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Capturing Patient Opportunity

THE PRESBYOPIC
ASTIGMATIC

30

Using Innovative
Contact Lens Technologies
for Practice Success

smartphone

laptop

driving

stability

clear vision

comfort

FEATURING

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Embracing Technology to Invigorate the Practice

The contact lens industry has seen an incredible number of advances over the last few years: from novel soft lens materials and optical designs to expanded parameters for correcting astigmatism and presbyopia. Still, looking at the data, it is evident that many opportunities remain.

Of the over 66 million people with astigmatism, for example, only about 8.6 million are wearing toric contact lenses.¹ For the ever-expanding population of presbyopes, only about 13% are ever offered contact lenses, and for many of these, the offer is for monovision.² Even with all the recent innovations in contact lens technology, practitioners have been stymied by a relative lack of options for people with both astigmatism and presbyopia.

Bausch + Lomb convened a panel of experts to discuss the forthcoming Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens. Our conversation focused on the substantial patient need and opportunity for this soft multifocal toric contact lens, on the material and optical features of the lens itself and, importantly, on strategies for successfully incorporating the lens into practice.

We discussed the importance of lens material properties like moisture retention for the presbyopic population; key optical/design factors such as rotational stability and consistency of power profiles of multifocal lenses; and the benefit of having a full trial/fitting set available for such an advanced-technology lens option.

Here, we recap and expand on our discussion, moving through the scope of the opportunities from a demographic perspective, looking closely at the current vision correction modalities among presbyopic astigmats as well as their interest in soft multifocal toric contact lens wear and perceived barriers. We explore the potential ergonomic and lifestyle benefits of soft multifocal toric contact lens wear and talk about ways to bring this opportunity to all eligible patients in the practice—including contact lens neophytes, established wearers, and former wearers. Finally, we describe the technology behind the Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens with a focus on material, optics, and guidelines for efficient fitting.

Woven throughout the following sections are insights for practice growth—actionable ways to incorporate this impressive lens technology. Integrating the Bausch + Lomb ULTRA® Multifocal for Astigmatism lens into our workflows promises to invigorate our practices, staff, and patients.

— Paul M. Karpecki, OD, FAAO

Presbyopic Astigmats in Contact Lenses: The Opportunity

According to US Census data, there are about 120 million people between ages 40 and 70 in the US today.³ Of these, about 70% wear prescription eyeglasses or contact lenses for vision correction, and 38% of vision-corrected adults aged 40 years and older report having been diagnosed with astigmatism.⁴ Thus, we can estimate that there are about 32 million presbyopic astigmats with the potential to wear contact lenses in the US today.

32 million presbyopic astigmats with the potential to wear contact lenses in the US today

A small proportion of these presbyopic astigmats are current contact lens wearers; many are lapsed wearers, and many more wear spectacles only. Indeed, nearly 80% of presbyopic astigmats in this age group wear eyeglasses only.⁴

Eyecare practitioners (ECPs) know that presbyopic astigmats are not rare, but historically, there have not been many readily available or satisfactory soft contact lens options to offer them. Even for practices that focus on contact lenses and offer them routinely to eligible patients, the presbyopic astigmat has posed a challenge.

Gina Wesley, OD – “[Presbyopic astigmats are] this forgotten subset of patients and they’re not intentionally forgotten. They’re just unfortunately left out of the options that we have readily available to us.”

Few Options

Monovision with toric soft contact lenses can be easy to fit, but it does not work well for all patients.⁵ Single-vision toric soft contact lenses combined with reading glasses, similarly, can be unsatisfactory for patients who are motivated to be free from spectacles.⁵ For low astigmats, using spherical equivalent soft contact lens correction can provide spectacle independence but can substantially sacrifice visual quality.⁶ Finally, specialty contact lens

Art Epstein, OD – “Many of these patients were successful contact lens wearers who dropped out for a variety of reasons, sometimes comfort, sometimes a lack of corrective ability. We just didn’t have lenses that really worked for them, and these are patients who really want to get back into it.”

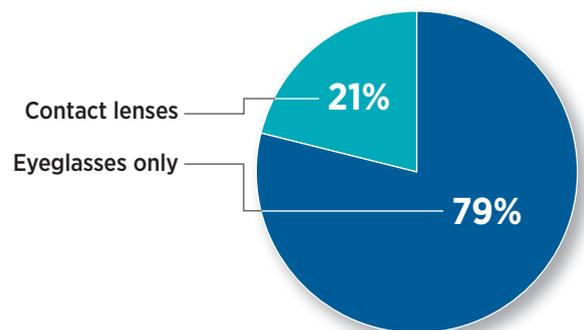
Kerry Giedd, OD – “They’re professionals, they’re active... they have all of the same visual standards and expectations as patients in their teens, 20s, and 30s. Trying to compromise that is really a challenge, so I’m so excited to have this option for these patients.”

fitting and ordering introduces logistical hurdles for patients and practices.

Many of the contact lens correction options for presbyopic astigmats have been cumbersome, resulting in a lack of confidence among ECPs in fitting them. After a few challenging or negative experiences, practitioners may be disinclined to offer contact lenses to presbyopic astigmats, especially those who are not current contact lens wearers. Current and former presbyopic astigmatic contact lens wearers, as well as those who have only ever worn spectacles, all represent a substantial opportunity.

Vision Correction Among Presbyopic Astigmats

Among vision-corrected adults ages 40+ (n=206)



Source: Multi-sponsor Surveys, Inc. The 2018 target report on contact lens marketing opportunities among 40+ presbyopes with astigmatism. January, 2019.

The Opportunity

Presbyopes—whether they have astigmatism or not—lead busy, active lives, and many are interested in contact lens wear. But as we will explore in the following pages, many believe they are not good candidates for contact lens wear and/or are not presented the option of contact lens wear by their ECPs.

Making contact lenses a standard offering for presbyopic astigmats requires a certain level of practice-wide commitment and coordination. When practitioners and staff are engaged together in a culture of talking to patients about options for presbyopic and astigmatic correction, the likelihood of success is greatest.

