

A Survey of Contact Lens Wearers and Eye Care Professionals on Satisfaction with a New Smart-Surface Silicone Hydrogel Daily Disposable Contact Lens

This article was published in the following Dove Press journal:
Clinical Optometry

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Purpose: To assess the patient and ECP preference of verofilcon A lenses over approximately a one-week period when worn on a daily wear, daily disposable (DD) basis by current DD contact lens wearers (CLWs) and new CLWs. ECPs assessed the lens fit, performance on eye and lens preference (to habitual DD lens) for current wearers.

Methods: A total of 218 current DD CLWs and 129 new CLWs aged >18 years participated in the survey. Baseline demographics and one-week data were obtained by 31 ECPs after fitting up to 10 current and 10 new wearers each. The survey was conducted online for both the participants and the ECPs. The survey took place in Australia and New Zealand from April to May 2019.

Results: For new wearers, the surveyed results demonstrated strong wearer preference for the verofilcon A lens with quality of life as a main driver. For current wearers, comfort was the main driver for verofilcon A preference. Post survey, 73% of ECPs stated they would most likely continue to fit verofilcon A lenses.

Keywords: verofilcon A, silicone hydrogel, daily disposable, surface, comfort

Background

Verofilcon A (PRECISION1™) is a silicone hydrogel (SiHy) contact lens made from a new high Dk (90×10^{-11} barriers) material with a lubricious 2–3 micron thick surface with more than 80% water content.¹ The centre oxygen transmissibility (Dk/t) of the lens is 100 barrers/cm making it one of the highest oxygen transmissible lenses currently available to Eye Care Practitioners¹ (ECPs). The high water content surface using SMARTSURFACE™ Technology is designed to enhance comfort and support an optically precise tear film.¹ A stable intact tear film is crucial to good subjective vision and comfort.² Verofilcon A has a modulus of 0.6 MPa and has been optimized through the thickness profile to assist ease of handling.¹

Introduction

CLWs and ECPs have benefited from two major developments in contact lens technology, and their eventual confluence. Daily disposable (DD) contact lenses offer excellent hygiene and convenience. They are also independent of the use of preservatives necessary to disinfect multi-use contact lenses.³ The use of daily

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disposable contact lenses reduces the chances of infiltrative events by a factor of 12 when compared with reusable soft contact lenses.³ Silicone hydrogel (SiHy) materials are the fastest growing segment of the category⁴ and elevate oxygen availability for soft contact lenses to enable normal corneal physiology and maintenance of physiological integrity beneath the lenses.

Consumers who are new to contact lenses are looking to improve their lifestyle and quality of life, but tend to have concerns regarding their abilities to handle and care for the lenses.⁵ Early experience with contact lenses can be an emotional roller coaster of highs and lows, and support from the ECP during this initial phase may increase the chance of success through advice and support. Existing wearers are more likely to be looking for an upgrade, which will improve their wearing experience by enhancing vision and/or comfort.

Nine out of ten ECPs agree SiHy contact lenses are the best choice to safeguard patients' eye health and should be the first material of choice for DD lenses.⁶ However, they consider the cost of DD SiHy lenses to be a significant barrier to wear, but agree that if costs were equivalent to hema, they would choose SiHy over hema for their DD contact lens fits.⁶ Yet in 2017, approximately 20% of DD fits were reported to be in hema materials.⁷ Interestingly, 68% of CLWs expect their ECP to recommend the best option for their eyes, irrespective of the cost.⁶

Fitting behaviours vary considerably between countries. Denmark, Finland and Australia fit the highest proportion of DD lenses of any material at 62%, 56% and 56%, respectively, with the USA somewhere in the middle at 23% and Mexico, China and Argentina at around 5%, 6% and 11%.⁸ Within the leaders, however, the split between the SiHy and hydrogel varies – Finland, Australia and the USA favour SiHy with a hydrogel: SiHy ratio of 4%:52% (Finland), 11%:45% (Australia) and 4%:19% (USA), whereas Denmark is firmly planted in the hydrogel camp at 47%:15%.⁹

A persistent issue with fitting new CLWs is between 20% to 25% will discontinue wear within the first year.⁹ Of these, 41% discontinue because of problems with vision, 36% because of discomfort and 25% because of handling issues. This 2017 finding is at variance with previous studies, which found discomfort to be the primary reason for discontinuation.^{10,11} Possible explanations could be that improvements in contact lenses have led to better comfort, or perhaps there is a higher proportion of toric and multi-focal lens wearers, who are more likely to experience visual

difficulties. Furthermore, a primary reason people drop out of contact lenses in the first three months of wear is due to difficulties with application and removal of the lenses.⁵ Practices can counter handling difficulties by instigating better follow-up strategies in the early stages of wear to ensure patients are coping, and by providing resources to help them when the practice is unavailable; for instance in the early mornings and late evenings when they are alone applying and removing their lenses.

