



Veiligheid, kwaliteit, traceerbaarheid en risicomomenten bij de cornea

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Westfriesgasthuis, VUmc, EuroCorneaBank

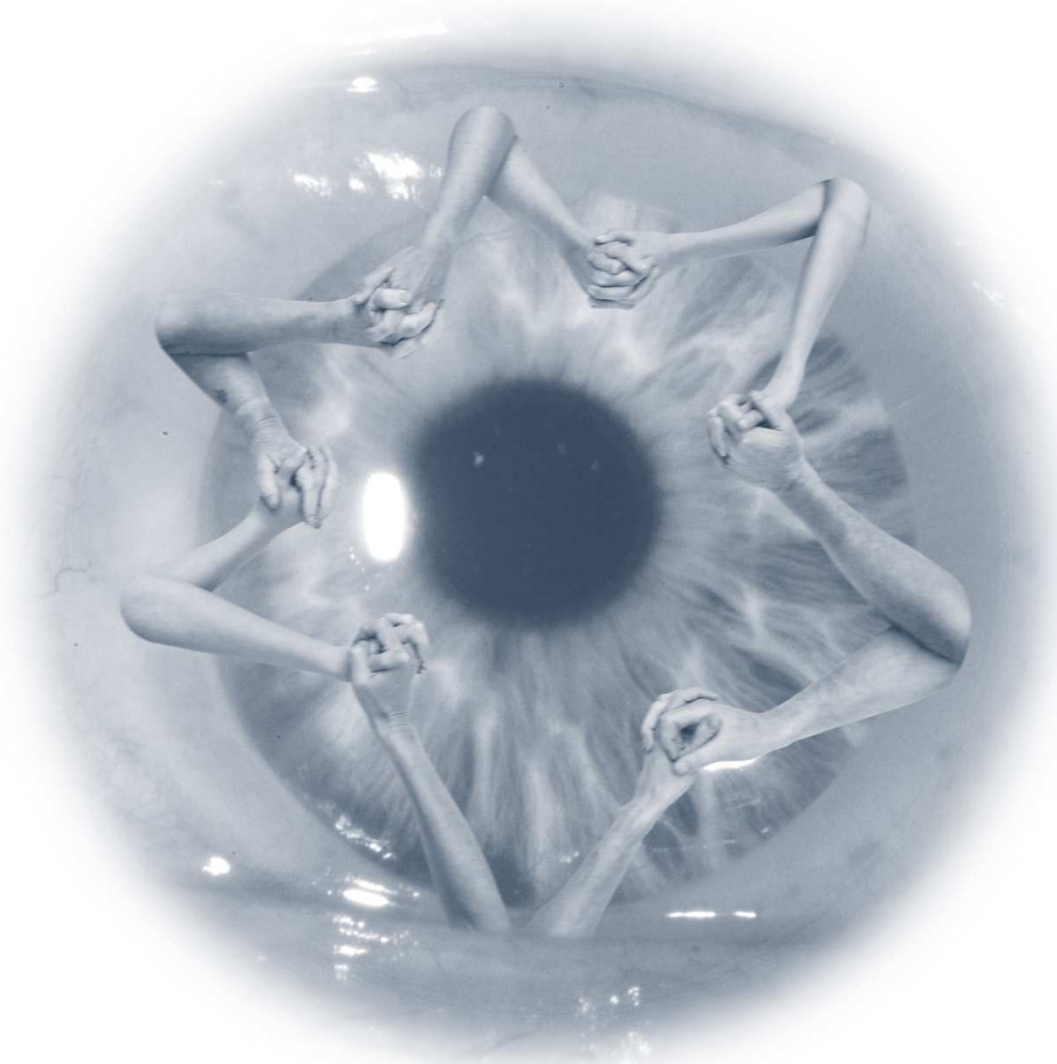
Donor tissue for corneal transplantation: trust and control

NTS- BIS

de oogarts

de Bank

de patiënt



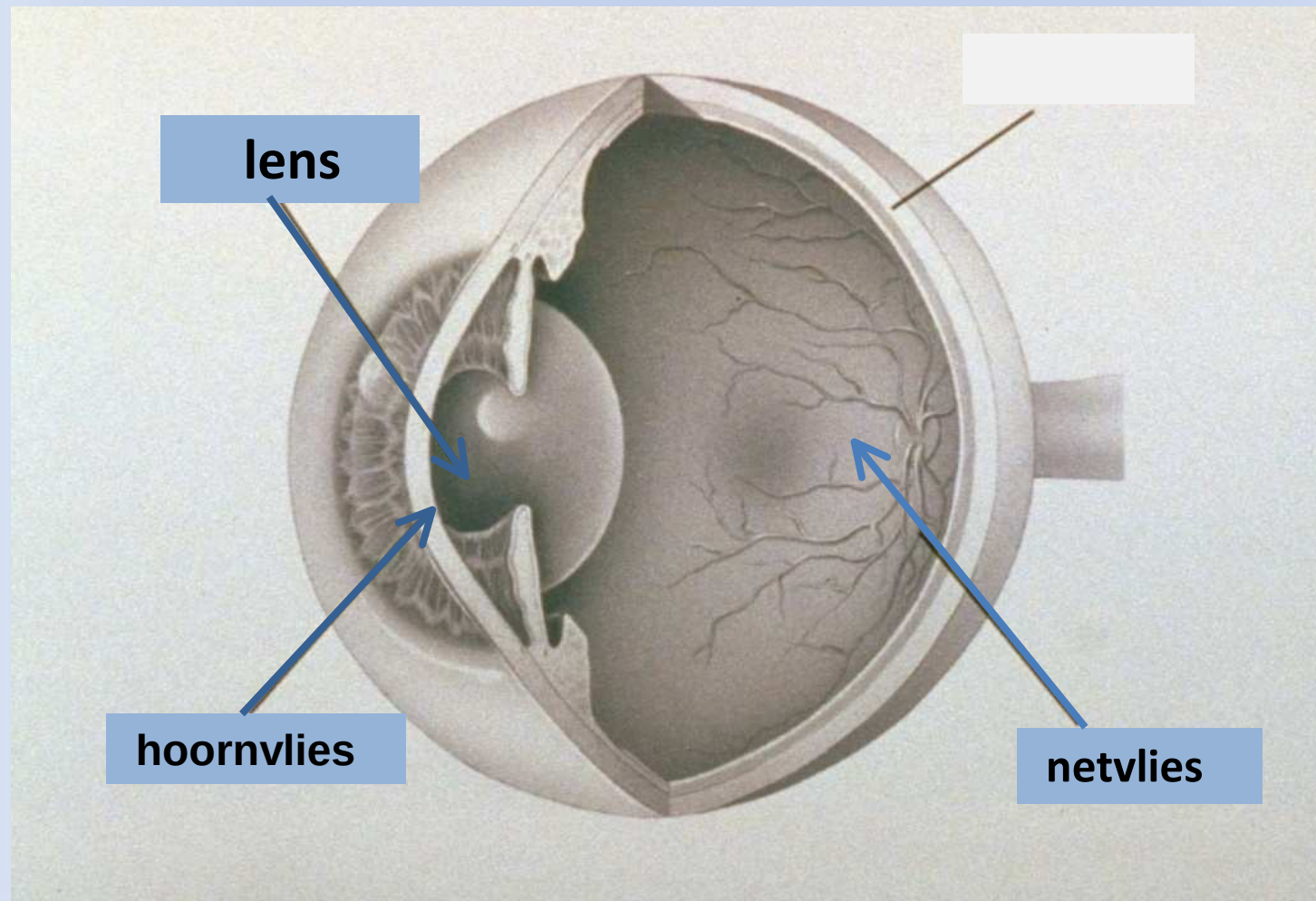
W.J. Rijneveld

- Bouw en functie van het hoornvlies
- Hoornvliestransplantaties
- Oogbanken
- Bewaarmethoden voor hoornvliezen
- Veiligheid en kwaliteit
- Follow-up, het vervolgen van de resultaten

