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Overview

Successful management of wound exudate remains a clinical challenge. The most common method of exudate management is the use of absorbent foam dressings. The goal of foam dressing products is to manage and remove the high levels of exudate found in and around the wound through a combination of fluid absorption and vapor transmission. Successful exudate management ensures less complications, faster healing and better patient outcomes.

Composition, design and quality vary among commercially available foam dressings on the market today. More specifically, clear and distinct differences between foam dressings exist in fluid handling capacity that include absorption direction and Moisture Vapor Transmission Rates (MVTRs).

Two in-vitro studies presented herein compare foam dressings for vertical absorption, MVTR, and the ability to absorb viscous exudate.

These studies help to demonstrate the successful balance necessary for optimal outcomes with select foam dressing products.

Cutimed® Siltec®
Super Absorbent Silicone
Foam Dressing

Order Information

Product Detail	REF No.	Size	Per Box	HCPCS
Cutimed® Siltec® Super Absorbent Soft Silicone Foam Dressing • 5 mm thick	7263200	2 in x 2½ in	10	A6209
	7263201	4 in x 4 in	10	A6209
	7263202	4 in x 8 in	10	A6210
	7263203	6 in x 6 in	10	A6210
	7263204	8 in x 8 in	5	A6211
Cutimed® Siltec® *(Light)* Super Absorbent Soft Silicone Foam Dressing • 3 mm thick	7263000	2 in x 2½ in	10	A6209
	7263001	4 in x 4 in	10	A6209
	7263002	6 in x 6 in	10	A6210
Cutimed® Siltec® B *(Border)* Super Absorbent Soft Silicone Foam Dressing • gentle adherent border	7263100	3 in x 3 in	10	A6212
	7263101	5 in x 5 in	10	A6212
	7263102	6 in x 6 in	10	A6212
	7263103	7 in x 7 in	5	A6213
	7263104	9 in x 9 in	5	A6213
Cutimed® Siltec® Sacrum *(Sacral Area)* Super Absorbent Soft Silicone Foam Dressing • specially designed for sacral area	7264700	7 in x 7 in	5	A6210
	7264701	9 in x 9 in	5	A6210
Cutimed® Siltec® Heel Super Absorbent Soft Silicone Foam Dressing • reduces pressure peaks, provides cushioning	7264800	6½ in x 9½ in	5	A6210
Cutimed® Siltec® Heel 3D Super Absorbent Soft Silicone Foam Dressing • ready-to-use, easy application	7264801	6½ in x 9½ in	5	A6210

Please refer to the product label and / or package insert for full instructions on the safe use of these products.

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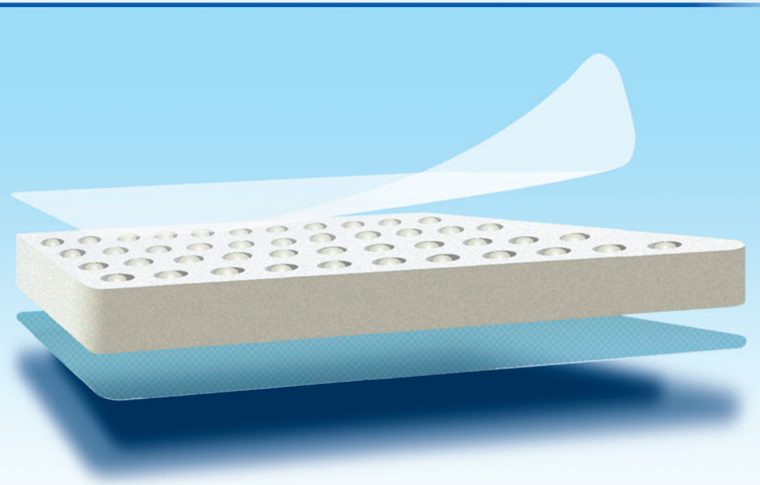
REV 05/14

In-Vitro Comparisons of Foam Dressings

Vertical Absorption and Vapor Transmission of Exudate for Effective Wound Management



Determining the Most Effective Direction of Exudate Absorption

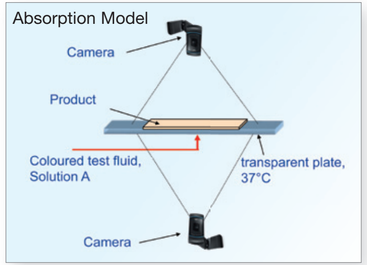
by Sascha Casu, Marco Schubert, Anna Tegelkamp, and Richard Loper – BSN Medical GMBH (Hamburg, Germany)

Introduction and Study Goal

Protection of the peri-wound skin against wound exudate and the resulting maceration is critical to the effective treatment of chronic wounds. Dependent upon the design, composition and quality of the foam dressings, the absorption of exudate into the dressing can be either horizontal, vertical or both. An in-vitro test was developed to determine the most clinically effective absorption direction of commercially available foam dressings.

Method

- Several commercially available foam dressings were placed on a transparent plate (37°C).
- A colored test solution was fed into the products through a hole in the middle of the plate.
- Cameras on the top and the bottom of the device recorded the fluid spread over time.
- Fluid spread areas on the top and bottom of the tested products were determined.



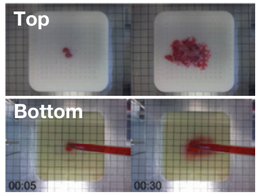
Results

Study results demonstrate a clear and distinct deviation in absorption direction among the tested foam dressing products. The study determined that a spreading ratio of greater than one is needed in order to achieve vertical absorption. In addition, in several of the tested products, the absorbed fluid did not come in direct contact with the top layer of the dressing, thus minimizing the fluid handling capacity of the foam dressing.