Interest in Contact Lenses and Barriers for Presbyopic Astigmats

Presbyopic astigmats, like presbyopes generally, are interested in contact lens wear. According to one survey, presbyopic astigmats who need multifocal correction express interest in trying multifocal contact lenses, with even greater interest among those who are current contact lens wearers.⁴ However, the same survey found that presbyopic astigmats who wear eyeglasses are more likely than other eyeglass-only wearers to perceive barriers to contact lens wear.⁴ Fifty-two percent of presbyopic astigmatic spectacle wearers believe that their vision problems prevent them from being able to wear contact lenses—with the most frequently cited reasons being astigmatism and the need for multifocal correction.⁴

How this happens is understandable: people with astigmatism may have been told, perhaps decades ago, that they were ineligible for soft contact lens wear. Having received this message once, and seeing the changes to their vision with the onset of presbyopia, presbyopic astigmats are unlikely to continue proactively bringing up the subject of contact lenses with their ECPs.

Interestingly, though presbyopic astigmatic eyeglass wearers express slightly greater interest in multifocal contact lenses compared with other eyeglass wearers in their age cohort; they are more likely to perceive barriers to contact lens wear, less likely to be aware of multifocal contact lens options, and further, are less likely to report having been recommended a multifocal contact lens by their ECP.⁴

Reasons for Wearing Contact Lenses

Among presbyopic astigmats (n=202)



Source: Multi-sponsor Surveys, Inc. The 2018 target report on contact lens marketing opportunities among 40+ presbyopes with astigmatism. January, 2019.

Making the Recommendation

Presbyopic astigmats are interested in contact lens wear, but they need to be told that it is an option for them. Coordination of a practice's staff—asking questions to gauge interest in contact lens wear at the time an appointment is made and during check-in—and educational materials in waiting and exam rooms can help initiate these conversations.

While presbyopic astigmats have generally similar attitudes about contact lens wear to other contact lens wearers 40 years and older, presbyopic astigmats who wear contact lenses tend to report more strongly favoring contact lens wear over eyeglasses for attributes such as comfort and

Factors Thought to Prevent Contact Lens Wear

Among presbyopic astigmats (age 40+) who wear eyeglasses only (n=58)



Source: Multi-sponsor Surveys, Inc. The 2018 target report on contact lens marketing opportunities among 40+ presbyopes with astigmatism. January, 2019.

providing sharp vision correction.⁴

For multifocal contact lenses, three key drivers of patient satisfaction with contact lens wear have been identified: sharp, clear vision at near; sharp, clear vision at mid-range; and ease of transition between near and far.⁷

Even practitioners who have made it a priority to create an office-wide culture around contact lenses as a standard offering have been challenged by the options available to presbyopic astigmats. Despite advances in toric and multifocal soft contact lens technologies, ECPs have been eager for lenses that bring these advances together in a package that can be readily fit in the office. Specialty lenses are available to correct astigmatism and presbyopia, but their use is associated with some inherent barriers that may deter ECPs from offering them or patients from accepting them—needing to wait sometimes weeks for a special order, making multiple follow-up appointments to be fit, and often having to make a financial commitment prior to even trying the lenses.

An Innovative Option

Having a soft multifocal toric lens with a full fitting set—and a straightforward, easy-to-use fitting guide—promises to remove some of these barriers for presbyopic astigmats in contact lenses. The Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens has been engineered with efficient fitting in mind, and a great deal of research has gone into developing a fitting guide (see page 14) to make the process as smooth as possible for ECPs.

It is clear from the data that many presbyopic astigmats want to wear contact lenses but believe they cannot. Those who already wear contact lenses value them for sharp vision correction, comfort, and appearance and lifestyle benefits. Making contact lenses a standard part of the conversation with presbyopic astigmats is particularly worthwhile with the advent of the Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens—an innovative option that can be trialed right away.

The State of Vision Correction Among Presbyopic Astigmats

Though there are many presbyopic astigmats eligible for contact lens wear, and many who would be interested in contact lenses, only about 20% of presbyopic astigmats aged 40 and older are contact lens wearers.⁴ Surveys of patients and ECPs alike indicate that a substantial proportion of presbyopic astigmats are offered and receive bifocal eyeglasses or progressive addition lenses (PALs), but contact lenses are less frequently a part of the conversation.

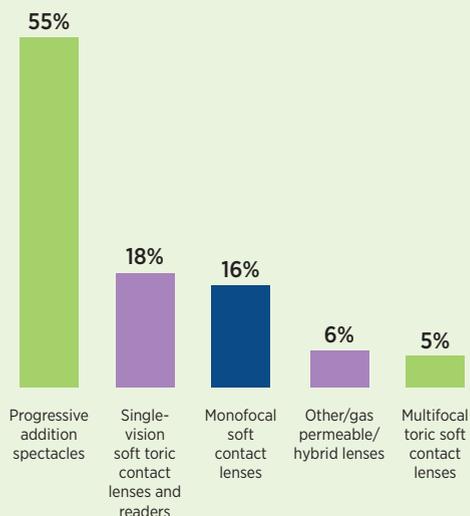
Kerry Giedd, OD - “To manage our presbyopic patients with astigmatism I think we’ve had to really compromise. We think of multifocals as our first choice contact lens for presbyopes, yet with our astigmatic patients, we often have to prescribe monovision or distance-only contacts with reading glasses.”

Vision Correction Breakdown

In an online survey, ECPs reported that over half of their presbyopic astigmats were in PAL spectacles; most of those who were wearing contact lenses either used single-vision toric soft contacts with reading glasses or monovision.⁸ Likewise, presbyopic astigmats themselves report receiving vision correction recommendations more often for spectacles than for contact lenses.⁴

Vision Correction Among Presbyopic Astigmats

Mean percentage estimates of presbyopic astigmats using various vision correction options (n=150 surveyed ECPs).



Source: DeNovo Research Solutions. Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens price sensitivity final report. June, 2018.

Mile Brujic, OD - “In an era of increased efficiencies, requiring more patient encounters in a given time period, we are creatures of habit, in particular with the way that electronic health records classify our patients. In our system it says ‘contact lens exam’ or ‘regular exam’ and I know that sometimes I become so focused on what the reason for the visit is, that I forget to offer contact lenses to those who are candidates, just because of the way they’re listed on the exam schedule.”