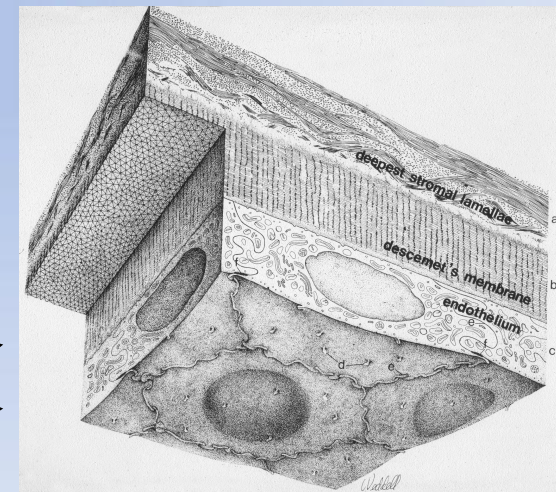
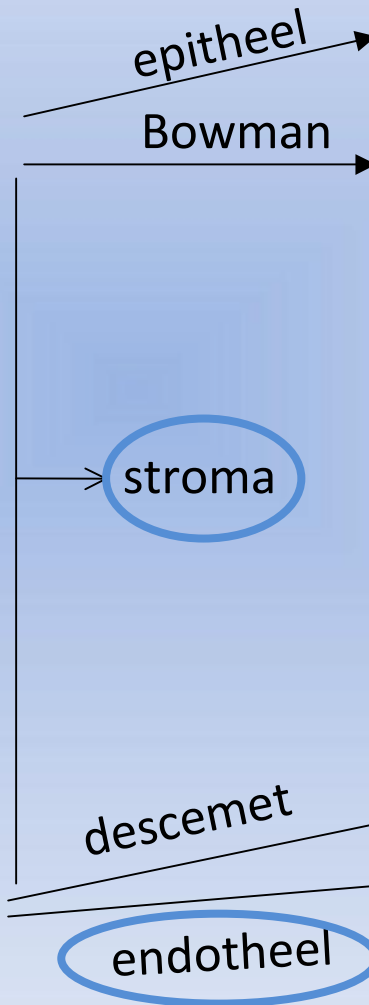
Het oog en het hoornvlies (de cornea)



Het oog en het hoornvlies (de cornea)

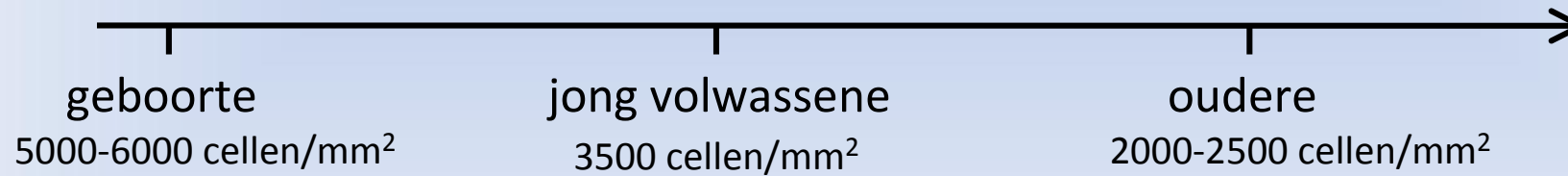
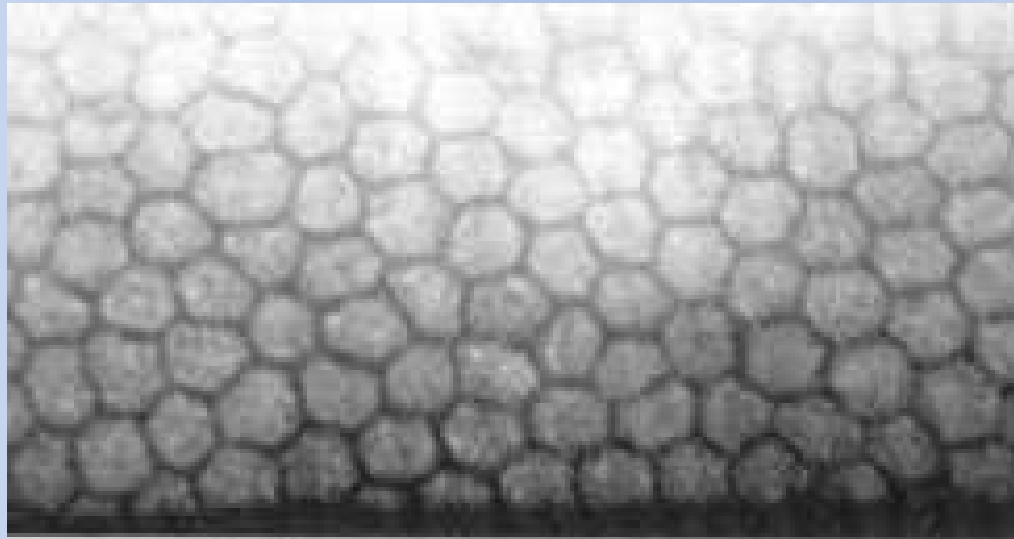


