

3M™ Cavilon™ No Sting Barrier Film
Clinical Evidence Summaries

Cavilon™ Brand



Clinical
Evidence
Summaries



Take comfort in proven protection



Take Comfort in Proven Protection

3M has over 70 pieces of clinical evidence supporting the efficacy and cost-effectiveness of 3M™ Cavilon™ No Sting Barrier Film—more evidence than any other moisture barrier or barrier film.

Following are summaries of studies evaluating Cavilon™ No Sting Barrier Film for:

- Periwound Skin Protection
- Moisture and Irritant Protection
- Adhesive Trauma Protection
- Friction Protection
- Peristomal Skin Protection
- Multiple Indications

Cavilon™ No Sting Barrier Film products are supported by a variety of clinical data and publications. 3M has created this document to help summarize the publications in a brief and easy-to-use format. If you have questions or need additional information, please refer to the citation referenced.

For more information, visit

www.3M.ca/skinwound

Table of Contents

Periwound Skin Protection

Application of 2 layer barrier film in negative pressure wound therapy.....	6
Effectiveness of the association of multilayer compression therapy and periwound protection with Cavilon™ (no sting barrier film) in the treatment of venous leg ulcers	6
Reducing skin maceration in exudative diabetic foot ulcers	6
Instrumental evaluation of the protective effects of a barrier film on surrounding skin in chronic wounds.....	7
<i>In vivo</i> evaluation using confocal microscopy of protective effect of No Sting Barrier Film 3M™ Cavilon™ on periwound skin.....	7
A liquid film-forming acrylate for periwound protection: a systematic review and meta-analysis (3M™ Cavilon™ No Sting Barrier Film)	7
Comparison of two periwound skin protectants in venous leg ulcers: a randomised controlled trial	8
Periwound protection with 3M™ Cavilon™ No Sting Barrier Film for patients with chronic venous leg ulcers, a randomized multi-centre trial.....	8
The protective effects of a new preparation on wound edges.....	8
Periwound skin protection: a comparison of a new skin barrier vs. traditional therapies in wound management.....	9
The use of 3M™ Cavilon™ No Sting Barrier Film to prevent maceration in pressure ulcers treated with an adhesive hydrocolloid dressing.....	9
Ulcer edge protection with a polymer protective film	9
3M™ Cavilon™ No Sting Barrier Film: an evaluation of periwounds prone to maceration.....	10
Film subjects win the day.....	10
Improvement in patient comfort and compliance through the use of 3M™ Cavilon™ No Sting Barrier Film	10
A comparison of an alcohol-based and a siloxane-based periwound skin protectant.....	11

Moisture and Irritant Protection

GENERAL

Incontinence-associated dermatitis.....	12
Health care aides: first line of defense in the prevention of skin breakdown	12
A comparative study of the skin protectant performance of eight barrier films	13

INCONTINENCE

Innovative strategy to prevent incontinence dermatitis	13
An economic evaluation of four skin damage prevention regimens in nursing home residents with incontinence: economics of skin damage prevention	14
Incontinence-associated skin damage in nursing home residents: a secondary analysis of a prospective, multi-center study.....	14
Tail and perineal wounds	14
A comparative study of the skin protectant performance of five barrier films	15
A comparative study of a barrier product versus zinc oxide for the treatment of incontinent lesions	15
Prevention and treatment of incontinence-associated dermatitis: literature review	15
Comparing cost per use of 3M™ Cavilon™ No Sting Barrier Film with zinc oxide oil in incontinent patients	16
The benefits of implementing a new skin care protocol in nursing homes.....	16
A comparison of cost and efficacy of three incontinence skin barrier products	16
Evaluation of routine use of an alcohol-free barrier film on patients with urinary and/or fecal incontinence	17
No ifs, ands, or butts: use of a protective, waterproof, liquid alcohol-free barrier on an infant*	17
The use of a liquid film to treat severe incontinent dermatitis: case reports	17
Comparison of the effectiveness of five different skin protective products	18
The use of 3M™ Cavilon™ No Sting Barrier Film in the management of incontinence dermatitis	18
Incontinence skin care.....	18
Barrier film protects skin of incontinent rats	19
Comparison of the efficacy and cost-effectiveness of three skin protectants in the management of incontinence dermatitis.....	19
Use of a non-alcohol incontinence barrier film on patients with severely compromised skin	19

Table of Contents

Adhesive Trauma Protection

GENERAL

Innovative solutions for skin tears, new absorbent acrylic wound technology	20
A prospective randomized trial of the effect of a soluble adhesive on the ease of dressing removal following hypospadias repair*	21
In search of a better central line dressing protocol in the autologous bone marrow reinfusion patient*	21
Comparison of the skin protection properties of various film forming skin protectants.....	21

NEGATIVE PRESSURE WOUND THERAPY (NPWT)

Protection of wound edges with 3M™ Cavilon™ No Sting Barrier Film during vacuum-assisted closure therapy: results of a clinical investigation in patients with chronic leg ulcers	20
---	----

Friction Protection

GENERAL

A motorized sliding sled apparatus for measuring the coefficient of friction of human skin <i>in vivo</i>	22
---	----

RADIATION THERAPY

Management of skin toxicity during radiation therapy: a review of the evidence	22
A case of . . . managing radiotherapy-induced skin reactions.....	22
Radiation induced skin reactions.....	23
Randomized control trial of 3M™ Cavilon™ No Sting Barrier Film for the prevention of radiation dermatitis in patients with nasopharyngeal carcinoma.....	23
Evidence-based skin care management in radiation therapy.....	23
Randomized, paired comparison of 3M™ Cavilon™ No Sting Barrier Film versus sorbolene cream (10% glycerine) skin care during postmastectomy irradiation.....	24
Some uses of 3M™ Cavilon™ No Sting Barrier Film for the prevention of postradiation dermatitis in the head and neck region.....	24

Peristomal Skin Protection

Clinical experience with an alcohol-free skin protectant 3M™ Cavilon™ No Sting Barrier Film.....	25
3M™ Cavilon™ No Sting Barrier Film: an effective barrier against the ravages of proteolytic enzymes on peristomal and perianal skin	25
Non-alcohol barrier film providing a success with stomal therapy patients.....	25

Multiple Indications

Clinical and economic evidence supporting a transparent barrier film dressing in incontinence-associated dermatitis and periwound skin protection	26
Don't neglect skin care in the treatment of chronic wounds	26
Wound protection for delicate baby and children's skin*.....	26
A clinical evaluation of 3M™ Cavilon™ No Sting Barrier Film.....	27
Skin care for intensive care patients.....	27
Barrier for effective wound care.....	27

Review Articles

Effectiveness of 3M™ Cavilon™ No Sting Barrier Film for preventing skin damage: a systematic review	28
The nursing care of common raw and bleeding conditions.....	28
3M™ Cavilon™ No Sting Barrier Film in the protection of vulnerable skin	28
Clinical review of a new non-alcohol film forming skin protectant	29

Other

A comparison of the durability of four barrier film products over a 72 hour period on human volunteers.....	29
Assessment of diaper-clogging potential of petrolatum moisture barriers	30
Comparison of dressing removal following hypospadias repair*	30
Measuring sting potential of various film forming skin protectants.....	30

* Studies included pediatric patients.

Periwound Skin Protection

Application of 2 layer barrier film in negative pressure wound therapy

Ng HW, Nallathamby V, Ho M, Ho S, Wong JM, Naidu S, et al. Poster presentation at 8th Asia-Pacific Burn Congress and The 3rd Congress of the Asia Wound Healing Association; 2011.
Study Type: Prospective (n: not reported)

OBJECTIVE OF STUDY

Evaluate the use of 3M™ Cavilon™ No Sting Barrier Film on the periwound skin of acute wounds (necrotizing fasciitis, Fournier's gangrene, skin graft recipient site and flap closures for pressure sores and other wounds) prior to the application of drape/film for NPWT.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film was applied using a 2-layer technique with a 45 second interval between layers. The NPWT was changed every 48-72 hours for a period of 1-3 weeks. Following closure, NPWT was applied for 7-10 days with Cavilon™ No Sting Barrier Film. In this study, there was no evidence of periwound skin maceration or skin stripping. There was also an outcome of reduced pain reported.

Effectiveness of the association of multilayer compression therapy and periwound protection with Cavilon™ (no sting barrier film) in the treatment of venous leg ulcers

Serra N, Palomar F, Fornes B, Capillas R, Berenguer M, Aranda J, et al. *Gerokomos* 2010; 21 (3): 1-7.
Study Type: RCT, n=98

OBJECTIVE OF STUDY

Evaluate the clinical effectiveness of a multi-layer compression bandage and 3M™ Cavilon™ No Sting Barrier Film on the periwound skin of venous ulcers.

