Prospective, Randomized Comparison of Two Presurgical Skin Antiseptic Preparations and Resultant Surgical Incise Drape Adhesion to Skin

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**Background:** Surgical incise drape adhesion is important at the wound edge where the skin and drape are contiguous with the wound. In a published study\textsuperscript{1}, it was shown that drape lift at the wound edge may be associated with a 6-fold increase in surgical site infection.

**Objective:** To determine if skin preparation impacts the adhesion of various incise drapes.

**Methods:** Following randomization, the backs of 22 healthy volunteers were prepped with 2 skin preparations according to manufacturers’ instructions: DuraPrep solution (DP) and ChloraPrep (CP). Three incise drapes were tested. Drape samples were applied to prepped areas and covered with saline-soaked gauze for 30 minutes to simulate a surgical fluid challenge. Drape samples were then mechanically removed using an adhesion peel tester according to a modified technique based on PSTC-101 International Standard for Peel Adhesion of Pressure Sensitive Tape. Adverse events were monitored and skin was assessed for erythema, skin stripping, and adhesive residue.

**Conclusion:** These data suggest that type of skin preparation affects drape adhesion. While DP shows increased adhesion, it does not appear to cause a clinically relevant skin reaction. For those surgeries where incise drapes are used, choosing a skin preparation that enhances incise drape adhesion may minimize drape lift and the potential for wound contamination.


**Discussion:** The clinical relevance of good drape adhesion is the potential contribution to risk reduction for surgical site infection. When used properly and adhered well throughout an entire procedure, skin preparations and surgical incise drapes can work as a multiple stage approach to potentially reduce wound contamination as part of an infection management program.

**Products tested:**
- DP, 3M™ DuraPrep™ Surgical Solution (Iodine Propovacrylex [0.7% available iodine] and Isopropyl Alcohol, 74 w/w)
- Patient Preoperative Skin Preparation, 3M Health Care
- ChloraPrep® with Tint (Scrub Teal®) Patient Preoperative Skin Preparation (2% w/v chlorhexidine gluconate [CHG] 70% v/v isopropyl alcohol [IPA]), CareFusion Inc.
- Ioban drape: 3M™ Ioban™ 2 Antimicrobial Incise Drape, 3M Health Care
- Steri-Drape 2 drape: 3M™ Steri-Drape™ 2 Incise Drape, 3M Health Care
- ACTI-Gard: ACTI-Gard™ Anti-Microbial Incise Drape, Medical Concepts Development

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