

Maximizing Success with Extended Wear Contact Lenses

A guide to selecting, educating and managing patients

Get to know your patients so that you can determine whether extended wear (EW) is suitable for them.

Some patients are at greater risk of developing an infection or a corneal inflammatory event (CIE) with EW, and may do better with a lower risk wear schedule. Watch for the following:

SMOKERS

In particular, smokers under the age of 30 have an increased risk of CIE.^{2,3}

CHRONIC HEALTH CONDITIONS

Patients with diabetes,⁴ respiratory or thyroid disease⁵ may have a greater risk of corneal infection.

POOR HAND HYGIENE

Substantial bacterial bio-burden on lenses is associated with CIE.²

A HISTORY OF CIE OR OCULAR SURFACE DISEASE

These patients are at greater risk of developing future adverse events.^{3,5}

ADVERSE WORK CONDITIONS

Patients who work in dusty or windy work environments, or who are exposed to fumes or splashing water, have an increased risk of CIE.^{5,6}

Talk to EW patients about the importance of properly wearing and caring for their lenses.

EW contact lenses may seem like a hassle-free option, but wearing them successfully requires daily self-monitoring to minimize the risk of complications. Provide patients with balanced information and context, and ensure that they are aware of the following guidelines:

CHECK EYES DAILY

Vision should be clear. Eyes should look and feel good. If not, remove lenses and seek advice from an eye care or medical practitioner. Always have glasses as back-up.

MAINTAIN GOOD HYGIENE

Wash and dry hands thoroughly before applying or removing contact lenses. Bacteria on EW contact lenses predisposes the wearer to developing CIE.^{2,7}

DO NOT EXPOSE EW LENSES TO WATER

Water can harbor microorganisms that can lead to severe infection, vision loss or blindness. If lenses have been in contact with water (e.g. while swimming, sitting in a hot tub, etc.), discard and replace with a new pair.⁸

STOP EW WITH SIGNS OF ILLNESS

Upper respiratory tract infections increase the risk of contact lens associated red eye⁹ or microbial keratitis (MK).⁵

REGULAR CHECKUPS ARE ESSENTIAL

The risk of developing an adverse event is highest within the first few months of EW.^{3,10,11}

Provide patients with balanced information.

EW has a 5x higher risk of complications compared to daily wear of the same lens materials.¹ For every 10,000 EW patients per year there are 21[‡] cases of MK^{11,12,13} with 3.2* cases resulting in vision loss.^{11,12}

[‡] Average rate from three studies

* Vision loss is defined as ≥ 2 lines loss of corrected Snellen acuity, and is the average of two studies

Extended wear (EW) can be an extremely convenient mode of vision correction. Wearing lenses continuously for multiple days may particularly benefit those leading a busy lifestyle or who juggle an irregular sleep schedule, but it also comes with a higher risk of complications compared to daily wear of the same lens materials.² The good news is that patients can help manage their risk if they understand the critical role they play in maintaining healthy lens care habits.

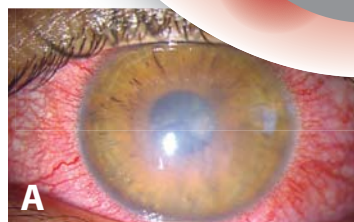


Developed by the Centre for Contact Lens Research with funding from the Johnson & Johnson Vision Care Companies

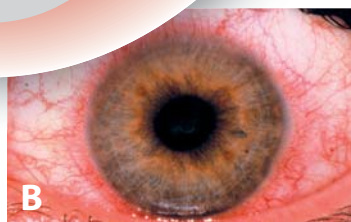


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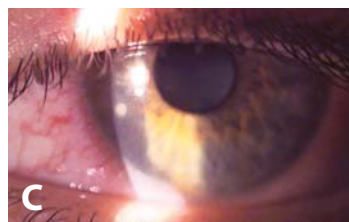
Complications Associated with Extended Wear: A Differential Diagnosis Guide



