Rijnstate

Manual Small Incision Cataract Surgery

- Cursus Werkgroep Internationale Oogheelkunde-

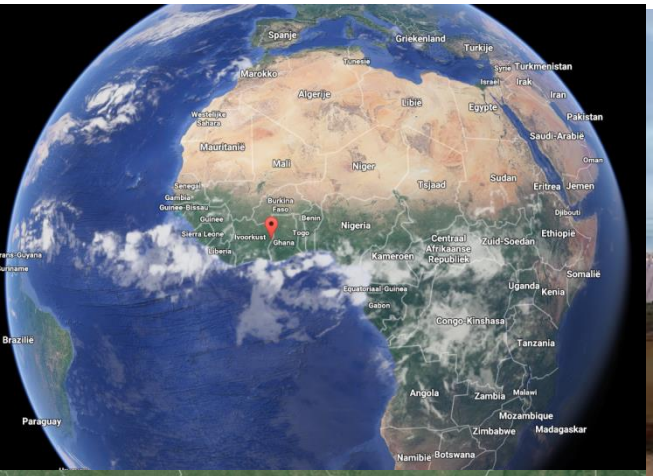
16-01-2025
Tim Westland
Oogarts Rijnstate
St. Mary's Hospital, Drobo, Ghana
Mulanje Mission Hospital, Malawi

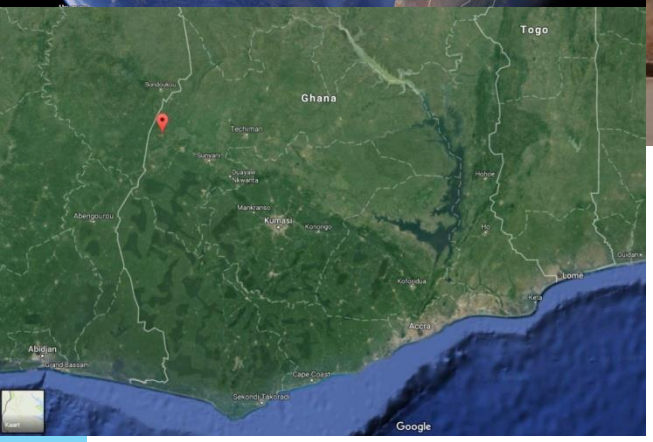




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St. Mary's Hospital, Ghana











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8


09 58 53
Leica



Mulanje Mission Hospital, Malawi

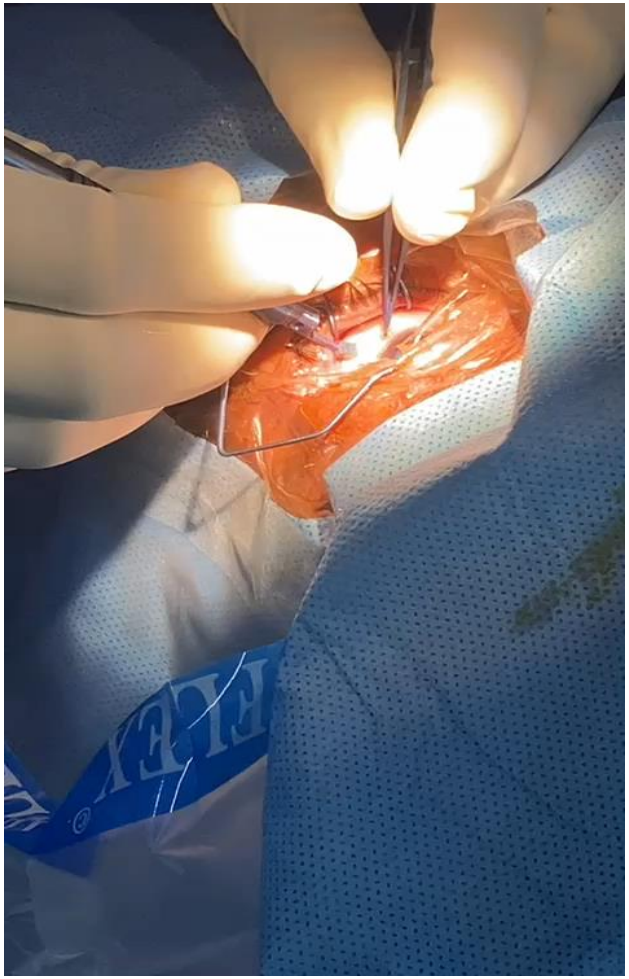








Wie kan er goed opereren?





