervical/upper thoracic region and hip/buttocks. Contact pressure was recorded for ten minutes with/without the postural correction system (Hugga®, PostureCare, UK), in a supine and side lying semi-foetal position (Figure 1).
- **Outcome Measures:** Peak pressure at the hip and shoulder (KPa), Numerical Rating Scale (NRS) (/10) for perceptions of comfort and restrictiveness
- **Statistical Analysis:** A repeated measures ANOVA with post-hoc pairwise comparisons was performed. For non-parametric data (NRS), Friedman tests were performed (significance level $\alpha = 0.05$).

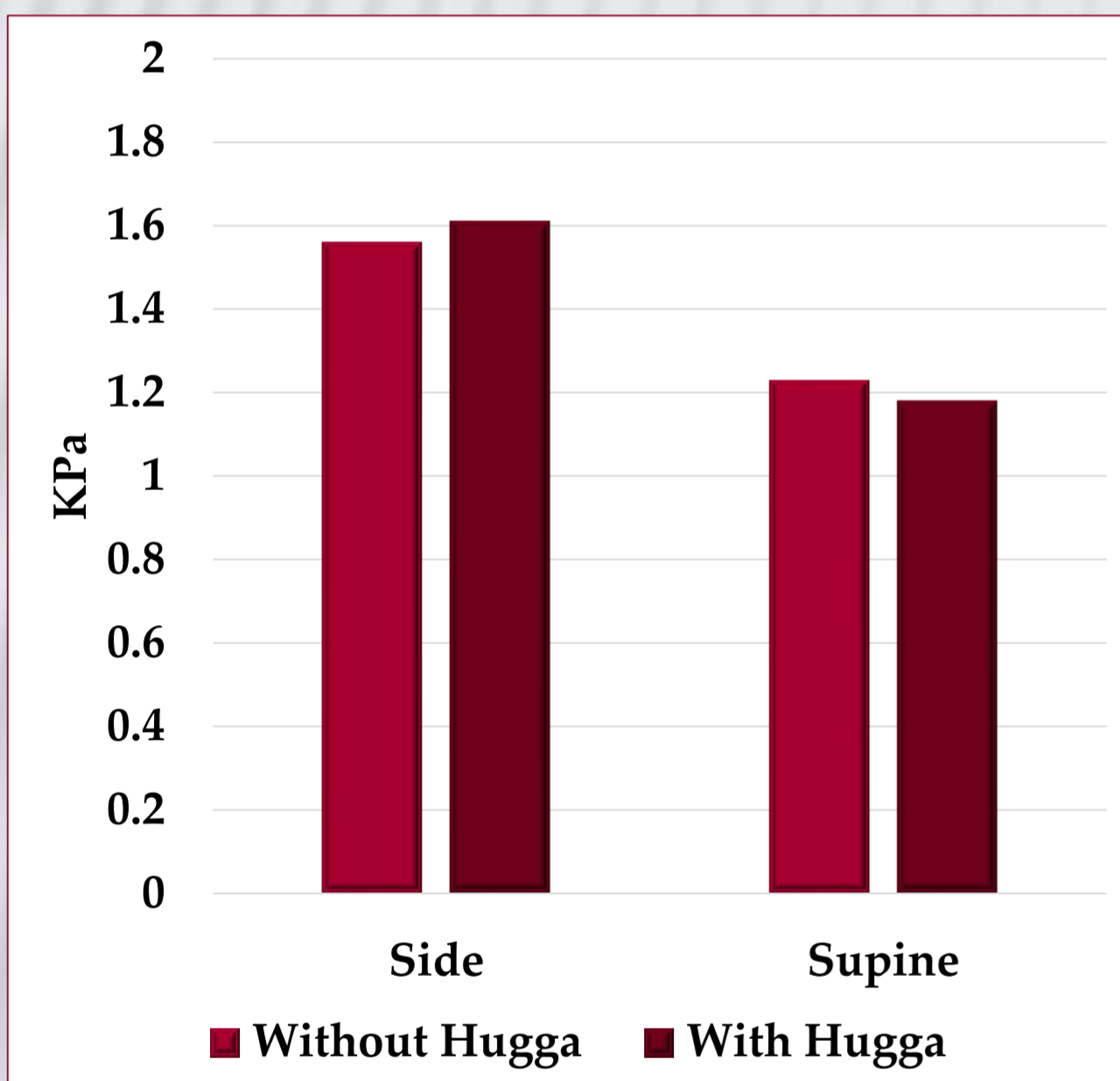


Figure 1: The postural correction sleep system being used in a side lying and supine position (Hugga®)