Conclusion

Based upon the horizontal absorption exhibited by the majority of tested products, these products run the risk of enabling exudate to come into contact with peri-wound skin resulting in skin maceration. When the fluid is absorbed vertically, ultimately reaching the top layer of the foam dressing, it transpires enough fluid to keep the wound comfortable while maintaining a moist wound environment.

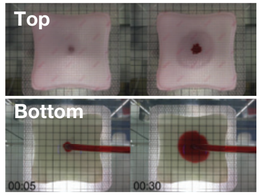
Cutimed® Siltec®



Fluid gets directly in contact with the top layer of dressing so total fluid handling starts immediately

- Fluid is vertically transported away from wound bed

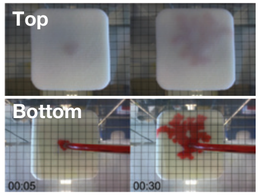
Allevyn® Gentle Border



Fluid does not come in direct contact with top layer of dressing so enhanced MVTR is not exploited

- Fluid is transported horizontally

Mepilex®

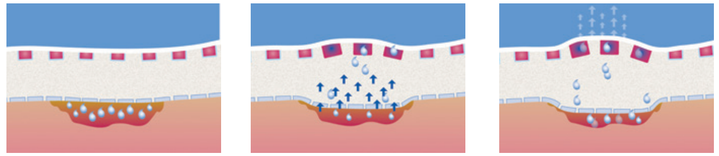


Fluid does not reach top film, hence dynamic MVTR is not started

- Fluid is absorbed only horizontally

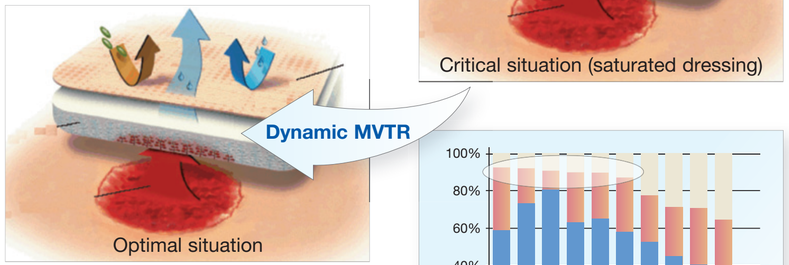
Total Fluid Handling – A Balancing Act

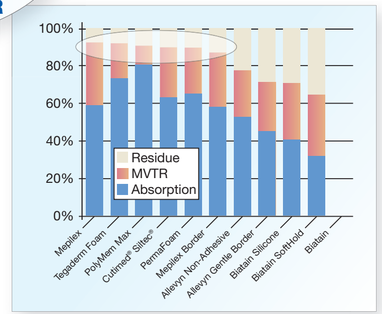
Vertical absorption and high MVTR (Moisture Vapor Transmission Rate) are two critical attributes of foam dressing technology that support optimum exudate management.



Dynamic MVTR is the process of transpiring just the right amount of fluid depending on the level of exudate to keep the wound comfortable while maintaining a moist wound environment – a high MTVR for wounds with high level of exudate, and a lower MVTR for wounds with low level of exudate.

The combination of vertical absorption and dynamic MVTR make up the Total Fluid Handling (TFH) capability which helps foam dressings deliver successful wound management.





Six products with uptake higher than 80% show good performance

Laboratory testing results are intended to illustrate a product's performance under controlled conditions. Actual use results may vary.

Successful Management of Highly Viscous Exudate

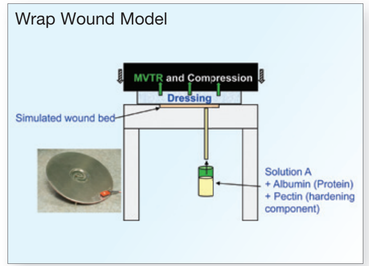
by Marco Schubert, Sascha Casu – BSN Medical GMBH (Hamburg, Germany)

Introduction and Study Goal

Foam products are known for their excellent fluid handling capacities often measured with Sol A (salt solution). The application of Sol A, however, cannot be used to solely predict how foam products will react in specific clinical conditions since Sol A does not contain proteins which tend to increase viscosity over time and lead to encrustations in and around the foams. This test was designed to demonstrate the ability of various commercially available foam dressing products to handle highly viscous fluids in an artificial wound model.

Method

- Several commercially available foam dressings were placed on a transparent plate (37°C).
- An Albumin/Pectin test solution was fed into the products (size 10 x 10 cm, 5 mm foam) through a hole in the middle of the foam dressing at 2ml/h over approx. 16 hours.
- A box on top filled with silica gel was designed to catch the evaporated water (MVTR).
- Calculation of the gravimetric difference of the dressings and the MVTR box before and after measurement and subtraction from the initial amount would be used to determine the absorption, MVTR and residue.



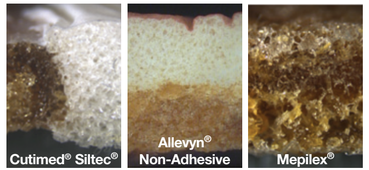
Results

Large Pores

- Show the highly viscous fluid is fully absorbed vertically – *leaving the area around the wound bed dry and the wound bed itself free of fluid but still not dry.*

Medium Pores

- Show the highly viscous fluid not fully absorbed vertically – *leaving the area around the wound with fluid residue and the wound bed wet.*



Small Pores

- Show that only a small percentage of the highly viscous fluid is absorbed vertically into the foam – *leaving the area around the wound bed full of residue due to blocking and the wound bed very wet.*

Conclusion

Large pores are proven to provide increased levels of vertical absorbency, promote higher transmission of fluid vapors, and leave less residue on the wound surface. Together these fluid handling benefits help to create the ideal, balanced environment for successful wound healing.