Dr. Jacob, Papua Nieuw Guinea

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Wereldwijd cataract

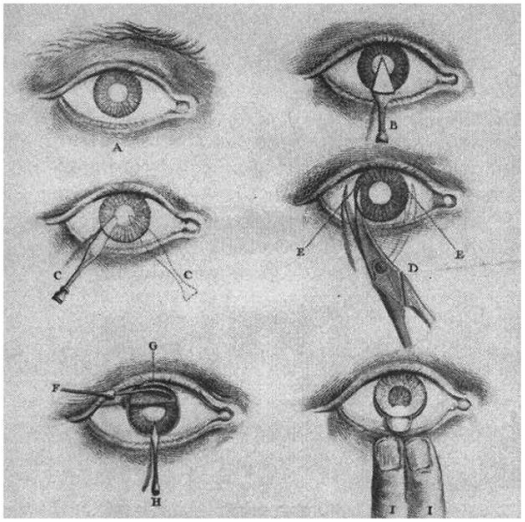
- Hoofdoorzaak blindheid wereldwijd
- 17 miljoen mensen bilateraal blind
- 40% van alle blindheid
- Behandelbaar



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Geschiedenis Cataract Chirurgie

- <1700: staarsteek, couching
- 1745: Jacques Daviel: ECCE



FIGUUR Cataractextractie volgens de Franse oogheelkundig chirurg Jacques Daviel (1693-1762).4 (a) Nadat het onderooglid omlaag is getrokken, wordt (b) met behulp van een keratoom een corneale incisie gemaakt. (c-e) Met een stompe naald en schaar wordt de incisie vergroot tot 180 graden. (f en g) Vervolgens wordt de cornea opgetild en (h) het lenskapsel geopend. (i) Door voorzichtige pressie op de bulbus oculi luxeert de lens in de voorste oogkamer en nadien naar buiten toe.

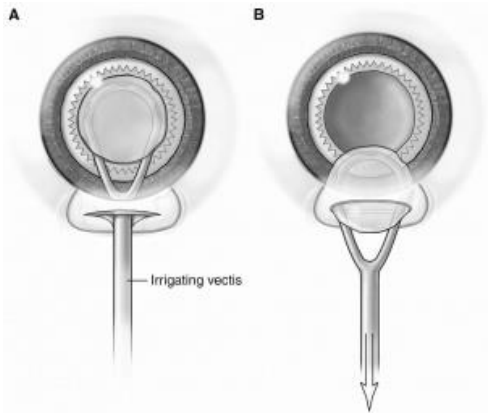
Pouw en Zegers, Ned Tijdschr Geneeskd. 2013;157:A5980

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Geschiedenis Cataract Chirurgie



- 1949: Harold Ridley: PMMA implant lens
- 1962: Kelman: Cryoprobe: ICCE
- 1967: Kelman: phacoemulsificatie, tandarts
- 1992: Pameijer: phacoemulsificatie in NLD
- 1992: Blumental: SICS
- 1999: Ruit: MSICS
- 2010: FLACS



Pouw en Zegers, Ned Tijdschr Geneeskd. 2013;157:A5980

Manual Small Incision Cataract Surgery - EyeWiki (aao.org)

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Waarom MSICS?



