



A Phase III, Randomized, Single-Blind Untreated Control Study
Involving a Novel Gel-Based Patch for the Improvement of the
Appearance of Fine Lines and Wrinkles.

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Study performed by the Dermatology/Cosmetic Laser Associates of La Jolla with data analysis performed by Mitch Goldman, MD and Associates & Jonathan Niszcza, MS, OTR/L, Bio Med Sciences, Inc.

Background

Chronic solar irradiation results in damage to the collagen matrix with subsequent alterations both morphologically and functionally to the skin. Damage includes cutaneous dryness, skin laxity, atrophy, fine wrinkles and dyspigmentation. Invariably, this weathering accelerates wrinkles and serves as a background for the development of cutaneous malignancies. One area in particular which can show significant photodamage early is the periocular area. Interest in a non-ablative, non surgical approach for treatment of periocular rhytids has prompted the development of a novel gel-based wrinkle patch.

The product is designed to minimize the appearance of facial wrinkles via a non-invasive topical dermal delivery mechanism. It consists of a soft silicone gel material with a fabric backing. The fabric gives the product a smooth and silky feeling and helps prevent it from sticking to bedding. The silicone gel (Silon[®]) allows the product to gently adhere to the skin and provides optimal occlusion to increase the skin's hydration level and prevent moisture dissipation. Adherence to the skin provides occlusion to increase the skin's hydration level and prevent moisture dissipation and enhancing the overall tone of the dermal skin surface. In addition, this silicone acts as a reservoir for the epidermal tightening agent that is delivered topically to the treatment site. The active ingredients are pre-dosed in a proprietary formulation, and are designed to be applied to periocular areas and leave on overnight. This allows for extended contact with the epidermis and with no active downtime in dosing.

Study Design

In order to assess the efficacy of the wrinkle patch at decreasing the appearance of fine lines and periocular rhytids, a randomized, single-blind untreated control single-center study was conducted. A secondary objective is to assess the safety and tolerability of multiple, nightly usage of the wrinkle patch in subjects seeking improvement in the appearance of facial wrinkles.

Subjects

Subjects were considered eligible for the study if they were between the ages of 18 to 65 with a periocular rhytid score of 3-5 per Rao-Goldman scale (Annex 1). Subjects were not allowed to have topical medicated agents (corticosteroids, retinoids, lactic acid, salicylic acid, AHA etc) within the past 1 month, non-ablative laser, light or radiofrequency treatment for 3 months or botulinum toxin, fillers, deep peels, ablative lasers for 6 months prior to enrollment in the study.

Analysis

Patients were graded by the physician at baseline utilizing the Rao-Goldman grading system and a score of 3 or greater was necessary to qualify.

Patients were photographed using the Canfield Digital photography system at baseline, day 5 (Visit 1), 2 weeks (Visit 2) and 3 weeks (Visit 3).

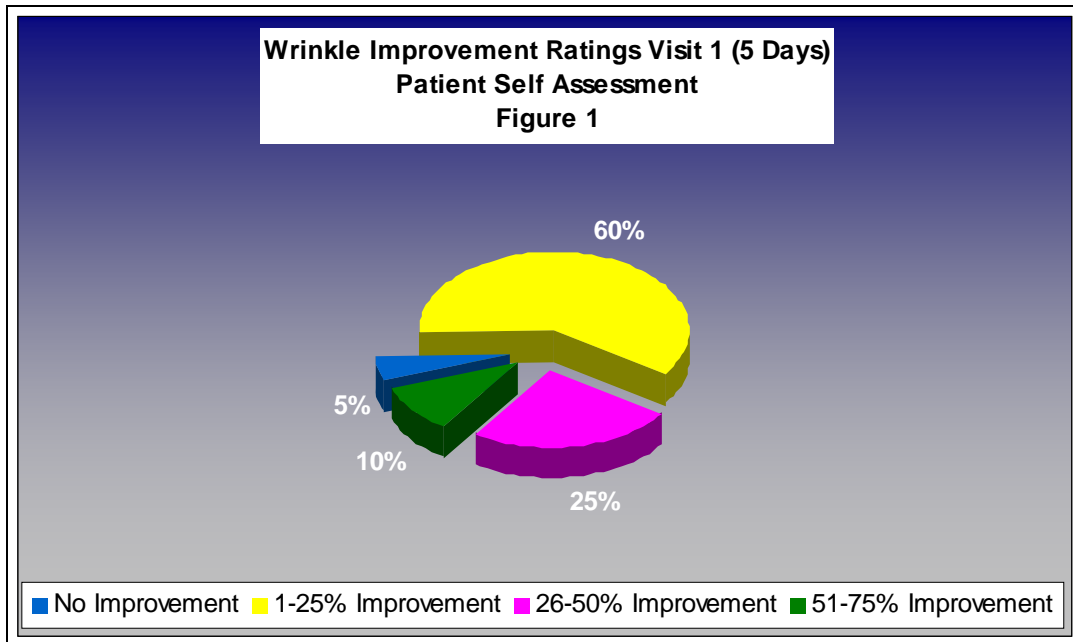
Subjects were provided with a questionnaire at visit 2 (5 days), visit 3 (2 weeks) and visit (3 weeks) which asked them to grade their response and any adverse reactions.