According to one patient survey, only 21% of presbyopic astigmatic spectacle wearers aged 40 and over reported that their ECP or office staff offered contact lenses as a vision correction option.⁴ Those who already wear contact lenses, perhaps unsurprisingly, are more likely to receive a recommendation for multifocal contact lenses as they become presbyopic: 33% of contact lens-wearing presbyopic astigmats reported being offered multifocals versus just 13% of those who were not contact lens wearers.⁴

In general, as for the contact lens modalities in use among presbyopic astigmats, many (49%) report wearing single-vision spherical lenses; 27% report a monovision or modified monovision modality; 25% report wearing single-vision torics; and 12% report wearing bifocal or multifocal lenses.⁴

I. Ben Gaddie, OD - “If you don’t talk to your patients about it and let them know that there are options available, that your staff and your practice are equipped to address contact lenses for presbyopic patients with astigmatism, they are not going to know. Because they have been told in the past that they are not candidates to wear contact lenses and so they get tired of asking ‘Is there an option for me?’”

Starting the Conversation

Many ECPs, even those who have a robust contact lens practice, struggle with putting presbyopic astigmats in contact lenses. Some soft contact lens options that are readily available in the office—such as monovision, toric contact lenses with over-readers, or spherical equivalent lenses—require compromise, while specialty lens options that could provide fuller correction often involve logistical challenges. Moreover, there is some hesitation among ECPs who may believe that, given the options, initiating a conversation about contact lenses with a presbyopic astigmat and working through the fitting process would simply be too time consuming to be worthwhile.

BRING CONTACT LENSES INTO THE CONVERSATION

In Dr. Gaddie's practice, "Are you interested in contact lenses?" is a part of the initial workup for any routine eye exam. The patient's response then appears right on the front of the record, enabling the ECP to walk into the exam room prepared to have a discussion about contact lens options. This level of coordination helps to clear some of the barriers that might otherwise prevent contact lens conversations from starting.

Such conversations do flow more naturally with established contact lens wearers, but the potential payoff of making contact lenses work for a presbyopic astigmat who believed they were not a candidate could be significant—not only for the individual patient, but also to differentiate the practice and generate referrals. Moreover, as with other advances in multifocal and toric contact lens technology, substantial effort has gone into making Bausch + Lomb ULTRA® Multifocal for Astigmatism lenses simple to fit.

Interest in Bausch + Lomb ULTRA® Multifocal for Astigmatism Lenses

Eighty-eight percent of ECPs reported being likely to fit Bausch + Lomb ULTRA® Multifocal for Astigmatism lenses.⁸ When ECPs were asked about reservations they would have with fitting a new multifocal toric soft contact lens, chair time/patient follow-up was cited most frequently, echoing a common refrain around the complexities of introducing new contact lens technology.⁹

However, the Bausch + Lomb ULTRA® Multifocal for Astigmatism lens, by incorporating the technologies of the Bausch + Lomb ULTRA® for Presbyopia and Bausch + Lomb ULTRA® for Astigmatism lenses, is designed for efficient fitting. With Bausch + Lomb multifocal lenses utilizing the 3-Zone Progressive™ design, ECPs using the fitting guide were able to successfully fit 80% of patients in one visit.^{*3}

Likewise, the speed of fitting for Bausch + Lomb ULTRA®

Gina Wesley, OD - "I think there is frustration with the lack of technology and options available; and that doctors think the current options might not solve the issues for them because they haven't fully embraced the technology and how it works. And I also think doctors are hesitant because of the perceived time that may be involved in fitting these patients. And as we know that's not necessarily the case with advancements in technology."

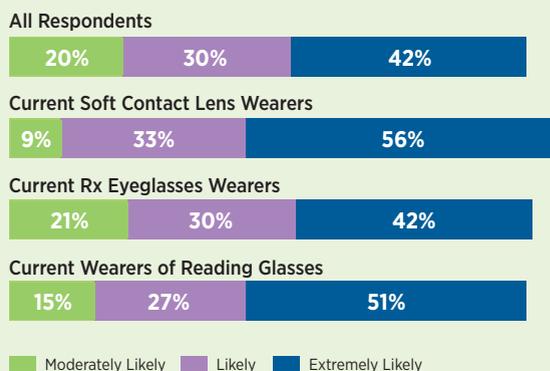
92% of surveyed presbyopes with astigmatism reported being likely to purchase Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lenses

for Astigmatism lenses was rated by ECPs as "excellent" or "very good" in 92% of patients.¹³ A clinical study using the Bausch + Lomb ULTRA® Multifocal for Astigmatism lens showed excellent rotational stability (≤ 5 degrees in 95% of eyes), centration, and movement at dispensing, comparable to the historical performance of the Bausch + Lomb ULTRA® for Astigmatism lenses.³

An online survey of 502 presbyopic astigmats between the ages of 40 and 60 found that 42% were extremely willing and 29% very willing to try contact lenses that would treat both presbyopia and astigmatism (willingness was rated on a scale of 1 to 5, with the mean rating in this case being 4.1).¹⁰ Ninety-two percent of respondents reported being likely to purchase Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lenses, and 96% agreed that the lenses would offer a benefit over their current or other available vision correction.¹⁰

These data suggest that a majority of presbyopic astigmatic patients would be receptive to hearing about and trying the Bausch + Lomb ULTRA® Multifocal for Astigmatism lenses. Bringing these patients into the contact lens conversation more fully with this option is likely to be a win for patients and practitioners.

Likelihood of Purchasing Bausch + Lomb ULTRA® Multifocal for Astigmatism Contact Lenses



Source: DeNovo Research Solutions. Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens price sensitivity with consumers. August, 2018.

*ECPs followed the fitting guide for the PureVision2 for Presbyopia lens, incorporating the 3-Zone Progressive™ design

[†]Results from a 7-investigator, multi-site, 2-week study of Bausch + Lomb ULTRA® for Astigmatism contact lenses on 157 current soft lens wearers

Issues of Visual, Ocular, and Physical Comfort for Presbyopic Astigmats

Advances in digital technology over the past few decades have fundamentally changed the way we live. Today, use of computers and other digital devices is an indispensable part of our everyday lives, and people of all ages spend long periods of time looking at screens for both work and leisure. This universal digital exposure helps improve our productivity and connectivity, but it is also known to give rise to ocular and visual problems.