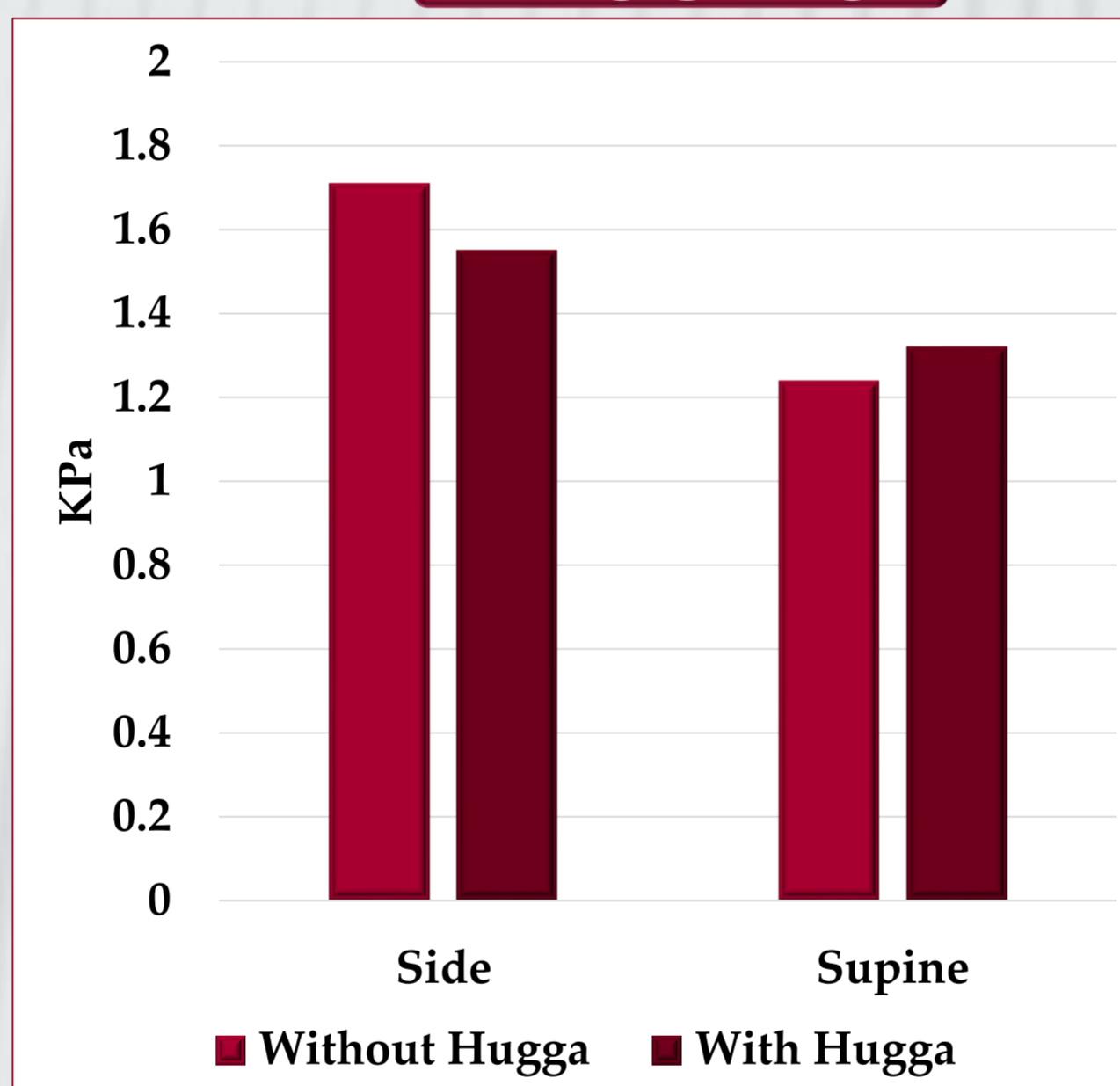


Figure 2: Conformat pressure mat system (Tekscan, USA)

RESULTS



Graph 1: Peak pressures at the Shoulder for each condition



Graph 2: Peak Pressures at the Hip for each mattress

- In side-lying, peak contact pressures at the hip significantly reduced by 9.3% with the intervention ($p=0.000$).
- In supine lying peak contact pressure at the shoulder significantly reduced by 4% with the intervention ($p=0.000$).
- In supine lying peak contact pressure at the hip significantly increased by 6% with the intervention® ($p=0.034$).
- NRS scores for perceived restrictiveness significantly increased with the intervention
- NRS scores for perceived comfort did not significantly change with postural correction system ($p>0.05$).

