

Pterygium Patient Burden Survey Identifies Gaps in Care and the Need for Nonsurgical Treatments

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Disclosures: Rohan Gandhi and Gregory Brooks are consultants of Cloudbreak Pharma. Kimberly Root is an employee of Cloudbreak Pharma. Mitchell Shultz is a consultant of HDMD, Lensar, and Twenty/Twenty Therapeutics; he is a consultant and investigator of Aerie Pharmaceuticals, BVI, Cloudbreak Pharma, Johnson & Johnson, New World Medical, Ocuphire Pharma, ReGenTree, and Sanoculis; he is a consultant, investigator, and speaker of Bausch+Lomb, Glaukos, RxSight, and Tarsus; and he is a cofounder of, an investor of, and speaker for Alchemy Vision. Daniel Terveen has received grants from Alcon and Sight Sciences; he has equity in Greenman Vision, Balance Ophthalmics, and True North CRO; and he is a consultant, has equity, and has received royalties from Glaukos. Gustavo Corrales has no conflicts of interest to declare.

Pterygium Survey: Background and Purpose

Pterygium is a common fibrovascular growth extending from the conjunctiva to the corneal surface, ranging in severity from mild to moderate irritation and redness to severe presentations^{1,2}



As it advances, a pterygium can compromise vision if it causes irregular astigmatism or corneal surface disease or if the lesion grows over the pupil¹



Pterygium is associated with tear film instability, and research suggests that dry eye disease and meibomian gland dysfunction can affect pterygium progression and recurrence³⁻⁴



Although **there is no approved treatment specific for pterygium**, topical treatments provide symptomatic relief (corticosteroids and other anti-inflammatory drugs)^{2,5-6}



Surgery may be considered for people with pterygium, but recurrence remains a concern^{1,7}

An estimated **~15M** people are **affected by pterygium** in the US⁸⁻⁹

A recent analysis of insurance claims estimated that **2.5 million individuals sought care for pterygium**, including diagnosis, between 2016 and 2021, suggesting that **pterygium is underdiagnosed and undertreated in the US¹⁰**

– ECPs estimate that 45% of pterygium cases are mild, 30% are moderate, and 25% are severe¹¹

Purpose: We sought to understand the patient journey for people with pterygium through a quantitative and qualitative survey. Here we present the:

- Social, emotional, and physical impact of pterygium
- Burden of disease
- Effects of disease progression
- Treatment history after diagnosis in people living with pterygium in the US

ECPs, eye care providers.

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Pterygium Burden Survey Methods

- ✓ This noninterventional, cross-sectional survey was conducted in volunteers for a multicenter phase 3 clinical trial enrolling people with a known pterygium of ≥ 1.2 mm and conjunctival hyperemia (measured on a scale of 0-4) in the United States¹
 - Survey participants who did not meet inclusion criteria due to mild to moderate conjunctival hyperemia in the phase 3 trial (scores 0-2 during the screening visit) were recruited to participate in an online quantitative and qualitative survey about the burden of disease
 - The survey was conducted in English and Spanish
 - The survey was conducted between September 8-December 29, 2023

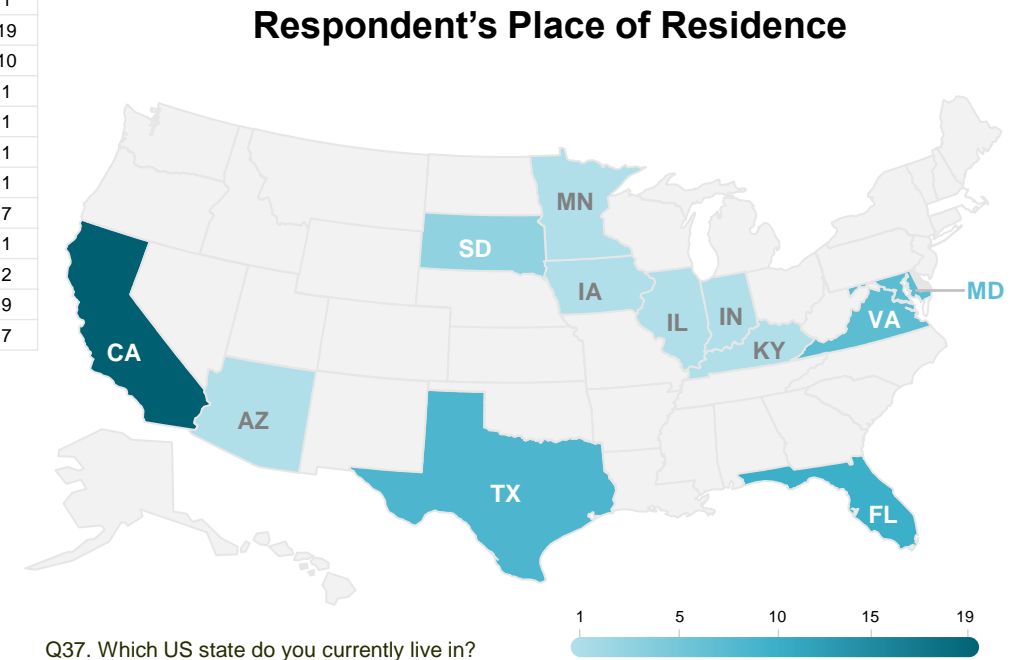
- ✓ Key topics in the survey included patient journey (i.e., onset, diagnosis, and treatment of pterygium) and the impact of the disease (i.e., ocular signs and symptoms, vision impact/changes, social impact, and environmental factors) on patients' lives as pterygium progresses
 - Topics for inclusion were informed by previously conducted qualitative research interviews with physicians and patients²
 - The survey was designed with multiple-choice questions, rating questions, and open-ended questions

