Abstract of clinical studies on silicone dressing.


BACKGROUND: Keloid and hypertrophic scars are common and are caused by a proliferation of dermal tissue following skin injury. They cause functional and psychological problems for patients, and their management can be difficult. The use of silicon gel sheeting to prevent and treat hypertrophic scarring is still relatively new, and started in 1981 with treatment of burn scars. OBJECTIVES: To determine the effectiveness of silicon gel sheeting for: (1) prevention of hypertrophic or keloid scarring in people with newly healed wounds (e.g. post surgery); (2) treatment of established scarring in people with existing keloid or hypertrophic scars. SEARCH STRATEGY: Trials were identified from searches of the Cochrane Wounds Group Specialised Register (searched September 2005), the Cochrane Central Register of Controlled Trials (The Cochrane Library Issue 3, 2005); MEDLINE (1989 to June 2002); EMBASE (1988 to May 2002); CINAHL (1982 to May 2002) and reference lists of articles and relevant reviews. The major supplier of silicon gel sheeting (Smith and Nephew) was approached for details of unpublished, ongoing and recently published trials. SELECTION CRITERIA: Any randomised or quasi-randomised controlled trials, or controlled clinical trials comparing silicon gel sheeting for prevention or treatment of hypertrophic or keloid scars against no treatment, placebo, or any other treatment type except surgery. DATA COLLECTION AND ANALYSIS: All relevant trials were assessed for methodological quality. Data were extracted independently by both reviewers using a standardized form, and the results cross-checked. All trials, meeting the selection criteria were assessed for methodological quality. MAIN RESULTS: Thirteen trials, involving 559 people, ranging in age from 2 to 81 years, were included in the review. The trials compared adhesive silicon gel sheeting with control; non-silicon gel sheeting; silicon gel plates with added Vitamin E; laser therapy; triamcinolone acetonide injection, and non-adhesive silicon gel sheeting. In the prevention studies, when compared with a no treatment option; whilst silicon gel sheeting reduced the incidence of hypertrophic scarring in people prone to scarring, (RR 0.46, 95% CI 0.21 to 0.98) these studies were highly susceptible to bias. Silicon gel sheeting produced a statistically significant improvement in scar elasticity, (RR 8.60, 95% CI 2.55 to 29.02), but again these studies were highly susceptible to bias. AUTHORS' CONCLUSIONS: Trials evaluating silicon gel sheeting as a treatment for hypertrophic and keloid scarring are of poor quality and highly susceptible to bias. There is weak evidence of a benefit of silicon gel sheeting as a prevention for abnormal scarring in high risk individuals but the poor quality of research means a great deal of uncertainty prevails.

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Silicone gel sheet treatment is widely used to treat hypertrophic scars and keloids since it is easily applied and prevents scar pain and itching. We used Cica-Care silicone gel sheets in the conservative treatment of six patients for 24 weeks and recorded pain, itching, redness, and scar elevation every 4 weeks. We also investigated the number of mast cells and Fas antigen expression in the lesional skin (one patient) before and after treatment. The pain and itching clearly decreased after 4 weeks of the silicone gel sheeting and disappeared after 12 weeks. Twelve weeks were required for a reduction in scar redness and elevation. After 24 weeks, a decrease in the number of mast cells and the enhanced expression of Fas antigen by lesional fibroblasts were observed. Thus, silicone gel sheeting is effective and safe, especially with more severe symptoms of pain and itching possibly induced by mediators derived from increased mast cells.

Ross Tilley Burn Center, Sunnybrook and Women's College Health Sciences Center and the Multiple Trauma & Complex Care Program, St John's Rehabilitation Hospital, Toronto, Ontario, Canada.