Table 1: Mean NRS scores (SD) for comfort and restrictiveness. * indicates statistical significance

		Comfort (/10)	Restrictiveness (/10)
Side Lying	Without Hugga®	7.67 (1.7)	0.60 (1.3)
	With Hugga®	7.93 (1.5)	3.13 (2.3)*
Supine Lying	Without Hugga®	8.33 (1.1)	0.53 (1.4)
	With Hugga®	8.07 (1.5)	3.47 (2.1)*

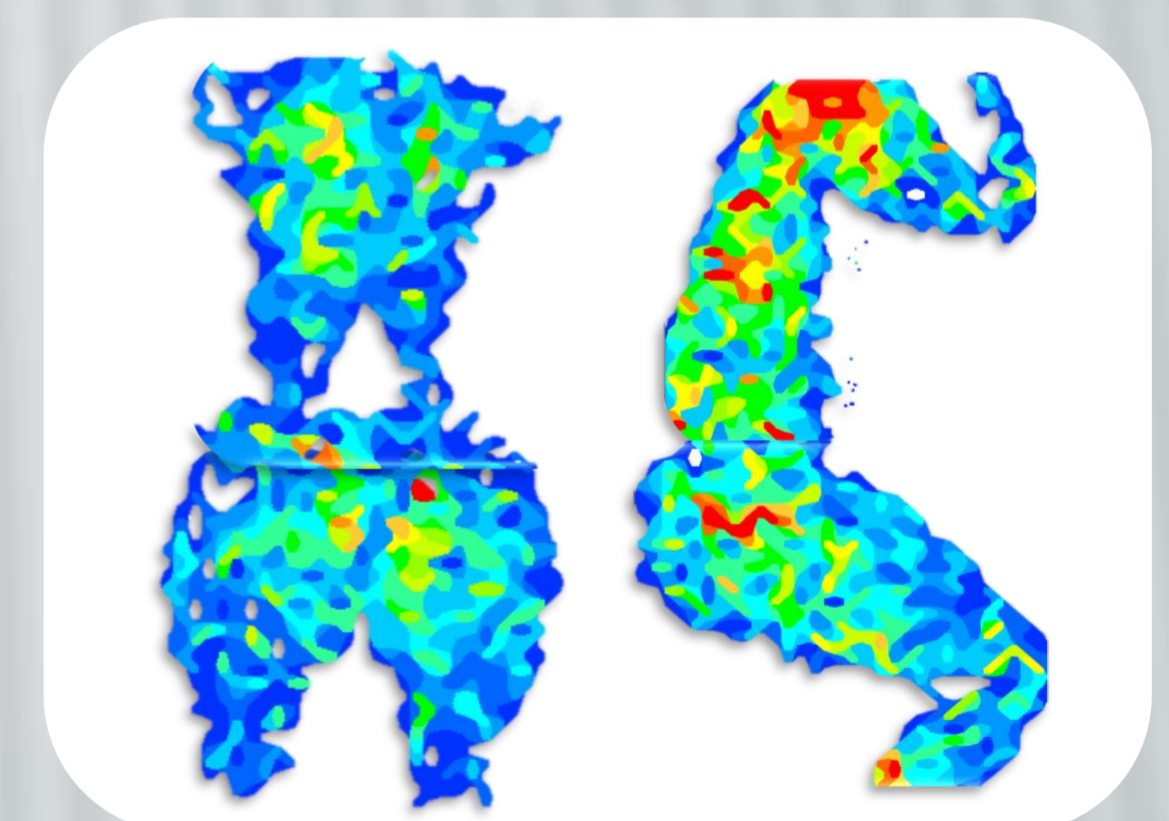


Figure 3: pressure map of supine and side lying positions

CONCLUSION

- The postural correction system held users in a specified posture without compromising comfort in side and supine lying.
- Reduced pressure in supine and side lying may reduce risk of pressure ulcer formation within patient populations around high pressure areas.
- A postural corrective system may be suitable for use within a community and healthcare setting, and may assist in the maintenance of body shape and form.
- It may reduce economic burden of pressure ulcers and health implications associated with poor patient positioning and enhance patient care.
- Potentially reduce risks amongst care givers associated with the manual handling of patient repositioning.
- Further work is now required to investigate the effectiveness of the postural correction system amongst bed-bound patients in preventing secondary complications such as pressure sores and body deformities.

REFERENCES

[1] ISWP (2016). National Clinical Guideline for Stroke. 5th edn. London: Royal College of Physicians [2] Scottish Intercollegiate Guidelines Network (2010) [3] Hill and Goldsmith. (2010) Biomechanics and prevention of body shape distortion. 15(2) pp15-32. [4] Greenhalgh, S., et al., (2010) Red Flags II: A guide to solving serious pathology of the spine. London, Churchill Livingstone.1