KEY FINDINGS / ANALYSIS

After 12 weeks of treatment, the average reduction in ulcer area was statistically greater in patients treated with Cavilon™ No Sting Barrier Film (83%) compared to the control group (no treatment) (72%) ($p=0.046$). The reduction of the ulcer area $\geq 50\%$ at four weeks was 69.4% in the Cavilon™ brand group compared to 46.9% in the control group ($p<0.01$). The clinical effectiveness of a multi-layer compression bandage in patients with venous leg ulcers, as measured by percentage reduction of area, was increased by the concomitant use of Cavilon™ No Sting Barrier Film.

Reducing skin maceration in exudative diabetic foot ulcers

Lazaro-Martinez JL, Garcia-Morales EA, Aragon-Sanchez FJ, Ano-Vidaes P, Allas-Aguado S, Garcia-Alvarez Y. *Rev ROL Enf* 2010; 33(3).
Study Type: Observational study, n=40

OBJECTIVE OF STUDY

Demonstrate the effectiveness of 3M™ Cavilon™ No Sting Barrier Film in resolving periwound skin maceration in diabetic foot ulcers.

KEY FINDINGS / ANALYSIS

Seventy percent of diabetic foot ulcers showed a healthy edge or less exudate after 30 days of treatment ($p<0.05$) with Cavilon™ No Sting Barrier Film. The use of Cavilon™ No Sting Barrier Film for maceration management of highly exuding diabetic foot ulcers was effective.

Periwound Skin Protection

Instrumental evaluation of the protective effects of a barrier film on surrounding skin in chronic wounds

Dini V, Salibra F, Brilli C, Romanelli M, *Wounds* 2008;20(9):254-57.
Study Type: Non-randomized, comparative study, n=40

OBJECTIVE OF STUDY

Investigate the effect of 3M™ Cavilon™ No Sting Barrier Film on skin surrounding chronic wounds by monitoring transepidermal water loss (TEWL) as a marker of skin health.

KEY FINDINGS / ANALYSIS

Twenty patients with pressure ulcers and 20 patients with venous leg ulcers were evaluated. Statistical evaluation showed an overall reduction of 45 percent in TEWL values in both groups by the conclusion of the study period when compared to baseline values. The study objectively demonstrated that Cavilon™ No Sting Barrier Film can help in the management of skin surrounding chronic wounds. An additional benefit was that the skin could be observed through the film. Cavilon™ No Sting Barrier Film application was a quick and simple process and removal was not necessary.

In vivo evaluation using confocal microscopy of protective effect of No Sting Barrier Film 3M™ Cavilon™ on periwound skin

Gómez T, Morán J, González S, *Gerokomas* 2008;19(1):41-46.
Study Type: Comparative, paired design at wound level, n=2

OBJECTIVE OF STUDY

Evaluate the protective properties of 3M™ Cavilon™ No Sting Barrier Film on the periwound skin of venous ulcers, and assess changes in the periwound skin of venous ulcers after use of Cavilon™ No Sting Barrier Film using confocal microscopy.

KEY FINDINGS / ANALYSIS

After one week of treatment, there was general improvement of periwound skin but in the areas treated with Cavilon™ No Sting Barrier Film, necrosis nearly disappeared and there was a significant reduction of exocytosis, spongiosis and a better structured epidermis and also an improvement in inflammation. The Cavilon™ No Sting Barrier Film group showed greater histological improvements compared to areas not treated with the barrier film. Cavilon™ No Sting Barrier Film is an effective treatment for periwound skin in high exudative chronic ulcers.

A liquid film-forming acrylate for periwound protection: a systematic review and meta-analysis (3M™ Cavilon™ No Sting Barrier Film)

Schuren J, Becker A, Sibbald RG, *International Wound Journal* 2005;2(3):230-8.
Study Type: Periwound review meta-analysis

OBJECTIVE OF STUDY

Undertake a systematic review of all reliable evaluations of the clinical performance and cost-effectiveness of 3M™ Cavilon™ No Sting Barrier Film in the protection of periwound skin in chronic ulcers.

KEY FINDINGS / ANALYSIS

A total of 49 papers were identified and considered. Possible data from eleven controlled trials were considered and a total of nine eligible studies were included in this analysis. The authors concluded that Cavilon™ No Sting Barrier Film is a safe and effective barrier to protect the periwound skin of chronic ulcers. Its benefits include: visibility of wound margins, reduction of erythema, pain control, patient comfort and reduced staff time.

Periwound Skin Protection

Comparison of two periwound skin protectants in venous leg ulcers: a randomised controlled trial

Cameron J, Hoffman D, Wilson J, Cherry G, *Journal of Wound Care* 2005;14(5):233-6.
Study Type: RCT, n=35

OBJECTIVE OF STUDY

Compare the efficacy and cost-effectiveness of two skin protectants, 3M™ Cavilon™ No Sting Barrier Film and zinc paste compound, in the management of maceration and irritation of the periwound area of venous leg ulcers.

KEY FINDINGS / ANALYSIS

There was a significant difference in time required to remove and re-apply the skin protectants: an average of 0.19 (± 0.17) minutes in the Cavilon™ No Sting Barrier Film group and 5.53 (± 2.10) minutes in the zinc paste group. Cavilon™ No Sting Barrier Film was easier to apply and transparent—hence not requiring removal for assessment. The zinc paste was messy to apply and difficult to remove, and thus took up considerably more nursing time than Cavilon™ No Sting Barrier Film.

Periwound protection with 3M™ Cavilon™ No Sting Barrier Film for patients with chronic venous leg ulcers, a randomized multi-centre trial

Bonnetblanc J, Vin F, Poster presentation at the World Union of Wound Healing Societies (WUWHS) in Paris; 2004.
Study Type: RCT, n=40

OBJECTIVE OF STUDY

Compare the effect of 3M™ Cavilon™ No Sting Barrier Film to no treatment on periwound skin in patients with venous leg ulcers receiving compression therapy.

KEY FINDINGS / ANALYSIS

Results from this study indicate significantly better periwound skin protection for patients in the Cavilon™ No Sting Barrier Film group.

The protective effects of a new preparation on wound edges

Neander KD, Hesse F, *Journal of Wound Care* 2003;12(10):369-71.
Study Type: Comparative, paired design at wound level, n=227

OBJECTIVE OF STUDY

Investigate the effects of 3M™ Cavilon™ No Sting Barrier Film on erythema on the edges of highly exuding wounds in patients with venous stasis ulcers.

KEY FINDINGS / ANALYSIS

In the Cavilon™ No Sting Barrier Film group, erythema disappeared in 88.1 percent of patients within three days of treatment, and in the remaining 11.9 percent, it had completely disappeared after four days. In the control group, the erythema intensity remained essentially unchanged throughout the study observation period. Cavilon™ No Sting Barrier Film helped to control erythema in all patients.

Periwound Skin Protection

Periwound skin protection: a comparison of a new skin barrier vs. traditional therapies in wound management

Coutts P, Queen D, Sibbald RG, *Wound Care Canada* 2003;1(1).
Available from URL: http://cawc.net/images/uploads/resources/Peri-wound_Skin_Protection.pdf
Study Type: Prospective case series, split wound design, n=30

OBJECTIVE OF STUDY

Compare the periwound protection performance of 3M™ Cavilon™ No Sting Barrier Film to two routinely used barrier products. Wound types included: diabetic foot ulcers, pressure ulcers and venous ulcers.

KEY FINDINGS / ANALYSIS

Significant differences were found favouring Cavilon™ No Sting Barrier Film with regard to application time. Results indicate that all treatments were similar in clinical efficacy with no differences noted for change in wound size, drainage or periwound condition. The authors concluded that Cavilon™ No Sting Barrier Film was more caregiver/patient friendly, allowed for better visualization of the wound edges, and was quicker to apply in the clinical setting.

The use of 3M™ Cavilon™ No Sting Barrier Film to prevent maceration in pressure ulcers treated with an adhesive hydrocolloid dressing

González G, Soriano V, Fornells G, Lopez R, Gómez S, et al., Poster presentation at the European Wound Management Association (EWMA) Conference in Granada, Spain; 2002.
Study Type: RCT, n=60

OBJECTIVE OF STUDY

Compare the effect of 3M™ Cavilon™ No Sting Barrier Film to no treatment in the control of maceration associated with use of hydrocolloid dressings on ulcers with moderate to large amount of exudate.