The purpose of this study was to determine whether enhanced patient education increases compliance with silicone gel sheeting (SGS) on hypertrophic (HT) scars and to determine whether this results in any improvement in scar outcome. Outpatients with a HT burn scar were randomized to either a conventional education group (CEG), which received routine instruction on the use of SGS or to an enhanced education Group (EEG), which also received routine instruction, along with a detailed 5-page handout and a 26-minute videotape. The CEG (n = 12, 67% male, age 38 +/- 10 years) and the EEG (n = 13, 77% male, age 47 +/- 10 years) were followed monthly for 6 months. Subjects in the EEG wore SGS for 21.8 +/- 3.0 hr/day compared with only 10.1 +/- 7.5 hr/day of use in the CEG (P < .001). Scars in the EEG had significantly better Vancouver Scar Scale ratings for pigmentation (P = .02), height (P = .03), and pliability (P = .02) by 6 months. Patients in the EEG had significantly better subjective ratings for the parameters of scar itch (P = .01), color (P = .02), hardness (P = .01), and elevation (P = .01). Finally, scars in the EEG had significantly better ratings for border height (P = .002) and thickness (P = .01) at 6 months based on evaluation of digital photographs. Detailed multimedia patient education improves compliance with SGS and results in a better scar outcome.

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BACKGROUND: Onychocryptosis, commonly referred to as ingrown nails, has many therapeutic alternatives for its management. Although mild cases can be treated conservatively, in severe cases, surgical treatment is preferred. Silicone gel sheeting is found to be effective in the treatment of hypertrophic scars and keloids.

OBJECTIVE: To document the effectiveness of silicone gel sheeting in the management of patients with onychocryptosis and in the prevention of the recurrences by breaking the devil's circle, which usually took place after the surgical procedures used in the treatment of the onychocryptosis.

METHODS: Fourteen patients were enrolled in the study. Entry criteria required the presence of slight (2 patients), moderate (2 patients), or severe (10 patients) onychocryptosis. The simple technique used in the study was the excision of the one-quarter part of the lesional side of the nail plate without excising the granulation tissue. After 24 hours, the silicone was placed on the granulation tissue and the exposed nail bed. Silicone gel sheet was bandaged loosely without applying any pressure. Patients entering the study were given detailed instructions in applying and using the gel for 12 hours during the daytime. The study lasted for 14 months and was composed of a treatment period of 4 months and a follow-up period of 10 months. The patients were evaluated every 2 weeks in the first month and then monthly. The change in thickness of granulation tissue was evaluated by comparing them with the baseline photographs and those taken at each visit.

RESULTS: The management and prevention of onychocryptosis were achieved in 12 of 14 patients (85.71%). The silicone gel sheeting treatment was well tolerated except for an occasional transient exudation, which was resolved when the treatment was withdrawn.

CONCLUSION: The results show that the new method that we used for the treatment of onychocryptosis is successful in reducing the thickness of the hypertrophic nail fold and prevents the recurrence of the condition during the regrowth of the nail plate by breaking the devil's circle. The advantage of this method is that it is not destructive to the nail matrix and the adjacent tissue.
5. Topigel in the treatment of hypertrophic scars after burn injuries. 


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The authors present the results of a medium-term study in which they investigated the therapeutic effect of the silicone elastomer TopiGel on developing hypertrophic scars in a group of patients after burn injuries classified as IIb or deeper. The hitherto published results are very encouraging. This medium-term study confirmed the hypothesis that TopiGel has a positive effect on the reduction, stabilization and normalization of hypertrophic scars. In 48 patients (96%) out of a total of 50, stabilization of the scar occurred as well as its functional and cosmetic normalization, although the subjective view of the patients or parents (in case of pediatric patients) differed in some instances. In two children (4%) only a significant reduction of the scar occurred and not normalization, due to incorrect application of the gel by the parents, lack of adherence to basic hygienic principles or the recommended procedure of gel application. In case of repeated complications, treatment was not pursued. In two patients (4%) treatment was discontinued for a short time due to an allergic skin reaction subsequently, treatment was resumed until complete stabilization of the scar was achieved. The study ruled out a positive therapeutic effect of the silicone sheet on the painfulness of a scar and old, mature hypertrophic scars.