Results

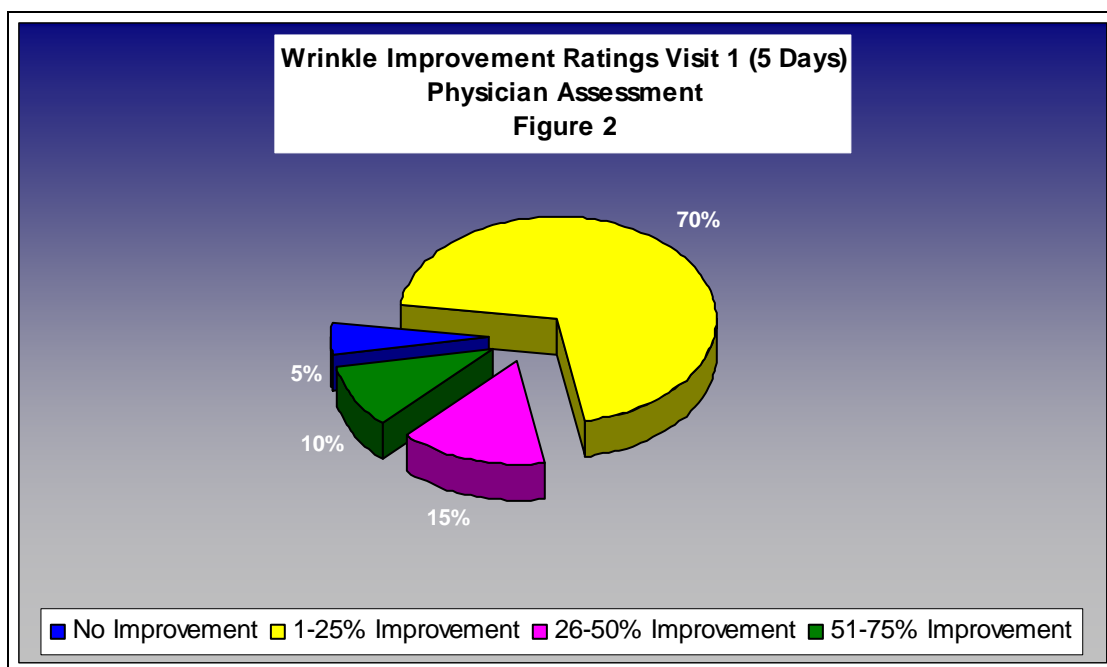
Twenty females were enrolled in the study. The mean age of subjects was 48.6 years. All patients completed the study. Three patient questionnaires were given: questionnaire 1 at day 5 (Visit 1), questionnaire 2 at 14 days (Visit 2) and questionnaire 3 at 21 days (Visit 3).

Results from Visit 1 (5 days)