KEY FINDINGS / ANALYSIS

Results confirm that the use of Cavilon™ No Sting Barrier Film reduces the periwound maceration caused by hydrocolloid dressings. Periwound maceration was not dependent on the degree of severity of pressure ulcers.

Ulcer edge protection with a polymer protective film

Bär M, Vanscheidt W, *Zeitschrift für Wundheilung* 2001;22(1):16-20.
Study Type: RCT, n=20

OBJECTIVE OF STUDY

Compare the efficacy and tolerability of 3M™ Cavilon™ No Sting Barrier Film to a zinc oxide paste for use in protecting macerated wound margins in lower extremity ulcers.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film provided a rapid improvement of maceration at the wound's margins, patient tolerability was regarded as very good, therapeutic steps were not disturbed, transparency of the film made it possible to observe underlying tissue, and the film could be used as an ideal base for wound dressings. The use of Cavilon™ No Sting Barrier Film for indolent leg ulcers with macerated wound margins proved to be effective, well tolerated and cost-effective.

Peri wound Skin Protection

3M™ Cavilon™ No Sting Barrier Film: an evaluation of periwounds prone to maceration

Garcia RF, Gago M, Adame S, Romero J, Jimenez A, et al., Poster presentation at the European Pressure Ulcer Advisory Panel (EPUAP) Conference; 2000.

Study Type: Comparative, paired design at wound level, n=26

OBJECTIVE OF STUDY

Evaluate the use of 3M™ Cavilon™ No Sting Barrier Film on periwounds prone to macerated skin when treated with moist wound healing dressings.

KEY FINDINGS / ANALYSIS

Eighty-eight percent of patients' maceration of the periwound areas disappeared or decreased at sites where Cavilon™ No Sting Barrier Film was applied in the first 48-96 hours. In all cases, the use of Cavilon™ No Sting Barrier Film allowed adhesion and removal of the dressing without affecting the periwound skin. Cavilon™ No Sting Barrier Film protected the periwound area of chronic wounds and did not cause discomfort. The foam applicator presentation was more appropriate for small specific areas with periwound maceration.

Film subjects win the day

Hampton S, *Nursing Times* 1998;94(24):80-2.

Study Type: Paired design at wound level, n=62

OBJECTIVE OF STUDY

Determine if clinical use of 3M™ Cavilon™ No Sting Barrier Film would reduce maceration and excoriation in at-risk patients and to see if protection could be afforded to those who had erythema or skin damage as a result of tape being applied to the skin.

KEY FINDINGS / ANALYSIS

Patients were categorized into six main types: cellulitis around a stoma, macerated periwound areas, excoriated periwound areas, sensitivity to tapes/dressings, baby eczema/nappy rash, and adherence to dressings. Sixty-one patients showed improvement after treatment with Cavilon™ No Sting Barrier Film, and 53 went on to heal completely when Cavilon™ No Sting Barrier Film was applied to the entire wound. The author concluded that Cavilon™ No Sting Barrier Film would be a useful addition to a wound care formulary for use as protection, to secure dressings that are difficult to hold in place. The study suggests that the use of film can improve the outcome for excoriated and macerated tissues.

Improvement in patient comfort and compliance through the use of 3M™ Cavilon™ No Sting Barrier Film

Jones J, Poster presentation at the Wound Care Conference in Harrogate, UK; 1998.

Study Type: Case studies, n=2

OBJECTIVE OF STUDY

Describe experience of using 3M™ Cavilon™ No Sting Barrier Film on the surrounding skin of leg ulcers of different etiology.

KEY FINDINGS / ANALYSIS

In the first case study, patient comfort was increased and there was an improvement in the surrounding skin. The patient had considerable improvement in quality of life, plus compliance with the dressing regimen. In the second case study, patient comfort was increased with an improvement in surrounding skin in a once a week dressing regimen.

Periwound Skin Protection

A comparison of an alcohol-based and a siloxane-based periwound skin protectant

Rolstad B, Borchert K, Magnan S, Scheel N, *Journal of Wound Care* 1994;3(8):367-368.
Study Type: Observational, comparative study, n=19

OBJECTIVE OF STUDY

Compare the clinical effectiveness of a siloxane-based liquid polymer skin protectant (3M™ Cavilon™ No Sting Barrier Film) to an alcohol-based liquid polymer skin protectant (Smith & Nephew Skin-Prep™). Patients with intact or compromised skin adjacent to wounds, tubes or stomas using frequently removed adhesives were included in the study.

KEY FINDINGS / ANALYSIS

The condition of periwound skin improved in all cases with no significant difference between study groups. All applications of Cavilon™ No Sting Barrier Film were rated as pain-free, whereas, only 57 percent of the Skin Prep allocations were rated as pain-free. There was a preference for the wand applicator (Cavilon™ No Sting Barrier Film). Because of the painless characteristic of the siloxane-based skin protectant, expanded indications for the use of this type of skin protectant may be considered.

Moisture and Irritant Protection

Incontinence-associated dermatitis

Gray M, Beeckman D, Bliss D, Fader M, Logan S, et al. *JWOCN* 2012; 39 (1): 61-74.
Study Type: Review

OBJECTIVE OF STUDY

Report of an international consensus group on best practice recommendations for prevention and treatment of incontinence-associated dermatitis (IAD) based on a review and evaluation of the current evidence base.

KEY FINDINGS / ANALYSIS

Two studies were cited in support of a "defined skin care regimen". 3M™ Cavilon™ No Sting Barrier Film was a component of a regimen for prevention studied by Bale and colleagues. Only four studies addressing treatment were included in the report. Cavilon™ No Sting Barrier Film was evaluated in two of the four studies. Campbell and colleagues conducted a descriptive study on 33 patients in a rehabilitation unit. Results indicate a reduction in erythema and skin maceration when using Cavilon™ No Sting Barrier Film. The second study, a randomized controlled study of 39 patients (Baatenburg de Jong) demonstrated a reduction in erythema and denudation with the use of Cavilon™ No Sting Barrier Film compared to zinc oxide oil.

Health care aides: first line of defense in the prevention of skin breakdown

Desjarlais-Tefft, Beth. Poster presentation at OLTC (Ontario Long Term Care Conference); 2010.
Study Type: Non-randomized, comparative study, n=231

OBJECTIVE OF STUDY

Compare the incidence of pressure ulcers in a long term care facility prior to and after the implementation of Cavilon™ products including 3M™ Cavilon™ No-Rinse Skin Cleanser, 3M™ Cavilon™ Durable Barrier Cream, and 3M™ Cavilon™ No Sting Barrier Film and a 3M educational program called RISE (Reduce Skin Breakdown through Education).

KEY FINDINGS / ANALYSIS

Prior to the use of the Cavilon™ products, there were 96 pressure ulcers reported in the long term care facility from the period of September 2007 to August 2008. After the implementation of Cavilon™ products and the 3M educational program (RISE), the incidence of pressure ulcers decreased 57% during the period of September 2008 to August 2009. Ninety-eight percent of the health care aides felt that the products improved the quality of life of their residents. The products were easy to use as reported by 88% of the health care aides. Seventy-five percent of the aides felt that the RISE program had increased their knowledge regarding residents' skin and maintaining skin integrity.

Moisture and Irritant Protection

A comparative study of the skin protectant performance of eight barrier films

Reuter H, Maene B, Stephens C, Andreas C. 3M Publication; 2009.
Study Type: Randomized, comparative, n=10

OBJECTIVE OF STUDY

Compare the effectiveness of 3M™ Cavilon™ No Sting Barrier Film to Coloplast Dermagard, Hartmann Menalind®, Salts Peri-Prep, Stiefel Ceridal®, Trio Healthcare Silesse™, Hartmann Tiritas and ConvaTec ConvaCare® Wipes using a dye retention method on healthy, adult volunteers.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film provided significantly superior skin protection ($p \leq 0.05$) between 1 and 7 days after application compared most other skin barrier films tested in this study. Cavilon™ No Sting Barrier Film is the only tested product that can maintain a significant protection over a 7 day time period. Six out of the eight barrier film products tested did not protect the site significantly compared to no covering at all.

Innovative strategy to prevent incontinence dermatitis

Hune S, Jyu A, Johansen K, Dubidat W, Stanesic A, et al., Poster presentation at the World Union of Wound Healing Societies (WUWHS) in Toronto; 2008.
Study Type: Non-randomized, comparative, n=25

OBJECTIVE OF STUDY

Compare the effect of a three-option system and evidence-based skin care protocol to standard care in preventing skin breakdown caused by incontinence dermatitis.