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Many techniques for management of hypertrophic scars and keloids have been proven through extensive use, but few have been supported by prospective studies with adequate control groups. Several new therapies showed good results in small-scale trials, but these have not been repeated in larger trials with long-term follow-up. This article reports a qualitative overview of the available clinical literature by an international panel of experts using standard methods of appraisal. The article provides evidence-based recommendations on prevention and treatment of abnormal scarring and, where studies are insufficient, consensus on best practice. The recommendations focus on the management of hypertrophic scars and keloids, and are internationally applicable in a range of clinical situations. These recommendations support a move to a more evidence-based approach in scar management. This approach highlights a primary role for silicone gel sheeting and intralesional corticosteroids in the management of a wide variety of abnormal scars. The authors concluded that these are the only treatments for which sufficient evidence exists to make evidence-based recommendations. A number of other therapies that are in common use have achieved acceptance by the authors as standard practice. However, it is highly desirable that many standard practices and new emerging therapies undergo large-scale studies with long-term follow-up before being recommended conclusively as alternative therapies for scar management.

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The mechanism of action of topical silicone gel sheets on hypertrophic scars is not well understood and their effect on the blood flow within hypertrophic scars has not been investigated. The purpose of this study was to examine whether application of silicone gel sheets produced any acute effects on blood flow in hypertrophic burn scars. Perfusion of hypertrophic scars and adjacent normal skin was measured using a laser Doppler with and without application of silicone gel sheets. Continuous measurements were made for 5 minutes before gel application, for 30 minutes during gel application and for 5 minutes following gel removal. Surface temperature of the scar was continuously monitored. An occupational therapist, blinded to the perfusion level, rated each scar using the Vancouver Scar Scale. Eighteen scars and adjacent control sites in sixteen adult burn patients (11 male, 5 female; mean age: 42 +/- 14 years) were evaluated. The mean scar age was 5.4 +/- 3.7 months. The mean Vancouver Scar Scale was 5.5 +/- 2.4. Hypertrophic scars demonstrated higher perfusion measurements at baseline compared to control areas (58.5 +/- 19.3 flux units vs 25.0 +/- 8.4 flux units; P < 0.001). Application of silicone sheeting gel did not significantly alter perfusion in either the hypertrophic scar or normal tissue from the baseline measurements. However, application of silicone gel sheeting did significantly increase the mean baseline surface temperature of the hypertrophic scar from 29 +/- 0.8 degrees C to 30.7 +/- 0.6 degrees C (P < 0.001). The mechanism of action of silicone gel sheeting probably does not involve an acute alteration in blood flow within the scar. However, surface temperature of the scar increased significantly following gel application, raising the possibility that temperature alteration is involved in the mechanism of action.

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BACKGROUND: Fibroproliferative disorders, which include hypertrophic scars and keloids, represent deviations from the normal process of wound healing. The fibrogenic cytokines have been associated with excessive scarring. It has been proposed that placing silicone in contact with hypertrophic scars may prove to be an effective form of treatment. This may be a result of downregulating fibroblasts and/or decreasing the fibrogenic cytokines. An in vitro model to study wound contraction is a fibroblast populated collagen lattice (FPCL). This study used FPCL as a method to study the effect of silicone sheeting on hypertrophic scar fibroblasts.

METHODS: Fibroblast cultures were obtained and collagen lattices were prepared. Silicone sheeting was placed over the collagen matrix versus Saran wrap used as a treatment control. The amount of gel contraction was measured every 24 hours for five days. The supernatant obtained from the culture medium following completion of the FPCL portion of the experiment was then used in an immunoassay for TGFbeta2.

RESULTS: A statistically significant decrease in amount of FPCL contraction occurred between three of the four brands of silicone sheets used compared to untreated control or Saran wrap treated FPCL. The immunoassay for TGFbeta2 showed a statistically significant decrease with all four types of silicone sheeting.

CONCLUSION: FPCLs populated with burn hypertrophic scar fibroblasts exposed to silicone sheeting have decreased contraction compared to an unexposed control and Saran wrap treated control. In addition, TGFbeta2 is downregulated in the silicone exposed group. It appears that silicone sheeting may act by downregulating fibroblasts and decreasing fibrogenic cytokines.