- ✓ Results are presented using descriptive statistics

Characteristics of Respondents in the Pterygium Survey

CHARACTERISTICS	SURVEY RESPONDENTS (N=60)
Current age, years, mean (range)	52.6 (21-85)
Age at diagnosis, years, mean (range)	41.9 (15-71)
Years since diagnosis, mean (range)*	10.4 (0-45)
Male sex, n (%)	37 (62.0)
Survey language	
English, n (%)	32 (53.0)
Spanish, n (%)	28 (47.0)
Participants who have had surgery†, n (%)	8 (13.0)
Pterygium crossed over the iris‡, n (%)	50 (83.0)

State	n
AZ	1
CA	19
FL	10
IA	1
IL	1
IN	1
KY	1
MD	7
MN	1
SD	2
TX	9
VA	7



Most survey respondents were male, many had been living with pterygium for 10+ years, and the study population was geographically dispersed

*This value is calculated from the answers of 2 questions: "Age when you were diagnosed with pterygium" and "What is your current age?" Two respondents had negative values for this calculation because they entered a higher "current age" than "age at diagnosis," so these negative values were not included in the range.

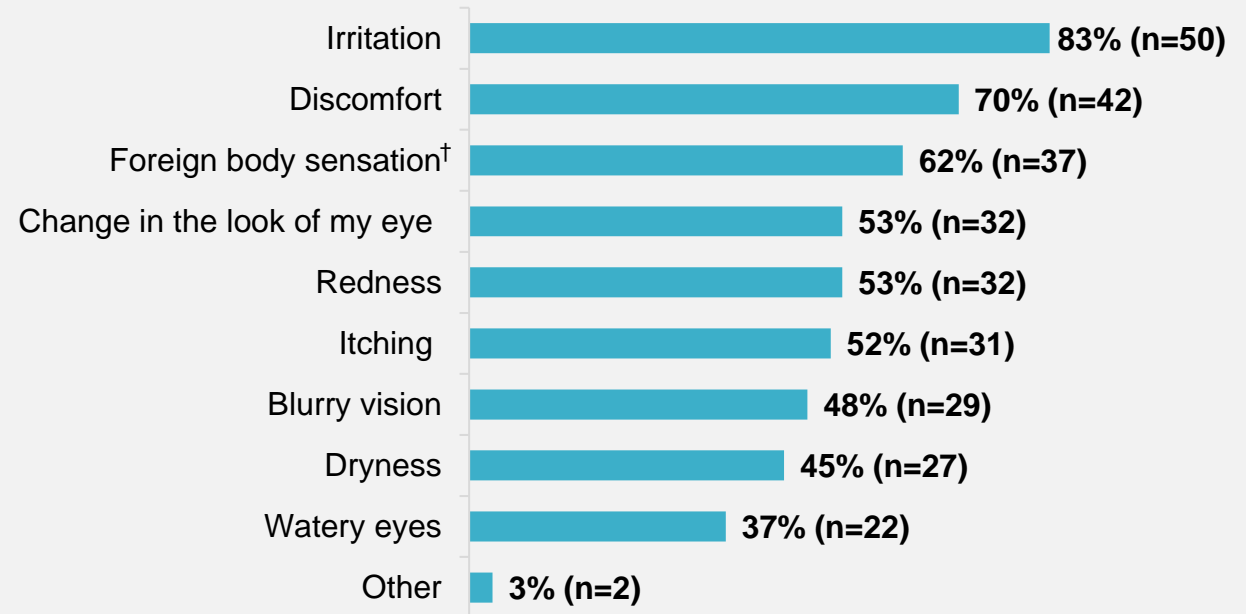
†While all survey respondents who had undergone surgery are known to have pterygium recurrence, 1 respondent selected otherwise.