0.5 mm



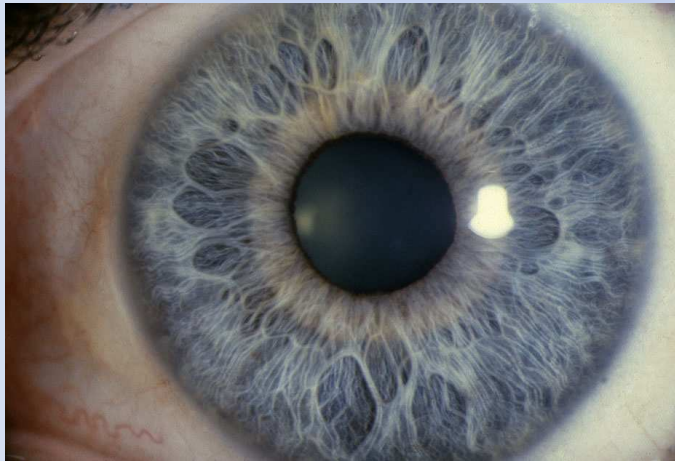
Het endotheel

! < 400- 700 cellen/mm²

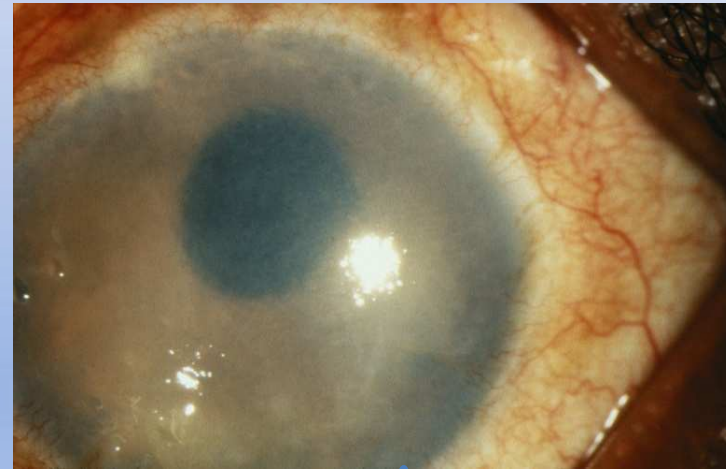


Heldere hoornvlies en gezwollen troebel hoornvlies

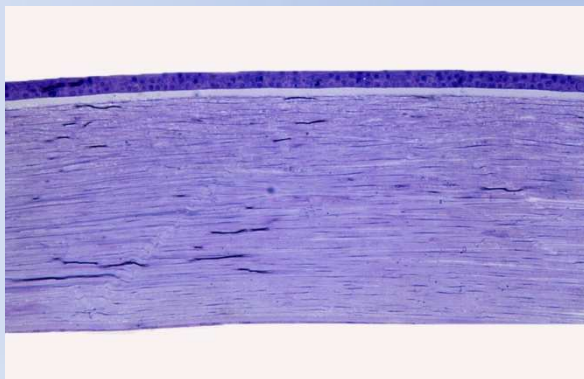
helder,
normaal
hoornvlies



troebel
hoornvlies



normale
dikte



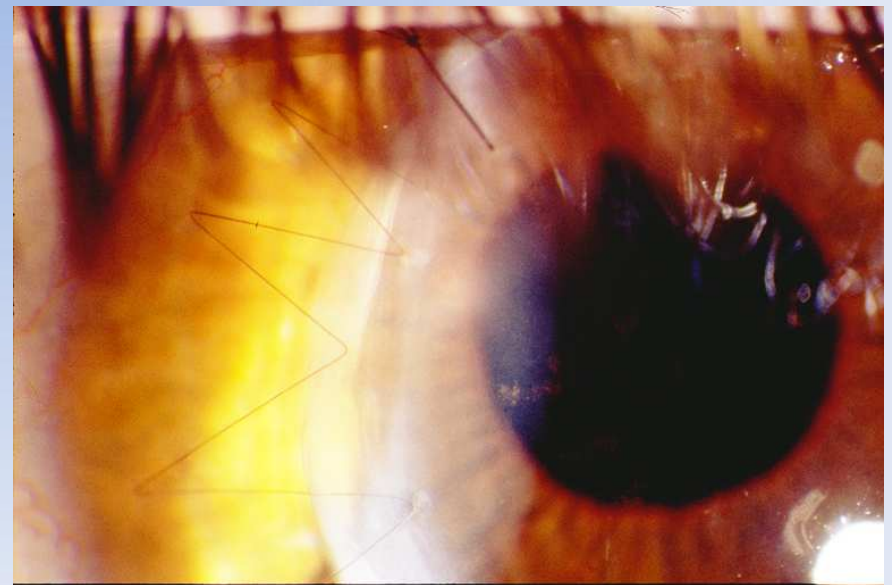
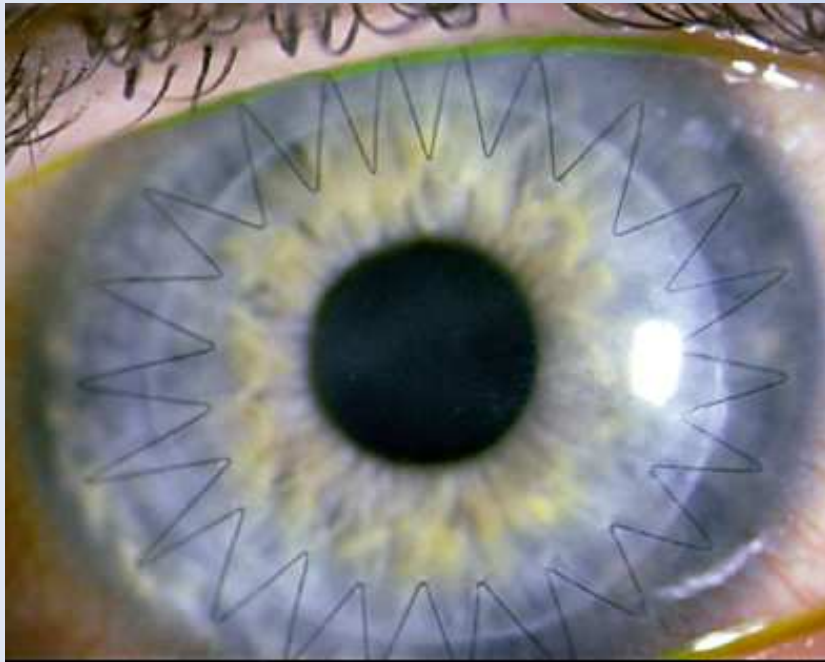
gezwollen



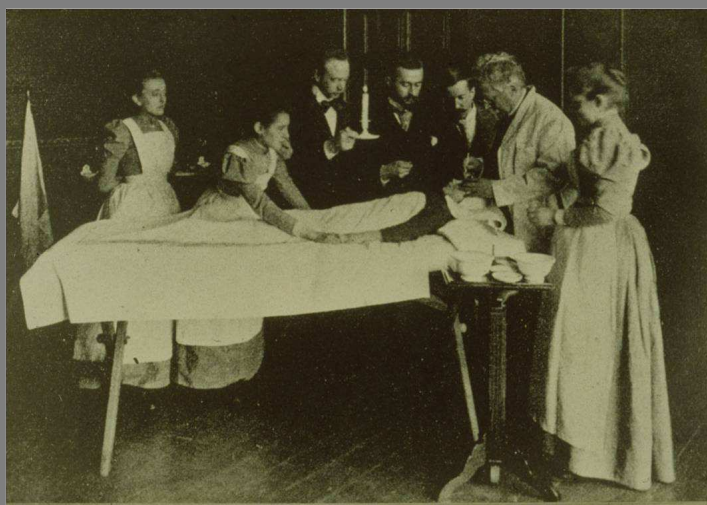
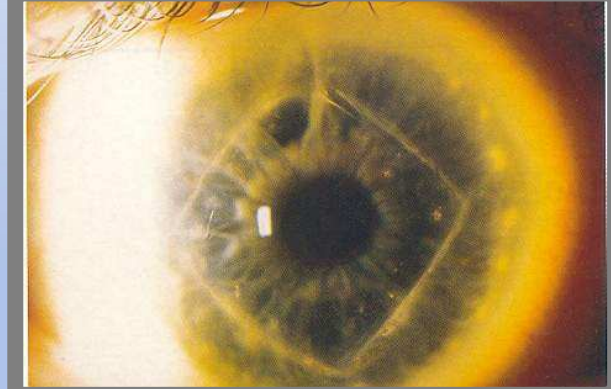
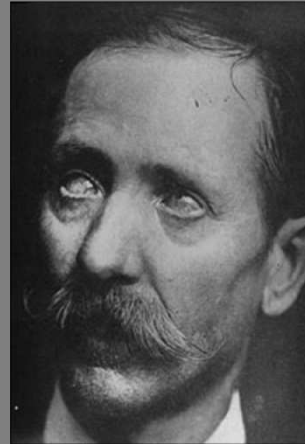
Afwijkingen en ziekten van hoornvlies