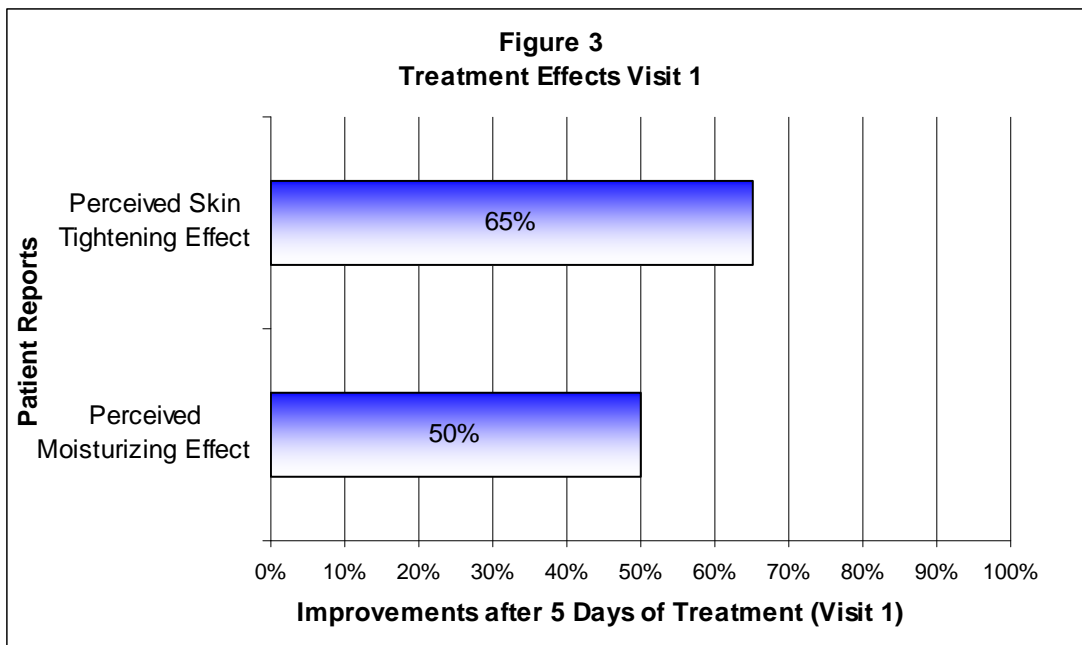
Patient Wrinkle Improvement Self-Assessment ratings demonstrated the following results - 12 patients showed a 1-25% improvement, 5 showed 26-50% improvement, 2 patients showed 51-75% improvement and 1 patient showed no improvement (Figure1).



These findings correlated strongly with the results from the Physician Assessment of the Patient Wrinkle Assessment – 14 patients showed a 1-25% improvement, 3 showed 26-50% improvement, 2 patients showed 51-75% improvement and 1 patient showed no improvement (Figure 2).

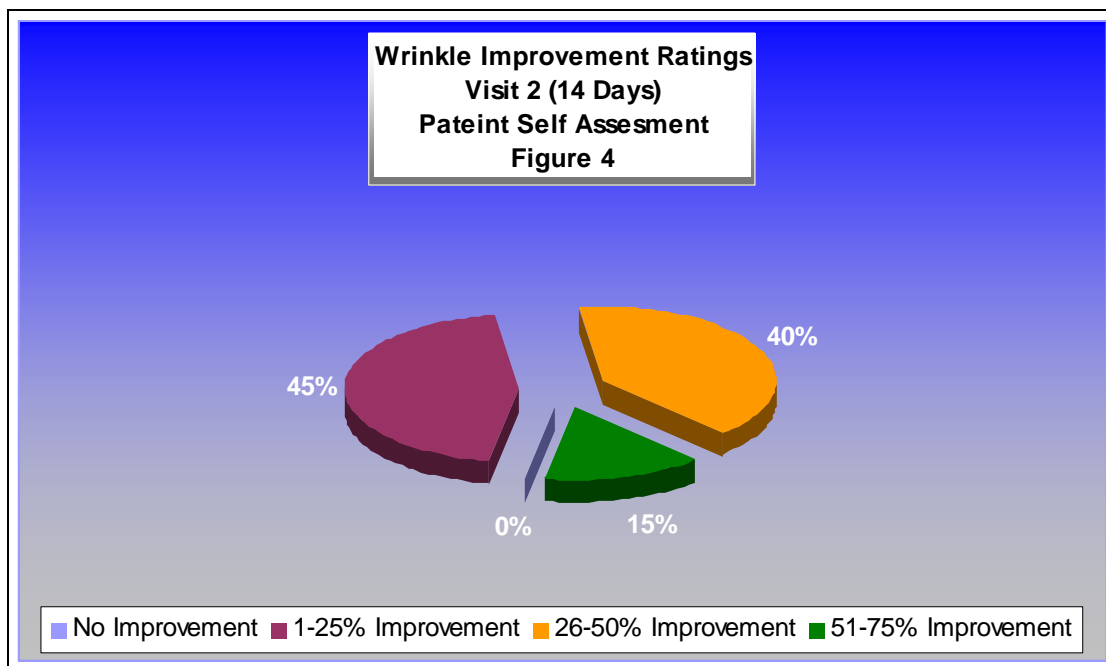


Patients were also asked to rate the overall perceived level of moisturizing and skin tightening with the product - 65% of patients noted a moisturizing effect from the product and 50% of patients noted skin tightening on the treated side when compared to the untreated control side. The effects of these two components lasted for an average of 8.41 hours post removal of the product (Figure 3). Redness, burning, itching, stinging or peeling was noted in less than 10% of patients.