‡Associated question: "Based on the photo, has the pterygium lesion crossed from the white of your eye onto the colored part of your eye?"

Pterygium Diagnosis Journey

- **50%** (n=26/52) sought care 2+ years after experiencing their first symptoms of pterygium
- **56%** (n=29/52) received a diagnosis of pterygium within 1 month of seeing a doctor for their symptoms; respondents initially consulted with
 - PCPs: 27% (n=14/52)
 - Optometrists: 31% (n=16/52)
 - Ophthalmologists: 37% (n=19/52)
 - Other HCPs: 6% (n=3/52)
- **57%** (n=34/60) of pterygium cases were diagnosed by ophthalmologists and 23% (n=14/60) by optometrists
 - 12% (n=7/60) were diagnosed by PCPs
 - 8% (n=5/60) by “other” doctors
- **87%** (n=52/60) were symptomatic at diagnosis

First symptoms experienced prior to diagnosis (N=60)*



Q. What were the first pterygium symptoms you experienced (before or after you were diagnosed with pterygium)? Please select all that apply.

Most respondents had a delayed diagnosis, despite experiencing symptoms

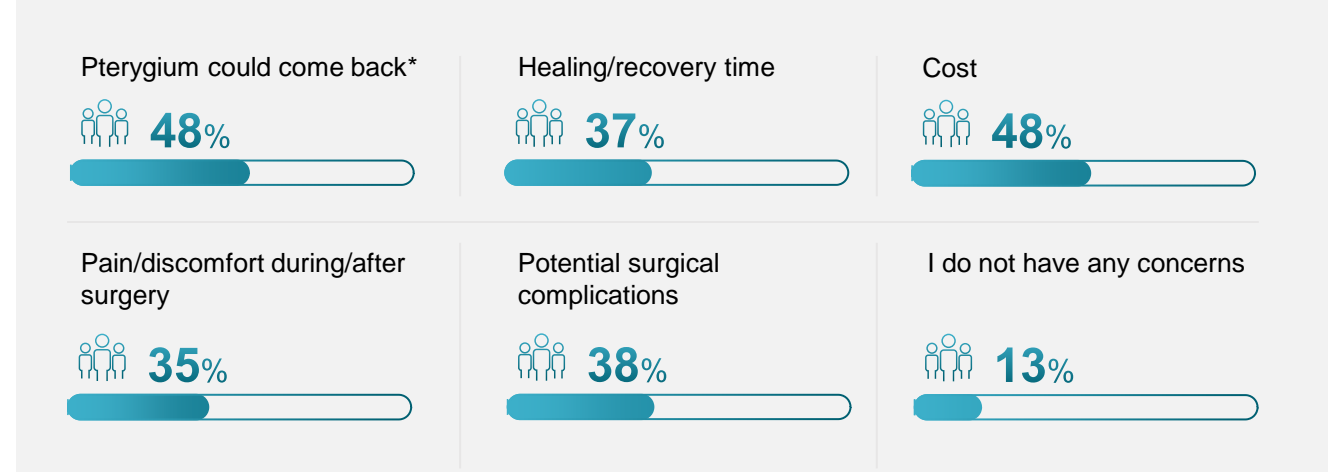
*Summary of symptoms based on respondent recall.

†The answers of “foreign body sensation” and “grittiness/sandy feeling” were combined.
HCPs, health care providers; PCPs, primary care providers.

