



Balancing **Skin Protection** and **Adhesion**: Quantifying the Effects of **Barrier Sprays and Adhesives**

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Background

Barrier sprays protect peristomal skin but reduce ostomy system adhesion. While reduced adhesion may lower MARSI risk, it can increase leaks and shorten wear time. This study quantifies the effects of barrier and adhesive treatments on peel strength.

Methods



Peel strength was measured using ASTM F2256 T-peel testing of hydrocolloid tape bonded to dermatomed porcine skin. Skin surfaces were prepared with either no treatment (control), non-tacky barrier spray, tacky barrier wipe, or silicone medical adhesive spray (applied to one or both surfaces). Laminated samples (2 kg roller) were peeled at 10 in/min using a Mark-10 motorized stand.

Peel Strength Results

Baseline

Untreated skin: 0.239 lb/in

Barrier Treatments

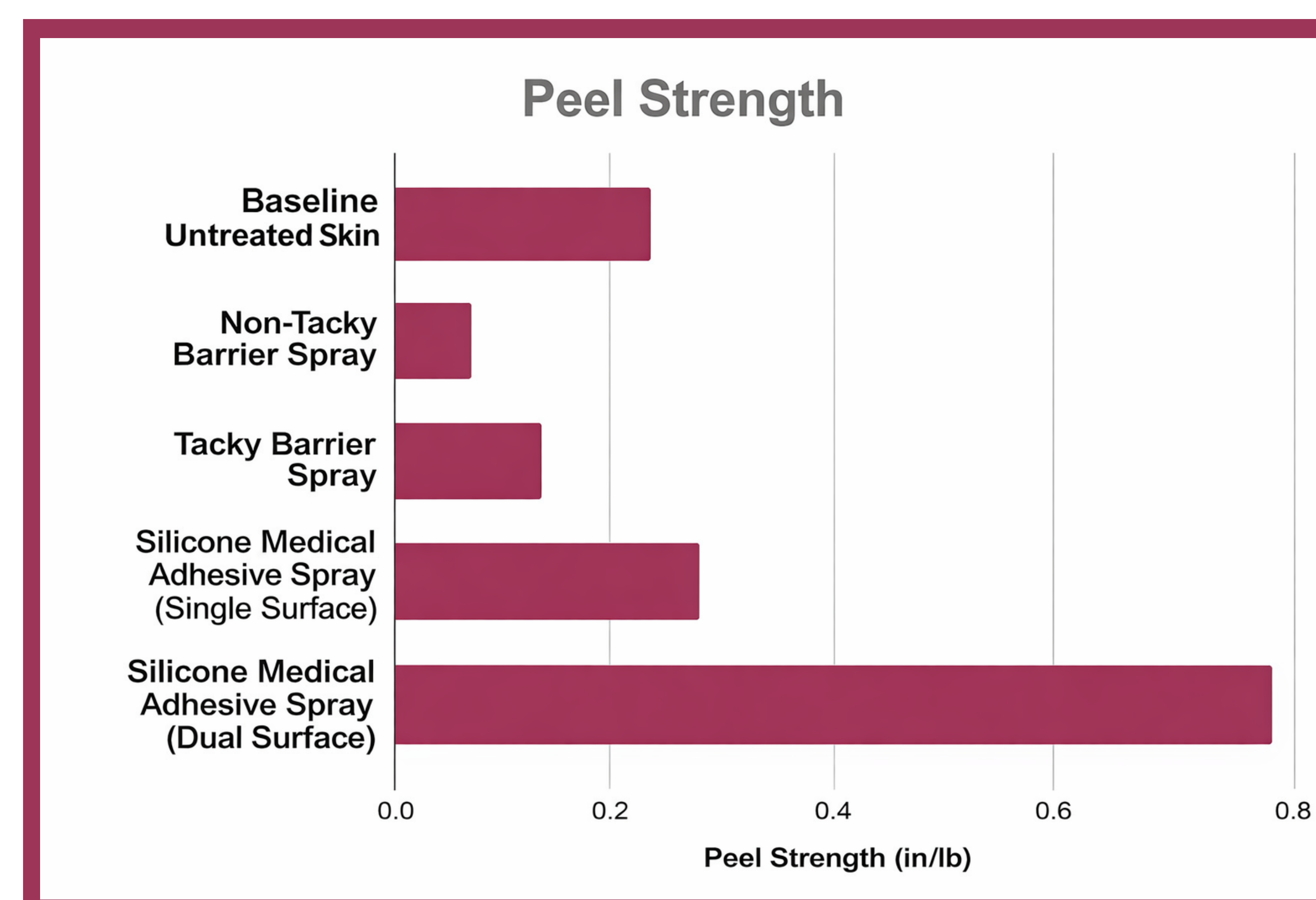
Non-tacky barrier spray: 0.073

Tacky barrier wipe: 0.14

Adhesive Treatments

Silicone Medical Adhesive Spray (single surface): 0.289

Silicone Medical Adhesive Spray (both surfaces): 0.782



Conclusions

- Barrier and adhesive treatments allow adhesion strength to be tailored to attachment security or skin tolerance needs.
- Barrier sprays reduced peel strength by 40% to 70%.
- Tacky barrier wipes demonstrated less reduction in peel strength than traditional barrier sprays.
- Silicone Medical adhesive spray increased peel strength by 20% to 225%.
- Pressure sensitive medical adhesives provide the greatest peel strength when applied to both skin and device, demonstrating the advantage of adhesives designed for direct skin application.

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