The burden of digital eyestrain—also known as computer vision syndrome—extends beyond its negative effects on the eye. Apart from the common ocular symptoms such as eyestrain, dryness, and blurred vision, affected individuals can experience significant physical discomfort, including headaches and pain in the neck and shoulder.¹¹ People across age groups are at risk of developing symptoms from digital eyestrain, including older adults who are already challenged by age-related loss of accommodation.

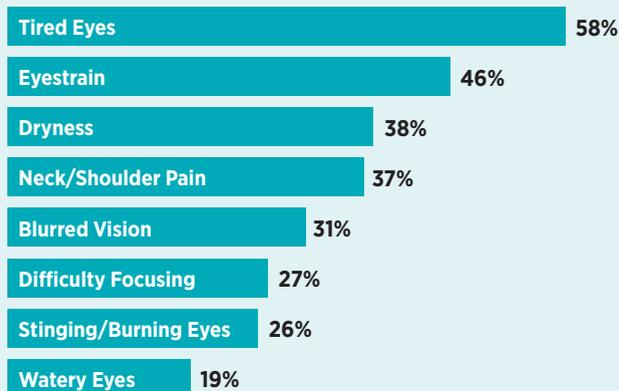
6.8 Mean number of hours per day presbyopic patients with astigmatism spend viewing digital devices

Contributing Factors

Digital eyestrain has become a widespread health issue. According to recent survey data, the prevalence of symptoms is as high as 90% in certain populations.¹² The

Symptoms Experienced While Viewing Digital Devices

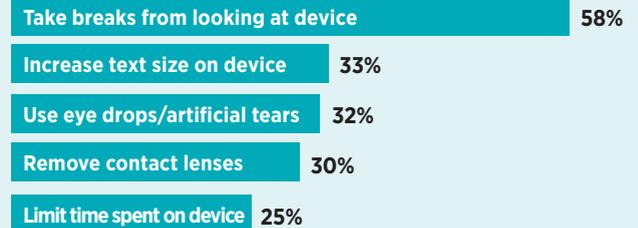
(Among presbyopic astigmatic contact lens wearers ages 40+)



Source: Multi-sponsor Surveys, Inc. The 2018 target report on contact lens marketing opportunities among 40+ presbyopes with astigmatism. January, 2019.

Actions Taken to Prevent Symptoms Related to Digital Device Usage

(Among presbyopic astigmatic contact lens wearers ages 40+)



Source: Multi-sponsor surveys, Inc. The 2018 target report on contact lens marketing opportunities among 40+ presbyopes with astigmatism. January, 2019.

extent to which digital device users experience visual symptoms is obviously linked to the amount of screen time. In the US, about two-thirds of adults aged 30 to 49 years spend five or more hours on digital devices.¹³ Among vision corrected adults over 40, the time spent viewing digital media averages 5.8 hours per day, which jumps to 6.8 hours among presbyopic astigmatic contact lens wearers.⁴

Individuals' visual abilities also play an important role in determining the degree of symptoms they experience with digital eyestrain. A number of ocular conditions can lead to reduced visual abilities and thus worsen the visual symptoms. These conditions include uncorrected refractive error such as astigmatism and presbyopia, accommodative disorders, and ocular surface or tear film abnormalities.^{12,14}

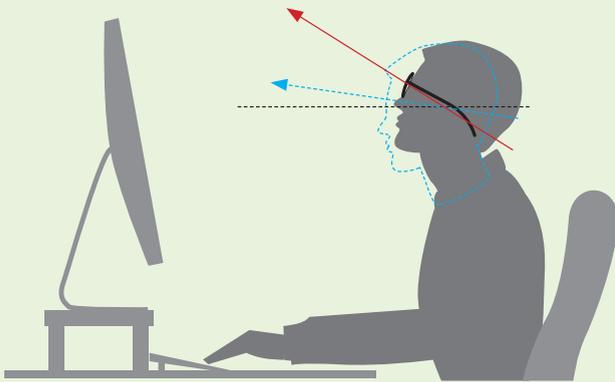
Additionally, multiple environmental factors, including viewing distance, display position, and lighting condition, may contribute to the development of visual symptoms with extended screen time.^{12,14} Because more than one factor may be implicated at once, a holistic approach is recommended for managing individuals experiencing symptoms of digital eyestrain.¹²

I. Ben Gaddie, OD – “Although I know there are more sophisticated, specialty lens options, sometimes our natural instinct is to take the path of least resistance. But now I can honestly say to a patient, ‘yes, you have astigmatism, and I do have an option we can try in the office today to help you see up close and see in the distance,’ and I think that will resonate a lot more and give some optimism to patients as well.”

Considerations for Presbyopes

For aging digital device users, the reduced ability to focus at near distances due to presbyopia is only one of the obstacles

Ergonomic Challenges for Computer Users Wearing Bifocal or Progressive Spectacles



— Average head inclination for progressive addition lenses
- - - Favorable head inclination

When working at a computer screen, bifocal or progressive spectacle wearers may habitually adopt a sitting posture with head tilted back to look through the lower part of their lenses. This upward inclination of the head can induce musculoskeletal strain and discomfort in the neck, shoulder, and upper back.

Patient and Environmental Factors That Can Influence Digital Eyestrain Symptoms

- Uncorrected refractive error, such as astigmatism and/or presbyopia
- Accommodative disorders
- Ocular surface or tear film abnormalities
- Hours per day spent on digital devices
- Viewing distance
- Display position
- Lighting conditions

progressive addition spectacle lenses.^{16,17} Because of the need to look through the lower portions of their spectacle lenses, presbyopic computer users wearing multifocal spectacles can often benefit from lowering their visual displays.¹⁸ Similarly, patients experiencing ergonomic issues with bifocals or PALs might be good candidates for contact lenses.

