

DO SKIN BARRIER PRODUCTS IMPEDE ABSORBENCY OF INCONTINENCE PADS?

Hypothesis / aims of study

Skin barrier products are commonly used with absorbent pads to prevent and treat diaper dermatitis. However pad manufacturers discourage their use because of concerns that they may impede urine penetration of pads resulting in leakage. Some manufacturers of barrier products claim that their products do not affect pad performance but there are no published studies and the effect of barrier creams on absorbent pads is unknown.

The aim of this study was to investigate the effect of skin barrier products on pad absorbency.

Study design, materials and methods

Design: Quasi-clinical laboratory study

Methods:

Equipment: Strike-through rig (for measuring speed of fluid absorption into pad material)

Products: Three commonly used barrier products:

- (1) Cavilon (polymeric solution)
- (2) Sudocrem (zinc-based cream)
- (3) Soft paraffin

Eight volunteer women (age range 24-46 years) tested the three barrier products. At each test a 75mm square of barrier product was applied to the volar forearm as follows: Cavilon (as manufacturer directed), Sudocrem and soft paraffin were applied in two doses (a) sparing/recommended (0.1g/75mm square) (b) liberal (0.3g/75mm square) – a total of five tests. A 75mm square patch of disposable fluff-pulp bedpad material was fixed over the skin area on which the barrier product had been applied, using a foam pad and micropore tape. A control patch was applied to the alternative arm. Patches were worn for one hour. Patches were then placed in the 'strike-through' rig and the speed of absorption of 5ml of saline was measured.

Results

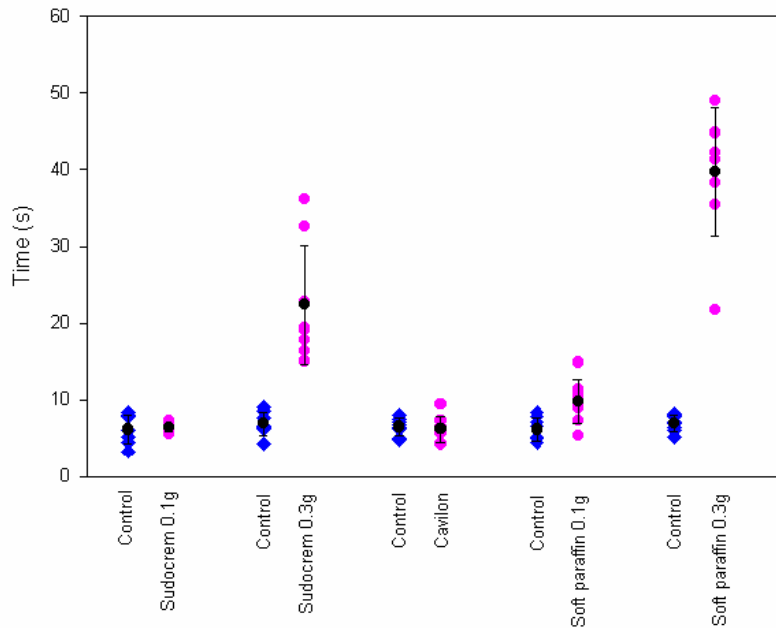
The table below shows comparisons between means of strike-through times (+ 95% CI for differences between experimental and control means) recorded from squares of fluff-pulp bedpad material used with different skin barrier products. Figure 1 shows data recorded from all subjects and controls.

	Controls (all tests)	Cavilon	Sudocrem 0.1g (sparing)	Sudocrem 0.3g (liberal)	Paraffin 0.1g (sparing)	Paraffin 0.3g (liberal)
Mean time (seconds) (95% CI)	6.4	6.1 (-1.5,2.1)	6.3 (-1.9,1.3)	22.4 (9.5,21.6)	9.8 (0.8,6.7)	40 (35.7,40)

Recommended applications of the Cavilon and Sudocrem did not increase absorption times significantly. Liberal applications (0.3g/75mm square) of both Sudocrem and soft paraffin resulted in substantially longer absorption times (x 3 for Sudocrem, x 7 for soft paraffin)

Figure 1

Strike-through times (seconds + SD) recorded from absorbent pad squares worn by 8 subjects with and without (control) test skin barrier products



Interpretation of results

Used as recommended these barrier products do not appear to impede absorption of pads and are therefore unlikely to affect pad leakage performance. However, 'liberal' applications of both Sudocrem and soft paraffin increased absorption times.

Delay in urine penetration of absorbent pads allows time for urine to track through poorly sealed openings, such as at the top of the legs (when standing or sitting) or the waist area (when lying in bed) resulting in pad leakage. However, it is not known how much the strike-through time would need to increase to result in a significant deterioration in pad leakage performance.

A recommended or 'sparing' quantity of Sudocrem was found to be more difficult to apply than a 'liberal' application indicating that care needs to be taken to adhere to manufacturers' recommendations.

Concluding message

These results indicate that barrier products can be used cautiously in conjunction with absorbent pads.

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