Verofilcon A daily disposable contact lenses (PRECISION1™, Alcon Laboratories Inc, Fort Worth TX, USA) combine high oxygen transmissibility with a new and unique surface technology to provide a high-specification entry-level DD SiHy lens for both new consumers and CLWs who would like to try a different lens. The 51% water content material has a Dk of 90, and the lens has a central Dk/t of 100 barrers/cm at -3.00D,¹ nearly three times the Harvitt and Bonanno requirement for daily wear.¹² The lens material is encapsulated in an integral, uniform, 2–3 micron-thick SMARTSURFACE™ with a greater than 80% water content to maintain a stable pre-lens tear film.¹

To examine the preference of verofilcon A in real-world conditions, a survey was conducted with ECPs and both new and existing CLWs in Australia and New Zealand.

Materials and Methods

Three hundred and forty seven participants completed the online survey. They were fitted by 31 ECPs with at least one year's experience fitting contact lenses. On average each ECP fitted 4 new wearers and 7 existing single vision soft CLWs with verofilcon A contact lenses. Participants had to be 18 years or older and have correctable visual acuity of at least 6/9 with their habitual correction and CLWs had to be able to wear contact lenses for at least 8 hours a day for a week. New contact lens wearers had to have correctable visual acuity of at least 6/9 with an up to date spectacle vertex corrected prescription. Participants with ocular or systemic disease were excluded, as were any using prescription or OTC medicines. Contact lens rewetting drops were allowed both prior to and during the evaluation period. Table 1 shows their gender and age demographic and Table 2 shows the percentages breakdown based on the habitual lens brand for the CLW group.

ECPs completed an online survey at baseline and another at the end of the trial period. Similarly, each participant completed an online baseline survey before

Table 1 Demographics of the Participants. New Wearers Were Younger Than the Existing wearers, Reflecting existing wearers Had Been Wearing Contact Lenses for a Period of Time Before the Survey

Base	Total (347)	New Wearers (129)	Current Wearers (218)
Gender			
Male	36%	43%	32%
Female	64%	57%	68%
Age			
18–24	27%	39%	19%
25–34	39%	36%	42%
35–44	18%	12%	21%
45–54	10%	9%	10%
>= 55	6%	4%	8%

Table 2 Percentages of Previously Worn Lenses by the CLW Group

Habitual Contact Lenses Worn by CLWs	
I-Day Acuvue [^] Oasys	29%
I-Day Acuvue [^] Moist	24%
I-Day Acuvue [^] TruEye	9%
DAILIES [®] AquaComfort Plus [®]	15%
MyDay [^]	14%
Biotrue [^] ONE day	7%
Clariti [^] I Day	4%
Proclear [^] I Day	4%

Note: [^]Trademarks belong to their respective owners.

fitting, and another after they had worn the lenses for at least one week, at the review consultation.

Institutional review board or ethics committee approval was not required as this research was conducted as a market research survey. The research was conducted by ECPs who agreed not to intervene or change the patient's normal standard of care, to protect patient's confidentiality, and to report adverse events encountered during the course of the survey.

All participants were asked to read a Patient Information and Informed Consent Form, at the beginning of the online survey and provided their consent by clicking a check box in the online survey. A printed copy of the informed consent was provided when requested. Patients were apprised of their rights, as per the National Privacy Policy, and advised any adverse events in the course of the research would be reported to the relevant authorities. Kantar Health Australia is bound by the principles of the Australian Market and Social Research Society's Code of Professional Behaviour which govern the collection, retention, use, disclosure and transfer of

information about subjects of, and participants in market and social research.

Results

Consumer Experience New to Contact Lens Wear

As the new wearers did not have previous contact lens experience for comparison, their preferences reflected improvements in their day-to-day quality of life. Participants were offered a range of statements from which they could choose multiple options. They preferentially selected statements which reflected better control, being able to do things more productively, increased quality of life and less disruption in their daily life.