KEY FINDINGS / ANALYSIS

Application of a three-option system (3M™ Cavilon™ No-Rinse Skin Cleanser, 3M™ Cavilon™ Durable Barrier Cream and 3M™ Cavilon™ No Sting Barrier Film) helped to maintain skin integrity in this elderly population. The barriers used did not interfere with absorbency of the patient briefs. A custom designed caddy system was an effective organizer to store products at the residents' bedside. It helped reduce the risk of cross infection, control costs by eliminating excess product use and provided a convenient reliable source of product.

Moisture and Irritant Protection

An economic evaluation of four skin damage prevention regimens in nursing home residents with incontinence: economics of skin damage prevention

Bliss DZ, Zehrer C, Savik K, Smith G, Hedblom E, *Journal of Wound Ostomy Continence Nursing* 2007;34(2):143-52; discussion 152.

Study Type: Non-randomized, comparative, n=981

OBJECTIVE OF STUDY

Determine the cost and efficacy of four different regimens of incontinence-associated dermatitis (IAD) prevention in nursing home residents. The four protocols of care included 3M™ Cavilon™ No Sting Barrier Film, ConvaTec Aloe Vesta® 2-n-1 Protective Ointment, Smith & Nephew Secura® Protective Ointment, and Coloplast Baza® Protect Moisture Barrier Cream.

KEY FINDINGS / ANALYSIS

Compared to the three regimens in which a barrier was applied after each episode of incontinence, the use of a regimen in which Cavilon™ No Sting Barrier Film was applied three times weekly had significantly lower costs for the barrier product, labor associated with barrier application, and total cost, which included products, labor, and supplies. Use of Cavilon™ No Sting Barrier Film three times weekly was effective for preventing incontinence-associated skin breakdown and can provide significant cost savings.

Incontinence-associated skin damage in nursing home residents: a secondary analysis of a prospective, multi-center study

Zimmaro Bliss D, Zehrer C, Savik K, Thayer D, Smith G, *Ostomy Wound Management* 2006;52(12):46-55.

Study Type: Non-randomized, comparative, n=981

OBJECTIVE OF STUDY

Perform a secondary analysis of data collected from a multi-site, open-label, quasi-experimental study of cost and efficacy of four regimens for preventing incontinence-associated dermatitis (IAD) in nursing homes residents to determine the occurrence and severity of skin damage in nursing home residents.

KEY FINDINGS / ANALYSIS

IAD developed in 33 (3.4 percent) of 981 incontinent nursing home residents. Study results suggest that the rate and severity of IAD are low with close monitoring and use of a defined skin care regimen that includes a pH-balanced cleanser and moisture barrier.

Tail and perineal wounds

Bellah JR, *Veterinary Clinics of North America: Small Animal Practice* 2006;36(4):913-929.

Study Type: Expert opinion

OBJECTIVE OF STUDY

Describe the use of 3M™ Cavilon™ No Sting Barrier Film for dogs or cats that are incontinent after surgery.

KEY FINDINGS / ANALYSIS

Dogs or cats with traumatic tail and tail-perineal injuries may be incontinent after surgery. To prevent irritation, Cavilon™ No Sting Barrier Film can be sprayed or swabbed on the area.

Moisture and Irritant Protection

A comparative study of the skin protectant performance of five barrier films

Issberner K, Schuren J. 3M Publication; 2004.
Study Type: Randomized, comparative, n=10

OBJECTIVE OF STUDY

Compare the effectiveness of 3M™ Cavilon™ No Sting Barrier Film to Clinimed LBF™ No Sting Skin Barrier, AlphaMed Skin Safe Non Sting Protective Film, Smith and Nephew Skin-Prep™, and Coloplast Comfeel Protective Film using a dye retention method on healthy, adult volunteers.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film provided significantly superior skin protection ($p \leq 0.05$) between 2 and 7 days after application compared to the competitive skin barrier films. On day 7, there was still considerable dye retention for Cavilon™ No Sting Barrier Film ($>30\%$) whereas there were no other significant differences between all other products whose dye retention measurements were all less than 10%. This study suggests that Cavilon™ No Sting Barrier Film will better protect the skin from fluid irritants such as stomal fluids or incontinence.

A comparative study of a barrier product versus zinc oxide for the treatment of incontinent lesions

Rueda Lopez J, Arboix I, Perejamo M, Torra I Bou JE, Verdu Soriano J, Garcia Gonzalez RF, Gago Fornells M. Oral presentation at the World Union Wound Healing Society (WUWHS) Meeting in Paris; 2004.
Study Type: RCT, n=50

OBJECTIVE OF STUDY

Evaluate the effectiveness of a non-stinging barrier product, 3M™ Cavilon™ No Sting Barrier Film, versus zinc oxide for incontinence dermatitis.

KEY FINDINGS / ANALYSIS

Complete healing occurred in 61% of the patients in the Cavilon™ No Sting Barrier Film group compared to 48% in the zinc oxide group after four weeks of treatment. The use of Cavilon™ No Sting Barrier Film was shown to be more effective for the treatment of incontinence dermatitis compared to the use of zinc oxide ointment, especially in patients with a severe skin condition.

Prevention and treatment of incontinence-associated dermatitis: literature review

Beeckman D, Schoohoven L, Verhaeghe S, Heyneman A, Defloor T, et al. *Journal of Advanced Nursing* 65(6): 1141-1154.
Study Type: Review

OBJECTIVE OF STUDY

Review the current evidence about the prevention and treatment of incontinence-associated dermatitis and to formulate recommendations for clinical practice and research.

KEY FINDINGS / ANALYSIS

Thirty-six publications, with 25 different studies were included in the review. The implementation of a structured perineal skin care program including skin cleansing and the use of a moisturizer is suggested. A skin protectant is recommended for patients considered at risk of incontinence associated dermatitis development. There are nine references in which 3M™ Cavilon™ No Sting Barrier Film was used on incontinent patients including: Baatenburg de Jong (2004), Bale (2004), Bliss (2007), Campbell (2000), Campbell (2001), Hampton (1998), Kennedy (1996), Zehrer (2004), Zehrer (2004).

Moisture and Irritant Protection

Comparing cost per use of 3M™ Cavilon™ No Sting Barrier Film with zinc oxide oil in incontinent patients

Baatenburg de Jong H, Admiraal H, *Journal of Wound Care* 2004;13(9):398-400.
Study Type: RCT, n=40

OBJECTIVE OF STUDY

Compare the total cost of treatment, skin condition, and efficacy of prevention of perianal/buttock skin breakdown in incontinent patients receiving 3M™ Cavilon™ No Sting Barrier Film and zinc oxide oil.

KEY FINDINGS / ANALYSIS

Both products resulted in improved skin condition after 14 days, but Cavilon™ No Sting Barrier Film was found to be more effective. Cavilon™ No Sting Barrier Film was also found to be significantly more cost-effective than zinc oxide oil, primarily because of the lower product application frequency and reduced nursing time.

The benefits of implementing a new skin care protocol in nursing homes

Bale S, Tebble N, Jones V, Price P, *Journal of Tissue Viability* 2004;14(2):44-50.
Study Type: Non-randomized, comparative study n=164

OBJECTIVE OF STUDY

To evaluate the effect of a new skin care protocol on patient skin condition, staff time and associated costs in a nursing home. The new skin care protocol consisted of a gentle no-rinse skin cleanser (3M™ Cavilon™ No-Rinse Skin Cleanser) in combination with 3M™ Cavilon™ No Sting Barrier Film on patients with moderate or severe incontinence-associated dermatitis (IAD), and a dimethicone-based barrier cream (3M™ Cavilon™ Durable Barrier Cream) on patients with intact skin/mild IAD.

KEY FINDINGS / ANALYSIS

Skin condition was maintained or improved and there was a significantly lower incidence of incontinence dermatitis after introducing the new skin care protocol. There was also a significant reduction in time to deliver the skin care post-intervention. Staff adherence to the new skin care protocol was good. This study demonstrated that the new skin care protocol with an educational program, maintained or improved patients' skin condition and significantly reduced the resources used in delivering nursing care.

A comparison of cost and efficacy of three incontinence skin barrier products

Zehrer CL, Lutz JB, Hedblom EC, Ding L, *Ostomy Wound Management* 2004;50(12):51-8.
Study Type: Descriptive study, n=250

OBJECTIVE OF STUDY

Examine the cost-effectiveness of four perineal skin barriers (3M™ Cavilon™ No Sting Barrier Film, ConvaTec Aloe Vesta® 2-n-1 Protective Ointment, Smith & Nephew Secura® Protective Ointment and Coloplast Baza® Protect Moisture Barrier Cream) used to prevent incontinence dermatitis.

