

Research Brief for Eye Care Practitioners: **rethinking contact lens deposits** What does it mean for clinical practice?

New evidence indicates that contact lens deposits are not as straightforward as we once thought.

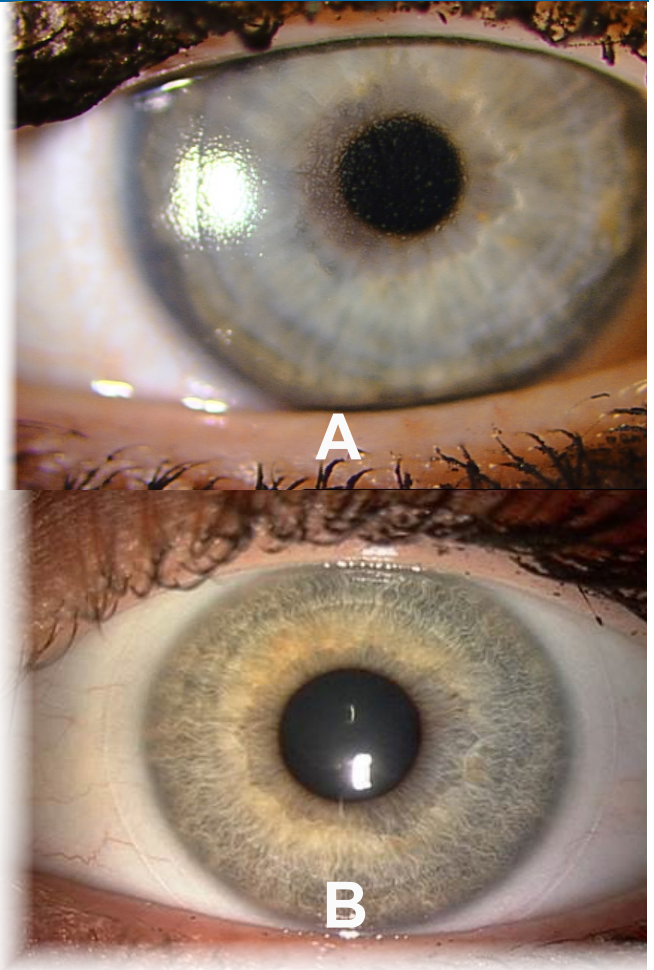
Lipids and proteins from the tear film adhere to contact lenses with wear. This deposition can occur very quickly, even within minutes of insertion -- and cannot be prevented.

You may see deposits through a slit lamp microscope or you may not see them at all! Visible deposits are never good, and suggest that a change in material, care system or replacement period is necessary. However, some lenses collect substantial deposits that remain invisible even under high magnification.

Recent evidence suggests that some deposits are not as bad as we thought! Lipid deposits (e.g. cholesterol) may improve wettability.^{1,2} Protein deposits (e.g. lysozyme and lactoferrin) have no impact on wettability.⁴⁻⁶

Proteins and lipids interact differently with different lens materials. Silicone hydrogel lenses attract more lipid and less protein. Certain conventional hydrogels attract more protein and far less lipid.

Deposits can vary in quality, resulting in different wearing experiences. If lysozyme loses its structure (or becomes “denatured”) it may cause discomfort and initiate an inflammatory response. Lipids that become degraded over time may elicit a drop in comfort too.



IT IS IMPOSSIBLE TO DETERMINE THE EXTENT OF DEPOSITION ON A LENS JUST BY LOOKING AT IT.

Take the lenses pictured above, each of which was worn for two weeks. Lens A has only 30 μ g of lysozyme, whereas the cleaner looking Lens B, has 1500 μ g of lysozyme on it.