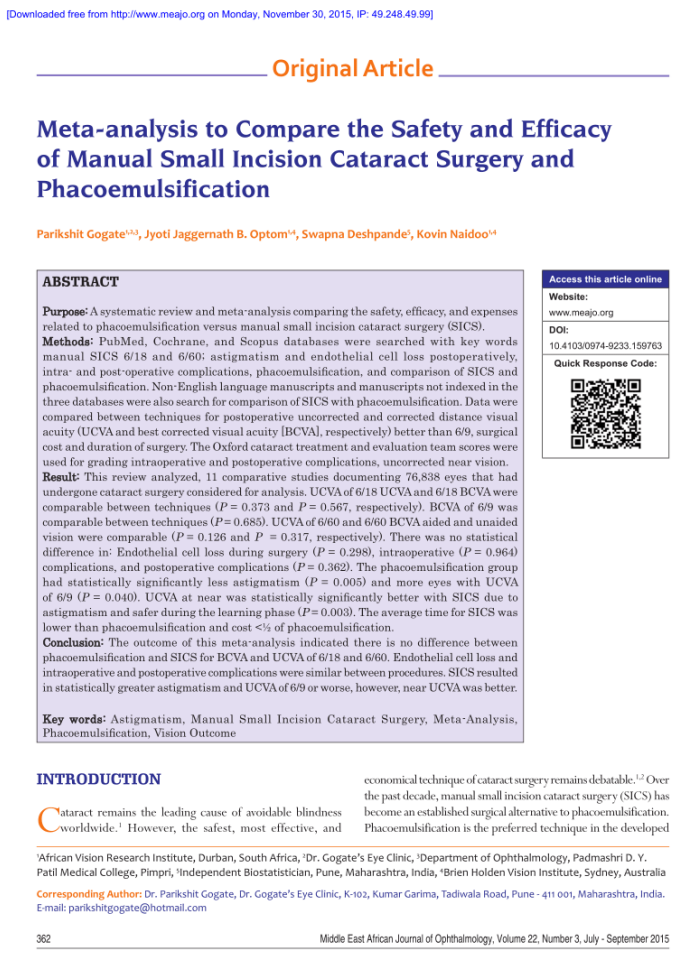
- Oogartsen in de tropen:
  - Zeer lage kosten (~30 euro)
  - Nauwelijks verbruiksmaterialen
  - Sneller dan phaco (gemiddeld 8-10 minuten)

- Alle oogartsen:
  - Zeer geschikt voor vergevorderd cataract
    - Brunescent/rubra/nigra
    - Snel herstel cornea

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Meta analyse

- 11 vergelijkende studies
- 77.000 patiënten
- Vergelijkbare resultaten
- Betere nabij visus met MSICS door astigmatisme
- Betere veraf visus phaco door minder astigmatisme
- MSICS is sneller
- MSICS is veel goedkoper



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Original Article

Meta-analysis to Compare the Safety and Efficacy of Manual Small Incision Cataract Surgery and Phacoemulsification

Parikshit Gogate[1,2,3], Jyoti Jaggernath B. Optom[1,4], Swapna Deshpande[5], Kovin Naidoo[1,4]

ABSTRACT

Purpose: A systematic review and meta-analysis comparing the safety, efficacy, and expenses related to phacoemulsification versus manual small incision cataract surgery (SICS).
Methods: PubMed, Cochrane, and Scopus databases were searched with key words manual SICS 6/18 and 6/60; astigmatism and endothelial cell loss postoperatively, intra- and post-operative complications, phacoemulsification, and comparison of SICS and phacoemulsification. Non-English language manuscripts and manuscripts not indexed in the three databases were also search for comparison of SICS with phacoemulsification. Data were compared between techniques for postoperative uncorrected and corrected distance visual acuity (UCVA and best corrected visual acuity [BCVA], respectively) better than 6/9, surgical cost and duration of surgery. The Oxford cataract treatment and evaluation team scores were used for grading intraoperative and postoperative complications, uncorrected near vision.
Result: This review analyzed, 11 comparative studies documenting 76,838 eyes that had undergone cataract surgery considered for analysis. UCVA of 6/18 UCVA and 6/18 BCVA were comparable between techniques ($P = 0.373$ and $P = 0.567$, respectively). BCVA of 6/9 was comparable between techniques ($P = 0.685$). UCVA of 6/60 and 6/60 BCVA aided and unaided vision were comparable ($P = 0.126$ and $P = 0.317$, respectively). There was no statistical difference in: Endothelial cell loss during surgery ($P = 0.298$), intraoperative ($P = 0.964$) complications, and postoperative complications ($P = 0.362$). The phacoemulsification group had statistically significantly less astigmatism ($P = 0.005$) and more eyes with UCVA of 6/9 ($P = 0.040$). UCVA at near was statistically significantly better with SICS due to astigmatism and safer during the learning phase ($P = 0.003$). The average time for SICS was lower than phacoemulsification and cost <½ of phacoemulsification.
Conclusion: The outcome of this meta-analysis indicated there is no difference between phacoemulsification and SICS for BCVA and UCVA of 6/18 and 6/60. Endothelial cell loss and intraoperative and postoperative complications were similar between procedures. SICS resulted in statistically greater astigmatism and UCVA of 6/9 or worse, however, near UCVA was better.