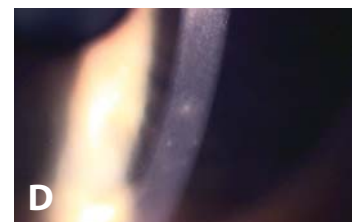
A
MICROBIAL KERATITIS



B
**CONTACT LENS
ACUTE RED EYE**



C
**CONTACT LENS
PERIPHERAL ULCER**



D
INFILTRATIVE KERATITIS

SYMPTOMS			
Rapid onset of pain that worsens without treatment	Mild discomfort to moderate pain on waking or in the middle of the night	Asymptomatic to moderate discomfort or foreign body sensation that improves with lens removal	Mild to moderate foreign body sensation or irritation; intolerant to contact lens wear
Photophobia	Photophobia	Photophobia	Photophobia
Severe lacrimation	Lacrimation	Lacrimation	Lacrimation
REDNESS			
Severe, all quadrants	Moderate, circum-corneal	Moderate, localized	Mild to moderate
INFILTRATES			
Typically 1 but can be more	From none to several tiny peripheral infiltrates	1	≥1
Focal, diameter >1mm	Focal and/or diffuse, small	Diameter <2mm	Small, focal
Irregular	Round, granular	Regular, round	Round, granular
Central or paracentral	Peripheral or mid-peripheral	Peripheral or mid-peripheral	Peripheral to mid-peripheral
Full thickness epithelial defect; Bowman's layer and stroma affected	Anterior stroma, sub-epithelial	Anterior stroma, sub-epithelial; full thickness epithelial defect	Anterior stroma, sub-epithelial
STAINING			
Yes, with stromal diffusion	Minimal	Yes, when active	Minimal
OTHER			
Anterior chamber reaction common: flare and/or hypopyon	Anterior chamber reaction rare (unless severe)	Anterior chamber reaction rare (unless severe)	No anterior chamber reaction
Usually unilateral	Can be bilateral	Usually unilateral	Can be bilateral
Lid edema			
Reduced acuity if near visual axis			
URGENCY			
Treat immediately, review daily or more often	Treat same day, review 1-2 days	Treat same day, review following day	Treat same day, review within 1-3 days

This is intended as a diagnostic aid and guide only, and does not constitute medical advice. Apply appropriate management guidelines in each case. Report any adverse events to the appropriate manufacturer. The following sources were consulted for this guide: 1. Anderson JS et al. (2006). A Handbook of Contact Lens Management (Ed. 2). Johnson & Johnson Vision Care & Synoptik. 2. Efron N. (2012). Contact Lens Complications (Ed. 3), 225-244.

1. Dart, J. K., Radford, C. F., Minassian, D., Verma, S. & Stapleton, F. (2008). Risk factors for microbial keratitis with contemporary contact lenses: a case-control study. *Ophthalmology* 115, 1647-54, 1654 e1-3. 2. Szczotka-Flynn, L., et al (2010). Risk factors for corneal infiltrative events during continuous wear of silicone hydrogel contact lenses. *Invest Ophthalmol Vis Sci* 51, 5421-30. 3. McNally, J. J., et al. (2003). Risk factors for corneal infiltrative events with 30-night continuous wear of silicone hydrogel lenses. *Eye Contact Lens* 29, S153-6; discussion S166, S192-4. 4. Eichenbaum, J. W., Feldstein, M. & Podos, S. M. (1982). Extended-wear aphakic soft contact lenses and corneal ulcers. *Br J Ophthalmol* 66, 663-6. 5. Keay, L., et al. (2009). Signs, symptoms, and comorbidities in contact lens-related microbial keratitis. *Optom Vis Sci* 86, 803-9. 6. Ozkan, J., et al. (2010). Risk factors for corneal inflammatory and mechanical events with extended wear silicone hydrogel contact lenses. *Optometry and Vision Science* 87, 847-853. 7. Willcox, M., et al. (2011). External ocular surface and lens microbiota in contact lens wearers with corneal infiltrates during extended wear of hydrogel lenses. *Eye Contact Lens* 37, 90-5. 8. Choo, J., et al. (2005). Bacterial populations on silicone hydrogel and hydrogel contact lenses after swimming in a chlorinated pool. *Optom Vis Sci* 82, 134-7. 9. Sankaridurg, P. R., et al. (1996). Haemophilus influenzae adherent to contact lenses associated with production of acute ocular inflammation. *J Clin Microbiol* 34, 2426-31. 10. Donshik, P., et al. (2007). Inflammatory and mechanical complications associated with 3 years of up to 30 nights of continuous wear of lotrafilcon A silicone hydrogel lenses. *Eye Contact Lens* 33, 191-5. 11. Stapleton, F., et al. (2008). The incidence of contact lens-related microbial keratitis in Australia. *Ophthalmology* 115, 1655-62. 12. Schein, O. D., McNally, J. J., Katz, J., Chalmers, R. L., Tielsch, J. M., Alfonso, E., Bullimore, M., O'Day, D. & Shovlin, J. (2005). The incidence of microbial keratitis among wearers of a 30-day silicone hydrogel extended-wear contact lens. *Ophthalmology* 112, 2172-9. 13. Morgan, P. B., Efron, N., Hill, E. A., Raynor, M. K., Whiting, M. A. & Tullio, A. B. (2005). Incidence of keratitis of varying severity among contact lens wearers. *Br J Ophthalmol* 89, 430-6.

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