KEY FINDINGS / ANALYSIS

The occurrence of incontinence dermatitis was not significantly different between the different protocols of care. Economic analysis showed that daily barrier application costs ranged from \$0.17 for the barrier film to \$0.76 for the ointments. With labour included in the analysis, costs were also lower for Cavilon™ No Sting Barrier Film. Results of this study suggest that the daily or three times weekly use of Cavilon™ No Sting Barrier Film protocols are affordable alternatives to using petrolatum ointments in the prevention of incontinence dermatitis.

Moisture and Irritant Protection

Evaluation of routine use of an alcohol-free barrier film on patients with urinary and/or fecal incontinence

Murray K, Brown P, Poster presentation at the Wound Ostomy and Continence Nurses (WOCN) Conference; 2003.
Study Type: Case series, n=5

OBJECTIVE OF STUDY

Demonstrate the clinical and cost-effective value of routine use of an alcohol-free barrier (3M™ Cavilon™ No Sting Barrier Film) for incontinence skin care.

KEY FINDINGS / ANALYSIS

After five days, skin remained intact without signs of breakdown. Patient and family satisfaction was positive. Better compliance from the nursing staff was noted. Material and labor costs were reduced. Study findings demonstrated that Cavilon™ No Sting Barrier Film could be clinically and economically effective when used as part of a preventative protocol.

No ifs, ands, or butts: use of a protective, waterproof, liquid alcohol-free barrier on an infant

Faller N, Hebert J, 3M Case Study; 2002.
Study Type: Case study, n=1

OBJECTIVE OF STUDY

Describe experience in using 3M™ Cavilon™ No Sting Barrier Film to preserve skin integrity due to constant fecal oozing in an infant.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film was applied over the affected skin with each diaper change. Skin damage resolved within a few days of initiating Cavilon™ No Sting Barrier Film. Cavilon™ No Sting Barrier Film allowed complete healing of the skin damage, caused no adverse reaction and has prevented further recurrence of the skin damage.

The use of a liquid film to treat severe incontinent dermatitis: case reports

Campbell KE, Keast DH, Woodbury MG, Houghton PE, Lemesurier A, Poster presentation at the Canadian Association of Wound Care (CAWC) Annual Meeting and Conference; 2001.
Study Type: Case series, n=22

OBJECTIVE OF STUDY

Assess the effectiveness of 3M™ Cavilon™ No Sting Barrier Film on the skin condition in patients with severe incontinent dermatitis and assess time required for application.

KEY FINDINGS / ANALYSIS

In phase one of this two phase study, overall skin condition improved. In phase two, results indicate significant time savings when using Cavilon™ No Sting Barrier Film. Use of Cavilon™ No Sting Barrier Film was a simple treatment effective in improving skin condition and reducing the time involved in providing care to patients with severe incontinent dermatitis.

Moisture and Irritant Protection

Comparison of the effectiveness of five different skin protective products

LaVoie K, Poster presentation at the Wound Ostomy and Continence Nurses (WOCN) Conference; 2000.
Study Type: Randomized, comparative, n=18

OBJECTIVE OF STUDY

Measure and compare moisture barrier effectiveness and wash-off resistance of five skin protectant products (3M™ Cavilon™ No Sting Barrier Film, Smith & Nephew No-Sting Skin-Prep,® ConvaTec Ilex Skin Protectant Paste, Smith & Nephew Triple Care® Extra Protective Cream, and a developmental skin barrier) on healthy volunteers.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film provided significant moisture barrier effectiveness initially and through four simulated normal washes. Smith & Nephew No-Sting Skin-Prep failed to provide any significant moisture barrier effectiveness. ConvaTec Ilex Skin Protectant provided significant moisture barrier effectiveness initially and through two simulated normal washes. Smith & Nephew Triple Care Extra Protective Cream provided significant moisture barrier effectiveness initially and through four simulated washes. Cavilon™ No Sting Barrier Film provided a significantly better moisture barrier than the competitive products.

The use of 3M™ Cavilon™ No Sting Barrier Film in the management of incontinence dermatitis

Hagelstein S, Bale S, Harding KG, Oral presentation at the European Wound Management Association (EWMA)/JMC Conference in Harrogate, UK; 1998.
Study Type: Case series, n=10

OBJECTIVE OF STUDY

Describe experience of using 3M™ Cavilon™ No Sting Barrier Film on patients with incontinence dermatitis.

KEY FINDINGS / ANALYSIS

These cases demonstrate that Cavilon™ No Sting Barrier Film provides an excellent barrier against urine and feces. Improvement of skin condition after application was noted in the majority of patients.

Incontinence skin care

Lutz J, Poster presentation at the Symposium for Advances in Skin and Wound Care (SAWC); 1998.
Study Type: Case study, n=1

OBJECTIVE OF STUDY

Describe experience of using 3M™ Cavilon™ No Sting Barrier Film in conjunction with hydrocolloid dressings in a patient with incontinence and Stage 2 sacral pressure ulcers.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film was applied to the entire area affected by the incontinence. 3M™ Tegaserb™ Hydrocolloid Dressings were placed over the primary ulcerated areas. Dressings remained in place five days and the barrier film was renewed daily to the surrounding erythematous areas. On the fifth postoperative day, the ulcerated areas were re-epithelialized and the areas of erythema had resolved.

Moisture and Irritant Protection

Barrier film protects skin of incontinent rats

St. Claire MB, St. Claire MC, Davis JA, Chang L, Miller G., *Contemporary Topics in Laboratory Animal Science* 1997;36(5):46-8.
Study Type: Animal study

OBJECTIVE OF STUDY

Examine the effectiveness of 3M™ Cavilon™ No Sting Barrier Film as a means of preventing urine skin scalding in rats used in a spinal cord injury study.

KEY FINDINGS / ANALYSIS

Rats that were treated with Cavilon™ No Sting Barrier Film showed no evidence of urine scalding or adverse events for three weeks postoperatively. Results indicate that Cavilon™ No Sting Barrier Film provides an excellent means of protecting valuable research animals from skin damage secondary to experimental procedures such as induced spinal cord lesions.

Comparison of the efficacy and cost-effectiveness of three skin protectants in the management of incontinence dermatitis

Lutz JB, Leighton B, Kennedy KL, *Proceedings of the 6th European Conference on Advances in Wound Management*, 1996 Oct 1-4; Amsterdam, The Netherlands. Macmillian Magazines Ltd.; 1997.
Study Type: Two phase RCT, n=40

OBJECTIVE OF STUDY

Determine optimum re-application schedule of 3M™ Cavilon™ No Sting Barrier Film and compare the cost-effectiveness of Cavilon™ No Sting Barrier Film when used on that schedule with that of a petrolatum ointment (Coloplast Sween® Peri-Care Moisture Barrier Ointment) and a zinc oxide cream (Sween® Baza®).

KEY FINDINGS / ANALYSIS

All five treatment groups showed significant improvement in skin condition at the end of the 12 day study. Data support a re-application schedule for Cavilon™ No Sting Barrier Film of up to 72 hours when used for the treatment of incontinence dermatitis. The daily cost of Cavilon™ No Sting Barrier Film (when applied every 72 hours) was less than zinc oxide cream and approximately equal to the cost of the petrolatum ointment.

Use of a non-alcohol incontinence barrier film on patients with severely compromised skin

Mooney RA, Wallace J, Newman DK, Smith D, *3M Case Studies*; 1993.
Study Type: Case studies, n=2

OBJECTIVE OF STUDY

Describe experience in using 3M™ Cavilon™ No Sting Barrier Film.

KEY FINDINGS / ANALYSIS

Results show that treatment with Cavilon™ No Sting Barrier Film was not only clinically efficacious but compatible with even the most denuded skin.

Adhesive Trauma Protection

Innovative solutions for skin tears, new absorbent acrylic wound technology

Bain G. 3M Publication; 2008.
Study Type: Case Study, n=1

OBJECTIVE OF STUDY

Describe the experience of using 3M™ Cavilon™ No Sting Barrier Film with 3M™ Tegaderm™ Absorbent Clear Acrylic Dressing on a skin tear injury in an elderly patient.

