Medical Perspectives on Peroxide-Based Contact Lens Products

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Mission:
Advance quality medical eye care for the public
by providing comprehensive ophthalmologists
and other eye care professionals
with education and training
in contact lenses
and related eye care science

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Peroxide Care Systems: Impact of Misuse

- Insult to the cornea surface is painful (peroxide causes shedding of the epithelial surface layer)

- Cornea has the highest density of nociceptors (pain detectors) in the body

(16,000/sq mm 20-40x greater than dental pulp 300-600x greater than skin)

Peroxide Care Systems: Impact of Misuse

Corneal pain is among the “Top 3” Pain Conditions

Kidney Stone    Childbirth    Corneal Abrasion
Peroxide Care Systems: Impact of Misuse

There are no long term problems associated with peroxide insult/exposure/burn

- None in “the literature” - peer reviewed journals, textbooks, etc.
- None in >25y of practice

  15 years as comprehensive ophthalmologist and cornea specialist at community hospital.

  11 years at specialty and academic practice caring for patients who need contact lenses on a medically necessary basis including patients with “sick” corneas who suffered inadvertent exposure

Peroxide insult to the cornea is “a self-limited process”
Peroxide Care Systems: Impact of Misuse

There are no long-term problems associated with peroxide insult/exposure/burn

- None in “the literature” - peer reviewed journals, textbooks, etc

Epstein AB, Freedman JM. Keratitis associated with hydrogen peroxide disinfection in soft contact lens wearers. 1990 17: 74-82. 4 cases of marked punctate staining, one case “assoc with a corneal ulcer”
Peroxide Care Systems: Medical Merits

Lowest rate of microbial keratitis


Lowest tendency for Pseudomonas (a bad guy) binding to the cornea


Image courtesy of Elmer Tu, M.D.
Peroxide Care Systems: Medical Merits

Highest microbiocidal activity

Peroxide Care Systems: Medical Merits

Highest microbiocidal activity
(especially against the “really bad guys”)


Peroxide Care Systems: Medical Merits

Lowest rate of toxic staining and corneal inflammation


https://www.cdc.gov/contactlenses/care-systems.html
Peroxide Care Systems: Medical Merits

Are the preferred disinfection method for patients who wear lenses on medically necessary, as opposed to cosmetic, basis.


Cornea transplant after Stevens-Johnson syndrome

Keratoconus and atopy (eczema)
Peroxide Care Systems: Recommendations

Peroxide systems are critical to the health and well-being of contact lens wearers who need them on a medically necessary basis.

There is no method to weigh the advantages to those who need peroxide systems against the disadvantages of misuse among cosmetic wearers.
Peroxide Care Systems: Recommendations

- Red labelling, Red tips, Red collars are useful in distinguishing peroxide solutions from Multipurpose Solutions (MPS)

- (Who reads instructions?)

- Neutralization cases with every bottle encourage adherence
Peroxide Care Systems: Recommendations

- Regulators should not place undue burden on eye care providers or manufacturers that might limit availability or utilization of this superior approach to contact lens care.
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Thank you!!!!!!!