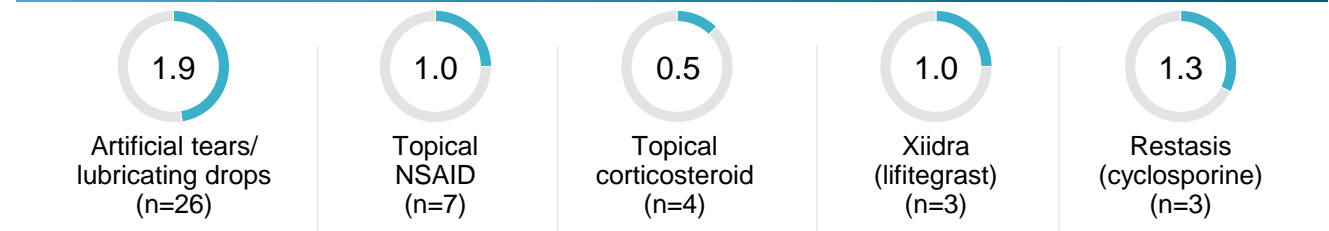
Pterygium Treatment Journey

- **62%** (n=37/60) received at least 1 pterygium treatment (OTC or prescription eye drops)
 - 70% (n=26/37) of respondents who received a pharmacological treatment started the course within 6 months of diagnosis
 - 43% (n=26/60) have received artificial tears, the most frequently prescribed treatment in the sample
- **13%** (n=8/60) had undergone surgery for pterygium; all have experienced recurrence
- **48%** (n=25/52) of respondents who have not undergone surgery are now considering it
- **77%** (n=46/60) of respondents reported extreme interest in a new eye drop that would address pterygium symptoms and delay or avoid the need for surgery‡

Biggest concerns regarding pterygium surgery (n=52)



Average satisfaction scores of available treatments for pterygium symptoms as reported by survey respondents†



Despite trying eye drops for symptomatic relief of pterygium, many respondents reported low satisfaction with available treatment options

*One participant answered "Other: that the problem returns." This answer was added to this category.

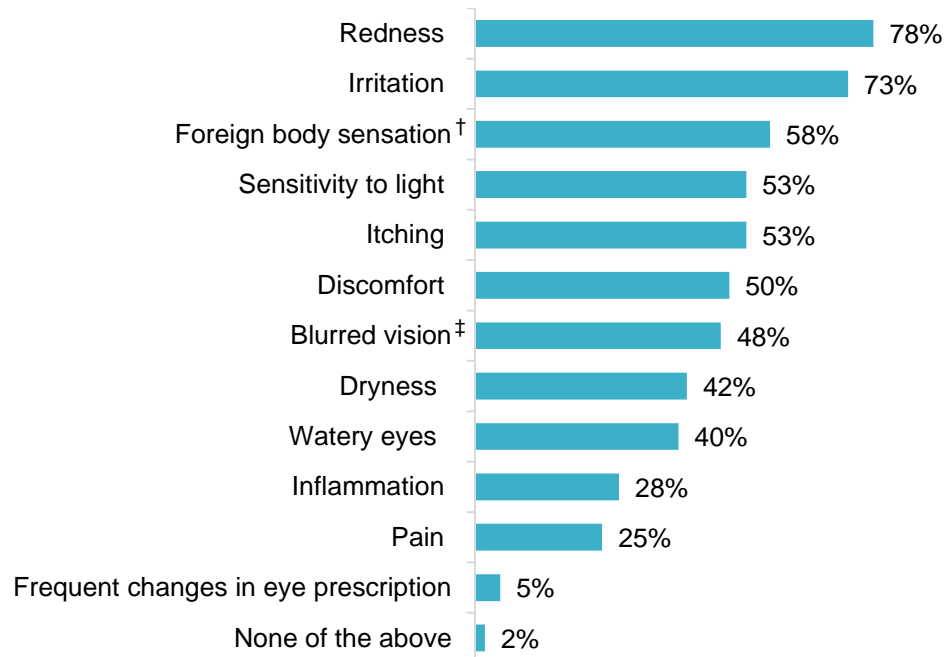
†On a scale of 0 to 4 (0=not satisfied, 4=extremely satisfied). Due to the small number of patients reporting to have received these treatments, patient satisfaction results shown here are directional and no specific conclusions can be drawn.

‡On a scale of 0 to 4 (0=not interested, 4=extremely interested).

NSAID, non-steroidal anti-inflammatory drug; OTC, over the counter.

