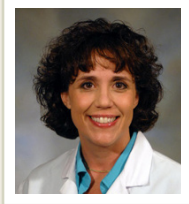


Contact Lens Update

CLINICAL INSIGHTS BASED IN CURRENT RESEARCH

Cosmetic or decorative contact lenses

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Christine Sindt is Director of Contact Lens Service and a Clinical Associate Professor of Ophthalmology and Visual Science at the University of Iowa Carver College of Medicine.

Cosmetic or so-called ‘decorative’ contact lenses, solely used to change the eye appearance and without vision correction, continue to be a popular form of cosmetic enhancement. Whether it is to simply make your brown eyes blue, create the perfect Halloween costume or indulge in the large eyed anime look exemplified by Lady Gaga in the “Bad Romance” video, decorative contact lenses are abundant from internet resources.

What makes decorative contact lenses different from vision correcting contact lenses? Nothing! Appearance-enhancing contact lenses pose the same risks as any other contact lens and if improperly fitted, cleaned or handled can cause serious damage to the eye.¹⁻⁵ A 2010 study showed that cosmetic contact lens wear markedly increased the relative risk (RR) of microbial keratitis (RR, 16.5) compared with wear of conventional contacts.⁶ Other risky behaviors that also increased the risk of keratitis included a gap of greater than one year since a wearer’s last visit to an eye care provider (RR, 3.4).

The problem associated with decorative contact lenses is the public’s disconnect between a lens as a cosmetic product versus a medical device. It is illegal to sell cosmetic contact lenses without a prescription in the US, UK, Canada and Japan. In these countries, all contact lenses, vision correcting or not, are considered medical devices and are strictly regulated. However, there are continued reports of lenses being sold via alternative supply routes - such as the internet and beauty supply outlets - even in these “regulated” countries, and in many countries plano lenses may be sold by any retailer.

A significant number of cosmetic lenses are purchased over the internet, with no quality control or advice for the purchaser on how to insert and remove them and how to safely care for the lenses following their use. These practices place individuals at risk for harmful eye care practices, most likely due to poor compliance.⁷ Internet purchasers have fewer follow-up examinations with eye care professionals and no one to consult in the case of an emergency, resulting in significant delay between the onset of symptoms and medical care.⁷ They participate in more risky behaviors, such as not practicing good hygiene, not cleaning or using the correct care products, sleeping in lenses, improper lens storage, participating in “lens parties” at which lenses are shared, or they may not replace lenses on a regular basis, all of which have been associated with increased risk of ocular infection.

Two complaints historically associated with cosmetic lenses relate to concerns regarding reduced comfort⁸ and vision, compared with conventional soft lenses. Opaque tinted lenses have a fixed pupillary aperture that may constrict the visual field^{9, 10} and increase peripheral vision blur.¹¹ However, even modern cosmetic lenses share some of these concerns. Even without vision-correcting power, plano decorative contact lenses are not devoid of optical effects: some iris-coloring soft contact lenses may significantly increase coma-like and total higher-order aberrations, resulting in decreased contrast sensitivity.¹²

The newest cosmetic lens on the market is the Air Optix Colors (Alcon Vision Care, Ft Worth Tx). These

lenses are the first and only silicone hydrogel, high-DK material with cosmetic capabilities. These lenses use the Freshlook “3 -in-1 color technology”, encapsulating the color pigments within the lens, creating the ultra-smooth permanent plasma surface technology used on all Air Optix brand contact lenses. The Air Optix platform addresses many of the safety concerns of cosmetic contact lenses, including high oxygen permeability and a smooth lens surface, in addition to regulating distribution through the requirement of a doctor’s prescription. In addition, it is worth considering that lenses with pigment on the surface resulted in significantly higher bacterial adherence,¹³ which is overcome when the pigment is encapsulated.

In summary, all contact lenses, decorative or refractive, require proper fitting, follow up and care. Arguably, the doctor-patient relationship is the best way to keep eyes healthy. New technology, and an understanding of how that technology improves the lens wearing experience, supports the doctor-patient connection. Cosmetic lenses are here to stay and they will continue to be an important part of our growing lens wearer population. It is important that wearers of these lenses understand the importance of ongoing care and appropriate disinfection and replacement procedures.

REFERENCES

1. Kerr NM, Ormonde S. Acanthamoeba keratitis associated with cosmetic contact lens wear. *NZ Med J* 2008. 121;1286: 116-9.
2. McKelvie J, Patel D, et al. Cosmetic contact lens-related Acanthamoeba keratitis. *Clin Experiment Ophthalmol* 2009. 37;4: 419-20.
3. van Zyl LM, Cook C. Bacterial keratitis and corneal scarring secondary to cosmetic contact lens wear. *S Afr Med J* 2010. 100;1: 37-8.
4. Sauer A, Bourcier T, et al. Microbial keratitis as a foreseeable complication of cosmetic contact lenses: a prospective study. *Acta Ophthalmol* 2011. 89;5: e439-42.
5. Singh S, Satani D, et al. Colored cosmetic contact lenses: an unsafe trend in the younger generation. *Cornea* 2012. 31;7: 777-9.
6. Sauer A, Abry F, et al. Study and prevention of contact lens-related microbial keratitis with a standardized questionnaire. *J Fr Ophtalmol* 2010. 33;10: 701-9.
7. Young G, Young AG, et al. Review of complications associated with contact lenses from unregulated sources of supply. *Eye Contact Lens* 2014. 40;1: 58-64.
8. Steffen R, Barr J. Clear versus opaque soft contact lenses: initial comfort comparison. *Int Contact Lens Clin* 1993. 20: 184-186.
9. Insler MS, Hendricks C, et al. Visual field constriction caused by colored contact lenses. *Arch Ophthalmol* 1988. 106;12: 1680-2.
10. Spraul CW, Roth HJ, et al. Influence of special-effect contact lenses (Crazy Lenses) on visual function. *CLAO J* 1998. 24;1: 29-32.
11. Gauthier C, Grant T, et al. Clinical performance of two opaque tinted soft contact lenses. *J Am Optom Assoc* 1992. 63;5: 344-349.
12. Ortiz C, Jimenez R. Optical quality and vision with iris-coloring soft contact lenses. *Optom Vis Sci* 2014. 91;5: 564-9.
13. Chan KY, Cho P, et al. Microbial adherence to cosmetic contact lenses. *Cont Lens Anterior Eye* 2014. 37;4: 267-72.