WHITE PAPER · PATIENT SURVEY STUDY

Visual Comfort and Sleep Outcomes with Eyesafe® CPF70 Technology

A two-period patient survey study of adult iPhone users, conducted with Southwest Eye Care – comparing CPF70 with a standard clear screen protector.

≈6:1

PREFERRED OVER A CLEAR PROTECTOR*

−31%

REPORTED EYE STRAIN (P = 0.001)

72%

RATED SLEEP GOOD OR VERY GOOD, UP FROM 48%

*Among the 21 of 29 participants expressing a preference. Self-reported outcomes from a two-period patient survey study; data on file, Eyesafe Inc., 2026.

SOUTHWEST EYE CARE × eyesafe

September 2026 · n = 29

Executive Summary

Adults now spend the majority of waking hours on digital displays, and screen-related visual discomfort and sleep disruption are among the most commonly reported technology complaints. This white paper reports the results of a two-period patient survey study conducted with Southwest Eye Care, a leading eye clinic, evaluating the Eyesafe® CPF70 screen protector against a standard clear screen protector in adult iPhone users (n = 29 completers).

Each participant served as their own control, using a standard clear screen protector for two weeks and then the CPF70 protector for two weeks, completing identical symptom and sleep surveys after each period. Key findings:

- Participants preferred the CPF70 protector 62% to 10% (28% expressed no preference) — nearly 6-to-1 among the 21 participants who expressed a preference.
- Reported eye strain frequency declined 31.4% ($p = 0.001$); the share of participants reporting eye strain "sometimes or more often" fell from 45% to 10%.
- Composite frequency across all eight digital eye discomfort symptoms declined 16.8% ($p = 0.002$), with statistically significant reductions in eye strain, tired/heavy eyelids, and red/watery/irritated eyes. All eight symptom categories trended downward.
- Self-reported sleep quality improved 10% ($p = 0.013$); participants rating sleep quality "good" or "very good" rose from 48% to 72%.

Notably, participants were instructed to disable True Tone and Night Shift throughout both study periods, isolating the effect of the physical filter from software-based color adjustment. Results are self-reported perception and preference outcomes from an unblinded, fixed-sequence survey design; they are not presented as outcomes of a controlled clinical trial, and limitations are discussed in Section 6.

1. Background

Modern displays emit a substantial portion of their energy in the 430–500 nm range of the visible spectrum — the band most implicated in melanopic (circadian) signaling. Evening light exposure in this band is well documented to suppress melatonin and shift circadian timing,

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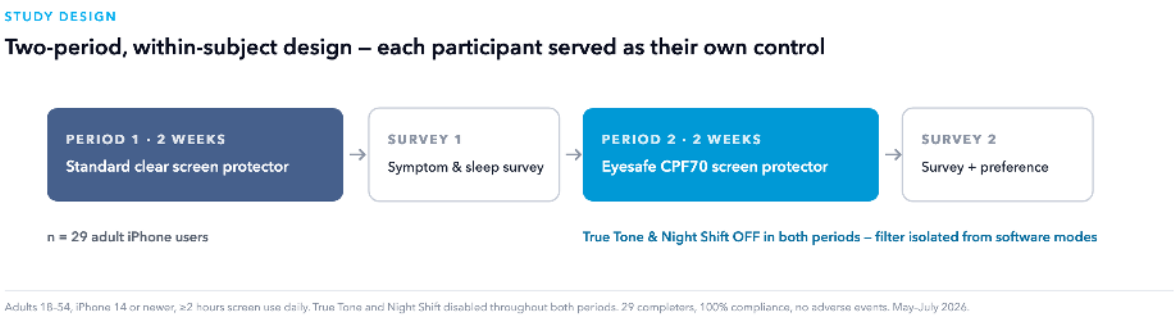
and consumer awareness of screen-related discomfort and sleep concerns continues to grow. Professional bodies, including the American Academy of Ophthalmology, attribute screen-related discomfort symptoms primarily to visual behavior (reduced blink rate, uncorrected refractive error, viewing ergonomics); the present study accordingly measures self-reported symptom frequency and preference rather than asserting a causal mechanism.

Eyesafe CPF70 is a screen protection product incorporating Eyesafe blue light filtering technology, engineered to selectively reduce transmission in the 430–500 nm band while preserving color performance. Unlike software night modes, which shift the display's white point toward amber, the CPF70 filter operates at the panel surface without requiring the user to change settings or accept a visibly altered image.

