Summary

Scheimpflug is an old imaging technique discovered by Jules Carpenter and developed by Theodor Scheimpflug; it is used originally in picturing oblique objects without distortions as in architectural photography but now it is applied in Ophthalmic imaging machines to obtain optical sections of the entire anterior segment of the eye.

Schemipflug have the advantage over Placido-based topography in that it can picture and measure directly the central part of the cornea, and after imaging, the computerized machine reconstructs a 3D image for the whole anterior segment of the eye and enabling the examiner to obtain detailed data about the cornea, the anterior chamber, the iris and the lens.

This method of imaging obtains true elevation points with a high resolution which enables a more accurate and precise measurement that is comparable to all other available technologies and that is also highly repeatable and reproducible making it a reliable technique.

The Scheimpflug technology is able to objectively quantify cataract and correlate its density with visual acuity and supply the examiner with a printed document, also it’s superior in showing different corneal pathologies and can calculate its location, density, depth and size and allow an objective way to follow up the patient after giving the proper treatment.

The keratoconus detection software is supplemented by accurate indices and provides a topography based analysis that can measure both the anterior and posterior surfaces, and pachymetry based analysis with high accuracy that can identify the corneal thickness at the apex (center of the exam), the thinnest point (TP) and the location and distance of the thinnest point relative to the apex.

In post refractive surgery patients, ability of the Scheimpflug technique to measure both the anterior and posterior corneal surfaces overcomes the disadvantage of ordinary keratometers and topographers which cannot measure the posterior corneal surface and so they provide inaccurate data about the true corneal power.

The Scheimpflug provides the accurate preoperative evaluation before phakic intraocular lens (pIOL) implantation through measuring of the anterior chamber depth and simulating the pIOL position enabling the examiner to measure the clearance between the lens and endothelium and also allows predicting the expected position of the pIOL after years.