



**The use of a new low-unit cost support system (Repose™) for patients with fractured neck of femur: an RCT. Challenging the paradigm.**  
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**Introduction**

Pressure sores are a relatively common problem, especially in elderly patients, and represent an area of high-cost for most health providers.

**Aims**

This study was designed to determine the effectiveness of a new low unit-cost support system (see Fig.1) in very high risk patients.

**Method**

*Design:* A prospective, single centre, randomised controlled trial testing the Repose™ mattress and cushion (Frontier Therapeutics, Blackwood, S.Wales) against the Nimbus II™ mattress plus Alpha TranCell™ cushion both in dynamic mode (Huntleigh Healthcare, Luton, UK).

*Sample:* 80 patients with confirmed fractured neck of femur (by x-ray), identified as at very high risk of tissue damage (Medley score >25), and over the age of 60 years.

Figure 1: Repose Support System



*Procedure:*

A concealed, computer-generated list was used to randomise eligible, consenting patients on an individual basis to one of the two support systems following confirmation of diagnosis. All patients were treated in hospital with standard best practice as appropriate to their condition, including regularly repositioning.

*Skin Assessments*

Skin assessments [0=normal skin to 4=superficial (sub)cutaneous necrosis] were completed over 17 sites, on admission, pre-operatively, and 7 days post-operatively (primary end point), with a follow-up at 14 days post-operatively.

**Sample Characteristics**

There were no significant differences between the groups at baseline on a range of variables, some of which are presented below, including type of operation and mean operation time.

		Repose	Nimbus
Sex	Male	11	5
	Female	29	35
Age yrs	Mean	83.5	80.9
	Range	67-96	64-96
Weight Kgs	Mean(SD)	60.9 (7.9)	56.0 (8.8)
Medley	Mean(SD)	27.6 (2.4)	28.3 (2.8)

**Results**

There were no significant differences between the groups in terms of skin condition at any of the time points.

	Condition of skin				
	0	1	2	3	
Admission	Repose	26	12	1	1
	Nimbus	27	11	0	2
Pre-op	Repose	29	6	1	0
	Nimbus	29	4	1	3
7-days	Repose	26	3	2	1
	Nimbus	26	4	1	0
14-days	Repose	19	2	0	3
	Nimbus	22	2	1	1

Data are missing for 17 patients by day 7, due to death (Repose 3, Nimbus 2), clinical deterioration (Repose 3), Discomfort (Repose 2, Nimbus 5), Data errors (2). By day 14, 13 patients had been discharged to other facilities.

**Conclusion**

This low-pressure overlay appears to offer a similar level of benefit in preventing the development of pressure sores in this high-risk group, and merits further investigation due to the potential for major cost reduction.