2. Study Objective

To evaluate whether adult iPhone users experience differences in self-reported visual comfort, sleep quality, and product preference when using an Eyesafe CPF70 screen protector compared with a standard clear screen protector, under matched two-week usage periods with software color-adjustment features disabled.

3. Design and Methods



- Design: two-period, within-subject patient survey study; each participant served as their own control. Period 1: standard clear screen protector, two weeks, followed by Survey 1. Period 2: Eyesafe CPF70 protector, two weeks, followed by an identical Survey 2.

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- Participants: adults aged 18–54, iPhone 14 or newer, self-reported smartphone use of at least 2 hours per day. n = 29 completers; 100% compliance; no adverse events reported.
- Setting: conducted with Southwest Eye Care (Minnesota); study oversight by Dr. Chad Dockter (Southwest Eye Care) with Dr. David Friess, OD (Eyesafe).
- Timeline: control period approximately May 27 – June 9, 2026 (Survey 1: June 12–20); intervention period approximately June 17–30, 2026 (Survey 2: July 2–10, 2026).
- Controlled software conditions: participants were instructed to disable True Tone and Night Shift for the duration of both periods, isolating the physical filter from software color adjustment.
- Measures: frequency of eight digital eye discomfort symptoms (1–5 scale), sleep quality and sleep-onset items, and overall product preference.
- Analysis: paired Wilcoxon signed-rank tests; significance threshold $p < 0.05$.

4. Results

4.1 Symptom frequency

All eight symptom categories trended downward with CPF70. Reductions were statistically significant for eye strain, tired/heavy eyelids, red/watery/irritated eyes, and the eight-symptom composite. Changes in the remaining categories — including dry eyes and burning/stinging — did not reach statistical significance and are reported for transparency; no claims are made on non-significant categories.

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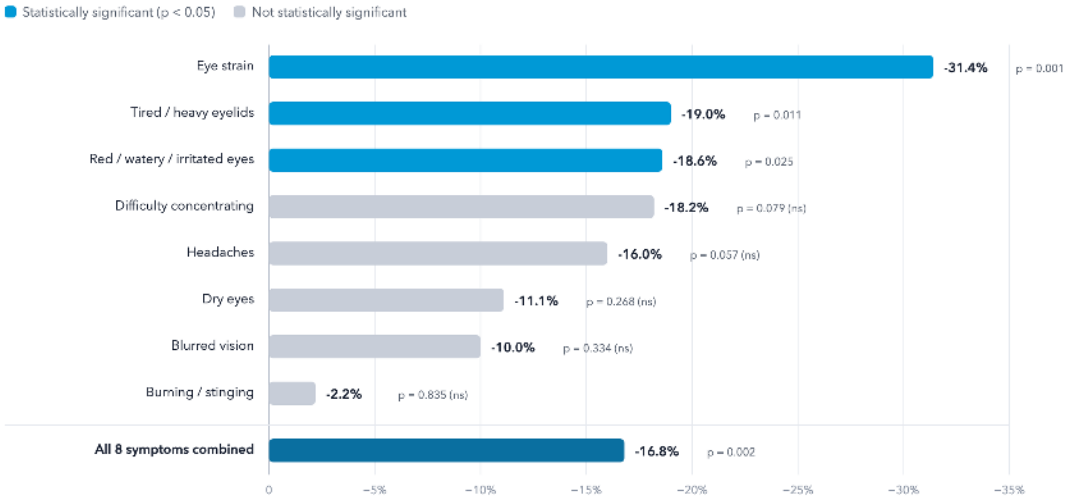
FIGURE 1

Change in reported symptom frequency with CPF70

Percent change in mean reported frequency vs. clear-protector period, all eight symptom categories (n = 29; paired Wilcoxon signed-rank)



Two-period patient survey study conducted with Southwest Eye Care; each participant served as their own control. Self-reported outcomes. Changes in non-significant categories are shown for transparency and support no product claims. Data on file, Eyesafe Inc., 2026.