Key words: Astigmatism, Manual Small Incision Cataract Surgery, Meta-Analysis, Phacoemulsification, Vision Outcome

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INTRODUCTION

Cataract remains the leading cause of avoidable blindness worldwide.[1] However, the safest, most effective, and economical technique of cataract surgery remains debatable.[1,2] Over the past decade, manual small incision cataract surgery (SICS) has become an established surgical alternative to phacoemulsification. Phacoemulsification is the preferred technique in the developed

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Corresponding Author: Dr. Parikshit Gogate, Dr. Gogate's Eye Clinic, K-102, Kumar Garima, Tadiwala Road, Pune - 411 001, Maharashtra, India. E-mail: parikshitgogate@hotmail.com

Cataractregistratie Nederland

- 720 oogartsen
- 17 miljoen inwoners

2021:

- Totaal cataractoperaties: 157.433
- MSICS/ECCE: **69 (0,04%)**
- ECCE: 35

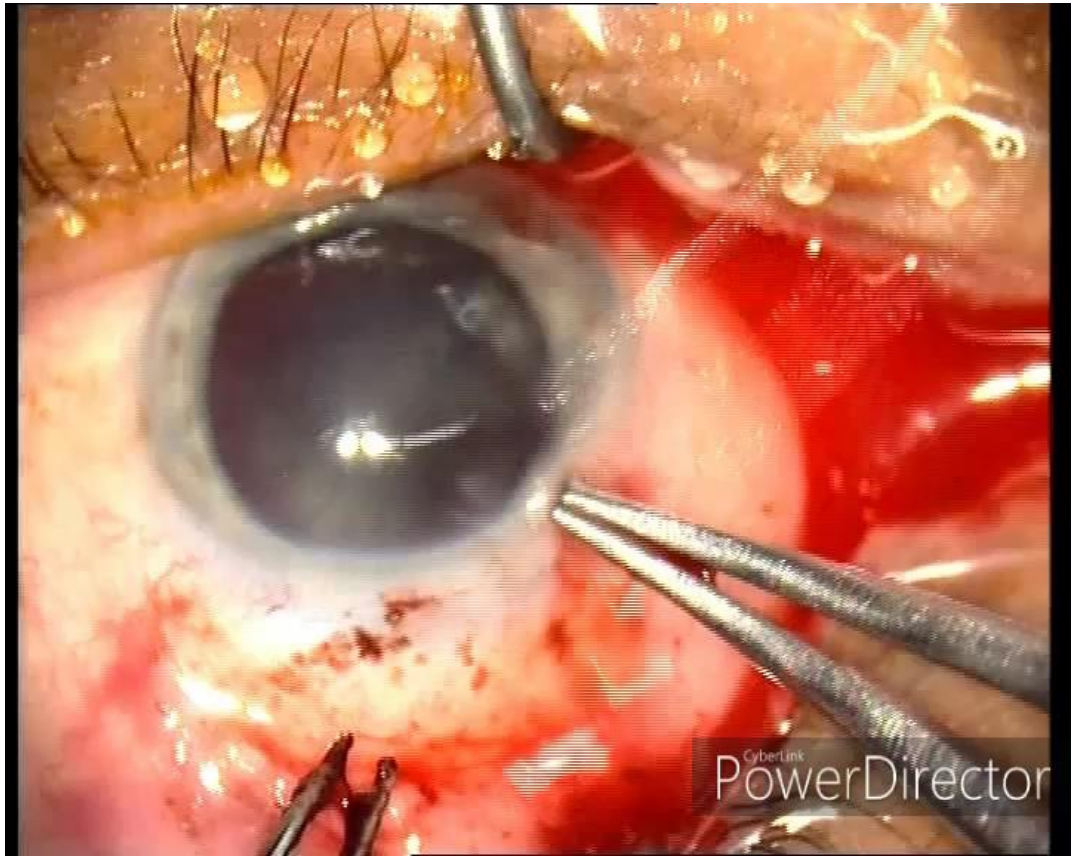
2023:

- Totaal cataractoperaties: 190.324
- MSICS/ECCE: **60 (0,03%)**
- ECCE: 21

- MSICS chirurgen: maximaal 10

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Manual Small Incision Cataract Surgery

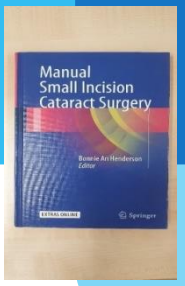


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Manual Small Incision Cataract Surgery