Paul Karpecki, OD - "The majority of patients with astigmatism don't believe they have a contact lens option. And then you layer on top of that presbyopia. If you think about these unmet needs, there are a lot of incredible opportunities."

to achieving visual and body comfort. With age, the ocular surface undergoes various physiological changes, including decreased tear production, dropout of meibomian glands, and alteration in meibum composition.¹⁵

Ergonomic considerations are also important for presbyopic patients, as the design of multifocal spectacle lenses could contribute to poor head/neck posture and musculoskeletal symptoms in computer users. Recent research has shown increased cervical tension and higher head inclination in computer users wearing bifocal or

Presbyopic Astigmats Who Report Being Offered Multifocal Contact Lenses

33%

of those who already wear contact lenses

13%

of those who wear spectacles

Source: Multi-sponsor Surveys, Inc. The 2018 target report on contact lens marketing opportunities among 40+ presbyopes with astigmatism. January, 2019.

Meeting the Challenge

Astigmats make up a large proportion of emerging presbyopes, and digital eyestrain is of particular concern for presbyopic astigmats who wear contact lenses—again, this group reports more hours per day using digital devices than other adults over 40.⁴ Compared to vision-corrected adults or contact lens wearers as a whole, this group is also more likely to experience vision problems associated with digital exposure.

Appropriate vision correction is paramount for presbyopic astigmats to meet the visual demands of extensive digital device usage. When making visual correction recommendations, ECPs should be aware of the visual, ocular, and ergonomic challenges this population faces. Multifocal contact lenses have an ergonomic advantage over bifocal/ progressive addition spectacle lenses, but they must also be able to offer clear vision and enhanced comfort in order to address the complex, unique visual needs of patients with both astigmatism and presbyopia.

Bringing Presbyopic Astigmats Back to Contact Lens Wear

Keeping emerging presbyopes in contact lenses has historically been a major challenge for ECPs. There is an inverse relationship between increasing age and use of contact lenses, and, on average, contact lens wearers are younger than non-contact lens wearers.^{19,20} In the US population as a whole, the use of contact lenses peaks in the age group of 18 to 40 years at 12.6%, and that number decreases to less than 4% for those aged 50 years and older.¹⁹

When patients with astigmatism become presbyopic, they might falsely believe that they can no longer wear contact lenses. Indeed, in a sample of vision-corrected people over 40, presbyopic astigmats who wear eyeglasses are nearly twice as likely as total eyeglass-only wearers to be former contact lens wearers (47% versus 28%).⁴ Compared to all former contact lens wearers, presbyopic astigmats are more likely to drop out after years of contact lens use, and half of them dropped out while wearing single vision spherical lenses.⁴

Recapturing these previous contact lens wearers presents an additional opportunity for practice growth, especially considering the fact that available lens options for this patient population are expanding. To succeed in attracting and retaining lapsed contact lens wearers, it is important to have a good understanding of why they drop out in the first place.

Art Epstein, OD – “For the subset of patients who have both astigmatism and presbyopia—and many of these patients also have ocular surface challenges—and would like to get back into contact lenses, I think the technology has finally gotten to the point where we can answer those problems.”

Reasons for Discontinuation

The leading cause for contact lens discontinuation, based on survey data from around the world, is discomfort (41.9% to 52.9%).²¹ The same appears to hold true for presbyopic astigmats: in the survey mentioned above, the top cited reasons for dropout among these patients included discomfort (36%) and dryness (26%).⁴ However, when compared with former contact lens wearers as a whole, a notably higher percentage of presbyopic astigmats reported changing vision needs and unsatisfactory vision correction (particularly astigmatism correction) as reasons to discontinue use.⁴ In particular, the need for reading glasses or bifocals (16%) was an important contributing factor to dropouts.

With continuing improvements in contact lens technology, ECPs are now better equipped to recapture former contact lens wearers and help keep their eyes healthy and comfortable. The Bausch + Lomb ULTRA® Multifocal for Astigmatism lens provides an opportunity to fill patients’ unmet vision correction needs and address comfort issues.

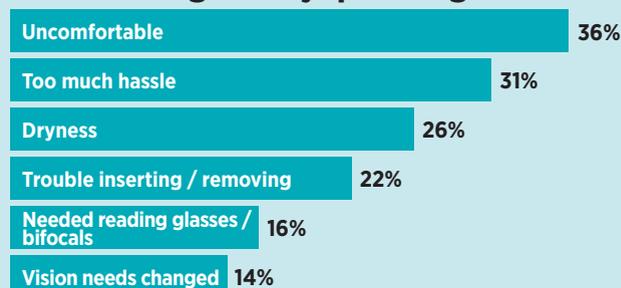
Gina Wesley, OD – “We often think in a singular way: it’s glasses or contact lenses and you can’t have both...And I think we need to be more of the mindset that a contact lens, especially a lens like the Bausch + Lomb ULTRA® Multifocal for Astigmatism, should be a tool in the arsenal of things that we give to our patients to help them maximize their visual potential.”

Bausch + Lomb ULTRA® Multifocal for Astigmatism Lens

Created with Bausch + Lomb’s innovative material and manufacturing technologies, the Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens is designed to simultaneously correct astigmatism and presbyopia with maximized wearing comfort and exceptional visual clarity and stability. The Bausch + Lomb ULTRA® 3-Zone Progressive™ multifocal and OpticAlign™ toric designs are both associated with high levels of patient satisfaction. According to the results of practitioner-conducted surveys, Bausch + Lomb ULTRA® for Presbyopia lenses provided clear vision for near, intermediate, and distance real-world tasks in 90%, 92%, and 90% patients, respectively; 91% of patients reported comfortable vision throughout the day.³ Among those fitted with Bausch + Lomb ULTRA® for Astigmatism lenses, 93% reported consistently clear vision throughout the day, and 96% said the lens provided comfortable vision during prolonged use of a smartphone or tablet.³

Contact lenses offer many distinct advantages over spectacles, and previous unsatisfactory experiences should not prevent patients from enjoying the benefits of contact lenses. By embracing innovative technologies and encouraging trial of new contact lens options, ECPs can be confident in addressing the specific vision correction needs of presbyopic and astigmatic former contact lens wearers and in providing them an optimal wearing experience.

Reasons for Discontinuing Contact Lens Wear Among Presbyopic Astigmats



Source: Multi-sponsor Surveys, Inc. The 2018 target report on contact lens marketing opportunities among 40+ presbyopes with astigmatism. January, 2019.