Symptom (frequency, 1–5 scale)	Clear (mean)	CPF70 (mean)	Change	p-value	Significant (p<0.05)
Eye strain	2.41	1.66	−31.4%	0.001	Yes
Tired / heavy eyelids	2.17	1.76	−19.0%	0.011	Yes
Red / watery / irritated eyes	2.03	1.66	−18.6%	0.025	Yes
Difficulty concentrating	1.90	1.55	−18.2%	0.079	No
Headaches	1.72	1.45	−16.0%	0.057	No
Dry eyes	1.86	1.66	−11.1%	0.268	No
Blurred vision	1.72	1.55	−10.0%	0.334	No
Burning / stinging	1.59	1.55	−2.2%	0.835	No
Composite (all 8 symptoms)	**1.93**	**1.60**	**−16.8%**	**0.002**	**Yes**

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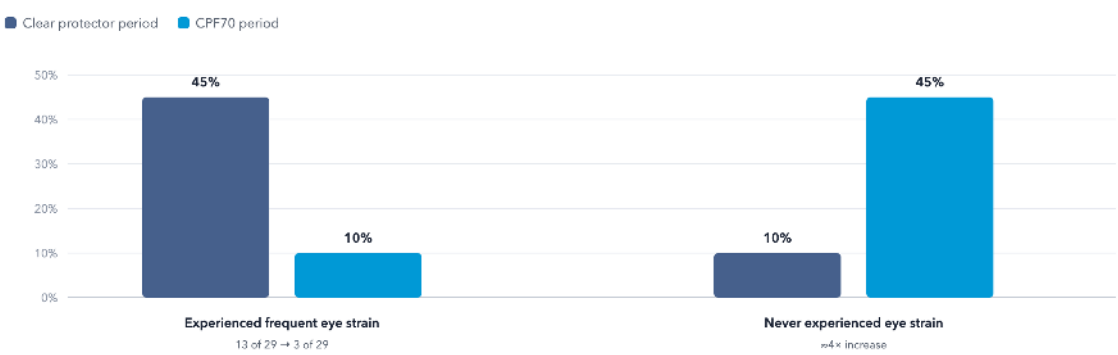
4.2 Eye strain frequency distribution

The proportion of participants reporting eye strain “sometimes or more often” fell from 45% (13 of 29) during the clear-protector period to 10% (3 of 29) during the CPF70 period — a reduction of more than 75% in frequent eye strain. The proportion reporting they “never” experienced eye strain increased approximately four-fold.

FIGURE 2

Eye strain frequency distribution shifted markedly with CPF70

Share of participants by reported eye strain frequency, clear-protector period vs. CPF70 period (n = 29)



“Frequent eye strain” = reported eye strain “sometimes” or more often. Self-reported outcomes; two-period patient survey study. Data on file, Eyesafe Inc., 2026.

4.3 Sleep outcomes

Mean self-reported sleep quality improved from 3.45 to 3.79 on a 5-point scale ($p = 0.013$), a 10% improvement. Participants rating their sleep “good” or “very good” rose from 48% (14 of 29) to 72% (21 of 29). Reported difficulty falling asleep trended lower (1.75 to 1.54; $p = 0.119$, not significant; $n = 28$), with the share reporting no difficulty rising from 45% to 59%.

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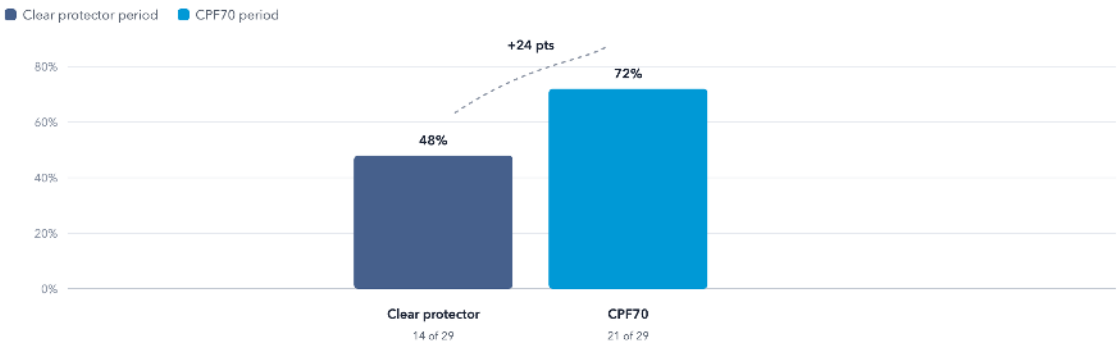
FIGURE 3

Self-reported sleep quality improved during the CPF70 period

Share of participants rating sleep quality "good" or "very good" (n = 29); mean sleep quality 3.45 → 3.79 on a 5-point scale (p = 0.013)



Self-reported outcomes; paired Wilcoxon signed-rank test. Reported difficulty falling asleep trended lower but was not statistically significant (p = 0.119, n = 28). Data on file, Eyesafe Inc., 2026.