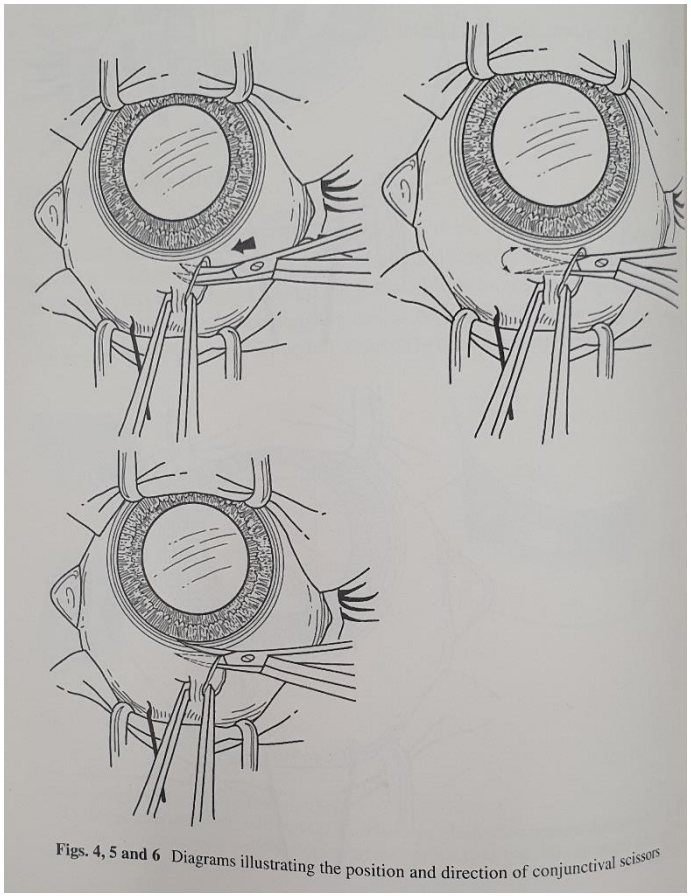
- Benodigdheden
  - Afdekdoek, ooglidspreider
  - Wescott schaar (conjunctiva), fijn chirurgisch pincet of kolibri, **cauter**
  - **Scalpel + mesje 11**, **Crescent knife**, Slit knife
  - HPMCC
  - Gebogen 30G naaldje
  - Hydrodissectie canule
  - **Spoelende lis/vectis canule**
  - Simcoe canule, infuuszak/ I/A phaco machine
  - PMMA/Acrylaat IOL

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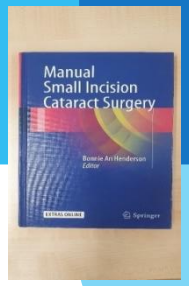
Conjunctiva openen

- Goede knip door tenon heen. Zeker op sclera zitten
- Beter wat te groot dan te zuinig openen
- Grondig cauteren