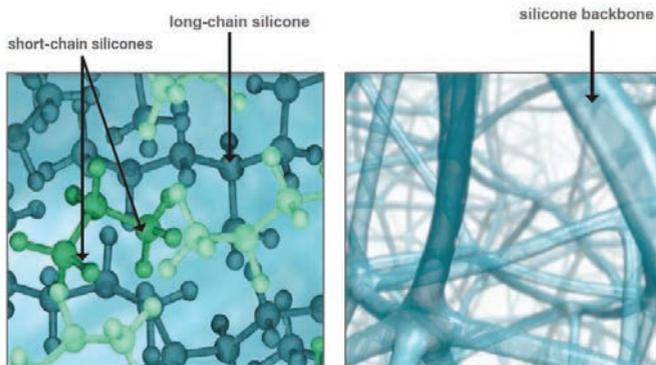
Bringing it All Together: MoistureSeal® Technology, 3-Zone Progressive™ Design, and OpticAlign™ Design

Contact lens wearers live and work in a range of environmental conditions that can impact their wearing experience. For many, including presbyopic astigmats, this includes hours of each day spent looking at digital devices, which can lead to reduced blinking frequency and symptoms of dryness and discomfort. Providing a smooth, wettable contact lens surface is important for distributing and maintaining the tear film across the surface of the lens between blinks. Soft contact lens development has therefore focused on materials able to help maintain the integrity of the tear film and surrounding ocular tissue.

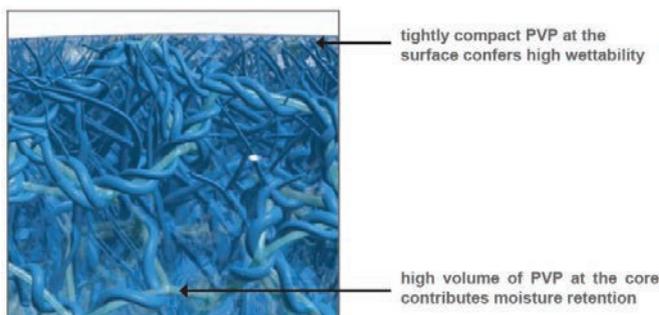
Material Innovations

The Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens material, samfilcon A, was developed to meet the comfort and vision needs of today's contact lens wearer. Designed to maintain a high moisture content, particularly for a silicone hydrogel lens, the unique material incorporates a combination of three silicone monomers to form a silicone backbone. Following the initial step of polymerization, the building blocks of polyvinylpyrrolidone (PVP) are grown throughout and around the silicone backbone. With this manufacturing

MoistureSeal® Technology



Three different silicones are combined in phase 1 to produce a flexible and highly breathable lens material



The building blocks of PVP are incorporated into the lens matrix during phase 2 to maximize moisture retention and surface wettability.

Art Epstein, OD - "I think it's important not to underestimate the material. The engineering behind MoistureSeal® technology is an innovative approach to manage moisture on the surface of a lens."

process, a high volume of PVP is incorporated into the bulk of the lens, and the PVP at the surface is tightly compacted to form a highly wettable, smooth surface. The unique chemistry of this material allows lenses to maintain 95% of their moisture for up to 16 hours.³

This MoistureSeal® technology is also featured in the other Bausch + Lomb ULTRA® spherical, toric, and multifocal contact lenses. Familiarity with the material is likely to give ECPs a good deal of confidence in prescribing the Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens.

Mile Brujic, OD - "My rule for fitting toric lenses is pretty easy: One, the lens has to be comfortable. Two, the lens has to be stable. And the Bausch + Lomb ULTRA® Multifocal for Astigmatism lenses really meet both of those needs."

OpticAlign™ Design

In order to incorporate advanced toric optical and stabilization technologies into this innovative lens material, Bausch + Lomb clinicians and lens designers studied the biomechanics of the blink over a wide variety of eyes with diverse shapes and sizes. High-speed videography was used to measure the movements of the upper and lower lids during blinking, providing a better understanding of lid movement and the role it plays in stabilizing a toric lens. The research demonstrated that the upper lid moves vertically and in an elliptical pattern across the palpebral aperture, whereas the lower lid chiefly moves horizontally and has limited vertical movement.

In developing the OpticAlign™ Design, lens designers considered the anatomical characteristics of eye and blink patterns to optimize lens geometries through clinical assessments of designs with varied lens diameter, sagittal depth, superior thickness, center thickness, inferior thickness, maximum ballast thickness, peripheral blending, and edge thickness and profile. The final design was selected to leverage the downward movement of the upper lid to keep the lens correctly oriented.

3-Zone Progressive™ Design

In developing 3-Zone Progressive™ design technology, Bausch + Lomb researchers recognized that the unique optical and anatomical characteristics of each presbyopic eye would

play a substantial role in defining individual retinal image quality. The researchers were also aware of the changing needs of the presbyopic digital device user and the limitations of optical designs for presbyopic patients.

While conventional multifocal contact lens designs used refractive error or refractive error and pupil size in optical design development, developers of 3-Zone Progressive™ design used a broader approach and accounted for refractive error, higher order aberrations, pupil diameter, corneal curvature, axial length, and residual accommodation across nine distances in the optical design development.³

During development of 3-Zone Progressive™ design, novel lens optics were evaluated using these unique features of a diverse population of presbyopic eyes. Diameter of a near zone, diameter of an intermediate zone, total add power, and change in power across distinct zones were assessed to optimize predicted visual outcomes. By adjusting diameters of the near and intermediate zones and the change in power within these zones, light energy can be redistributed to provide exceptional near and intermediate visual outcomes. The final 3-Zone Progressive™ design was selected based on the optimal visual outcomes across the nine distances (6 m, 2 m, 1 m, 67 cm,

Bausch + Lomb ULTRA® Multifocal for Astigmatism Contact Lens Fitting Parameters

(Dispensing visit; n=42 eyes)

Rotation	
0 degrees	28 (66.67%)
1 to 5 degrees	12 (28.57%)
6 to 10 degrees	2 (4.76%)
11 to 15 degrees	0
16 to 20 degrees	0
>20 degrees	0
Centration	
Excellent	36 (85.71%)
Good	6 (14.28%)
Fair	0
Poor	0
Movement	
Adequate	42 (100%)
Excessive	0
Insufficient	0
Adherence	0