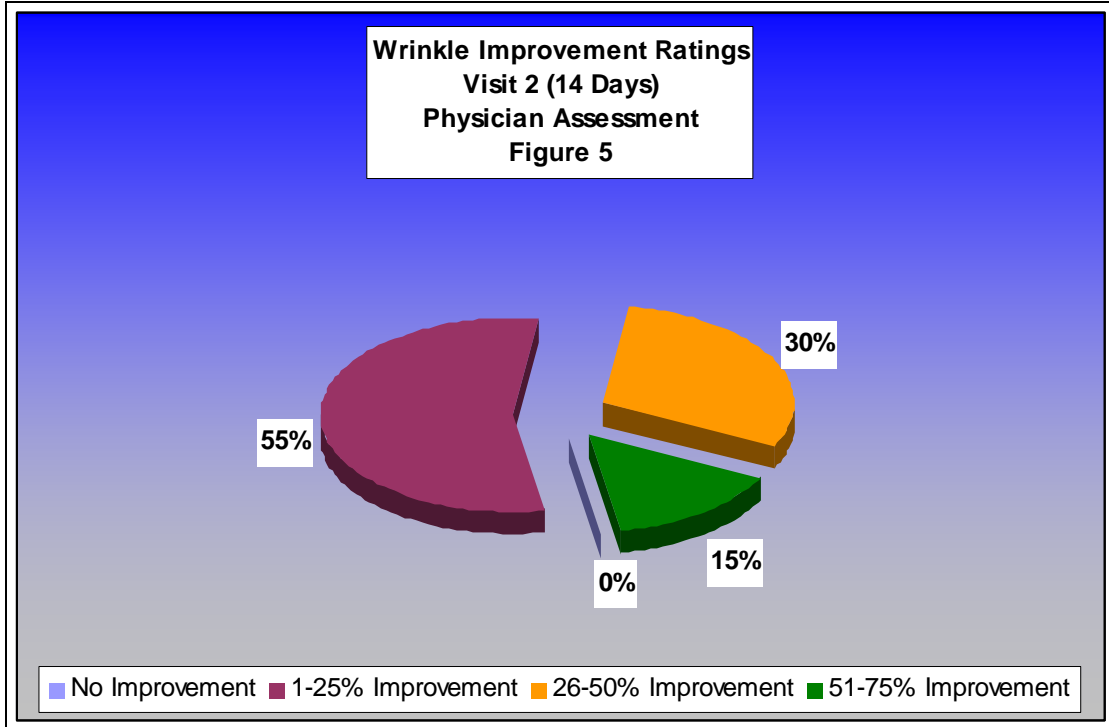


Results from Visit 2 (14 days)

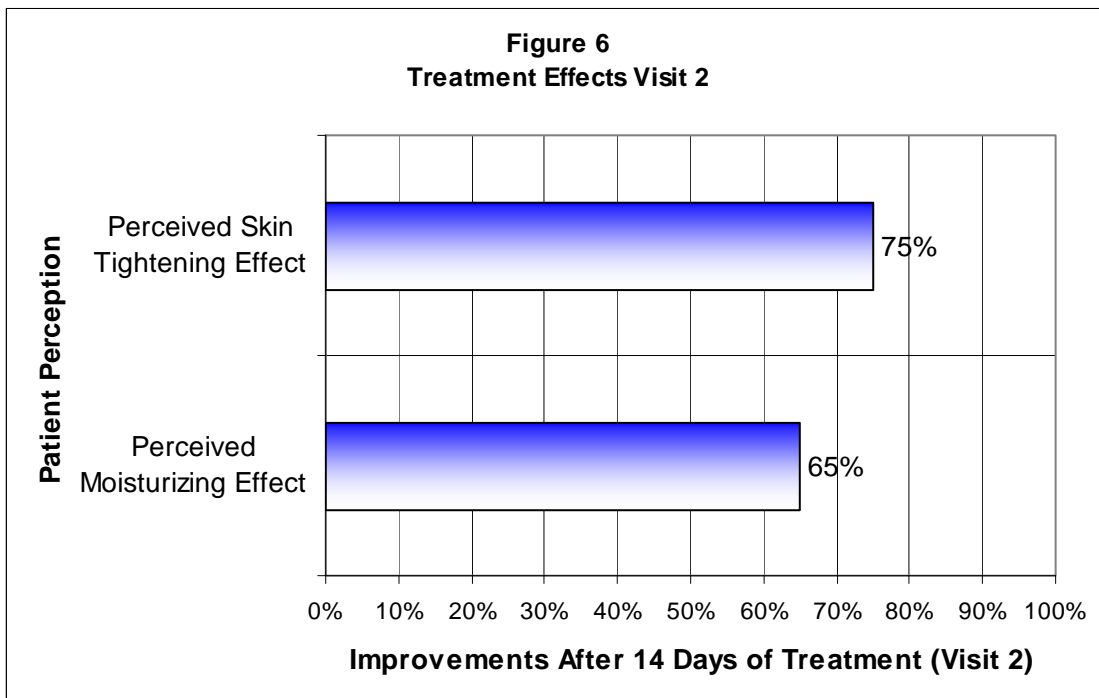
Patient Wrinkle Improvement Self-Assessment ratings demonstrated the following results – 9 patients showed a 1-25% improvement, 8 patients showed a 26-50% improvement and 3 patients showed 51-75% improvement and 0 patients showed no improvement (Figure 4).