From the 129 new wearers (Figure 1), 91% agreed with the statement PRECISION1 "provides me with an option to be spectacle-free", 79% agreed with the statement "is a great lens to start my contact lens wearing experience" and 70% agreed with the statement that PRECISION1 "is the one I will continue to wear in the future". These responses were particularly strong in the 18–24 age group (n=50) with 94% agreeing the lens provided a spectacle-free option, 90% agreeing it was a great lens to start their contact lens journey and 78% agreeing they would continue to wear the lens in the future.

For the new CLWs reported in Figure 2 seventy five percent (75%) agreed that the lenses allow them to comfortably wear lenses all day long, 78% agreed that they provide clear vision at the end of the day as much as at the beginning and 79% agreed that they had clear vision when looking at digital devices.

When placing lenses on the eye 82% of new wearers agreed the lenses are easy to place on the eye and 72% agreed they are easy to remove.

Existing Contact Lens Wearers

Of the 172 existing CLWs (Figure 3) with a preference when compared to their previous contact lens wearing experience 4 out of 5 (81%) expressed a preference or strong preference for the verofilcon A contact lenses. The preference was more pronounced for people above 25 years, at 80% or more, and strongest in the 35–44 year-old group at 89%.

The preferences were related to a comparative experience with their habitual lenses influenced by attributes such as long-lasting comfort (Figure 4), less feeling of dryness, all-day comfort and a longer wearing time. Overall, existing wearers still made holistic evaluations such as less disruption in daily life and a better quality of life, but these were secondary to the comparative evaluations and less emphatic than in the non-wearing group.

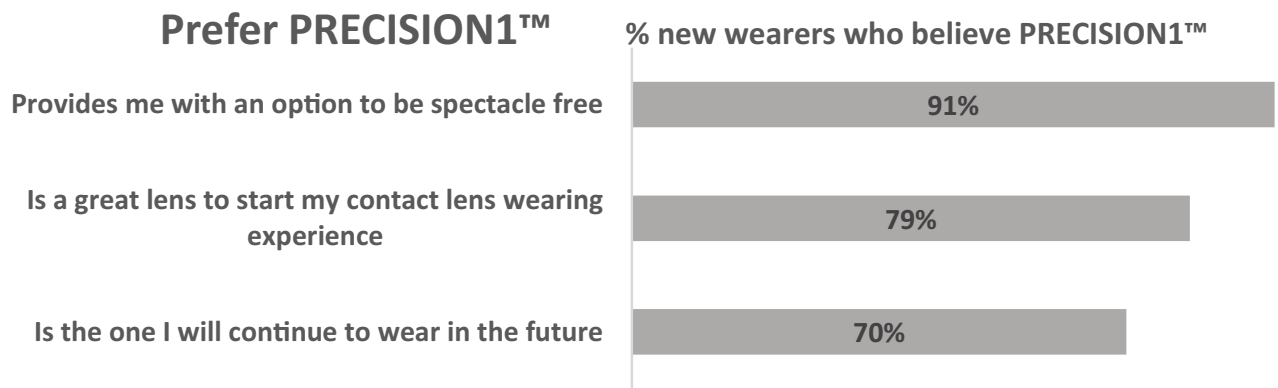


Figure 1 Overall 91% of new CLWs agreed that verofilcon A contact lens provide an option to be spectacle-free.
Note: New Wearers (amongst all new wearers n=129).