Transplantatie

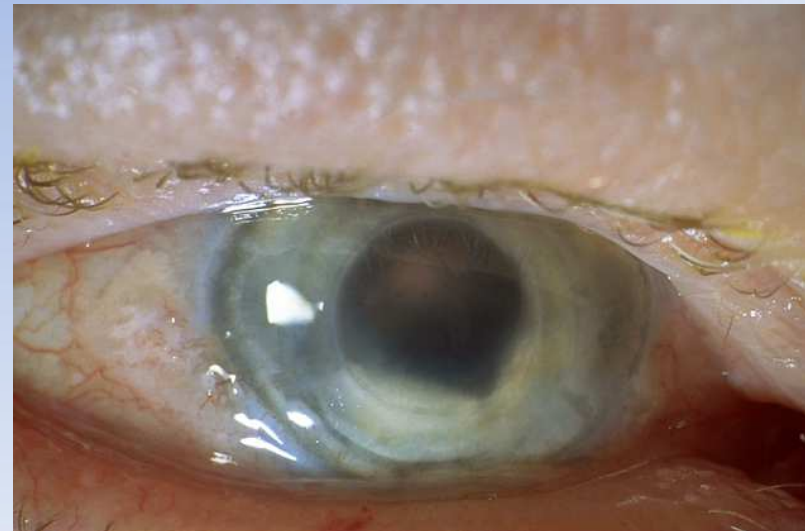
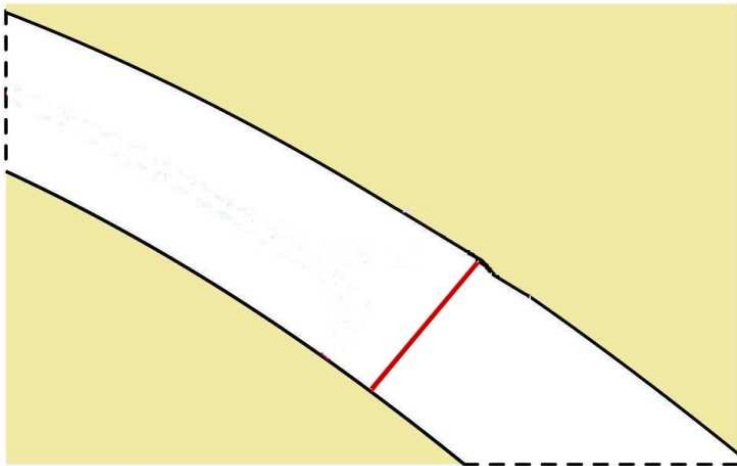
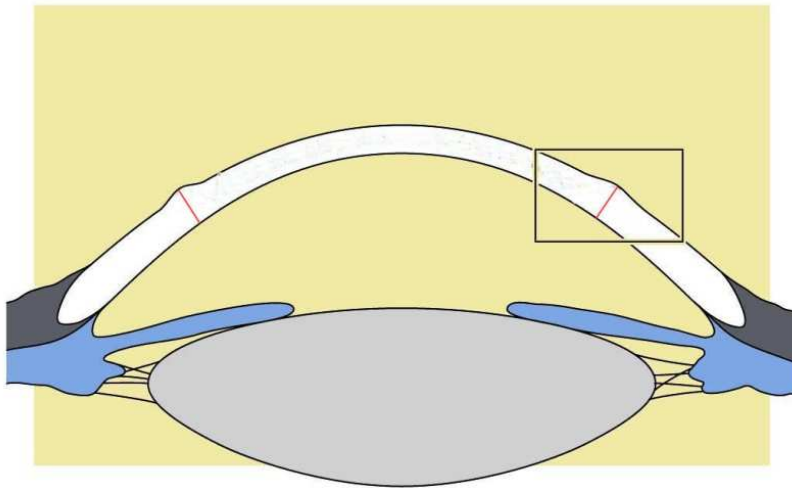


Geschiedenis van de transplantatie



Perforende corneatransplantatie

1939 eerste Leiden

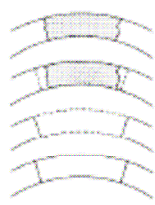
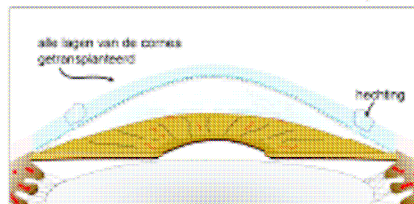


Hoornvliestransplantatie

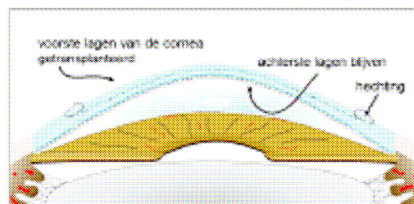
mogelijkheden nieuwe technieken

Transplantaties tot 2004

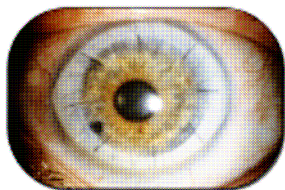
94% Perforerend, PKP



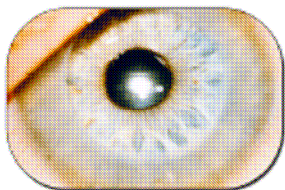
6% Lamellair, LKP



Resultaat Hoornvliestransplantaties



Voor verwijderen van de hechtingen



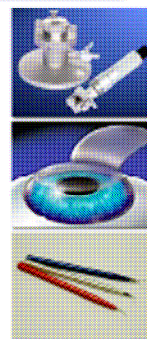
Na verwijderen van de hechtingen

Nieuwe apparatuur

- Kunstmatig voorste oogkamer
- Microkeratoom
- Specifiek instrumentarium



Verbetering snijvlak
Bewerken bewaard weefsel



Nieuwe mogelijkheden

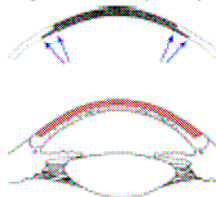
Lamellaire Hoornvliestransplantaties (LKP)

- Anterieur: lagen aan voorzijde hoornvlies
- Posterieur: lagen aan achterzijde hoornvlies



Perforerende Hoornvliestransplantaties (PKP)

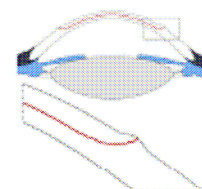
- Lamellaire wondranden
- Paddenstoel techniek
- Omgekeerde paddenstoel techniek



Vervanging voorste lagen (ALKP)

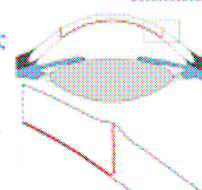
Snijvlak maken met:

- Mes
- Microkeratoom = hoornvliesschaaf



Snijvlak maken met mes:

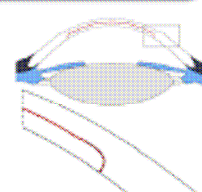
- "Big bubble technique"
- "Visco-dissection"
- "Late and gentle bubble"



Vervanging achterste lagen

Dikte laag afhankelijk van snij techniek:

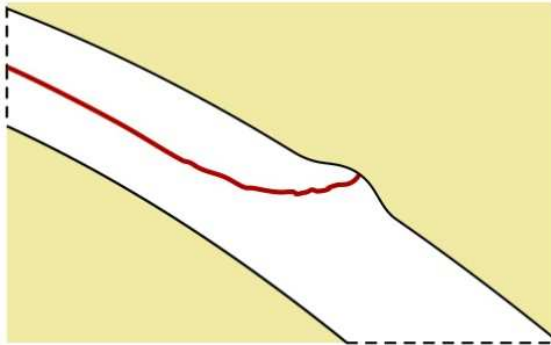
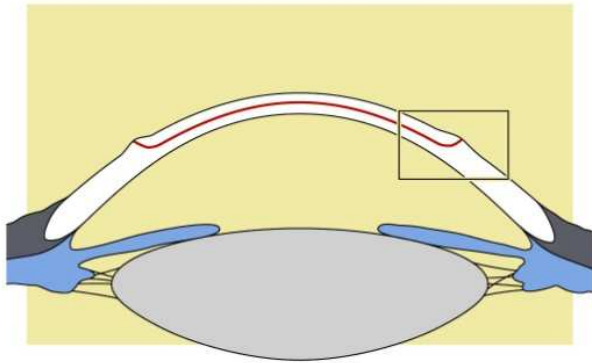
- Microkeratoom
- Mes
- Intralaser