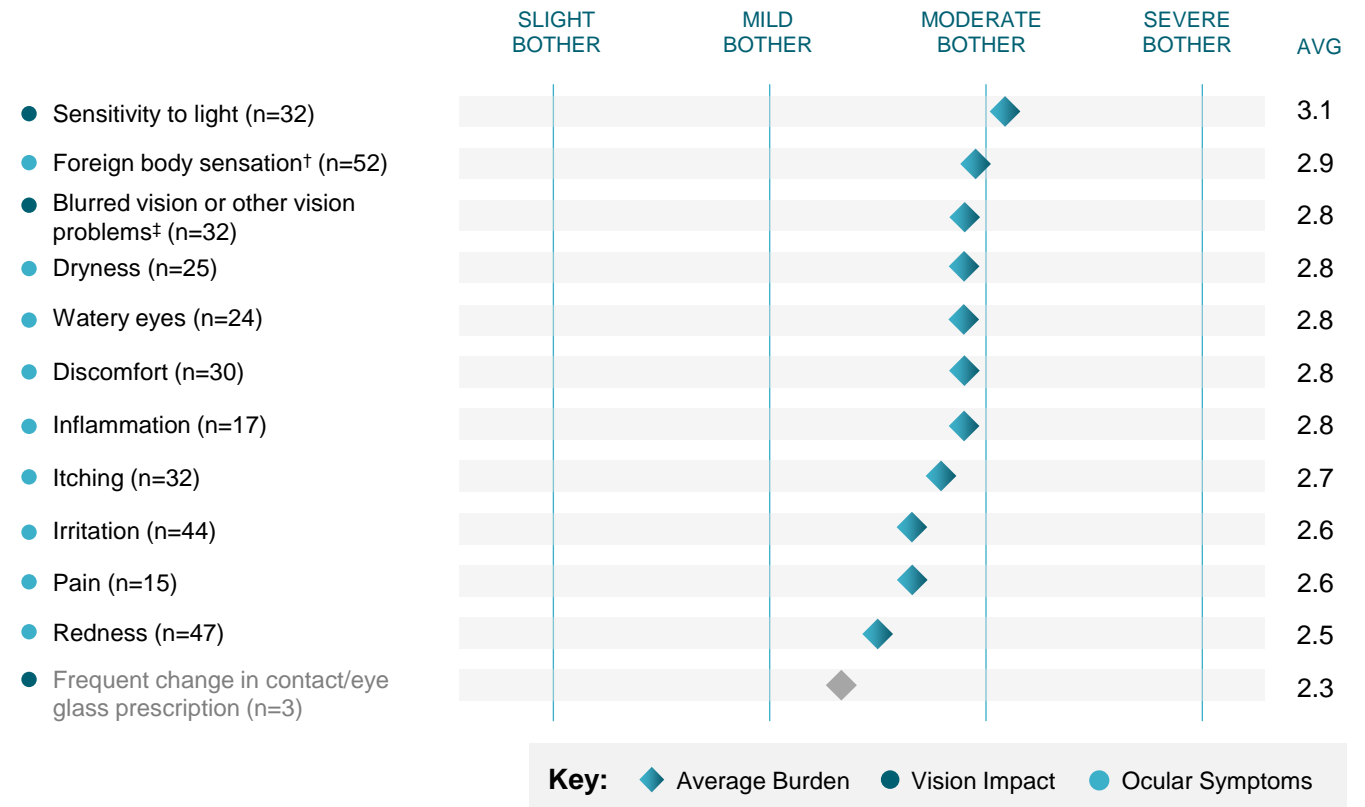
Pterygium Symptoms and Burden Reported by Survey Respondents

Percent of respondents who experience each pterygium symptom (N=60)



Note: One respondent also answered "Other: headaches."








Average level of burden of each pterygium symptom*




Survey respondents continue to experience several ocular and vision symptoms associated with their pterygium

*Scale: 0-4, where 0 = not bothersome and 4 = severely bothersome. Symptoms reported by <5 respondents have been greyed out. †The answers of "foreign body sensation" and "grittiness/sandy feeling" were combined. ‡Or other vision problems, e.g., astigmatism (2 respondents who answered "Other: Double vision" and "Decreased vision" were added to this category).

Impact of Environmental Factors on Pterygium Symptoms

		Affected by environmental factors (N=60)	Redness	Irritation	Foreign Body Sensation	Sensitivity to Light	Itching	Discomfort	Blurred Vision	Dryness	Watery Eyes	
	Direct sunlight	75%	✓	✓		✓	✓	✓	✓		✓	
	Wind	70%	✓	✓	✓		✓	✓				
	Dry/hot weather	55%	✓	✓				✓		✓		
	Smoke	47%	✓	✓			✓	✓			✓	
	Air conditioning	45%						✓				
	Allergies/pollen	55%	Increases feelings of redness (n=8), itching, irritation, discomfort (n=7), blurred vision (n=6)									
	Swimming*	28%	Increases feelings of redness (n=6), discomfort, irritation (n=5)									











Q: For each environmental factor, please select which of your symptoms are most impacted.

