

# THE EFFECT OF PADDED ADHESIVE DRESSINGS AND BODY POSITION ON SACRAL INTERFACE PRESSURE

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## PLASTIC SURGERY

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**BACKGROUND:** Padded dressings are being increasingly used to prevent sacral pressure ulcers but the reduction in pressure these provide in different body positions is not known. It was hypothesized that dressings would reduce peak interface pressure in a supine position, with minimal effect in other positions.

**METHODS:** Twenty healthy adult volunteers of both sexes were recruited. Participants sat on a pressure-sensing mat on a hard surface in 3 positions: 1) Supine; 2) Supine with the back on a 30-degree wedge; 3) Sitting. Baseline measurements were taken and then repeated with a padded adhesive dressing on the sacrum. Age, sex and body mass index (BMI) were collected for all participants. Peak pressures were compared across positions using linear mixed effects modelling.

**RESULTS:** Eleven females and 9 males, ages  $25.5 \pm 3.9$  (18-37) and BMIs  $22.2 \pm 2.1$  (17.9-25.9) participated. After controlling for sex and age, BMI did not significantly impact peak pressure (chisq=0, p=1). After controlling for sex, age, and BMI, the effect of position was statistically significant (chisq=59.7, p<0.001), with a post-hoc Tukey test revealing greater peak pressures supine ( $321.4 \pm 169.3$  mmHg) compared with the 30-degree ( $101.6 \pm 128.1$  mmHg, t=7.02, p<0.001) and sitting ( $128.1 \pm 60.8$  mmHg, t=7.96, p<0.001). The presence of a dressing did not significantly impact peak pressure (bare  $177.5 \pm 165.1$  mmHg vs. dressing  $191.3 \pm 156.9$  mmHg, chisq=0.52, p=0.47).

**CONCLUSION:** Contrary to our hypothesis, a padded dressing had no effect on interface pressure in any position. In all positions pressure was well above the known capillary closing pressure of 32 mmHg, demonstrating the importance of offloading and the need for additional interventions to relieve pressure.