KEY FINDINGS / ANALYSIS

The use of Tegaderm™ Absorbent Clear Acrylic Dressing with Cavilon™ No Sting Barrier Film allowed easy and continuous observation of the skin tear and the surrounding skin. The dressing was easy to remove without causing skin trauma or putting the newly repaired skin flap at risk. The acrylic pad in the dressing provided absorbency for the small amount of serous discharge and prevented any maceration to the re-epithelialized wound. The combination of Cavilon™ No Sting Barrier Film and Tegaderm™ Absorbent Clear Acrylic Dressing was valuable for securing, protecting and facilitating the closure of the skin tear.

Protection of wound edges with 3M™ Cavilon™ No Sting Barrier Film during vacuum-assisted closure therapy: results of a clinical investigation in patients with chronic leg ulcers

Körper A, Hölzle K, Grabbe S, Dissemond J, *Zeitschrift für Wundheilung* 2007;12(1):6-11.
Study Type: Prospective, non-randomized, n=20

OBJECTIVE OF STUDY

Evaluate the effect of 3M™ Cavilon™ No Sting Barrier Film on wound edge alterations in patients undergoing vacuum-assisted closure therapies.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film was applied once during vacuum-assisted closure therapy for a time period of 48-96 hours. About 75 percent of the patients showed no alterations of the wound edges. During Cavilon™ No Sting Barrier Film treatment, the condition of the wound edge improved in 20 percent of the patients and no therapy-limiting adverse effects were observed. The clinical use of Cavilon™ No Sting Barrier Film in vacuum-assisted closure therapy is a simple method for practical and economic protection of wound edges.

Adhesive Trauma Protection

A prospective randomized trial of the effect of a soluble adhesive on the ease of dressing removal following hypospadias repair

Sanders C, Young A, McAndrew HF, Kenny SE, *Journal of Pediatric Urology* 2007;3(3):209-13.
Study Type: RCT, n=53

OBJECTIVE OF STUDY

Determine if the use of 3M™ Cavilon™ No Sting Barrier Film as part of a novel dressing removal technique resulted in shorter removal times, reduced the child's experience of pain and/or reduced parental anxiety when compared to a standard approach.

KEY FINDINGS / ANALYSIS

The dressing with Cavilon™ No Sting Barrier Film was significantly quicker to remove than the dressing with standard removal procedure, averaging 30 minutes (5-86 minutes) compared to 40 minutes (17-105 minutes), respectively. There were no significant differences in child's pain or parental anxiety score between the two approaches. The novel dressing removal approach incorporating Cavilon™ No Sting Barrier Film resulted in a significantly shorter dressing removal time than the standard procedure.

In search of a better central line dressing protocol in the autologous bone marrow reinfusion patient

Link D, Cutler C, 3M Clinical Study; 1998.
Study Type: RCT, n=50

OBJECTIVE OF STUDY

Compare the effect of 3M™ Cavilon™ No Sting Barrier Film to 3M™ Tegaserb™ THIN Hydrocolloid Dressing on skin protection, skin colonization, laboratory confirmed bloodstream infection, nurse and patient satisfaction, and nursing time when used over subcutaneous cuffed central catheter sites.

KEY FINDINGS / ANALYSIS

The Cavilon™ No Sting Barrier Film protocol proved to be superior in both patient and nurse satisfaction as well as cost analysis. There was no significant difference in skin integrity, skin colonization or laboratory-confirmed bloodstream infection. Authors recommend the use of Cavilon™ No Sting Barrier Film under transparent dressings, changed twice weekly, and this regimen was adopted as their standard of practice.

Comparison of the skin protection properties of various film forming skin protectants

Grove GL, Leyden JJ, Lutz JB, Seifert CM, Poster presentation at the Wound Ostomy and Continence Nurses (WOCN) Conference; 1993.
Study Type: RCT, n=12

OBJECTIVE OF STUDY

Compare four different film-forming skin protectants (barrier films) in an adhesive trauma skin model.

KEY FINDINGS / ANALYSIS

3M's alcohol-free barrier film significantly reduced the degree of skin damage caused by repeated application and removal of two commonly used dressing tapes. No significant differences were found between the alcohol-containing barrier films and the "no protectant but taped sites" suggesting that these products provide little if any protective value against skin stripping.

Friction Protection

A motorized sliding sled apparatus for measuring the coefficient of friction of human skin *in vivo*

Grove GL, Grigoryan A, Houser T, Damia J, Poster presentation at the Clinical Symposium for Advances in Skin and Wound Care (CSASWC) in Orlando; 2010.

Study Type: Non-randomized, comparative, pilot study, n=9

OBJECTIVE OF STUDY

Investigate the effects of two barrier films on the frictional properties on the skin.

KEY FINDINGS / ANALYSIS

3M™ Cavilon™ No Sting Barrier Film dried quickly to a relatively smooth, lower friction surface compared to Medline Sureprep® No-Sting Barrier Film. Medline Sureprep No-Sting Barrier Film remained tacky two minutes after application, resulting in a jerky motion of the sled as it traversed the skin, and a 257 percent higher coefficient of friction compared to Cavilon™ No Sting Barrier Film. In this pilot study, Cavilon™ No Sting Barrier Film demonstrated a significantly lower coefficient of friction than Medline Sureprep No-Sting Barrier Film.

Management of skin toxicity during radiation therapy: a review of the evidence

Kumar S, Juresic E, Marton M, Shafiq J, *Journal of Medical Imaging and Radiation Oncology*, 2010;54(3);264-279.

Study Type: Review

OBJECTIVE OF STUDY

A meta-analysis was performed to systematically review evidence on acute skin toxicity management (grade 2 or greater) for patients undergoing radiotherapy. A review of the literature was conducted on studies published between 1980 and 2008.

KEY FINDINGS / ANALYSIS

Twenty-nine articles were reviewed for this meta-analysis. Only seven articles demonstrated statistically significant results for prophylactic management of the side effect of acute skin toxicity. Topical products included in these citations were: corticosteroids, hyaluronic acid, sucralfate, calendula, 3M™ Cavilon™ No Sting Barrier Film and silver leaf dressing. Results demonstrated that the rate of moist desquamation was significantly reduced with Cavilon™ No Sting Barrier Film and that the pruritis score was significantly reduced in the barrier film area.

A case of...managing radiotherapy-induced skin reactions

Mann L, Quinton M, Ford A, Soomal R, Graham K, *Synergy* 2010; 8-10.

Study Type: Case studies, n=2

OBJECTIVE OF STUDY

Compare 3M™ Cavilon™ No Sting Barrier Film to usual skin care treatment on ease of application, wear time/durability, pain on application and patient comfort in patients receiving both pelvic radiotherapy and adjuvant chemotherapy for carcinoma of the anus.

KEY FINDINGS / ANALYSIS

The use of Cavilon™ No Sting Barrier Film was safe and the patient found it soothing and comfortable when applied. There appeared to be a slight delay in the onset of the inevitable normal radiotherapy skin reaction.

Radiation induced skin reactions

McQuestion M. Radiation Induced Skin Reactions. In Haas ML, Moore-Higgs GJ eds. *Principles of Skin Care and the Oncology Patient*. Pittsburgh, PA: Oncology Nursing Society 2010:134.

Study Type: Review

OBJECTIVE OF STUDY

This chapter reviewed current evidence based recommendations for management of radiation induced skin reactions.

KEY FINDINGS / ANALYSIS

3M™ Cavilon™ No Sting Barrier Film has been shown to reduce the frequency and duration of moist desquamation and pruritis (Graham) compared to Sorbolene Cream. The benefits of Cavilon™ No Sting Barrier Film are summarized, including protection from further trauma and provision of a moisture retaining barrier.

Randomized control trial of 3M™ Cavilon™ No Sting Barrier Film for the prevention of radiation dermatitis in patients with nasopharyngeal carcinoma

Chang L. Oral presentation at the World Union of Wound Healing Societies (WUWHS) in Toronto; 2008.

Study Type: RCT, n=42

OBJECTIVE OF STUDY

Investigate the effectiveness of 3M™ Cavilon™ No Sting Barrier Film for the prevention or reduction of acute radiation-induced dermatitis of grade 2 or higher during radiation therapy for nasopharyngeal cancer patients, compared to no treatment.

KEY FINDINGS / ANALYSIS

Skin reaction area and RTOG scores were significantly different between experimental and control sites towards the end of radiotherapy. Preliminary results of this study demonstrate the advantage for the use of Cavilon™ No Sting Barrier Film in preventing skin breakdown during radiation therapy and consequently reducing the incidence of radiation dermatitis of grade 2 or higher.

Evidence-based skin care management in radiation therapy

McQuestion M. *Seminars in Oncology Nursing* 2006; 22 (3): 163-173.