Key:  Factor impacted a given symptom in 9+ respondents

Environmental factors affect the severity of common symptoms like redness and irritation in respondents with pterygium

*Swimming is likely to be relevant for a smaller subset of the survey population.

Main Challenges When Being Diagnosed or Learning About Pterygium

 Symptom burden (n=18)	<ul style="list-style-type: none">The discomfort caused by foreign body sensation, redness, irritation, and itching was mentioned by many respondents<ul style="list-style-type: none">Additionally, they highlighted how symptoms interfered with daily activities such as wearing contact lenses	 <i>"[The biggest challenge is] probably just trying to relieve the dryness, redness, and irritation caused by them."</i>
 Relationships with their HCP (n=9)	<ul style="list-style-type: none">Respondents reported challenges when trying to build a relationship with their HCP and understanding their care options	 <i>"It was complicated for me to trust in the right doctor to get my treatment."</i>
 Getting surgery (n=7)	<ul style="list-style-type: none">Many respondents were concerned about surgery, the recurrence rate, the risks associated with the surgery, and the discomfort and social burden after the procedure	 <i>"If surgically removed, I was told they could come back."</i>
 Diagnosis concerns (n=6)	<ul style="list-style-type: none">Respondents report concerns about their diagnosis, including worries about whether their vision will be affected	 <i>"I did not know whether [pterygium] would affect my eyesight."</i>
 No challenges during diagnosis (n=12)	<ul style="list-style-type: none">Several respondents reported that they did not face any challenges when diagnosed or learning about pterygium	 <i>"I had no challenges. I did my research. My doctors were patient. They explained how I could rectify my symptoms."</i>

Many survey respondents reported difficulties in learning about pterygium and building a relationship on their care options with their HCP

Challenges of being diagnosed and learning about pterygium

- ~80% of survey respondents reported challenges while being diagnosed and/or learning about pterygium
- 22% (n=13/60) of respondents reported that their physician does not or only slightly understands the impact of pterygium on their lives

Main Challenges When Receiving Treatment for Symptoms of Pterygium



Limited or ineffective treatment options

(n=21)

- Some respondents reported not having received a treatment even though they would like to for their pterygium symptoms
- For respondents who had pterygium surgery or are considering it, the risk of recurrence poses a big challenge



"[I have not had any treatment for my symptoms to date.] At this time, we continue to monitor if/when its growth could impair my vision and then plan to take corrective action. Ideally, an eye drop could be developed to remove the pterygium without surgery."



Symptom impact on mental health and daily living

(n=11)

- Many respondents highlighted the impact pterygium symptoms had on their social interactions and mental health
- Discomfort of HCP appointments (e.g., getting pictures taken) also increases anxiety



"My anxiety would increase considerably, and I would experience significant eye dryness."



No challenges during treatment for symptoms of pterygium

(n=13)

- Several respondents reported that they have not faced any challenges while being treated for pterygium



"I often find relief using just eye drops."

The limited effect of current treatments and symptom burden were the most frequently mentioned challenges related to treatment

Challenges of living with pterygium

- 50% (n=30/59) of survey respondents report that pterygium had a considerable impact on their lives and affected daily activities

Pterygium Patient Survey Conclusions

- ✓ Although **50% of survey respondents did not seek care for 2+ years from symptom onset**, most were diagnosed within 1 month after an office visit with an HCP
- ✓ **Pterygium symptoms can affect vision, appearance, and ocular comfort**, and the broad range of symptoms experienced by the respondents in this sample presented a **significant burden on mental health and daily living**
- ✓ Survey respondents reported that environmental conditions can worsen pterygium symptoms, and they may benefit from **guidance from their ECPs and HCPs on how to manage their symptoms throughout the year**
- ✓ **More effective treatment options are needed** to address the underlying disease processes (e.g., conjunctival hyperemia, vascularity, lesion length) and to reduce or avoid the need for surgery
- ✓ This research highlights the **needs for earlier pterygium diagnosis, improved coordination between optometrists and ophthalmologists, and nonsurgical disease-modifying treatments** to achieve optimal patient outcomes
- ✓ In this study, survey respondents described and provided specific details on the burden and environmental impact of pterygium. **Increased disease awareness among providers and patients may also improve care** for this undertreated and underdiagnosed condition

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