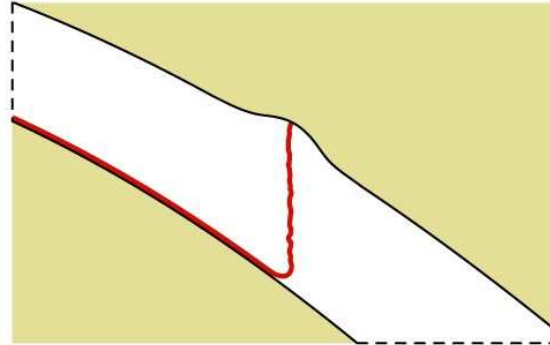
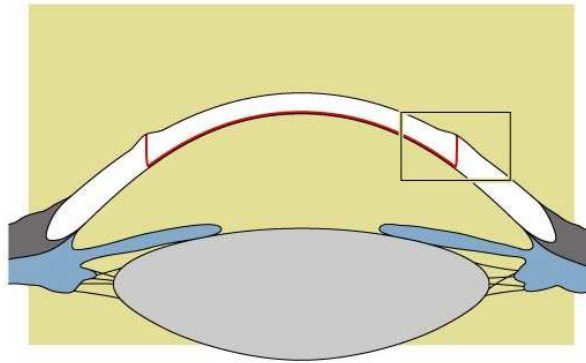
Huidige stand van zaken

- Aantal LKP's neemt snel toe: verdubbeld in 2004 - 2005
- Toepassing afhankelijk ziekte hoornvlies (alleen voorste of achterste deel)
- Vergelijkend onderzoek in uitvoering

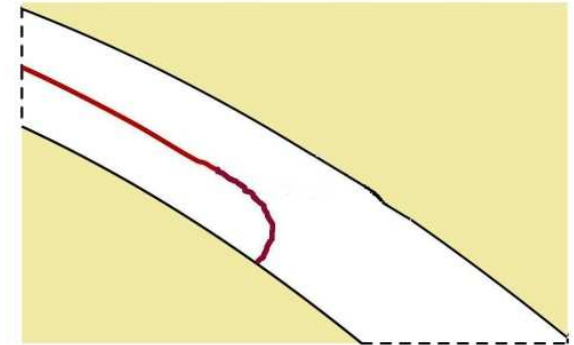
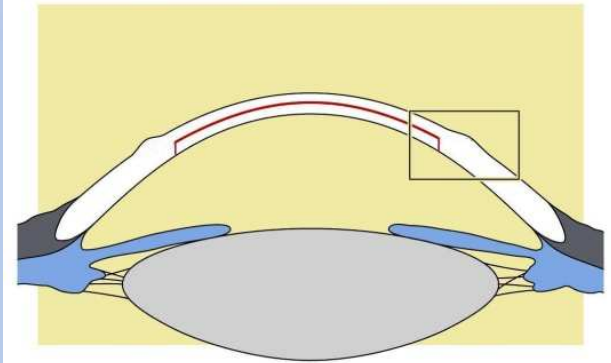
Lamellaire corneatransplantatie



anterior lamellaire

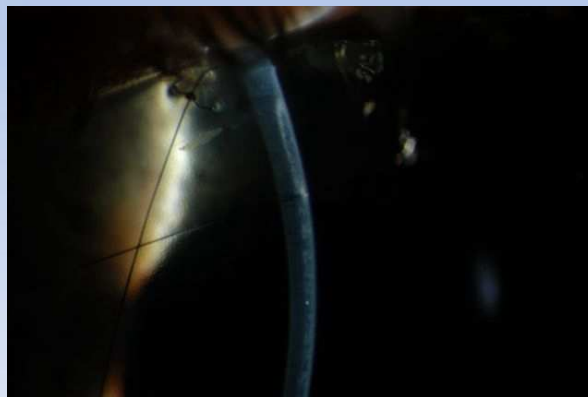


diepe anterieure lamellaire

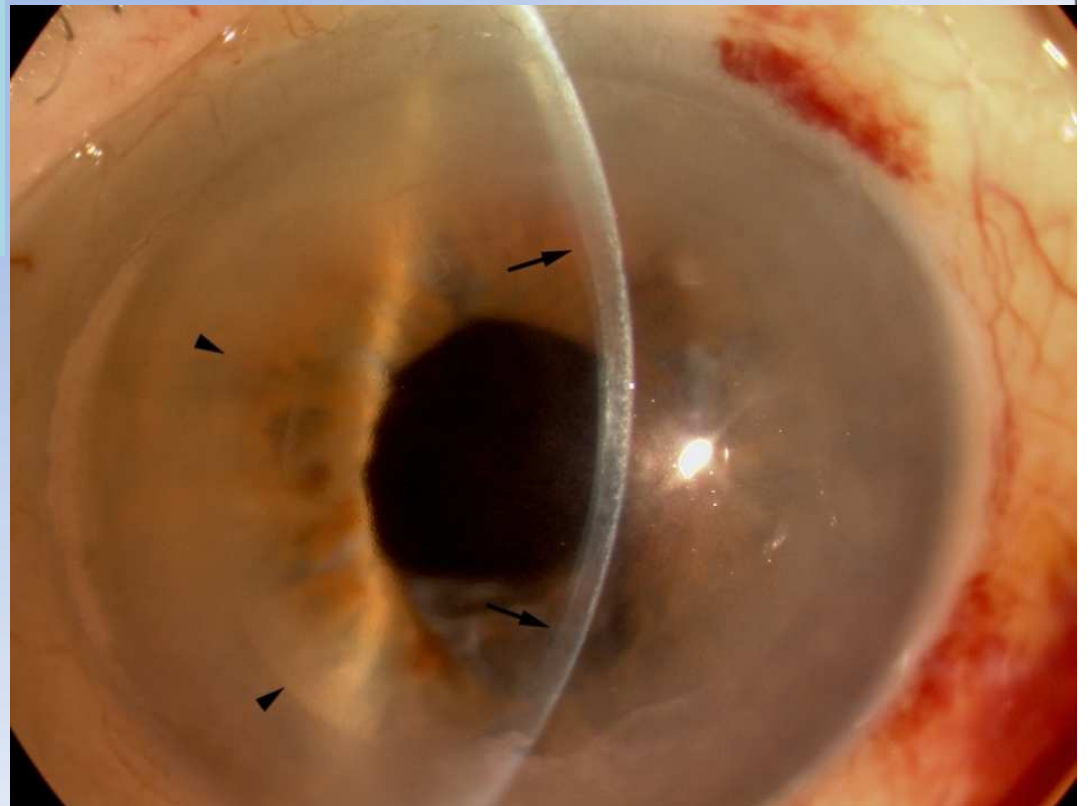
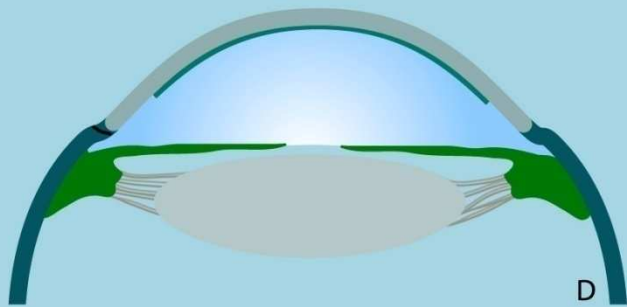