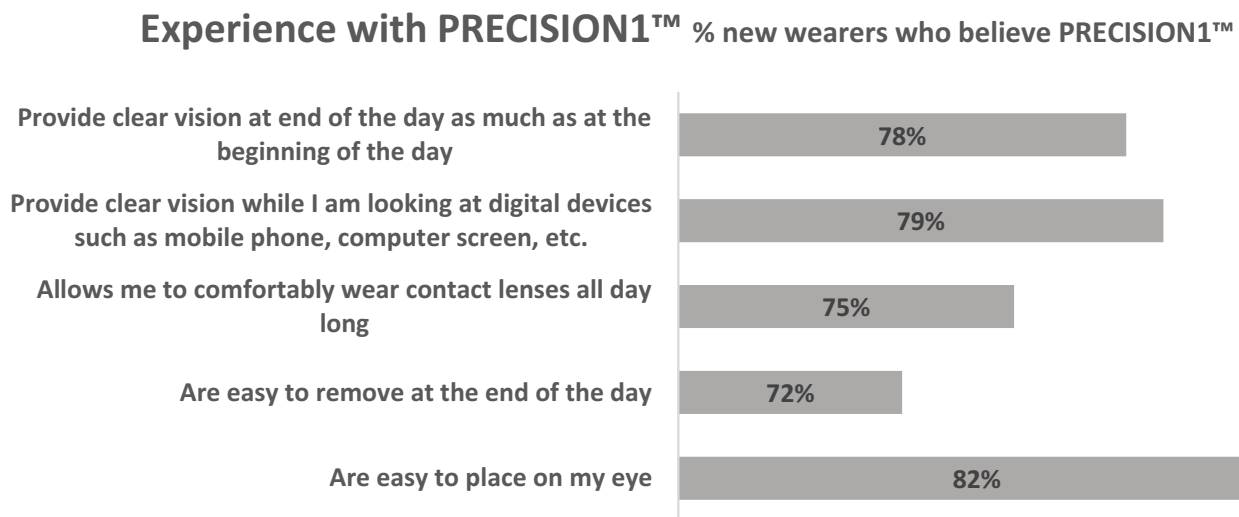


Figure 2 82% of new CLWs agreed verofilcon A are easy to place on the eye and 72% agreed they are easy to remove at the end of the day.
Notes: New Wearers (amongst all new wearers n=129). Data from Grant and Tang.¹³

Current wearers – Patient preference for “comfort” attributes amongst wearers who have a preference after trialling PRECISION1™ (Figure 4).

For ease of application and removal, CLWs preferred verofilcon A over their previous lenses at 71% and 61%, respectively. Preference for visual performance compared to habitual lenses (Figure 5) also favoured the new verofilcon A lens at 85%, with 83% also preferring them for their performance at the end of the day compared with the beginning.

Current wearers – Patient preference for “consistent & precise vision” attributes amongst wearers who have a preference after trialling PRECISION1™ (Figure 5).

Eyecare Professionals Experience

More than half of ECPs involved in the trial switched their most preferred contact lens brand to verofilcon A contact lenses

(Figure 6). The ECPs selected the following statement “Makes me feel confident that I recommend the best contact lens brand to my patients” as the main driver for this preference.

Discussion

In real-world conditions of use, a majority of surveyed new CLWs had a strongly favourable impression of wearing verofilcon A contact lenses, agreeing the lenses improved their quality of life. The most notable benefits of verofilcon A to new wearers are clear distance vision, comfortable fit, ease of insertion, long-lasting comfort and comfort when looking at a mobile phone or computer. New wearers also agreed verofilcon A contact lenses were a great way to start their contact lens wearing experience and would stay wearing them. Lifestyle improvements are important points for practitioners to incorporate into discussions with potential CLWs.

Patient preference post PRECISION1™ experience current wearers who have a preference after trialling PRECISION1™

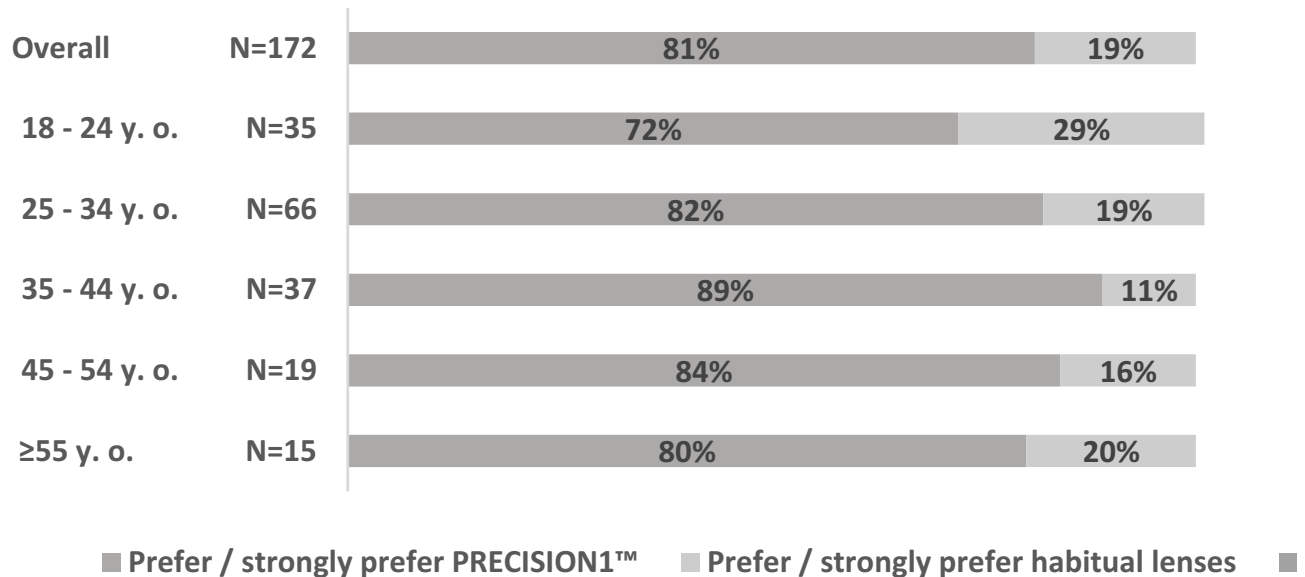


Figure 3 81% of existing CLWs expressed a preference or a strong preference for verofilcon A contact lenses over their current lenses.