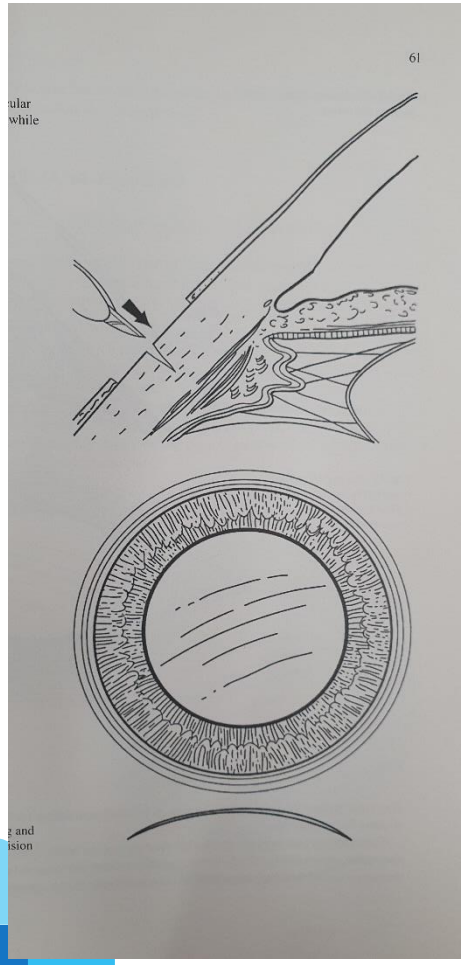


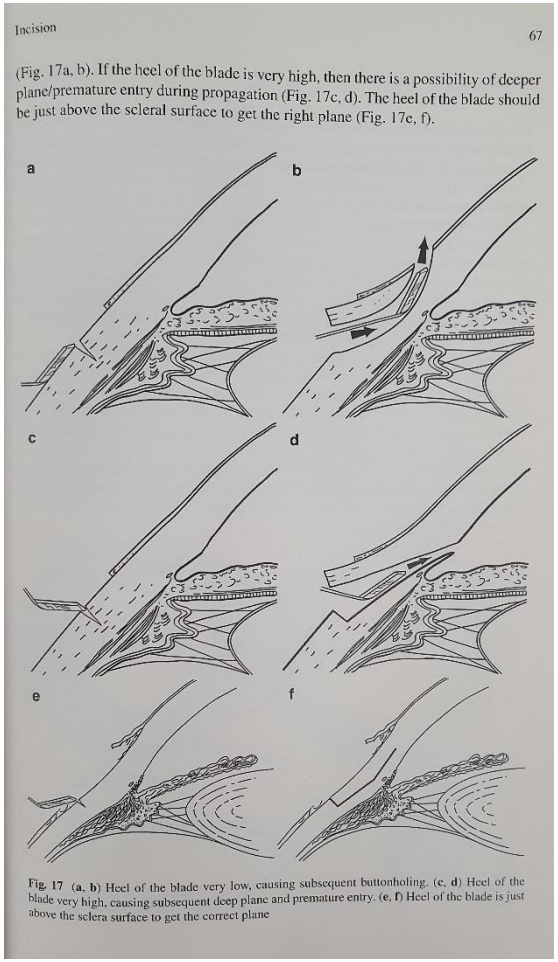
Figs. 4, 5 and 6 Diagrams illustrating the position and direction of conjunctival scissors

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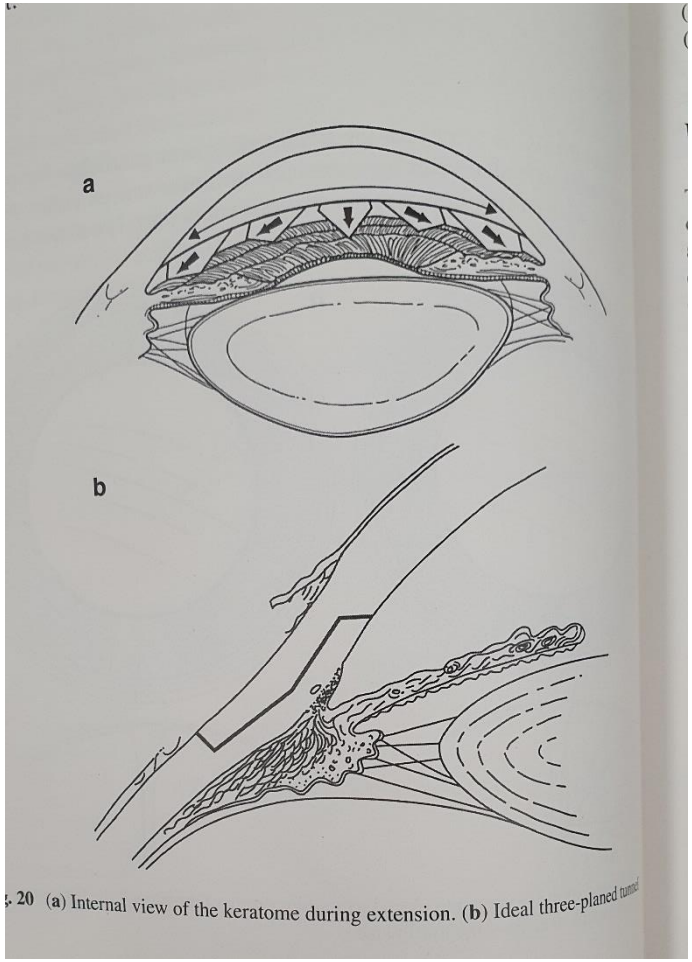
Wond constructie



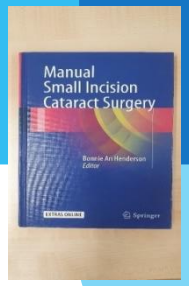


(Fig. 17a, b). If the heel of the blade is very high, then there is a possibility of deeper plane/premature entry during propagation (Fig. 17c, d). The heel of the blade should be just above the scleral surface to get the right plane (Fig. 17e, f).