These findings again correlated strongly with the results from the Physician Assessment of the Patient Wrinkle Assessment – 11 patients showed a 1-25% improvement, 6 showed 26-50% improvement, 3 patients showed 51-75% improvement and 1 patient showed no improvement (Figure 5).



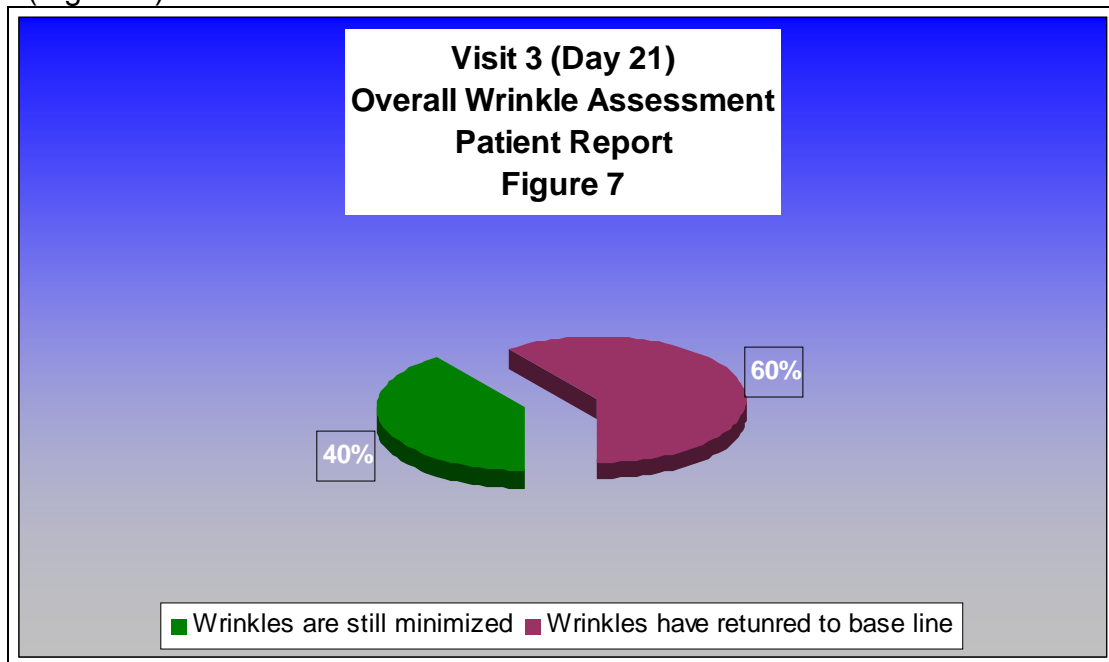
When examining patient assessment scores across the two series of evaluation periods, as treatment continued, a greater percentage of patients (90%) documented improvement at day 14 (Visit 1) when compared to the 5 day (Visit 1) results (65%). This same trend was found in the physician assessment where the results demonstrated an 85% improvement (Visit 1) and 95% improvement (Visit 2).