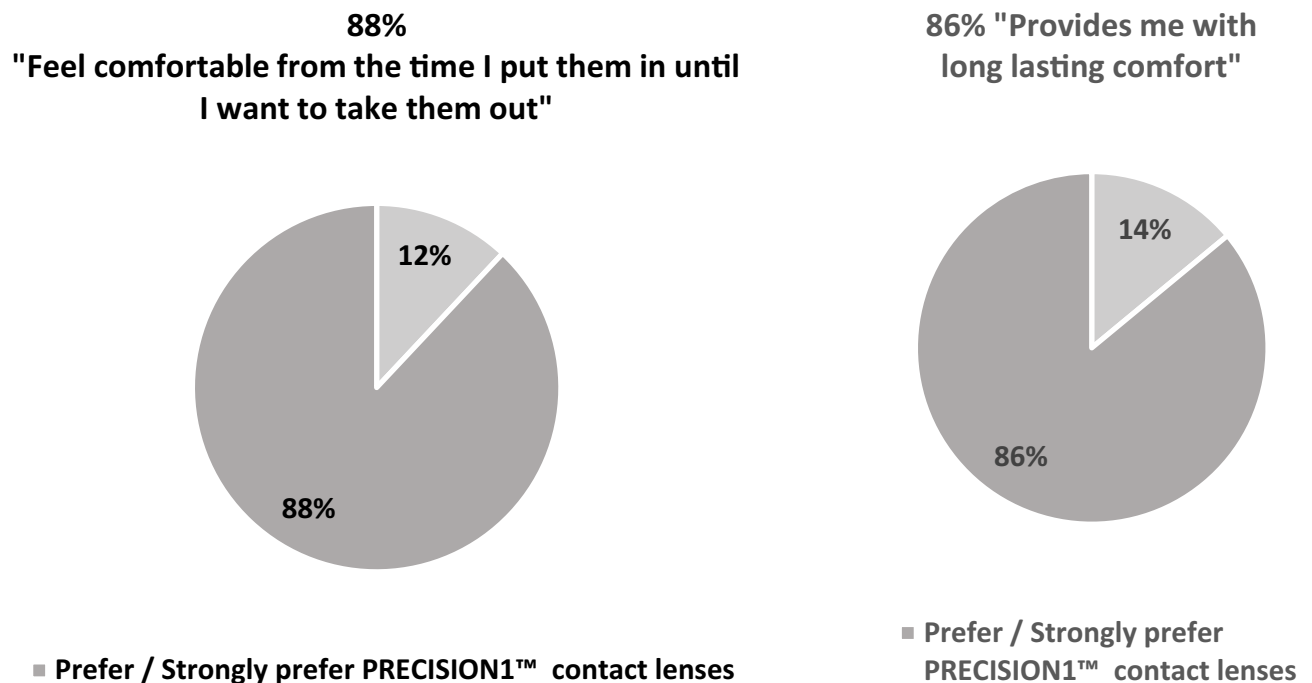
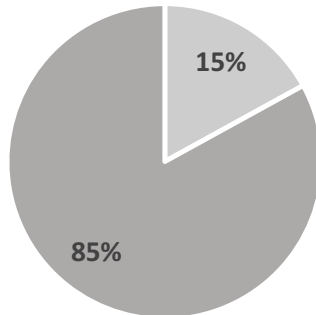


Figure 4 Existing wearers' comfort preferences.

