

Improvements in Soft Contact Lens (SCL) Wearing Time and Tolerability Following a Single In-Office Thermal Pulsation Treatment

Sathi Maiti OD FAO, Laura M. Periman MD
Periman Eye Institute: Seattle, WA



INTRODUCTION

Meibomian gland dysfunction (MGD) and resulting dry eye discomfort is a common reason for decreasing contact lens wearing time and contact lens drop out, thought to impact up to 50% of soft contact lens (SCL) wearers.¹

In-office thermal pulsation with devices like Systane iLux (Alcon) are commonly used to treat MGD. Previous studies with Systane iLux have shown improvements in meibomian gland secretion scores (MGSS), tear break up time (TBUT), and ocular surface disease index (OSDI).³

While studies on thermal pulsation with systems like LipiFlow (Johnson and Johnson) have shown improvement in contact lens wearing time, to our knowledge no similar studies have been performed with Systane iLux specifically on contact lens wearers with MGD.¹

In this prospective, nonrandomized, open-label, single center clinical trial we evaluated the change from baseline in OSDI scores, contact lens dry eye questionnaire-8 (CLDEQ-8), subjective contact lens wearing time and comfort questionnaires, and MGSS after a single Systane iLux treatment.

METHODS

Subjects 18 years or older with subjective dry eye wearing soft contact lenses a minimum of 2 hours/day, 4 days/week, with OSDI ≥ 12 , CLDEQ-8 ≥ 12 , and MGSS ≤ 12 were treated with a single in-office Systane iLux treatment.

Evaluated at baseline and 4 weeks following Systane iLux treatment:

Primary Endpoints:

- OSDI standardized questionnaire score
- CLDEQ-8 standardized questionnaire score
- Subjective contact lens wearing time questionnaire including:
 - How many hours a day do you wear SCLs on average?
 - How many hours per day do you experience comfortable SCL wear on average?
 - Included pre treatment: How many more hours per day would you wear your contact lenses if they were comfortable?
 - Included post treatment: Do you feel that you can wear your contact lenses for longer compared to before Systane iLux treatment?
- Meibomian gland secretion score
 - Sum of 15 glands of lower eyelid graded from 0 (no secretion) to 3 (clear secretion) evaluated with Korb expressor, max score 45 per eye)

Secondary Endpoints:

- Corneal NaFL staining, Conjunctival LG Staining, TBUT

Statistical analysis was performed using Microsoft Excel, paired-sample t-tests (alpha = 0.05) were used to calculate p-values for mean change from baseline for all endpoints.

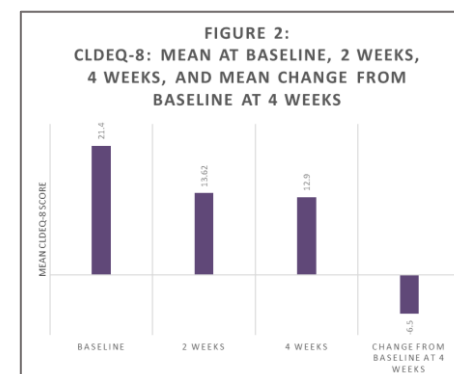
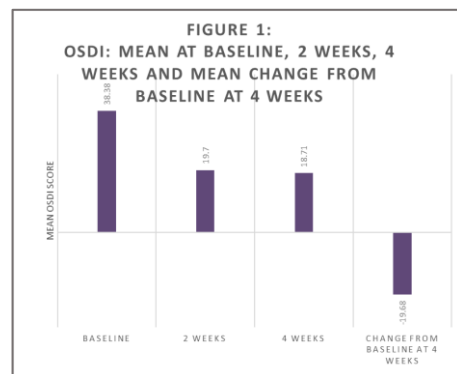
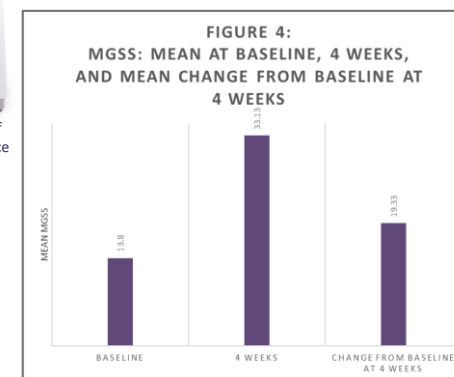
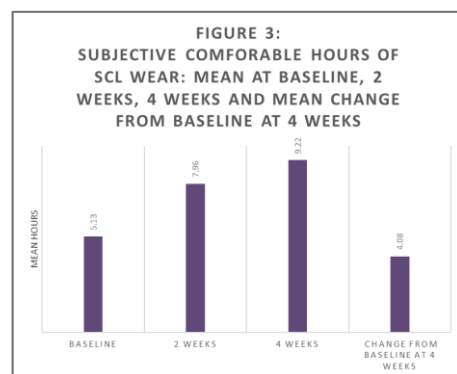


Figure 5: Image of Systane iLux device



RESULTS

N = 30. Mean age: 43.1 (12.9) Gender: 24 Female (80%) 6 Male (20%). Race: 19 Caucasian, 9 Asian, 2 multiple race. 21 subjects wore daily disposable contact lenses. Mean days per week of wear were 5.8 (1.3). 24 (82.8%) of subjects reported subjectively feeling they can wear their contact lenses for longer than before treatment.

	Mean at Baseline (SD)	Mean at Week 4 (SD)	Mean Change from Baseline (SD)	P-Value
OSDI	38.38 (16.23)	18.71 (14.68)	-19.68 (14.62)	<0.0001
CLDEQ-8	21.4 (4.23)	12.9 (5.96)	-6.5 (4.54)	<0.0001
Hours of comfortable CL wear	5.13 (3.54)	9.21 (4.59)	4.08 (3.87)	<0.0001
MGSS	13.80 (4.48)	33.13 (9.84)	19.33 (10.12)	<0.0001
TBUT	4.75 (1.93)	5.29 (1.63)	0.55 (1.45)	0.05
Corneal NaFL Staining	9.20 (4.37)	8.43 (4.64)	-0.76 (3.65)	0.26
Conjunctival LG Staining	5.10 (3.74)	4.27 (3.58)	-0.83 (2.30)	0.06

CONCLUSION

A single in office treatment with Systane iLux statistically significantly increased the hours of subjective comfortable SCL wear, as well as improved OSDI, CLDEQ-8, and MGSS scores in current soft contact lens wearers with MGD 4 weeks post treatment.

REFERENCES

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DISCLOSURES

SM: Alcon, Avenova, Dr. Lite Medical Technology, Tarsus, TearRestore
LP: Alcon, Aerie, Aldeyra, Allergan, Avellino, Azura, Bausch, Bruder, Dompe, Eyedotec, Horizon, Kala, Lumenis, MYZE, Novartis, NuSight Medical, Olympic Ophthalmics, Quench Method, Quidel, Santen, Science Based Health, Sun Pharma, Tarsus, TheraMEDx, Visant
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