posterieure lamellaire

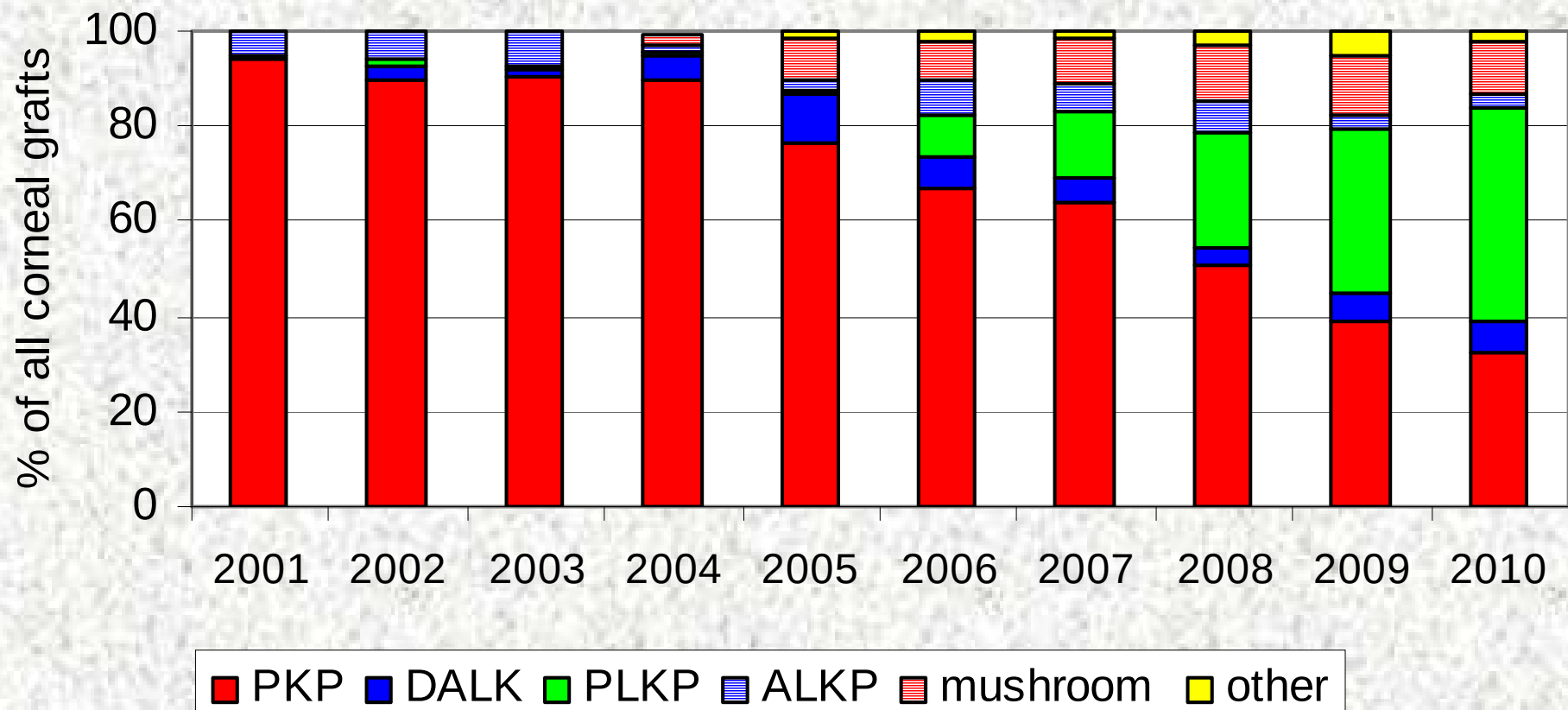
Lamellaire transplantatie



Posterieure transplantatie



Grafting procedures in the Netherlands



Geschiedenis van donor preserving : het ontstaan van de oogbank



Koude preserving (2-8 °C) en orgaankweek (31-37 °C)



Kwaliteitsaspecten bij het oogbank proces orgaankweek



70 er jaren vorige eeuw ,mn in de USA

Koude preserving



- 4-8 graden Celsius
- er komen oogbanken
- die nemen deel verantwoordelijkheid over
- vertrouwen----- controle (80 er jaren aids)
- selectie leeftijd, tijd tussen overlijden en uitname
- bewaartijd 2-3 dagen (uiterlijk 6 dagen)

70 er jaren vorige eeuw in Europa

Orgaankweek

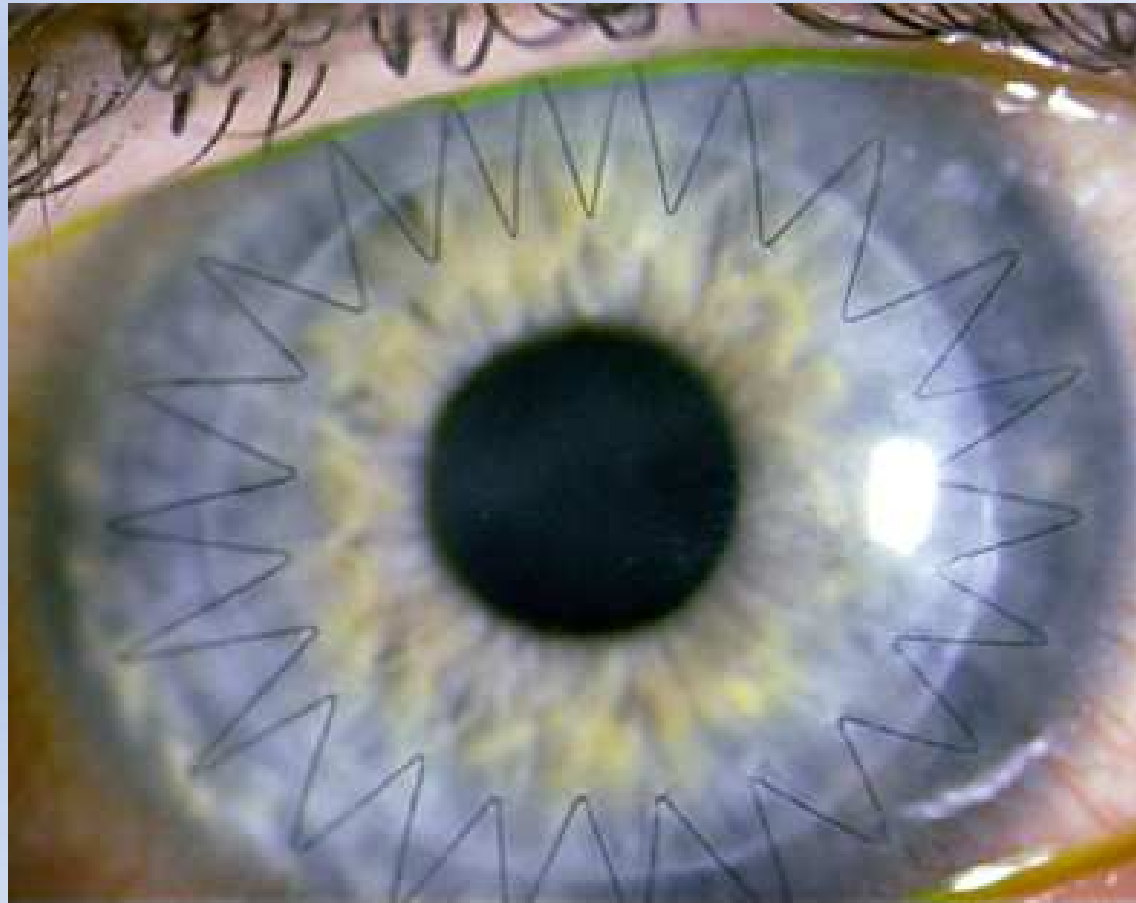


- Bewaard in weefselkweek medium
- Voor transport over geplaatst
- Endotheel evaluatie is verplicht