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Twenty five consecutive Saudi patients who underwent treatment of hypertrophic scars using Cica-care silicone gel sheets were included. The scars were secondary to burns or traumatic friction injuries. There were 15 females and 10 males with a mean age of nine years. Patients were given detailed instructions in applying and washing the gel and attended a review clinic regularly. At each visit, problems and scar assessment using the Vancouver scale were documented by an experienced occupational therapist. Problems associated with gel sheeting were common and included persistent pruritis (80%), skin breakdown (8%), skin rash (28%), skin maceration (16%), foul smell from the gel (4%), poor durability of the sheet (8%), failure of the sheet to improve hydration of dry scars (52%), poor patient compliance (12%) and poor response of the scar to treatment (24%). Most of these problems were eliminated by temporary interruption of treatment, more frequent washings of the gel sheet, better skin hygiene and occasionally by changing the brand of gel sheets. Permanent discontinuation of treatment occurred in only one patient and was because of lack of response to treatment. The modes of action of silicone gel in the treatment of hypertrophic scars are discussed.

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BACKGROUND: Topical silicone gel sheeting has been used for more than 20 years to help reduce the size of hypertrophic scars and keloids. Its clinical efficacy and safety is well established. OBJECTIVE: To determine whether topical silicone gel sheeting can be used to prevent hypertrophic scars and keloids from forming following dermatologic skin surgery. METHODS: Patients undergoing skin surgery were stratified into two groups: those with no history of abnormal scarring (low-risk group) and those with a history of abnormal scarring (high-risk group). Following the procedure, patients within each group were randomized to receive either routine postoperative care or topical silicone gel sheeting (48 hours after surgery). Patients were followed for 6 months. RESULTS: In the low-risk group, there were no statistical differences between individuals using routine postoperative care or using topical silicone gel sheets. In the high-risk group, there was a statistical difference (39% versus 71%) between patients who did not develop abnormal scars and used topical silicone gel sheeting and patients who developed abnormal scars after routine postoperative treatment. Those individuals having a scar revision procedure also showed a statistical difference if topical silicone gel sheeting was used following surgery. CONCLUSION: Topical silicone gel sheeting, with a 20-year history of satisfaction in dermatology, now appears to be useful in the prevention of hypertrophic scars and keloids in patients undergoing scar revision.

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Various groups have reported the efficacy of treatment with topical silicone gel sheet (SGS) for keloids and hypertrophic scars. Because its hydrating effect on the stratum corneum (SC) has been suggested as a mechanism underlying its therapeutic effectiveness, we evaluated it by comparing it with simple plastic film occlusion. With biophysical instruments we assessed the water content of the skin surface as well as its water evaporation on the flexor aspects of bilateral forearms of 10 healthy volunteers for 30min after removal of dressings of SGS or a plastic film that were applied either for 1 day or for 7 days. Occlusion with SGS or plastic film induced hydration of the skin surface, which was followed by an initial quick and later slow process of dehydration when the skin was exposed to the ambient atmosphere. The magnitude of the increase in hydration induced by SGS was always smaller than that of the plastic film occlusion and, unlike the latter treatment, hydration became less with repetition of SGS treatment. On day 7, the SC hydration quickly reduced to the level of non-treated control skin after removal of the dressings. An in vivo test demonstrated that the water-holding capacity of the SC normalised after 7 days of SGS treatment. SGS probably produces a favourable condition for the skin by protecting it from various environmental stimuli, while keeping the SC in an adequately but not over-hydrated condition.

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Topical treatments for the body are beneficial for photoageing as well as for specific disease processes, such as scars or striae. Every patient should topically apply photoprotectants in order to prevent photodamage to the skin. Tretinoin can improve body skin and has a documented use in striae. Alpha-hydroxy acids can restore body skin when used on a regular basis. Antioxidants may be of benefit. Scars can be improved with a variety of topically applied agents ranging from silicone gel sheeting to super-potent topical steroids. Chemical peeling for the body can improve the skin with the use of alpha- or beta-hydroxy acids. While topical therapy can improve body skin, adjunctive surgical therapy may be needed to correct body skin disorders or concerns fully.