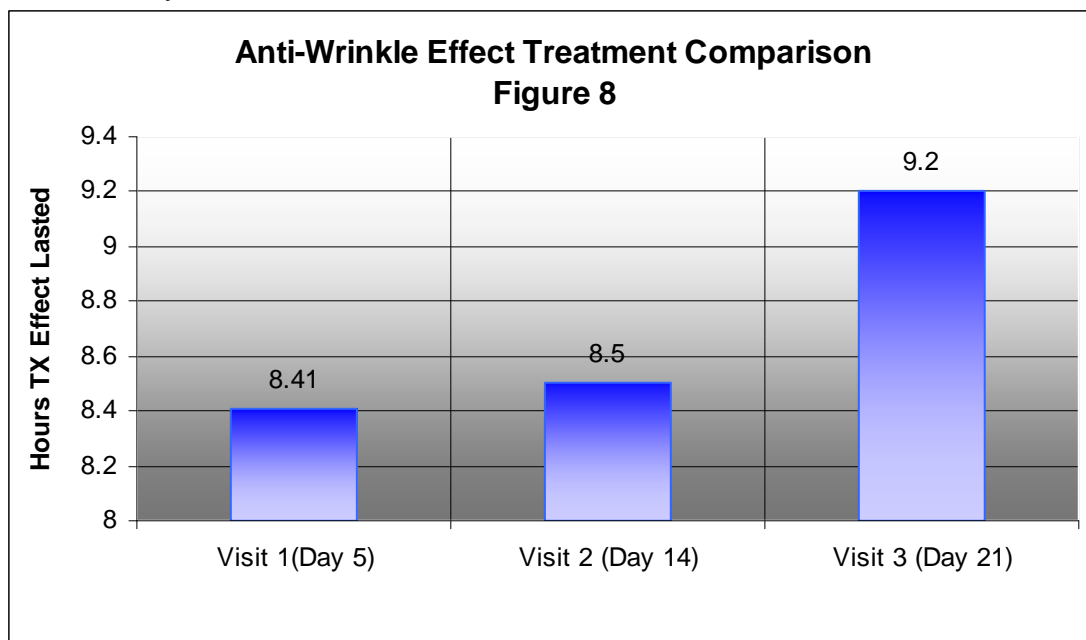
In addition, the percentage of patients noting a moisturizing effect from the product increased from 50% to 65% at the 2 week survey. Skin tightening was noted by 75% of patients which was a 10% increase from the day 5 (Visit 1) assessment and these effects lasted for an average of 8.5 hours (Figure 6). Additionally, 10% of patients had noting redness, burning, itching, stinging or peeling via patient assessment.

Results from Visit 3 (21 days)

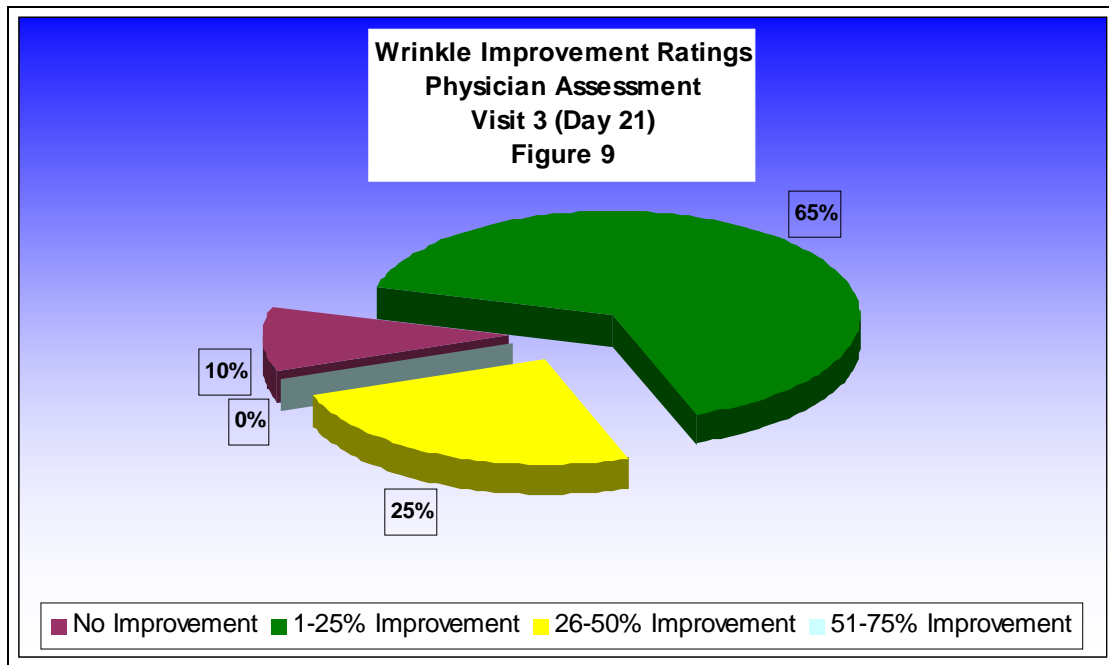
This questionnaire was administered to the study patients after product had been discontinued for 1 week. Overwhelmingly, 40% of patients reported that the effects of treatment persisted at 7 days without using the treatment material while 60% of patients noted that the treated area had returned to baseline (Figure 7).



