

Deposits and make-up

Q Are contact lens deposits more or less likely to affect silicone hydrogel (SiH) lenses than hydrogels? I know lipid is more of an issue with SiH lenses but does make-up composition, such as iron, have any bearing on this? Is it these components that destabilise the tear film?

A Dr Cécile Maissa replies: Several material and patient-related factors have been shown to influence the deposition of tear film components on contact lens materials. In addition to the patient's tear film composition, contact lens material ionicity, water content, pore size and hydrophobicity influence the interaction between the patient tear film components and the contact lens.

Silicone hydrogel materials with the incorporation of siloxane moieties have greater hydrophobic properties than traditional hydrogel materials. Overall, SiHs have a propensity to attract lipids. They adsorb more lipids than traditional hydrogel lenses in *in vitro* and in *ex vivo* studies; however, the level of absorption varies between materials and is more marked for non-surface-coated materials.

Clinical data for currently available SiH contact lenses show that both material and lens care affect lipid uptake, and that lipid is a significant component of contact lens spooliation. Some conventional hydrogel wearers previously problem free with contact lenses have demonstrated clinically significant deposition when fitted with SiHs; this in turn has led to the need to return to a rub lens care regimen.

Lipid spooliation affects the overall contact lens performance and acceptance. Lipid deposition creates localised non-wetting areas destabilising the tear film, making it difficult to spread evenly over the entire contact lens surface post blink. Additionally, wearers who present with significant surface spooliation (eg visible front surface debris visible with the slit lamp biomicroscope or visible lipid contamination observable with the Tearscope) habitually complain of poor lens comfort and/or compromised variable vision.

Eye make-up such as mascara, eyeliner and eye shadow contains pigments as well as waxes and oils that can adsorb on the lens surface and be additional sources of contact lens spooliation, although the specific effects of make-up contamination have not been extensively studied.

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Eye make-up can be an additional source of contact lens spooliation

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1. Chamberlain P *et al.* Fluctuation In Visual Acuity During Soft Toric Contact Lens Wear. *Optom Vis Sci* 2011; 88: E534-538. 2. McIlraith R *et al.* Toric lens orientation and visual acuity in non-standard conditions. *Cont Lens Ant Eye* 2010; 33:23-26. 3. JJVC data on file June 2011; 1•DAY ACUVUE® MOIST® Brand Contact Lenses cover 94% and ACUVUE® OASYS® Brand Contact Lenses cover 97% of spherical and cylindrical prescriptions. ACUVUE®, 1•DAY ACUVUE® MOIST®, ACUVUE® OASYS®, HYDRACLEAR®, LACREON® and SEE WHAT COULD BE® are registered trademarks of Johnson & Johnson Medical Ltd. © Johnson & Johnson Medical Ltd 2012.