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A randomised, intra-individual, comparative study demonstrated that both qualitative improvements and significant changes in skin functional condition can be achieved in the tissue of older, mature scars. Four treatment modalities were studied in an intra-individual comparison involving 12 volunteers with 2.5 to 4-year-old scars. The treatments were: a self-adherent, hydroactive, polyurethane dressing alone; polyurethane plus compression; silicone sheeting plus compression; and compression alone. Evaluation criteria were changes in the microcirculation, roughness and the skin temperature of the scar tissue. All treatment modalities were found to have significant effects both on tissue function and scar tissue surface structure. The most pronounced effects were achieved with the combination of polyurethane dressing plus compression or silicone sheeting plus compression. The positive effect of the polyurethane dressing alone on scar tissue was even slightly superior to that of compression therapy alone.

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An open clinical trial was conducted to assess the effect of self-adhesive silicone gel sheet (SASGS) for the treatment of hypertrophic scars and keloids in Thai people. Patients were instructed to apply the SASGS to the scars as long as possible, but not less than 12 hours per day for at least 8 weeks. The subjective results of the treatment were evaluated by the patients. The scars were evaluated for color, height, weight before and after treatment at 4 and 8 weeks. Eighteen patients with 18 hypertrophic scars or keloids were recruited into the study. Their ages ranged from 6 to 33 years (mean 21 years). The average duration of the scars was 5.7 years. Twelve patients (66.67%) stated good results. All of the 18 patients wanted to continue the treatment with SASGS. Heights of the scars were reduced in 12 lesions (66.67%) after treatment for 8 weeks (P = 0.058). Weights of the lesions were decreased in 10 lesions (55.55%) but were not statistically different (P = 0.090). Seven lesions (36.84%) were improved in color. Two patients (11.11%) developed erythematous rash around the lesions which subsided after withdrawal of the treatment. The long term follow-up for the recurrence and the mechanism of action of this treatment should be studied further.

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The efficacy of topical silicone gel sheeting in prevention and/or reduction of keloids and hypertrophic scars is well recognized. In the present study, we reexamined the possible release of silicone-related compound(s) from a commercially available silicone gel sheet (Cica-Care, Smith and Nephew, Hull, England) in aqueous media in vitro. The silicone gel sheet was also applied on the excised skin surface to examine the possible distribution of silicone-related compounds into the skin in vitro. Silicone-related compounds were measured as silicon by an inductively coupled plasma-atomic emission spectrophotometer. When a piece of silicone gel sheet was placed in phosphate buffer solution (pH 3-9) at 37 degrees C for 7 days, the concentration of silicon in the medium increased with time, depending on the pH of the medium. This indicates that the released silicone-related compounds are water-soluble. When Cica-Care was applied on the surface of excised rat skin, human axilla skin and hypertrophic scars under hydrated conditions in vitro, silicon was detected in all skin samples. Greater distribution was observed in rat skin than in human axilla skin and hypertrophic scars. The release of silicone-related compounds from a silicone gel sheet (Cica-Care) and their distribution into the skin were demonstrated in vitro. Silicone-related compounds distributed into the skin may have pharmacological effects on the skin. Further investigation will be necessary to investigate in detail the action of silicone-related compounds on the proliferation of fibroblasts and excessive production of collagen.

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Punch grafting was performed in 15 patients using punches varying in size from 2 to 3 mm in diameter. Silicone gel sheets were used as a post-operative dressing. Removal of the dressings after 7 days revealed no lifting of grafts in 13 patients. A minimally raised surface seen in two patients flattened after 6 to 8 weeks of continuous use of the dressing. At two months of follow-up, no cobblestoning or any other untoward effect was evident. Firm pressure provided by silicone gel sheets probably prevents cobblestoning by counteracting forces which tend to lift the grafts. Additionally, the sheets act as a brace preventing graft dislocation, provide a sterile atmosphere underneath the grafts, facilitate periodic observation due to their transparency, and are easily removed at the time of follow-up.

