

Clinical Applications of Specular Microscopy

Many eye diseases affect the structure and function of the corneal endothelium. The purpose of specular microscopy is to determine the morphologic characteristics of the posterior surface of the cornea. Using computer-assisted morphometry, KONAN specular microscopes analyze the size, shape, and population of the endothelial cells. Utilization of this morphologic analysis is the primary clinical application of specular microscopy and the analysis provides information on the endothelium that is difficult or impossible to derive from the clinical examination alone.

As with all diagnostic tests, specular microscopy may be considered reasonable and medically necessary based upon abnormal patient symptoms and/or clinical signs of illness or injury.

The following list is intended as a guide to those conditions where specular microscopy may be reasonable and medically necessary.

1. Identification and/or follow-up for disorders of endothelial cell function
 - assessment of corneal edema
 - assessment of endothelial corneal dystrophy
 - assessment of change in corneal membranes
2. Identification and/or follow-up for disorders of the iris and ciliary body
 - assessment of iridocyclitis
 - assessment of glaucomatocyclitic crises
 - assessment of pigmentary iris degeneration
3. Identification and/or follow-up for cataractcortical age-related cataract
 - assessment of traumatic cataract
 - assessment of cataract in inflammatory ocular disorders
 - assessment of cataract with ocular neovascularization
4. Identification and/or follow-up for other disorders of the lens
 - assessment of aphakia
 - assessment of subluxation of the lens
 - assessment of anterior dislocation of the lens

5. Preoperative assessment for ocular surgery
 - patients about to undergo a cataract extraction following a corneal transplant
 - patients about to undergo a cataract extraction following previous intraocular surgery
 - patients about to undergo a secondary lens implantation
 - patients about to undergo a second intraocular surgery in the same eye
 - patients with clinically significant corneal edema
 - patients with clinically significant corneal guttata
6. Postoperative management of ocular surgery
 - patients with pseudo-aphakia
 - assessment of mechanical complications of a corneal graft
 - assessment of other complications of a corneal graft
 - assessment of cataract fragments in the eye following cataract surgery
7. Diagnosis and treatment for injury to the eye
 - assessment of alkaline chemical burn of the cornea and conjunctival sac
 - assessment of acid burn of the cornea and conjunctival sac
 - assessment of other burn of the cornea and conjunctival sac
8. Diagnosis and treatment for contact lens-induced disorders
 - assessment of corneal edema due to wearing of contact lenses
 - assessment of corneal disorder due to wearing of contact lenses
 - assessment of overnight contact lens wear following cataract surgery