Fig. 17 (a, b) Heel of the blade very low, causing subsequent buttonholing. (c, d) Heel of the blade very high, causing subsequent deep plane and premature entry. (e, f) Heel of the blade is just above the sclera surface to get the correct plane

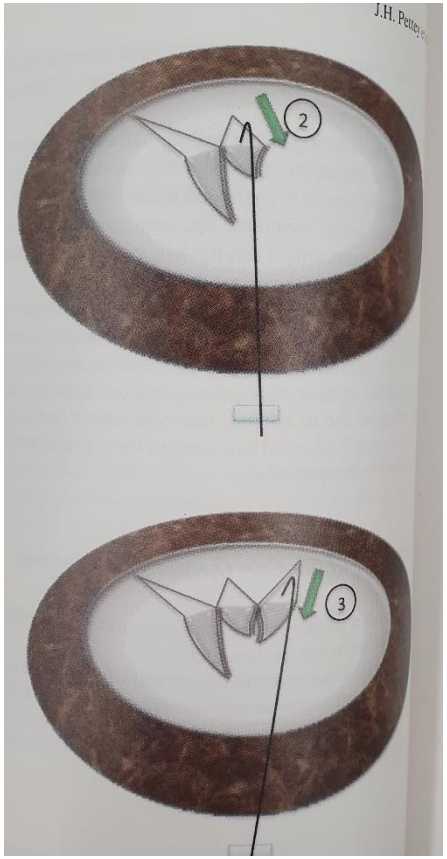


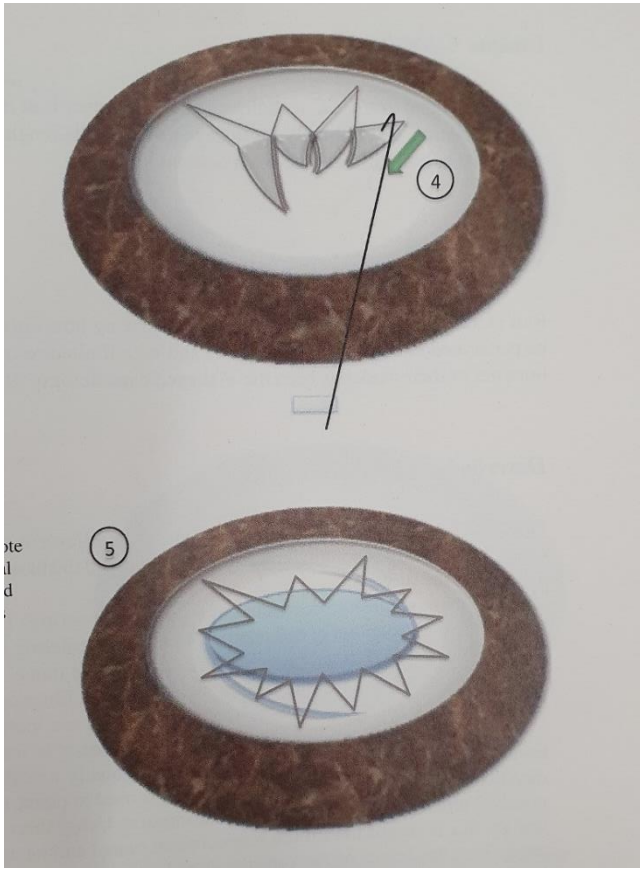
20 (a) Internal view of the keratome during extension. (b) Ideal three-planed tunnel



Methode maken rhexxis

- Can opener
- Grote CCC
- Envelop





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Hydrodissectie

- Spuiten
- Dialen
- Techniek door met punt canule achter iris lens naar boven te wippen
- Veel blijven irrigeren
- Indien 1 helft boven iris blijven spuiten en aan equator lens draaiend helemaal voor iris krijgen
- Eventueel iris terugduwen

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Lensextractie

- Vectis spoelende lis
- Op 5 cc spuit plaatsen
- Of losse lepel
- Alternatief is fish hook





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IOL implantatie

- Voorkeur PMMA lens
  - Kan in bag/sulcus
  - Minder nastaar
  - Geen glistenings
  - Kosten (5 euro per lens)