Rotation, centration, and movement of the Bausch + Lomb ULTRA® Multifocal for Astigmatism at dispensing

PREPARE FOR SUCCESS WITH THE BAUSCH + LOMB ULTRA® MULTIFOCAL FOR ASTIGMATISM CONTACT LENS

- Educate staff about the lens features and parameters
- Identify appropriate patients—consider using the electronic health records system
- Build on experience with the Bausch + Lomb ULTRA® for Astigmatism and Bausch + Lomb ULTRA® for Presbyopia lenses
- Use the fitting guide to maximize chances of success
- Leverage fit set for in-office trials

50 cm, 40 cm, 33 cm, 28 cm, and 25 cm) and “real world” patient experience wearing the multifocal low- and high-add lenses.³

As use of digital devices by presbyopic contact lens patients grows, the need for sustained near and intermediate vision increases. In patient surveys, sharp, clear vision at near and mid-range distances have emerged as the top two characteristics driving satisfaction with multifocal lens wear.⁷ With multifocal optics that account for refractive error, higher order aberrations, pupil diameter, corneal curvature, axial length, and residual accommodation across nine distances, the innovative 3-Zone Progressive™ design can help presbyopic patients enjoy the benefits of contact lens wear.

Familiarity with the Bausch + Lomb ULTRA® for Presbyopia contact lenses should help ECPs as they begin to work with the Bausch + Lomb ULTRA® Multifocal for Astigmatism lenses.

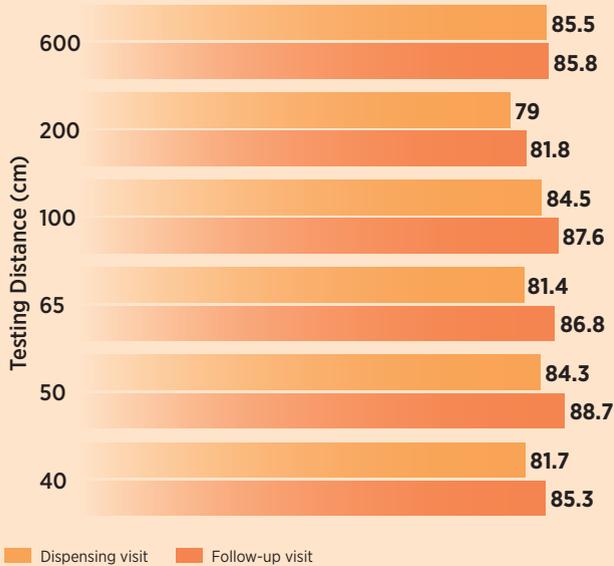
Gina Wesley, OD - “This is the ultimate completion of a family of lenses when you consider parameters and availability on a proven platform of design stability and MoistureSeal® technology.”

Bringing it Together

The Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens is a culmination of these lens technologies. The innovative soft multifocal toric contact lens has been developed combining the MoistureSeal® technology of the proven samfilcon A material with both the 3-Zone Progressive™ multifocal and OpticAlign™ toric designs. The lens was designed with several goals in mind, including clear vision at all distances, stability, and an efficient fitting process.

A study (n=42 eyes) with the Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens showed the lens performed excellently in terms of objective and subjective visual quality and measures of fitting. Subjective visual quality increased from baseline to the 2-week follow-up visit for intermediate and near vision.³ The lens also showed excellent stability, centration, and movement, with a rotation of 5

Bausch + Lomb ULTRA® Multifocal for Astigmatism Contact Lens Subjective Visual Quality Ratings



Subjective visual quality with Bausch + Lomb ULTRA® Multifocal for Astigmatism lenses, rated in the exam room on a scale from 0 to 100, with 100 being the most favorable.

the presbyopic astigmats in their practice—those who are current, but less than satisfied contact lens wearers, former wearers, and neophytes. Having a trial set with a wide range of parameters on site makes it possible to initiate the fitting process rapidly, without the delay and hassle of specialty lens ordering.

Paul Karpecki, OD - “[This lens] gives us a chance to be able to do something on the spot and because of the stability, because of the design, because of what goes into this, I think we’re going to see some very immediate success and I think that’s going to not only translate to the patient but also to our staff and our entire practice. I’m excited about this opportunity.”

Although the material and optical technologies in the Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lenses are highly advanced, a commensurate amount of research and development went into ensuring that the lenses are easily fit (see fitting guide on page 14). Making innovative contact lens technologies like those in the Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens available to a new subset of patients can create excitement among staff and patients and invigorate the practice.

The success of a contact lens fit has many facets: the logistics of fitting a lens, stability, great vision, and comfort—but the ultimate measure of success is patient satisfaction. There are plenty of reasons to believe that the Bausch + Lomb ULTRA® Multifocal for Astigmatism, like the other lenses in the Bausch + Lomb ULTRA® family, will bring satisfaction to a previously underserved patient population.

degrees or less for 95% of eyes at dispensing.³

The Bausch + Lomb ULTRA® Multifocal for Astigmatism lens is a significant advancement, bringing what would otherwise be specialty lens technology together with the convenience of easy-to-fit planned replacement lenses. ECPs will have the advantage of another option to offer

