



Clinical Evaluation of Varilux Physio® vs. Digitally Surfaced “Dual-Surface” PAL

Research conducted by independent 3rd party - grant provided by Essilor of America

PURPOSE

To compare the performance of two PAL design technologies:

- 1.) Varilux Physio®- introduced in 2006- has a front surface digitally molded progression which uses *W.A.V.E. Technology™* to reduce and control higher order aberrations common to all progressive lenses.
- 2.) DS PAL- introduced in 2004- has progression digitally surfaced on both the front and the back of the lens which reduces skew distortion.

METHODS

Subject masked, randomized design, dispensing (duration = 3 weeks / design), identical frames and fitting parameters, AR coated, high-index substrate (1.67 Varilux Physio, 1.60 DS PAL)

Fitting parameters:

- ♦monocular Pds
- ♦FRP @ center pupil
- ♦min. fitting height =18

Each subject subjectively compared designs for:

- ♦Distance (overall preference)
- ♦Intermediate (overall preference)
- ♦Near (overall preference)
- ♦Dynamic Vision (object/subject in motion)
- ♦Visual Fatigue
- ♦Adaptation
- ♦Overall Preference

SUBJECTS

N = 81 subjects

by ametropia

- 27 Myopes** (maximum Rx -6.00)
- 27 Emmetropes**
- 27 Hyperopes** (maximum Rx +3.75)

by astigmatism

- 23 Spherical Rx**
- 34 Cylinder <1.00D**
- 24 Cylinder 1.00 - 2.00D**

Mean ADD = +2.25 (r = +1.00 to +3.00)

Mean Fitting Height = 21mm (18-25mm)

Current Primary Correction Type:

- 23 = PALs (none wearing either PAL assessed)
- 5 = SV (DVO or NVO)
- 5 = Contact Lenses (1 monovision, 1 multifocal)

Inclusion Criteria:

20/20 or better in each eye

CONCLUSIONS

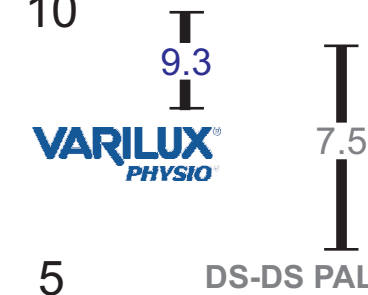
Varilux® Physio® was preferred in 7/8 of the areas measured. The results were significantly in favor of Varilux Physio for *distance vision* (p<0.001), *intermediate vision* (p<0.01), *near vision* (p<0.01), *dynamic vision* (p<0.01), and most significantly, **subjects with a preference preferred Varilux Physio overall 20:1** (p<0.01).

Additionally, when questioned regarding intent to purchase, 79% chose to purchase Varilux Physio.

STATISTICAL RESULTS

N = 81	Varilux Physio	DS-DS PAL	No Pref.	p-value
Distance Vision	31	1	49	<0.001
Intermediate Vision	37	0	44	<0.001
Near Vision	53	0	28	<0.001
Dynamic Vision	39	2	40	<0.001
Adaptation	12	14	55	0.556
Visual Fatigue	11	3	67	0.061
OVERALL Performance	40	2	39	<0.001

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FINAL MEAN EVALUATION

Wearers rated satisfaction significantly higher (p<0.01) for Varilux Physio.

10 = highly satisfactory
1 = very unsatisfactory

Varilux Physio = 9.3 (+/-0.8)
DS-DS PAL = 7.5 (+/-1.9)