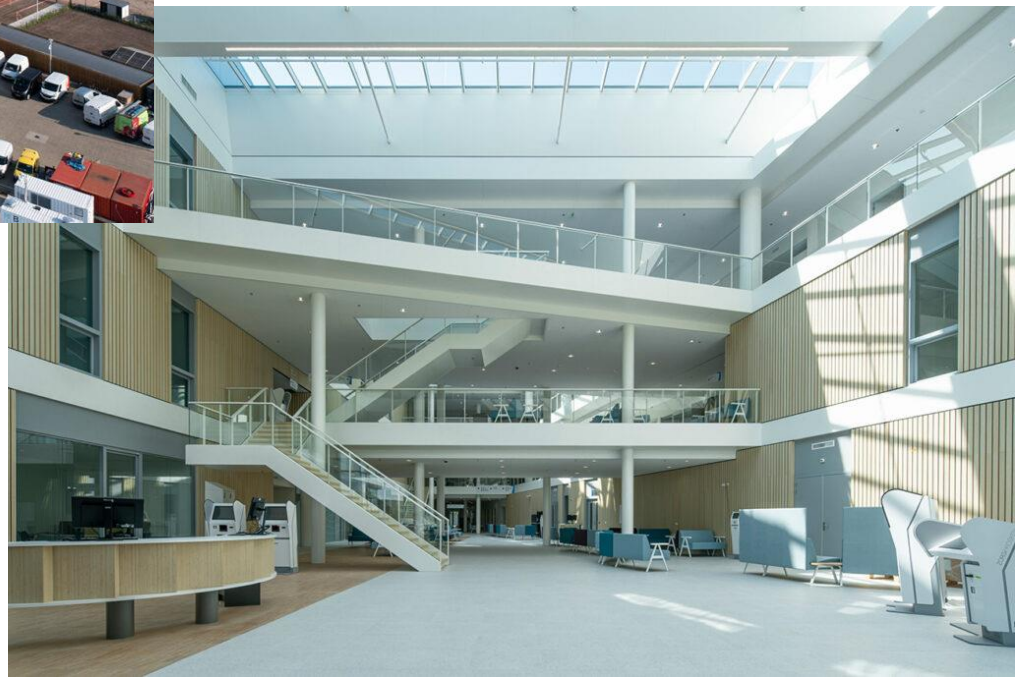


Bij voorkeur plaatsen met een dispersief viscoelasticum (HPMCC)

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Duurzame Oogheelkunde







Elferink, NIOIC 2022, Sustainable ophthalmology

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Phaco 1 case





MSICS 20 cases





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Healthcare and Climate

- Healthcare accounts for almost 5% of net global CO2 emissions

- If it were a country, it would be the fifth largest climate polluter on the planet

Stancliffe et al. Towards net zero healthcare BMJ 2022

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Worldwide Ophthalmology

- It has a major impact : highest surgical volume worldwide, which will increase (29 million procedures worldwide in 2021)

- Emerging scientific evidence what a net zero ophthalmic healthcare system might look like

Failing to plan and planning to fail. Can we predict the future growth of demand on UK eye care services? Eye 2019 A global view on output and outcomes of cataract surgery with national indices of socioeconomic development, Invest Ophthalmol Vis Sci 2017 Cataract surgery and environmental sustainability: Waste and lifecycle assessment of phacoemulsification at a private healthcare facility, JCRS 2017 Addressing the environmental sustainability of eye health-care delivery: a scoping review, Lancet Planetary Health 2022

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Improving productivity, costs and environmental impact in International Eye Health Services: using the 'Eyefficiency' cataract surgical services auditing tool to assess the value of cataract surgical services BMJ 2022

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Onthoud dit en verbreed je horizon!

- Wereldwijd cataract belangrijkste oorzaak blindheid
- MSICS net zo goed en veilig als Phaco
- MSICS veel minder belastend voor klimaat

'Voor iedere dag waar je hier maximaal 20 mensen de ondertiteling weer zonder bril laat lezen kun je elders op onze planeet 400 blinde mensen ziend maken'

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Vragen?



Tim Westland, westland.tim@gmail.com 0616344574

Rijnstate

Wetlab MSICS
Zaterdag 28 juni 2025



ophtec

Programma

10:00 - 10:30 | Ontvangst

10:30 - 11:00 | Presentatie Dr. Westland

Manual Small Incision Cataract Surgery

11:00 - 12:00 | Wetlab

Oefenen met sclerale zelfsluitende wondconstructie op varkensogen

12:00 - 12:30 | Lunch

12:30 - 14:00 | Wetlab

Oefenen met can opener capsulotomie, hydrodissectie, vectis lensextractie en IOL implantatie op varkensogen

14:00 - 15:00 | Afsluitende borrel

MW medical workshop

Klik hier of scan de QR code om aan te melden