Eisen aan donor weefsel

- Veilig
en
- Functioneel



Eisen aan donorweefsel: Veilig

1) Geen overdraagbare ziektes donor



Overdraagbare ziekten donor

Sytemisch transmissie

- Retinoblastoom
- Adenocarcinoom van de iris
- Rabies
- Creutzfeldt-Jacob

Locale transmissie

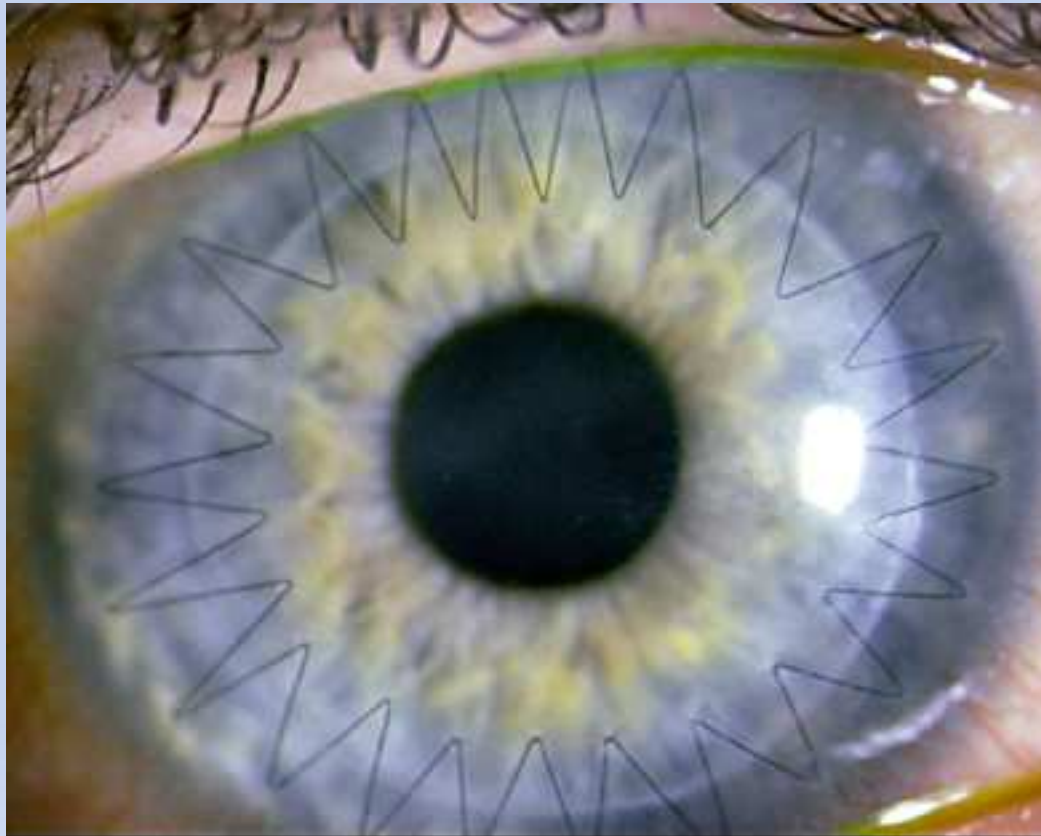
- HIV
- Hepatitis B
- Hepatitis C
- Lues
- HTLV
- CMV
- HSV

Eisen aan donorweefsel: Veilig

2) Geen infecties



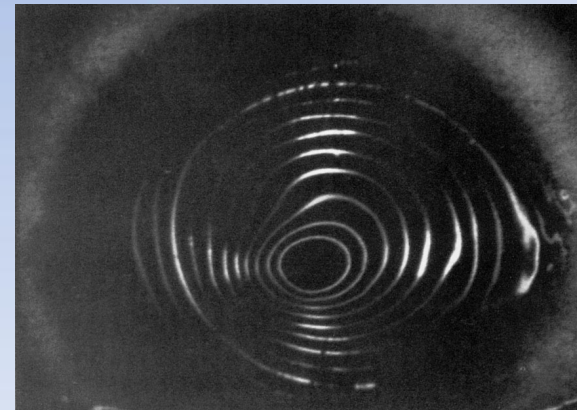
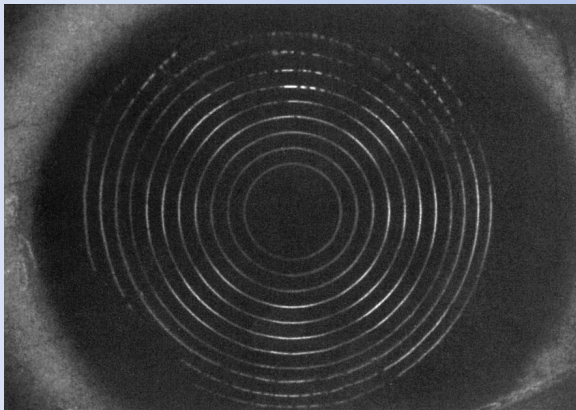
Eisen aan donorweefsel:functioneel



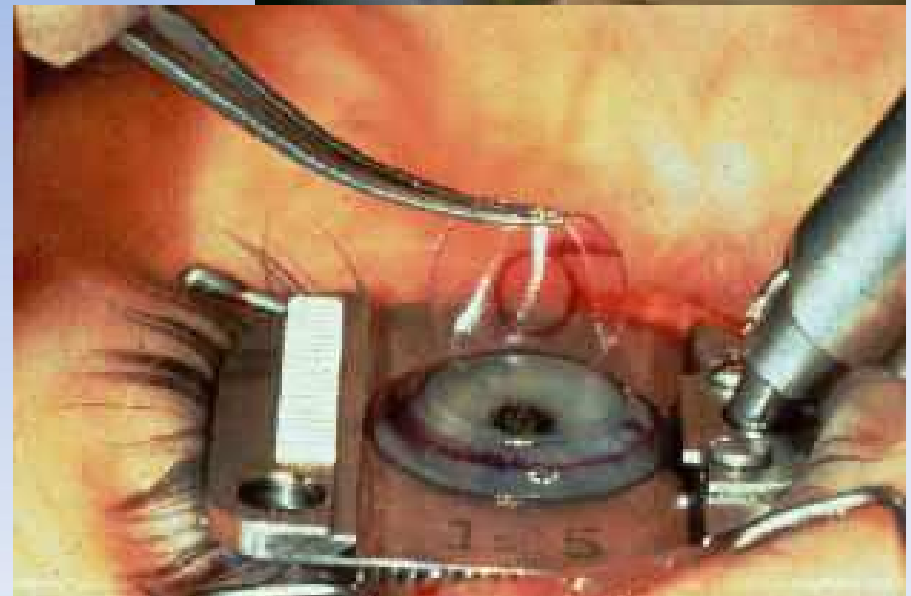
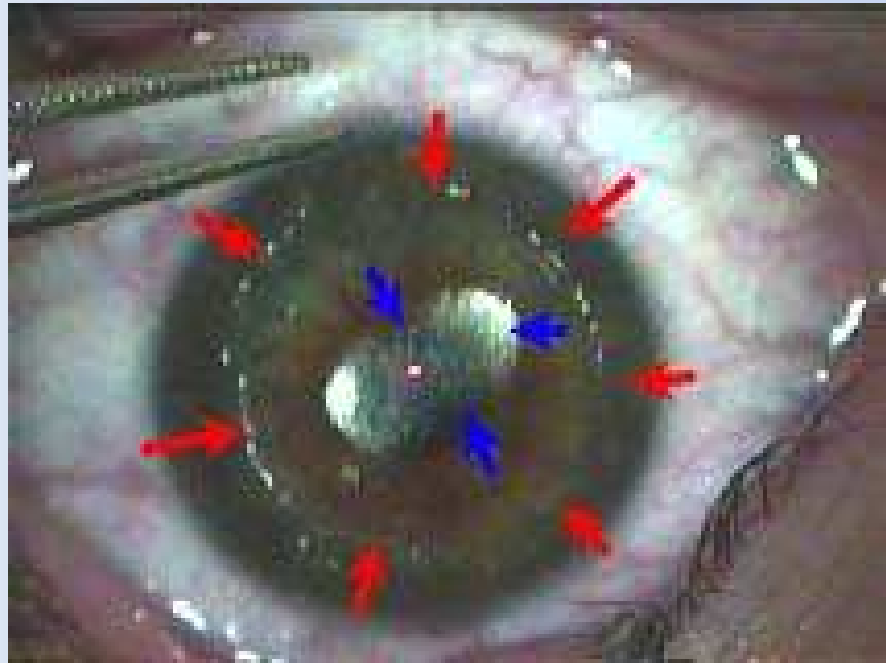
Eisen aan donorweefsel: Functioneel