Study Type: Review

OBJECTIVE OF STUDY

To review studies evaluating the prevention and management of radiation skin reactions and dermatitis.

KEY FINDINGS / ANALYSIS

This review cites the work of Graham (2004).

Friction Protection

Randomized, paired comparison of 3M™ Cavilon™ No Sting Barrier Film versus sorbolene cream (10% glycerine) skin care during postmastectomy irradiation

Graham P, Brown L, Capp A, Fox C, Graham J, et al., *International Journal of Radiation Oncology Biology Physics* 2004;58(1):241-6.

Study Type: Randomized paired comparison, n=61

OBJECTIVE OF STUDY

Test the effect of prophylactic use of 3M™ Cavilon™ No Sting Barrier Film on the rates of radiation treatment-induced moist desquamation among post-mastectomy patients compared with Sorbolene Cream (containing 10% glycerin).

KEY FINDINGS / ANALYSIS

There was significantly less moist desquamation in the Cavilon™ No Sting Barrier Film group compared to the Sorbolene group. Pruritis was also significantly reduced in the Cavilon™ No Sting Barrier Film group. Pain levels were generally low and were not significantly different between the treatment groups. Cavilon™ No Sting Barrier Film reduced the duration and frequency of radiation-induced moist desquamation.

Some uses of 3M™ Cavilon™ No Sting Barrier Film for the prevention of postradiation dermatitis in the head and neck region

Peskova Z, Straubova K., *Sestra* 2004;2:34-36.

Study Type: Non-randomized, comparative, n=8

OBJECTIVE OF STUDY

Evaluate the effect of skin protection with 3M™ Cavilon™ No Sting Barrier Film compared to conventional therapy in patients with tracheostomies receiving radiation therapy.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film offered two considerable advantages: easy and sparing application and a relatively long-lasting integrity of the film. Cavilon™ No Sting Barrier Film helped to prolong the period of tolerance to radiation therapy considerably.

Peristomal Skin Protection

Clinical experience with an alcohol-free skin protectant 3M™ Cavilon™ No Sting Barrier Film

Bracelert V, Ribal A, Poster presentation; 2005.
Study Type: Case studies, n=6

OBJECTIVE OF STUDY

Present benefits for patients and staff of using 3M™ Cavilon™ No Sting Barrier Film in a stoma therapy clinic.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film was used for: apparatus adhesion, peristomal irritation and prevention of irritation of the perineum in incontinent patients. Cavilon™ No Sting Barrier Film was easy to apply, dried rapidly and allowed skin monitoring. It was well accepted by patients because of pain-free application. The cost-benefit ratio was positive and allowed 72 hours of protection. Very good results were also obtained when Cavilon™ No Sting Barrier Film was used in skin folds, around a tracheotomy site, on periwound skin during Negative Pressure Wound Therapy (NPWT) and for peritube protection.

3M™ Cavilon™ No Sting Barrier Film: an effective barrier against the ravages of proteolytic enzymes on peristomal and perianal skin

Jones D, Powell G, Marshall J, Edwards A, Poster presentation at the Annual Conference for the Centre for Community Nursing, University of Hull; 1999.
Study Type: Case studies, n=3

OBJECTIVE OF STUDY

Describe experience of using 3M™ Cavilon™ No Sting Barrier Film for excoriated skin and sore perianal skin following the formation of ileo-anal pouch.

KEY FINDINGS / ANALYSIS

In one patient with pyoderma gangrenosum and a second patient with a leg ulcer of mixed etiology, Cavilon™ No Sting Barrier Film was found to be extremely versatile and easy to apply. It provided a pain-free, long-lasting protective interface between the skin and gastrointestinal fluids. Cavilon™ No Sting Barrier Film was found to be more effective than the traditional methods of skin protection like creams and hydrocolloid preparations.

Non-alcohol barrier film providing a success with stomal therapy patients

Thompson J, Jack L, Bush L, 3M Case Studies; 1997.
Study Type: Case studies, n=3

OBJECTIVE OF STUDY

Describe experiences using 3M™ Cavilon™ No Sting Barrier Film.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film was successfully used on two patients with excoriated skin in the peristomal and perianal area. In the third case, Cavilon™ No Sting Barrier Film was used on several skin tears on an elderly, malnourished woman. In all cases, improvement was noted within 24 hours after application of Cavilon™ No Sting Barrier Film with continued improvement at 48 hours.

Multiple Indications

Clinical and economic evidence supporting a transparent barrier film dressing in incontinence-associated dermatitis and periwound skin protection

Guest JF, Greener MJ, Vowden K, Vowden P. *Journal of Wound Care* 2011; 20(2):76-84.
Study Type: Review

OBJECTIVE OF STUDY

Summarize the clinical and economic evidence supporting use of 3M™ Cavilon™ No Sting Barrier Film for the prevention of incontinence-associated dermatitis and periwound damage.

KEY FINDINGS / ANALYSIS

Six clinical studies including data on 1,563 patients treated with Cavilon™ No Sting Barrier Film or a comparator were identified. The barrier film was as effective as petrolatum ointments and more effective than zinc oxide formulations in preventing incontinence associated dermatitis. For periwound skin protection, Cavilon™ No Sting Barrier Film was effective but not significantly different than petrolatum and zinc oxide products. Cavilon™ No Sting Barrier Film was potentially more cost-effective when used for incontinence-associated dermatitis prophylaxis and periwound skin protection than either petrolatum or zinc oxide products, largely due to nursing time savings.

Don't neglect skin care in the treatment of chronic wounds

Hallern BV, Lilienkamp M, *Die Schwester / Der Pfleger* 2001;40(7):596-598.
Study Type: Case studies, n=2

OBJECTIVE OF STUDY

Present two case studies to evaluate the ability of 3M™ Cavilon™ No Sting Barrier Film to provide skin protection from moisture.

KEY FINDINGS / ANALYSIS

The first case study is a diabetic patient with a large ulcer on the forefoot. Maceration of the toes and especially the web spaces was successfully treated with Cavilon™ No Sting Barrier Film. The second case study is a patient with a large wound in the groin area with copious drainage. Maceration of the periwound skin was successfully prevented with the use of Cavilon™ No Sting Barrier Film. The two case studies presented indicate the successful use of Cavilon™ No Sting Barrier Film to protect the skin.

Wound protection for delicate baby and children's skin

Gerber V, *Kinderkrankenschwester* 2001;20(12):517-8.
Study Type: Case studies, n=2

OBJECTIVE OF STUDY

Describe experiences with 3M™ Cavilon™ No Sting Barrier Film for children for a variety of indications such as periwound care, maceration on the chin and diaper dermatitis.

KEY FINDINGS / ANALYSIS

Two case studies are presented. The first case study is on a non-healing ulcer in the groin area of a 14-week old baby. Healing was documented after five days. The second case study is on the care of a gastrostomy in a seriously disabled child. In this case, Cavilon™ No Sting Barrier Film helped to prevent skin damage.

Multiple Indications

A clinical evaluation of 3M™ Cavilon™ No Sting Barrier Film

Campbell K, Woodbury MG, Whittle H, Labate T, Hoskin A, *Ostomy Wound Management* 2000;46(1):24-30.
Study Type: Observational, non-comparative, n=33

OBJECTIVE OF STUDY

Determine if 3M™ Cavilon™ No Sting Barrier Film reduced redness, assisted in the adhesion of dressing and condom catheters, prevented or reduced maceration, prevented or reduced skin stripping, and had any adverse effects on patients.

KEY FINDINGS / ANALYSIS

Geriatric and spinal cord patients were enrolled in this study. Redness was reduced in 96 percent of patients who were at risk. Maceration was prevented in 94 percent of patients, and skin stripping was prevented in 100 percent of patients. Dressing adhesion improved significantly in 90 percent of subjects. For all patients, barrier film was easy to apply and there were no adverse events. Cavilon™ No Sting Barrier Film was an effective liquid skin sealant and protectant.

Skin care for intensive care patients

Samann S. *KrankenPflege Journal* 1999; 37: 328-330.
Study Type: Expert opinion

OBJECTIVE OF STUDY

Review skin care practices for patients in intensive care units.

KEY FINDINGS / ANALYSIS

The author recommends the use of 3M™ Cavilon™ No Sting Barrier Film for protection from adhesive trauma for patients with catheters. Improvement in skin condition was noted following application of Cavilon™ No Sting Barrier Film under dressings. Another use of Cavilon™ No Sting Barrier Film was application in areas of risk (within skin folds under breasts and groin) as soon as skin redness was observed. Other product properties reviewed included pain free application and drying within 30 seconds.

