



## Contact Lenses: Out with the Old/In with the New?

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### Editorial

To answer this question: I certainly hope not, at least not always. Without a doubt over the past several years the contact lens industry has brought forth numerous new materials, designs, and modes of contact lens manufacturing. But that should not translate into a universal switch from the “old” to the “new”. I would like to share some specific instances where older lens materials and designs should still have a place in your practice.

Although without a question newer more oxygen permeable rigid gas permeable (RGP) materials have been key to the introduction of such modalities as overnight wear of Orthokeratology lenses, these materials often have some less advantageous attributes. Although we often only consider oxygen permeability (Dk) and lens wettability when selecting a RGP material, one should also consider that such materials often have lower material hardness and greater modulus. This translates into a material more prone to being scratched, deposited and/or warping. For a patient, who for reasons of compromised dexterity, or less than optimal lens care compliance, is more apt to warp and/or allow deposits to form on the lens, an “older” lower Dk material would be more advantageous. Assuming that the patient is not napping or sleeping in their lenses, nor has a high refractive error that would require increased lens thickness at the center or edge, the durability and deposit resistance of an “older” less oxygen permeable material may be far better suited.

Also to be considered when fitting RGP's is lens design. As of late there has been a wealth of information regarding the use of scleral lens designs in place of corneal designs, especially when providing for individuals with irregular corneas (i.e: keratoconus, post corneal transplant or post refractive surgery). While scleral lens designs do provide lens to corneal fitting relationships largely unobtainable with corneal RGP lenses, they are not without their limitations. Besides their higher cost, they are almost always more difficult to insert and remove, and require additional steps/cost such as the need to fill the bowl of the lens with unpreserved saline prior to insertion. An additional consideration is that the majority of patients who are dispensed scleral lenses will need to remove their lenses part way through the day to resolve issues related to tear stasis and the accumulation of debris between the lens and cornea. I have seen a large number of keratoconus patients who underwent a re-fitting from corneal to scleral lenses, most often in an attempt to eliminate

concerns related to lens induced corneal scarring. Interestingly a significant minority of them elected not to abandon their “old” corneal lenses, and continue to utilize them on occasions where lens removal during the day would prove problematic. In addition I have had several patients who simply could not adapt to the insertion & removal aspects of scleral lens wear. While I am in no way advocating providing patients with a lens modality that might in time prove non-advantageous, we need to remind ourselves that not every corneal RGP lens that creates central touch will lead to scarring. I have seen keratoconic patients with scarring that have never worn a lens, and have countless keratoconic patients that I have followed for decades wearing RGP lenses with apical touch and no scarring. One needs to simply remain vigilant through frequent periodic follow-up that the patient's lenses are not causing central corneal epithelial compromise, which is believed to be a necessary pre-requisite to lens induced corneal scarring.

Switching to soft lens applications, the advent of silicone-hydrogel materials has undoubtedly been a most welcome addition to the arena of soft lenses. However they too are not without their limitations. The single most obvious advantage of these materials over traditional hydrogels is their higher Dk, and often improved surface wettability. However here again along with the pluses come several minuses, such as generally increased cost, higher propensity for lipid deposits, and altered attraction of tear proteins. Where the primary goal is frequent lens replacement to avoid the accumulation of deposits and/or antigens on the lens surface, higher patient cost may negatively impact lens replacement. Countless patient surveys have revealed that not all patients replace their lenses as directed, and logic would indicate that lens cost is at least one causative factor. For the patient who neither naps in their lenses, nor presents with an unusually high refractive error, I often continue to rely on traditional hydrogel materials, especially when my goal is for the patient to truly dispose of their lenses daily. In these instances the higher Dk of a silicone hydrogel material may be less needed, if indeed the lower cost of a traditional hydrogel promotes better compliance.

Simply stated, anytime a new contact lens material or design is presented, as an eye care provider one must not be swayed by the “something new” label when a more appropriate choice exists even if it represents “yesterday's technology”.