Existing CLWs who were switched into verofilcon A lenses also expressed strong positive feedback on their performance with 4 out of 5 preferring the verofilcon A lenses to their previous lenses. As they already

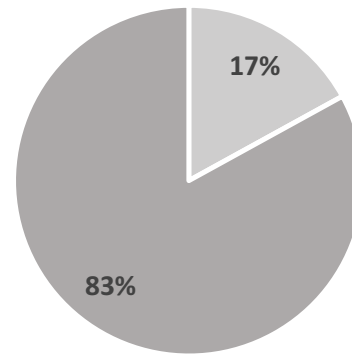
had experience of contact lens wear, the feedback in the survey was comparative in nature, with strong preferences for verofilcon A lenses because of subjective comparison to their previous lenses such as longer

85% "Provide consistent and precise vision from beginning of the day to when I want to remove them at the end of the day"



■ Prefer / Strongly prefer PRECISION1™ contact lenses

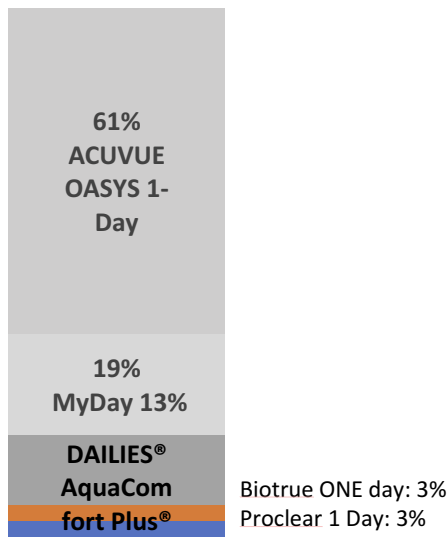
83% "Provide clear vision at the end of the day as much as at the beginning of the day"



■ Prefer / Strongly prefer PRECISION1™ contact lenses

Figure 5 Existing wearers' vision preference compared to their habitual vision.

Pre PRECISION1™ trial



Post PRECISION1™ trial

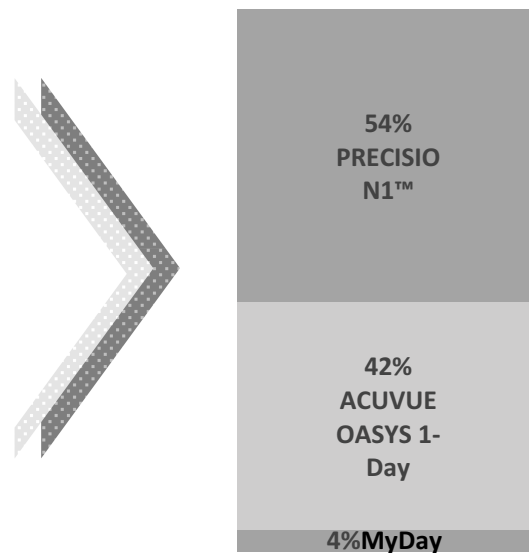


Figure 6 More than half of ECPs surveyed changed from their previously most preferred lens type to verofilcon A. Note: ECPs most preferred (n=31).

lasting comfort. Based on these results, the lenses may be a good option for people who experience intermittent discomfort and/or end of day discomfort with their existing lenses which is often tolerated, but not appreciated. Switching to verofilcon A contact lenses offer

a chance to address this, knowing comfort is one of the main reasons of contact lens drop out,¹¹ as well as significantly improving oxygen supply for hydrogel wearers with these symptoms and other hypoxic effects such limbal redness.¹⁴

As might be expected from a lens positively received by both new and existing CLWs, ECPs expressed enthusiasm and a preference to continue to fit it, many adopting it as their preferred daily disposable lens. It offers a credible option to move CLWs into SiHy DD lenses as a first and preferred option for ECPs and contact lens wearers.

Conclusions

Verofilcon A contact lenses are a high-quality SiHy DD option aimed at consumers who are new to contact lens wear including current spectacles wearers as well as those upgrading to DD from hema or frequent replacement lens wear. A one-week trial resulted in strong preferences to proceed with the lenses by both new CLWs, current CLWs and by the ECPs who fitted them. With the ease of placing and removal, the >80% water surface moisture,¹ high oxygen transmissibility, and the highly wetttable, high water content SMARTSURFACE™, verofilcon A contact lenses open up an excellent option to these consumers and practitioners.

Acknowledgments

This survey was sponsored by Alcon Laboratories Inc. (Fort Worth TX, USA). The survey was managed, conducted and data analysis was conducted by Kantar Health Australia funded by Alcon Laboratories. Medical writing support, which was funded by Alcon Laboratories Inc. was provided by Toolbox (Zurich, Switzerland). The authors would like to thank all the survey participants.

Disclosure

Timothy Grant and Anson Tang are employees of Alcon Laboratories (Australia) Pty Ltd. The authors report no other conflicts of interest in this work.

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