REFERENCES

1. Multi-sponsor Surveys, Inc. The 2018 target report on the market for toric contact lenses. July, 2018.
2. Multi-sponsor Surveys, Inc. The 2017 study of the US multifocal contact lens market. March, 2018.
3. Data on file. Bausch & Lomb Incorporated, Rochester, NY.
4. Multi-sponsor Surveys, Inc. The 2018 target report on contact lens marketing opportunities among 40+ presbyopes with astigmatism. January, 2019.
5. Bennett ES. Contact lens correction of presbyopia. *Clin Exp Optom.* 2008;91(3):265-78.
6. Wolffsohn JS, Bhogal G, Shah S. Effect of uncorrected astigmatism on vision. *J Cataract Refract Surg.* 2011;37(3):454-60.
7. Multi-sponsor Surveys, Inc. The 2015 Gallup study of the US multifocal contact lens market. October, 2015.
8. DeNovo Research Solutions. Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens price sensitivity final report. June, 2018.
9. SERMO RealTime. Presbyopic astigmat vision correction survey. May, 2019.
10. DeNovo Research Solutions. Bausch + Lomb ULTRA® Multifocal for Astigmatism contact lens price sensitivity with consumers. August, 2018.
11. American Optometric Association. Computer vision syndrome. <https://www.aoa.org/patients-and-public/caring-for-your-vision/protecting-your-vision/computer-vision-syndrome> Accessed March 4, 2019.
12. Coles-Brennan C, Sulley A, Young G. Management of digital eye strain. *Clin Exp Optom.* 2019;102(1):18-29.
13. Sheppard AL, Wolffsohn JS. Digital eye strain: prevalence, measurement and amelioration. *BMJ Open Ophthalmol.* 2018;3(1):e000146.
14. Gowrisankaran S, Sheedy JE. Computer vision syndrome: a review. *Work.* 2015;52(2):303-14.
15. Gipson IK. Age-related changes and diseases of the ocular surface and cornea. *Invest Ophthalmol Vis Sci.* 2013;54(14):ORSF48-53.
16. Abbas RL, Hourri MT, Rayyan MM, Hamada HA, Saab IM. Effect of unifocal versus multifocal lenses on cervical spine posture in patients with presbyopia. *Int J Occup Saf Ergon.* 2018 Jun 6:1-5. doi: 10.1080/10803548.2018.1459349. [Epub ahead of print]
17. Jaschinski W, König M, Mekontso TM, Ohlendorf A, Welscher M. Comparison of progressive addition lenses for general purpose and for computer vision: an office field study. *Clin Exp Optom.* 2015;98(3):234-43.
18. Bartha MC, Allie P, Kokot D, Roe CP. Field observations of display placement requirements and character size for presbyopic and prepresbyopic computer users. *Work.* 2015;52(2):329-42.
19. Swanson MW. A cross-sectional analysis of U.S. contact lens user demographics. *Optom Vis Sci.* 2012;89(6):839-48.
20. Cope JR, Collier SA, et al. Contact lens wearer demographics and risk behaviors for contact lens-related eye infections - United States, 2015. *MMWR.* 2015, 64(32):865-70.
21. Rumpakis J. New data on contact lens dropouts: an international perspective. *Review of Optometry.* Jan 15, 2010. <https://www.reviewofoptometry.com/article/new-data-on-contact-lens-dropouts-an-international-perspective> Accessed Mar 6, 2019.

Fitting the Bausch + Lomb ULTRA® Multifocal for Astigmatism Lenses

The range of parameters available in the Bausch + Lomb ULTRA® Multifocal for Astigmatism lenses—from +4.00 to -6.00D, two add powers, three cylinder powers, and around-the-clock astigmatism correction—is exciting for ECPs who want to be able to offer more options to their presbyopic astigmatic patients.

Bausch + Lomb ULTRA® Multifocal for Astigmatism Design and Lens Parameters

Material	samfilcon A
Lens Material Technology	MoistureSeal® Technology
Water Content	46%
Oxygen Permeability	114 Dk
Lens Design Technologies	3-Zone Progressive™ design OpticAlign™ design
Base Curve	8.6 mm
Diameter	14.5 mm
Spherical Powers	+4.00D to -6.00D in 0.25D steps
Cylinder Powers	-0.75D, -1.25D, -1.75D
Axes	10° to 180° in 10° steps
Add Powers	Low: +0.75D to +1.50D High: +1.75D to +2.50D
Visibility Tint	Light blue
Wear Schedule	Daily wear and up to 7 days extended wear
Replacement Schedule	Monthly

Bausch + Lomb ULTRA® Multifocal for Astigmatism Fitting Guide

Initial Fitting

STEP 1: Update spectacle refraction and Add power

STEP 2: Select toric lens power (adjusted for vertex distance, if necessary)

STEP 3: Select Add power according to the following guideline

SPECTACLE ADD	BOTH EYES
+0.75D to +1.50D	Low Add
+1.75D to +2.50D	High Add

Evaluating

- Allow trial lenses to equilibrate for at least 10 minutes before assessing fit and vision
- Confirm axis orientation
- Evaluate distance and near vision binocularly in normal room illumination
- If vision at distance and near are satisfactory, dispense lenses and schedule follow-up exam within 1 to 2 weeks

Refining

- Confirm axis orientation
- Determine eye dominance
- Follow guidance below

		NEAR VISION		DISTANCE VISION			
		DOMINANT EYE	NON-DOMINANT EYE	DOMINANT EYE	NON-DOMINANT EYE		
IF PATIENT IS WEARING	TWO LOW ADDS	Initial Lens	Low Add	Low Add	Initial Lens	Low Add	Low Add
	Refinement 1	Low Add	High Add	Refinement 1	Bausch + Lomb ULTRA® for Astigmatism	Low Add	
		Refinement 2: If vision is still unsatisfactory, make small changes by adding +0.25D at a time to non-dominant eye (wearing High Add lenses) using hand-held lenses, and continue evaluating vision binocularly in normal room illumination. Adjust contact lens power when vision is satisfactory.					
IF PATIENT IS WEARING	TWO HIGH ADDS	Initial Lens	High Add	High Add	Initial Lens	High Add	High Add
	Refinement 1	High Add	Add +0.25D to the non-dominant eye	Refinement 1	Low Add	High Add	
		Refinement 2: If vision is still unsatisfactory, make small changes by adding +0.25D at a time to non-dominant eye using hand-held lenses, and continue evaluating vision binocularly in normal room illumination. Adjust contact lens power when vision is satisfactory.					
		Refinement 2: If vision is still unsatisfactory, make small changes by adding -0.25D at a time to dominant eye (wearing Low Add lenses) using hand-held lenses, and continue evaluating vision binocularly in normal room illumination. Adjust contact lens power when vision is satisfactory.					

BAUSCH + LOMB ULTRA® MULTIFOCAL FOR ASTIGMATISM

GO BEYOND THE EXPECTED IN 2019



An innovative multifocal toric lens
available soon as a standard offering

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