STANDARDIZED ‘NO TOUCH’ DMEK TECHNIQUE

FAST AND FULL VISUAL REHABILITATION

EFFICIENT USE OF DONOR TISSUE

REFRACTIVE NEUTRAL

ANATOMICAL RESTORATION OF THE CORNEA

‘FOR ADVANCED DMEK SURGERY I FOCUS ON D.O.R.C. INSTRUMENTS’
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Standardized “no touch” Descemet membrane endothelial keratoplasty (DMEK) 80% of patients at ≥0.8 (≥20/25) at 6 months

• After its introduction one decade ago by the Netherlands Institute for Innovative Ocular Surgery (NIIOS) in Rotterdam, endothelial keratoplasty has evolved toward selective replacement of the Descemet membrane, referred to as ‘Descemet membrane endothelial keratoplasty’ (DMEK).

• Both the surgical steps for preparation of the donor tissue, ie harvesting the donor Descemet membrane, as well as the operative procedure, have been thoroughly standardized.

• To optimize the clinical outcome, and to avoid the risk of tissue damage and perioperative complications, the procedure can be performed as a completely ‘no touch’ technique.

• To enable surgeons to perform standardized ‘no touch’ DMEK, a ‘DMEK donor tissue preparation set’ and a ‘DMEK surgical instrument set’ were designed and developed in close collaboration with Dr. Gerrit Melles. Prepared donor Descemet-rolls can be ordered from Amnitrans Eyebank Rotterdam.

DMEK INSTRUMENTS

50.2200 DMEK Surgical Disposable Set
- Curved pipette for graft loading and anterior chamber insertion
- Dual luer-lock connector
- Straight glass pipette incl. Balloon for graft rinsing
- 5 ml syringe with luer-lock (2x)
  - 1 x for graft insertion
  - 1 x for BSS
- 1 ml syringe (air injection)
- 23G “Stab” knife (side ports)
- 27G Blunt cannula (BSS)
- 30G Bent cannula for air injection
  - (Box/3, sterile)

50.213D Disposable Melles DMEK Scraper Set
- Style 1: 45°
- Style 2: 90°
  - (Set/2, sterile)

50.2201 DMEK Sinskey Hook Up

50.2202 DMEK Sinskey Hook Down

50.2203 DMEK Graft Manipulation Forceps with extra fine tips for intraocular and extraocular unrolling of the graft

50.2210 Disposable reversed Sinskey hook with irrigation
  - (Box/3, sterile)
**INSERTION OF THE DMEK GRAFT**

_A and B_
After loading the graft, the glass injector is attached to a 5 ml. syringe.

_C and D_
The position of the double roll, which should be facing up inside the injector, is checked under the surgical microscope, and the injector is positioned into the main incision to insert the DMEK roll into the recipient anterior chamber.

_E and F_
After insertion, the double roll should still be facing up. The endothelium is located at the outer surface of the DMEK graft.

**CENTERING AND UNFOLDING OF THE DMEK GRAFT**

_A_
A small air-bubble is positioned in between the ‘double-rolls’ of the DMEK-graft and by applying gently strokes with the cannula onto the outer corneal surface, the DMEK-graft is rotated.

_B_
The air bubble is enlarged to further unroll the DMEK-graft, and using the cannula at the outer corneal surface, the graft is centered.

_C_
Than the air bubble is enlarged to completely unfold the DMEK-graft, and to position it onto the iris.

_D and E_
After approximately ten seconds, the air bubble is aspirated and the cannula is positioned underneath the graft to inject air at the pupillary margin (air in between iris and graft).

_E and F_
Once completely unfolded, the anterior chamber is filled with air for approximately 45-60 minutes.

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**DMEK PREPARATION SET**

- **50.2220 Straight glass pipette incl. balloon (Box/3, sterile)**
- **2114.A Donor Cornea Holder**

**Recommended Standard Anterior Instruments:**
- Colibri Forceps
- Anatomical Forceps
- McPherson Forceps
- Hockeystick
We describe a standardized technique for “no-touch” isolated Descemet membrane transplant, ie, Descemet membrane endothelial keratoplasty (DMEK).

All essential steps, including patient preparation and descemetoctomy as well as DMEK graft implantation, orientation, unrolling, centering, appositioning, and fixation, are described in detail. In the management of Fuchs endothelial dystrophy, the technique may provide a best-corrected visual acuity of 20/25 (0.8) or better in ¾ of cases and an endothelial cell density of about 1800 to 2000 cells/mm2 at 6 months after surgery.

No-touch DMEK may therefore be a safe and effective procedure for the treatment of corneal endothelial disorders, making endothelial keratoplasty accessible to most corneal surgeons without requiring major investments while providing an unprecedented visual rehabilitation rate and outcome. Arch Ophthalmol. 2011;129(1):88-94

OTHER DMEK PUBLICATIONS


DMEK DONOR CORNEA

Since donor tissue criteria as well as instrument specifications may vary with each surgical case, the combined supply of donor tissue and surgical instruments may provide the best guarantee for D.O.R.C. International high quality instruments, and surgery-matched donor tissue. Donor Cornea can be available from Amnitrans Eyebank Rotterdam.