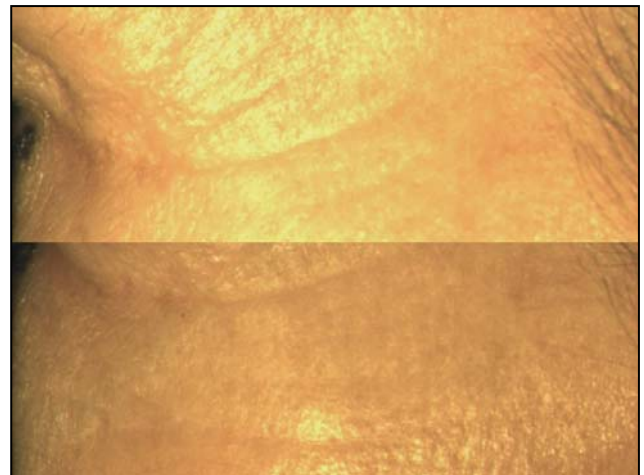
Skin tightening and skin moisturizing effects persisted for 9.2 hours – which was an incremental increase from 8.41 at Visit 1 and 8.50 at Visit 2 (Figure 8). The cumulative effect was noted to last an average of 3.36 days after the last treatment was removed.



Seventy percent of patients reported that they looked younger while using the product by an average of 3.5 years. The physician assessment scores showed that this effect still persisted where 65% of patients had a sustained improvement compared to baseline 13 patients showed a 1-25% improvement, 5 patients showed 26-50% improvement, 0 patients showed 51-75% improvement and 2 patients showed no improvement or had returned to baseline (Figure 9).



Clinical Treatment Examples

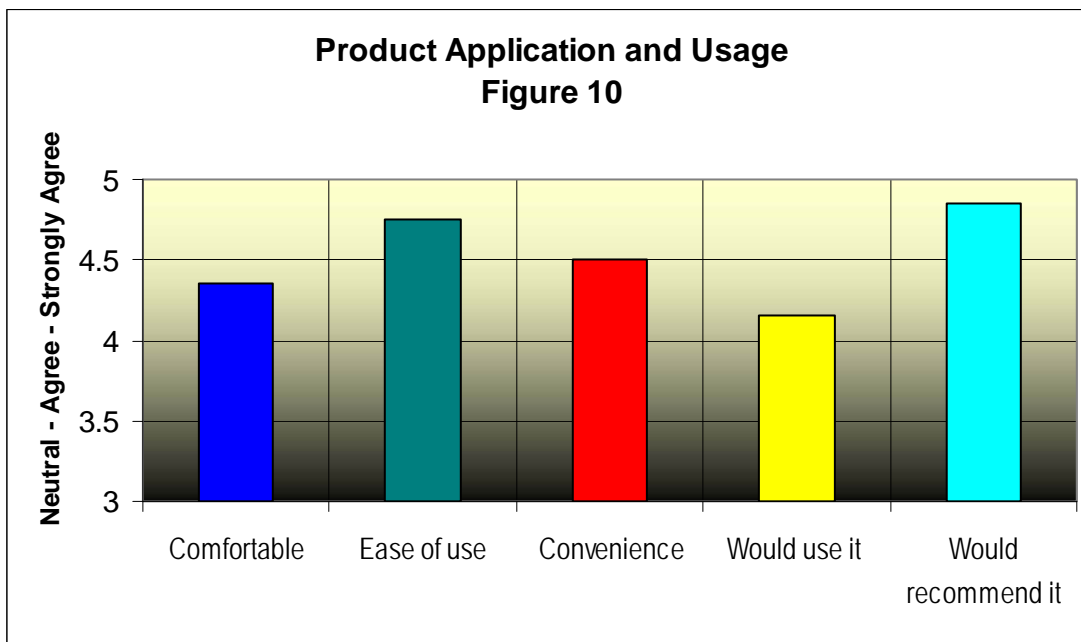


Within subject photographic comparison of wrinkles taken at baseline (Visit 0 - top 2 photos) and then on Day 14 (Visit 2 - lower two photos) demonstrating a reduction in the appearance of fine lines and wrinkles when utilizing the wrinkle patch treatment protocol via a photographic visual assessment.

Product Application and Usage

Patient assessment for usage 1-5 Likert Scale (1=bad/strongly disagree and 5=good/strongly agree)

Patients reported that they felt that the product was easy to use remove from the plastic backing (4.35) however comments were made that color coating the back adhesive would allow for even easier application. The comfort level was high very high (4.50). Patients also felt that the patch remained in place (4.75) without requiring any other type of support (i.e. eyeshade). An average score of 4.15 was given when asked if patients would use this product if commercially available and strong support was given when asked if they would recommend this product to a friend or family member (4.85). Also, patients felt strongly (4.75) that this was a very simple and convenient way to manage their wrinkles (Figure 10).