Barrier for effective wound care

Butcher M, Poster presentation at the European Conference on Advances in Wound Management, Harrogate, UK; 1999.
Study Type: Review and expert opinion

OBJECTIVE OF STUDY

Discuss the use of 3M™ Cavilon™ No Sting Barrier Film in a variety of clinical situations including: excoriation following severe diarrhea, peri-gastrotomy, tracheostomy wounds, leg ulcers and wound drains.

KEY FINDINGS / ANALYSIS

Clinical use of Cavilon™ No Sting Barrier Film supported the research outcomes identified by the various trials of the product and as a result, this product was added to a wound care formulary.

Review Articles

Effectiveness of 3M™ Cavilon™ No Sting Barrier Film for preventing skin damage: a systematic review

García-Fernández F, Pancorbo-Hidalgo P, Verdú-Soriano J, *Gerokomos* 2009;20(1):29- 40.
Study Type: Review, n=30 studies

OBJECTIVE OF STUDY

Review the available evidence on clinical efficacy and cost-effectiveness for 3M™ Cavilon™ No Sting Barrier Film for protecting skin against irritating agents.

KEY FINDINGS / ANALYSIS

Use of Cavilon™ No Sting Barrier Film significantly reduced the erythema in edges of exudative venous ulcers (evidence: high), with an overall clinical effectiveness similar to zinc oxide creams (moderate). Cavilon™ No Sting Barrier Film was easier to apply and remove than zinc oxide creams (moderate). In patients with incontinence, the use of Cavilon™ No Sting Barrier Film reduced the extent of dermatitis better than moisturizing creams (moderate) and had equal effectiveness in dermatitis prevention as zinc oxide creams or petrolatum (high), but with better effect in decreasing redness and denudation (high). In radiotherapy patients, the Cavilon™ No Sting Barrier Film reduced both the area and severity of radiodermatitis (moderate). The cost of Cavilon™ No Sting Barrier Film in both product and nursing time was significantly lower than zinc oxide creams (high).

The nursing care of common raw and bleeding conditions

Hampton S, *British Journal of Nursing* 2004;13(10):618-620.
Study Type: Expert opinion

OBJECTIVE OF STUDY

Describe benefits of 3M™ Cavilon™ No Sting Barrier Film.

KEY FINDINGS / ANALYSIS

The author reviews benefits described in two Cavilon™ No Sting Barrier Film studies by Campbell et al (2000) and Williams (1998).

3M™ Cavilon™ No Sting Barrier Film in the protection of vulnerable skin

Williams C, *British Journal of Nursing* 1998;7(10):613-5.
Study Type: Expert opinion

OBJECTIVE OF STUDY

Review features and benefits of 3M™ Cavilon™ No Sting Barrier Film including directions for use and research.

KEY FINDINGS / ANALYSIS

Studies discussed include: Rolstad (1994), Lutz and White (1997), Grove (1993) and Hampton (1997). Cavilon™ No Sting Barrier Film appears to meet the requirements of providing an easy-to-use, cost-effective, and pain-free product. Cavilon™ No Sting Barrier Film can reduce skin irritation and also increase the wear time and waterproof seal of some adhesive dressings.

Review Articles

Clinical review of a new non-alcohol film forming skin protectant

Lutz JB, 3M Review Paper; 1993.
Study Type: Review

OBJECTIVE OF STUDY

Present an overview of pre-clinical and clinical testing on performance attributes of 3M™ Cavilon™ No Sting Barrier Film. Performance attributes included cytotoxicity, patient comfort, protection from skin stripping, moisture barrier effectiveness and protection from urine and stool. Comparisons were made to four other skin protectants: ConvaTec AllKare® Protective Barrier Wipe, Bard® Protective Barrier Film, Mentor Shield Skin™, Smith & Nephew United Skin-Prep™.

KEY FINDINGS / ANALYSIS

Cavilon™ No Sting Barrier Film was non-cytotoxic and pain free during application when used on compromised skin. It was highly effective in protecting skin from adhesive tape trauma, and provided significant moisture barrier protection four days after application. It is clinically proven and cost-effective in incontinence protection. Cavilon™ No Sting Barrier Film compared favorably in these attributes to the other four other skin protectants (barrier films).

Other

A comparison of the durability of four barrier film products over a 72 hour period on human volunteers

Houser T, Grove GL, Zerweck C, Poster presentation at the Clinical Symposium for Advances in Skin and Wound Care (CSASWC) in Orlando; 2010.
Study Type: RCT, n=18

OBJECTIVE OF STUDY

Compare the durability of four barrier film products over a 72 hour period using activated carbon powder (ACP) as a marker substance for efficacy of the barrier film at providing a physical barrier to wash-off and wear-off.

KEY FINDINGS / ANALYSIS

After 72 hours of wear, 3M™ Cavilon™ No Sting Barrier Film was more than twice as effective at preventing wash-off and wear-off of a marker substance from the skin compared to Medline Sureprep™ No-Sting Barrier Film. Smith & Nephew Skin-Prep™ and No-Sting Skin-Prep® appear to provide little barrier effectiveness even after 24 hours of wear. These films appear to quickly wash or wear off the skin. Cavilon™ No Sting Barrier Film appears to have significantly less wash-off and wear-off than competitive barrier films.

Assessment of diaper-clogging potential of petrolatum moisture barriers

Zehrer CL, Newman DK, Grove GL, Lutz JB, *Ostomy Wound Management* 2005;51(12):54-8.
Study Type: Randomized, balanced-block design, n=16

OBJECTIVE OF STUDY

Examine whether four commonly used moisture barriers for the treatment and prevention of incontinence associated dermatitis clog a commonly used adult absorbent brief under simulated normal use conditions.

KEY FINDINGS / ANALYSIS

Results indicate significant differences between the four test products both in percent transfer and in mini brief fluid absorption. From 59 to 69 percent of the petrolatum-based products transferred from the skin to the mini briefs resulting in a 54 to 90 percent reduction in fluid uptake. 3M™ Cavilon™ No Sting Barrier Film did not transfer to the mini brief and fluid uptake (98 percent) was minimally affected.

Comparison of dressing removal following hypospadias repair

Sanders C, *British Journal of Nursing* 2003;12(15 Suppl):S21-8.
Study Type: RCT, n=20

OBJECTIVE OF STUDY

Compare a standard method of dressing application to a dressing application incorporating 3M™ Cavilon™ No Sting Barrier Film on dressing removal time and pain in children with hypospadias repair.

KEY FINDINGS / ANALYSIS

Time savings were noted in the Cavilon™ No Sting Barrier Film group. The mean time from start until the end of the procedures was 29.50 minutes for the control group and 9.33 minutes for the Cavilon™ No Sting Barrier Film group. Children in the Cavilon™ No Sting Barrier Film group had lower pain scores before dressing removal than the control group. Data from this small feasibility study indicates the need for a further, more detailed randomized controlled trial.

Measuring sting potential of various film forming skin protectants


Schwartzmiller DH, Lutz JB, Grove GL, Poster presentation at the Symposium for Advances in Skin and Wound Care (SAWC); 1994.
Study Type: RCT, n=15

OBJECTIVE OF STUDY

Compare and quantify the perception of pain during application of various alcohol and non-alcohol based film forming skin protectants (barrier films): 3M™ Cavilon™ No Sting Barrier Film, ConvaTec AllKare® Protective Barrier Wipe, Mentor Shield Skin,™ Smith & Nephew Skin Prep® and Bard® Protective Barrier Film.

KEY FINDINGS / ANALYSIS

The alcohol based barrier film caused severe pain when applied to freshly stripped wounds. In the non-alcohol based group (Cavilon™ No Sting Barrier Film) results were statistically equivalent to the saline negative control, and did not cause pain when applied.

The background is a solid blue color with a pattern of water droplets of various sizes, some in focus and some blurred, creating a sense of depth and moisture.

More Evidence
than Any Other
Moisture Barrier or Barrier Film



Available in Canada from:

Critical & Chronic Care Solutions Division

3M Canada Company

P.O. Box 5757

London, Ontario N6A 4T1

Canada

1-800-364-3577

www.3M.ca/skinwound

3M Health Care

2510 Conway Avenue

St. Paul, MN 55144

USA

1-800-228-3957

www.3M.com/Cavilon

Please recycle. Printed in Canada. © 2013, 3M. All rights reserved.
3M, Tegaderm and Cavilon are trademarks of 3M. Used under license in Canada.
All other trade names referenced are the service marks, trademarks,
or registered trademarks of their respective companies.
1305-01273E