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BACKGROUND: Success of skin grafts depends on sufficient immobilization and early intervention for hematoma, seroma, or infection. OBJECTIVE: To stabilize and cover skin grafts with a tie-over technique using translucent silicone gel sheet. METHODS: Twenty-seven skin defects were resurfaced with skin grafts. A sterile silicone gel sheet was placed over the skin graft. Gel was fixed to the wound edges with skin staplers. RESULTS: All grafts healed without any complication. CONCLUSION: Using silicone gel sheeting on 27 skin grafts, we found that it is an effective method for stabilization and allows direct visualization of the graft in order to inspect hematoma-like complications.

Technion Israel Institute of Technology, Lady Davis Carmel Hospital, and Maccabi Sick Fund, Haifa, Israel.

Silicone gel and silicone occlusive sheeting are widely used at present for the treatment of hypertrophic and keloid scars, without any scientific explanation as to their mode of action. In a recent paper the possibility was raised that static electricity generated by friction-activated silicone sheeting could be the reason for this effect, and that it can, with time, cause involution of hypertrophic and keloid scars. The objective of this study was to test this hypothesis and to observe whether a continuous and also an increased negatively charged static-electric field will shorten the treatment period. A device to implement these requirements gradually evolved over a 5-year period. A number of prototypes were tested until the final product was attained. Some of the patients in this study were treated initially with a silicone sponge inserted in the cushion. Later this version was changed to the final design described herein. A silicone cushion was developed with the purpose of increasing a negative static-electric charge to accelerate the regression process. The cushion is custom-made using a silicone occlusive sheeting envelope of 0.75-mm thickness, which does not deteriorate with use, and is partially filled with high viscosity silicone oil. Its edges are sealed, and its size is designed to extend a little beyond the scarred area. Static electricity readings, generated by activating the cushion by pumping action with the fingers, stretching or deforming the cushion, are invariably much higher when compared with those obtained with silicone occlusive sheeting and silicone gel sheeting. The interaction between the negatively charged ions of the cushion and the ionic charges of the tissue fluids may be the critical factor in achieving hypertrophic and keloid scars involution. Of the 30 patients enrolled in the study, 3 patients dropped out. Treatment with the silicone cushions yielded 63.3 percent cessation of itching and burning followed by pallor and flattening of the scar, some markedly so, over a few weeks to 6-month period. An additional 26.6 percent had their scars resolved in up to 12 months of treatment. Good contact of the cushion over the scar has been shown to be important in this clinical trial, and much creativity is needed for making elastic strap bindings that ensure this contact. The clinical trials extended over a 12-month period. Ten patients (33.3 percent) who had recalcitrant scars with little response to the use of the silicone cushion were given intralesional corticosteroid injections, in addition to the continued use of the cushion, resulting in a fairly rapid resolution of these scars over a period of months to a year.

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BACKGROUND. Hypertrophic scars and keloids remain a problem for surgeons. Topical and intralesional corticosteroids, positive pressure dressings, cryotherapy, and laser therapy are helpful but not uniformly successful. OBJECTIVE. To document the effectiveness of silicone gel sheeting in the prevention and/or reduction of evolving hypertrophic scars and keloids. METHODS. Silicone gel sheeting was placed over evolving scars in 20 cases. The dressing was worn for at least 12 hours a day. Biopsies were examined for the presence of silica in the tissue. RESULTS. Lesions improved during the treatment period in 85% of the cases. The mechanisms of action are unknown. Positive pressure was not necessary. No silica from the dressing was found at the wound site. CONCLUSION. Daily treatments with silicone gel sheeting should begin as soon as an itchy red streak develops in a maturing wound. The dressing is effective in reducing the bulk of these lesions.

The purpose of this study was to analyze the efficacy of silicone gel sheeting in the treatment of fresh and long-standing hypertrophic and keloid scars. All subjects applied the gel sheeting in the same fashion and wore it for twelve to twenty-four hours per day for at least two months. After at least six months' follow-up, twenty of thirty-six (56 percent) chronic scars were improved. Eleven of fourteen fresh hypertrophic scars (79 percent) did not recur after surgery during a similar follow-up period. Side effects were minimal. Silicone gel sheeting is safe and effective treatment for hypertrophic and keloid scars. The mechanism of action is not completely understood.