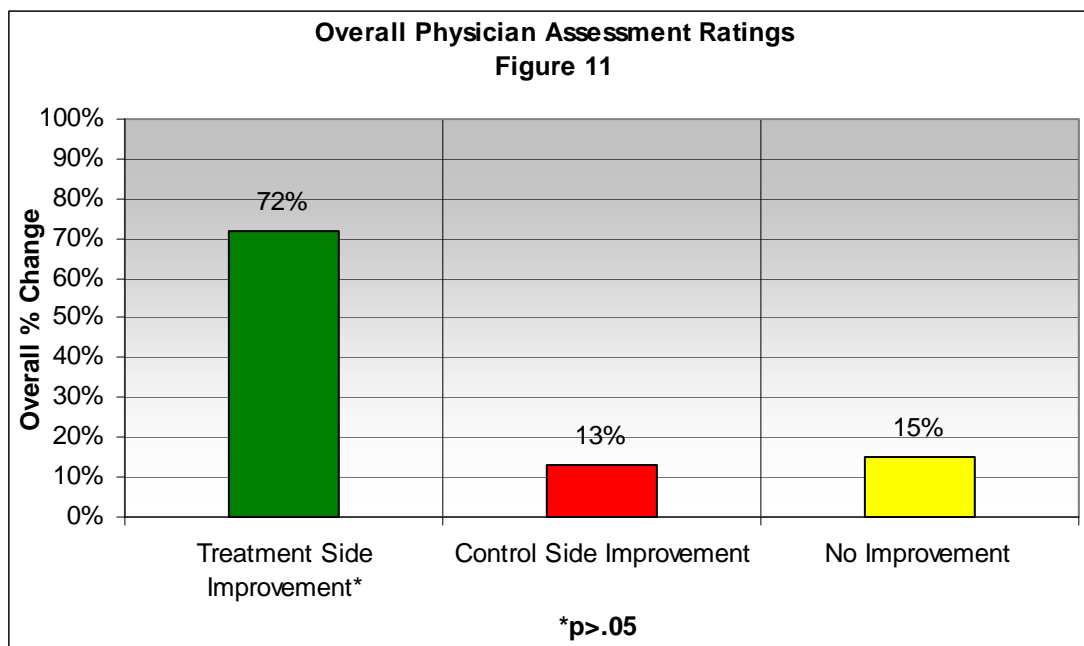


When asked for comments regarding how the products made them feel, the following was listed:

- Fun to try, no negative symptoms, subtle improvement
- Hopeful for less deep lines around the eyes
- Less fine lines
- Encouraging and motivating to continue
- Improved somewhat
- More refreshed look
- Convenient for usage when traveling
- More confident
- No difference
- Skin feels softer
- Hopeful and satisfied
- Slightly more moist
- I like using a noninvasive, non-surgical approach to achieve good results
- Area softer, wrinkles less defined, more toned
- Comfortable to use

Preliminary Results and Conclusions from the Clinical Data Set

This was a 1/2 face, placebo controlled within patient design in which 70% showed an improvement on the treated side, 13% on the control side and 15% showed no difference. This trend is maximized when looking at comparisons over time which indicates that there is evidence that the effect of this material persists and can be quantified by the patient and an objective, blinded observer. The one tail t test showed significance ($p < .05$) indicating that a potential exists that the baseline and final measurements are different in this comparison between the two treatment conditions supporting the effect of the material in producing an improvement in the appearance of periorbital wrinkles (Figure 11).



Subjective patient evaluation demonstrated a more pronounced appearance of change effect within the first two weeks where the scoring was initially at 65% at visit 1 but then jumped to 90% by visit 2. This trend continued into visit 3 at 70% even when the product had been discontinued. Blinded physician assessments of the patients found an 80% improvement in week 1 and an 85% improvement in week 2 when comparing the two conditions. Additionally, this trend continued into the third assessment at but had dropped to 60%.

Patient self-assessment showed a slower appearance of change effect initially at 55% in week 1 but then closely correlated the physician findings to 80% in week 2. As expected, both improvements declined by week 3 with the patient self assessment declining to 40% improvement while the physician assessment remained more stable at 70% improvement. These findings support the binding effect of the silicone (Silon[®]) acting as a good systemic reservoir for the epidermal tightening agent and systemically producing a hydrating result on the periorbital region producing a lasting effect to the skin that is evident to the naked eye on both self-assessment and blinded observer rating scales. This evidence supports the cumulative effect of this treatment over time as demonstrated by the continued successive increases in both patient self assessment and physician blinded assessment across all three treatment parameters and supports the indication of this treatment as a useful adjunct to other, more invasive anti-wrinkle treatment options as a temporary wrinkle reducing agent.