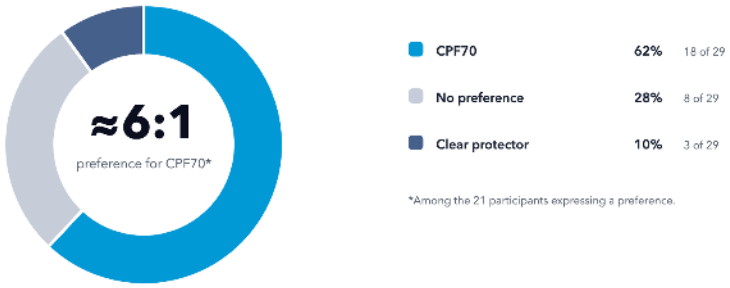
4.4 Product preference

At study end, 62% of participants (18 of 29) preferred the CPF70 protector, 10% (3 of 29) preferred the clear protector, and 28% (8 of 29) expressed no preference. Among the 21 participants expressing a preference, 86% chose CPF70 — a ratio of nearly 6-to-1.

FIGURE 4

Participants preferred CPF70 nearly 6-to-1

End-of-study product preference (n = 29)



62% preferred CPF70 (18 of 29), 10% preferred the clear protector (3 of 29), 28% expressed no preference (8 of 29). The 6-to-1 ratio reflects the 21 participants who expressed a preference (86% chose CPF70). Data on file, Eyesafe Inc., 2026.

5. Discussion

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Three aspects of these results are noteworthy. First, the preference result is strong and commercially meaningful: when users directly compared a premium filtered protector against the standard clear alternative on their own device, those with a preference chose the filtered product nearly 6-to-1. Second, improvements in self-reported comfort and sleep were observed with software color-adjustment features disabled — addressing the common question of whether a physical filter adds value beyond built-in night modes. The filter operated continuously, without user action and without the visible color shift software modes impose. Third, the pattern of results is internally consistent: the largest changes occurred in the symptom categories most associated with screen viewing, while categories with stronger non-screen etiologies (e.g., dry eye) showed smaller, non-significant changes — a pattern consistent with genuine participant-perceived differences rather than uniform response bias, though the design cannot exclude expectation effects (see Limitations).

6. Limitations

- Fixed sequence: the clear protector was always used first; order, expectation, and seasonal effects cannot be excluded. A randomized crossover was specified in the protocol; the executed design was fixed-sequence.
- Self-reported outcomes only; no objective clinical measures; participants were not blinded to the product they were using.
- Sample size (n = 29) limits subgroup analysis and generalizability; participants had generally mild baseline symptoms.
- Single site (one Minnesota clinic population).

Accordingly, results are presented as self-reported perception and preference outcomes from a patient survey study — not as evidence from a blinded, randomized clinical trial — and Eyesafe does not present these findings as medical or therapeutic claims.

7. Conclusion

In a two-period patient survey study of 29 adult iPhone users conducted with Southwest Eye Care, the Eyesafe CPF70 screen protector was preferred nearly 6-to-1 over a standard clear screen protector among participants expressing a preference, with statistically significant reductions in reported eye strain and overall symptom frequency and a significant

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improvement in self-reported sleep quality — all with software color-adjustment features disabled. These findings support continued investment in physical blue light filtration as a differentiated, always-on complement to device software features, and warrant confirmation in larger, randomized, controlled designs.

8. Citation and Use

Recommended citation: Data on file, Eyesafe Inc., 2026; two-period patient survey study, n = 29, conducted with Southwest Eye Care. Marketing statements derived from this study are subject to Eyesafe claims review; statements regarding non-significant symptom categories (including dry eyes and burning/stinging) are not supported and must not be used.

About

Eyesafe Inc. is dedicated to making electronics healthier for the people who use them. The company sets health standards for the world's screens and develops display technology with leading ophthalmologists and optometrists — deployed on more than 350 million screens with the world's leading device brands and backed by a portfolio of 100+ patents and trade secrets. Learn more at eyesafe.com.

ZAGG is a global leader in mobile accessories. The Eyesafe CPF70 screen protector evaluated in this study is marketed by ZAGG with Eyesafe technology.

Southwest Eye Care is a leading full-service eye clinic. Study oversight was provided by Dr. Chad Dockter. Learn more at southwesteyecare.net.

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