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BACKGROUND. Topical silicone gel sheeting has been used successfully in the management of hypertrophic and keloid scars resulting from thermal burn wounds. METHODS. An open-label approach using the silicone gel sheets was performed using hypertrophic and keloid scars secondary to surgical procedures or traumatic insults. RESULTS. The silicone gel sheets resulted in moderate improvement in scar thickness, scar color and was noted to be effective to some degree in all tested. The material was easy to use and painless. CONCLUSION. Topical silicone gel sheeting is an effective method for the treatment of hypertrophic and keloid scars and may be considered useful in the treatment of these difficult cutaneous lesions.

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A prospective, randomized trial was designed to compare the standard Kenalog injection of established hypertrophic sternal scars with topical silicone gel sheets (Spenco). Fourteen poststernotomy cardiac patients with symptomatic scars were randomized to treatment in one-half of the scar with Kenalog injection. Simultaneously, the other half of the scar received the silicone gel sheet. The standard Kenalog injection used was 40 mg/ml x 1 cc, mixed with 1 cc of 1% Xylocaine with epinephrine. The gel sheets were worn continuously for 12 hours for 12 weeks. Pretreatment and posttreatment photographs were compared for color and appearance by blindfolded observers. Scar measurements (length, width, and height) were taken weekly in each area, and the patients were asked to rank their symptoms within each half as worse, the same, or better. The primary outcome of patient preference was analyzed sequentially, and the recruitment was terminated after 11 patients had completed the study, 10 of whom favored the silicone gel treatment (p < 0.05). Three patients remained in the treatment phase at the time of termination and completed the study subsequently. For the total sample of 14 subjects, 11 preferred the silicone gel, 1 expressed no preference, and 2 preferred the injection. The average time to improvement was 3.9 +/- 0.62 days (gel) versus 6.8 +/- 1.86 days (Kenalog). This study demonstrates that silicone gel sheets provide earlier symptomatic relief and a more aesthetic scar and are the preferred treatment of patients with symptomatic hypertrophic sternal scars.

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In 31 patients with hypertrophic scars or keloids, a side by side test was carried out to check the efficacy of an occlusive dressing technique using cream which did not contain silicone oil, versus a simple application of vaseline, used as a control. In all cases, the cream treated areas of scar and keloid demonstrated a remarkable improvement over that of the vaseline treated area. These findings strongly suggest that the mechanisms of hydration and occlusion are the main basis of the therapeutic action of this method in treating hypertrophic scars and keloids.

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We studied the effects of a silicone gel bandage that was worn for at least 12 hours daily on the resolution of hypertrophic burn scar. In a second cohort, the prevention of hypertrophic scar formation in fresh surgical incisions by this bandage was also evaluated. In 19 patients with hypertrophic burn scars, elasticity of the scars was quantitated serially with the use of an elastometer. An adjacent or mirror-image hypertrophic burn scar served as a control. Scar elasticity was increased after both 1 and 2 months compared with that in controls. There was corresponding improvement clinically that persisted for at least 6 months. In the other cohort, scar volume changes in 21 surgical incisions were measured before and after 1 and 2 months. Gel-treated incisions gained less volume than control incisions after both intervals. Clinical assessment corroborated this quantitative demonstration of a decrement in scar volume. We concluded that topical silicone gel is efficacious, both in the prevention and in the treatment of hypertrophic scar.

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A simple tie-over dressing using a silicone gel sheet gives firm fixation and allows direct inspection of the underlying grafted skin. Moreover, if haematoma or any complication is recognised, the sheet can be easily removed and reapplied.

A silicone gel (Dow Corning X7-9119) has been successfully used in the management of hypertrophic scars. The gel softens and reduces scars in a shorter time period than pressure therapy. Relevant properties of the material and its mode of action have been investigated. The mode of action is unknown, but it is not due to pressure, temperature, oxygen tension or occlusion.

A new method of treatment for burn scar management is outlined using silicone gel sheets (Spenco Corporation MD-3071). The method has been applied to 42 patients with burns of varying degree and maturity. The results have been successful in all cases. The mode of action of the gel is unknown, but it does not rely on pressure. The method can easily be tailored to the individual needs of the scar and the patient. Individual initiative and a flexible approach to its use are advocated.