



# Allergy and CLs - what your wearers are itching to know

**Jayne Schofield** and **Andrew Elder Smith** look at some research suggesting contact lenses with slow release of polyvinyl alcohol may help alleviate some of the symptoms of hay fever

nlike love and marriage, contact lens wear and allergies have not been considered as going together like a horse and carriage

(younger readers – ask your parents or grandparents!). A paper published in 2011 by James Wolffsohn and Jean Emberlin<sup>1</sup> revealed that, for a lot of people afflicted by ocular allergies (pollen allergies), wearing contact lenses actually relieved symptoms and signs. In other words, pollen allergy sufferer's eyes often looked and felt better when they were wearing contact lenses. This article explains why some contact lenses are better than others at relieving pollen allergy symptoms.

# How much of an issue is seasonal allergy?

Seasonal allergy affects a large proportion of the UK population. According to Allergy UK, one in three people are affected at least once in their lives.<sup>2</sup> Many eye care practitioners might think this figure is low when they consider their wearer base and how many patients report (pollen) allergies, sensitivities to foods and perfumes, and hay fever. According to Wolffsohn, the prevalence in the USA has reached up to 50 per cent, with the majority having some ocular symptoms. Given that children, teenagers and young adults are more affected by ocular allergy<sup>3</sup> it is important that eye care practitioners are giving sound advice and letting people know that research backs the view that certain contact lenses are better than others for pollen allergy sufferers. Seasonal allergy is on the increase, with levels within the European population rising to match that of the USA in the next few years.



Seasonal allergy affects a large proportion of the population

## So what is allergy in general?

Allergy is an over-reaction of the immune system to a substance to which it would not normally respond. In short, this leads to release of inflammatory markers such as histamine and a cascade of physiological reactions which can take many forms and reach different levels of severity. For example a skin reaction will give rise to itching, redness, a rash and possibly swelling. If the reaction is in the respiratory system the sufferer may experience sneezing, coughing, wheezing and shortness of breath. The ocular signs and symptoms include: itching, watering, conjunctival injection, swelling of the eyelids and conjunctiva, reduced tear film stability, papillary changes in the palpebral conjunctiva, corneal staining and reduced vision quality.

There is a huge range of substances to which people can be allergic and the reaction may be seasonal, as in hay fever, or perennial, as in the case of animal dander and house dust mite. Allergy to pollen is generally referred to as hay fever and is a problem of the summer months. Hav fever is a misnomer and the idea that pollen allergy is a summer problem a misconception since many people are not allergic to grass pollens but to tree pollens. Trees release their pollens at different times through the year (Table 1), so if you are unlucky enough to react to several different trees your symptoms could last months. The reason that historically symptoms were worse during the hay making season is because the cutting and tossing of the hay threw dust and pollens that had settled on the grass in to the air.

## Contact lenses and pollen allergy

Instinctively, it seems reasonable that placing a contact lens on an eye that is inflamed by an allergic reaction does not seem the right thing to do, particularly if it is a re-usable lens that will be contaminated with proteins, lipids and mucins from the tears, which leads to reduced comfort levels.<sup>4</sup> However, Hayes *et al* published evidence showing that single-use contact lenses reduce pollen allergy symptoms<sup>5</sup> and that single-use lenses were more comfortable than the wearers' habitual reusable lenses

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Table 1 Pollen release seasons for common allergy-causing plants.<sup>8</sup>

and an effective strategy for managing pollen allergy suffering contact lens wearers.

## What's new?

Wolffsohn and Emberlain looked at the response generated when asymptomatic contact lens wearers who reacted positively to a skin prick test to grass pollen were exposed to airborne particles of the same pollen. Their signs and symptoms were graded at the start of each phase of the study and each participant was exposed to the pollen on three occasions: with no lens, when wearing an etafilcon A daily disposable and a Dailies AquaComfort Plus contact lenses, in a random order.

The signs and symptoms assessed are detailed in Table 2 with subjects being asked to assess severity and duration of symptoms.

## Results

Subjects found that their eyes were significantly more comfortable when they were wearing Dailies AquaComfort Plus compared to no lens at all and that, although etafilcon A reduced signs and symptoms the improvement was less marked. When wearing Dailies AquaComfort Plus, subjects found that the severity of burning and stinging was significantly reduced and that overall symptoms were significantly reduced in duration. Dailies Plus also reduced hyperaemia compared to no lens or etafilcon A lenses.

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## Comfort is the key

Comfort is a key issue in contact lens wear. It remains the number one reason why wearers drop out of contact lenses and fear of discomfort puts many people off even trying contact lenses in the first place.

Enhancing contact lens comfort improves retention rates and will improve the reputation of contact lenses as a comfortable vision correction option. Preventing drop out also has a positive impact on the business finances as contact lens wearers proportionately contribute more to income than spectacle wearers, are more loyal and make more recommendations than spectacle wearers, improving your contact lens business makes sense.

# Blink-activated moisturising agents

Dailies AquaComfort Plus contact lenses are formulated with three ingredients that give a comfort drop effect through the day. HMPC

### TABLE 2 Signs and symptoms assessed

Sign	Symptom
Bulbar hyperaemia	Discomfort
Limbal hyperaemia	Burning
Palpebral hyperaemia	Dryness
Conjunctival staining	Itchiness
Bulbar staining	Stinging
Palpebral roughness	

(hydroxymethylcellulose) lubricates the lens, PEG (polyethylene glycol) moisturises the lens and PVA refreshes the lens until the end of the day. It is well established that Dailies Plus provide superior tear film stability due to the release of PVA on blink.<sup>6</sup> In the paper Wolffsohn states 'Utilising a contact lens which has a known characteristic of leaching polyvinyl alcohol, a clinical tear film supplement, into the tear film further reduced limbal and palpebral redness [compared to etafilcon A lenses].'

## Making life better

This study shows that wearing contact lenses during periods when wearers are suffering seasonal allergy reaction actually improves signs and symptoms both in severity and duration. Importantly the blink activated release of moisturising agents unique to Dailies Plus reduced them more than contact lens materials without that feature. As eye care practitioners we owe it to our wearers to give them the best overall experience of contact lens wear in terms of vision, comfort and long term ocular health. Comfort remains the number one reason that wearers drop out of contact lenses,<sup>7</sup> so optimising comfort will retain more wearers and encourage others to discover the benefits of clear vision without glasses. Dailies Plus with blink activated moisture release helps comfort through enhancing tear film stability through the day and reducing seasonal allergy signs as symptoms.

#### References

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