1. Vorm

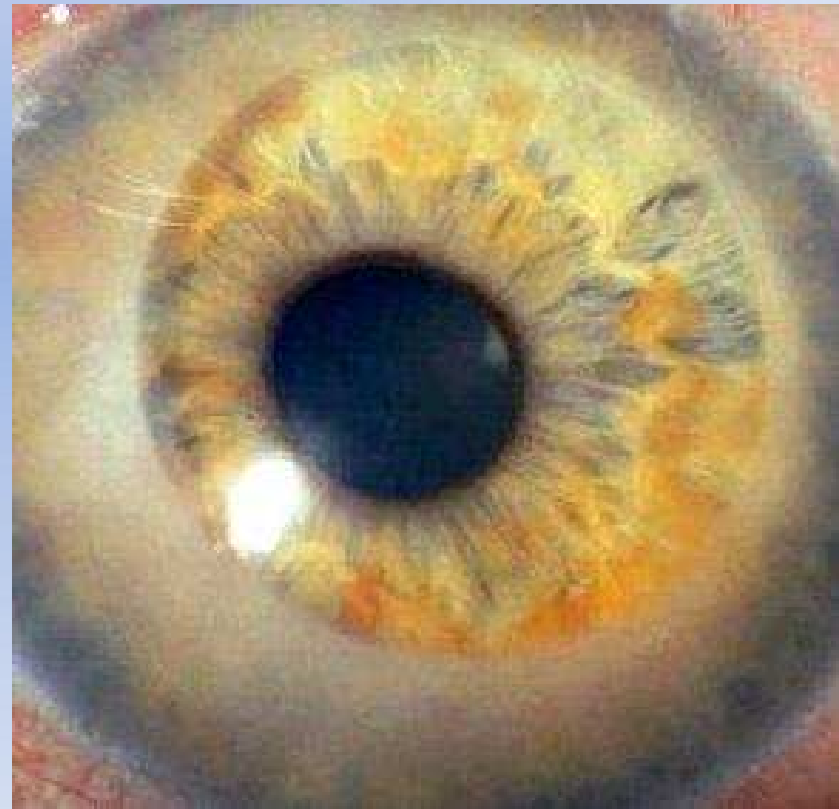
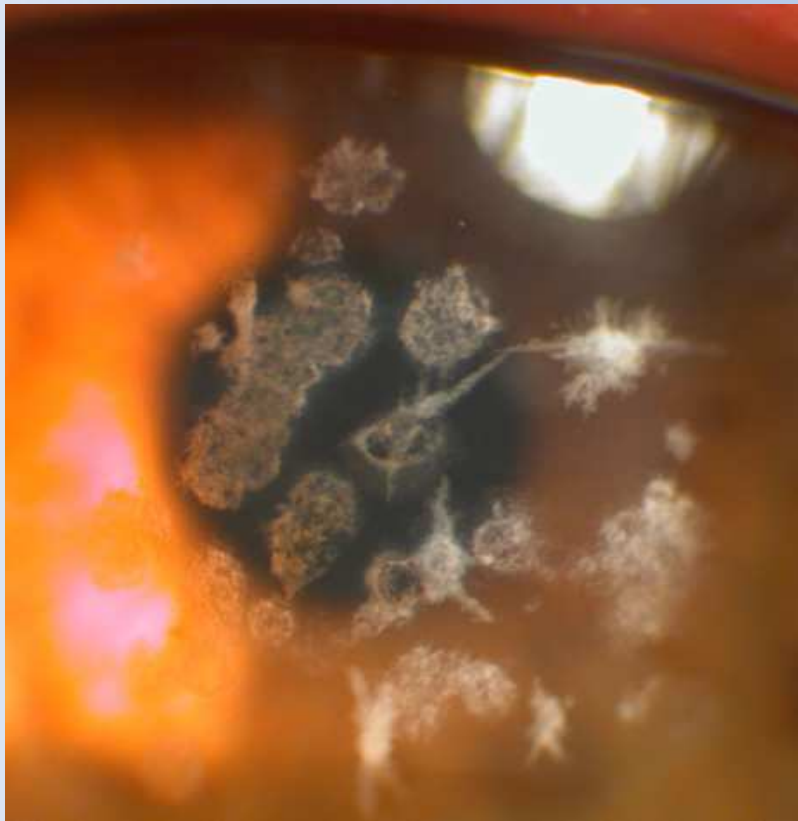


Testen donor weefsel op vormafwijkingen



Eisen aan donorweefsel: Functioneel

2. Transparantie



stroma

arcus en littekens





Binnenkomst
bank

Evaluatie
spleetlamp

Decontaminatie
en excisie



Microscopische
evaluatie

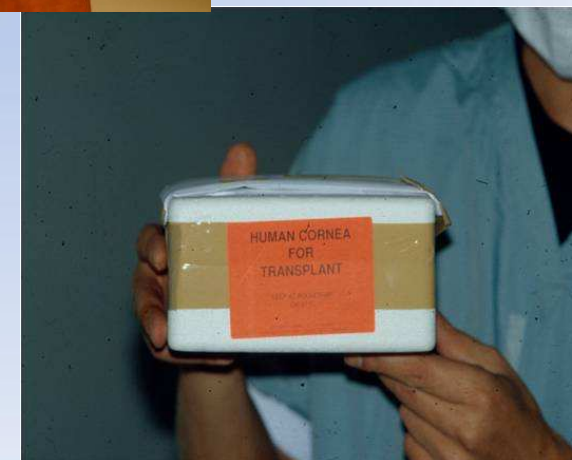
Preservatie



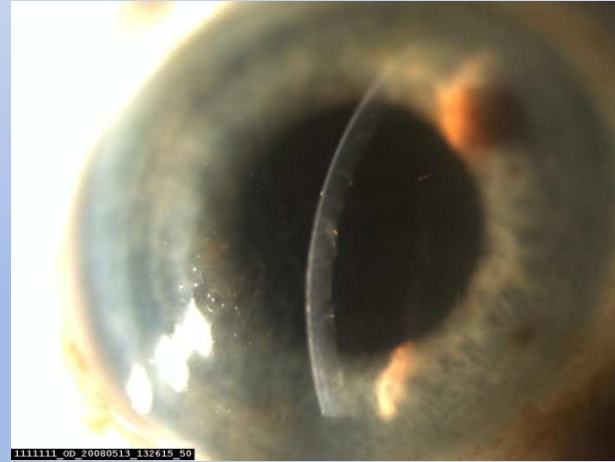
allocatie

Tweede evaluatie
Microbiologische
controle

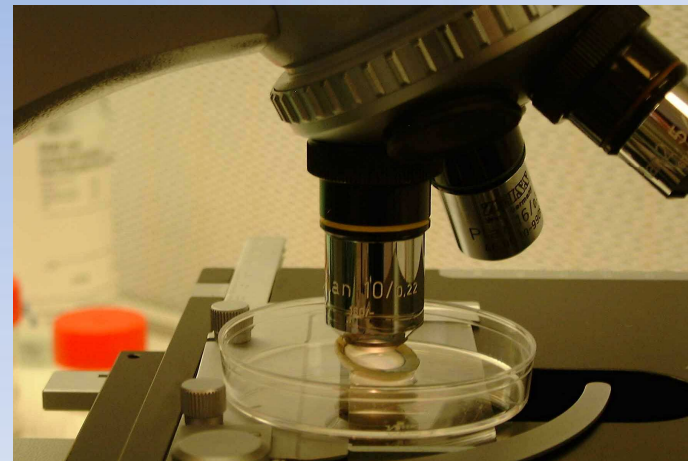
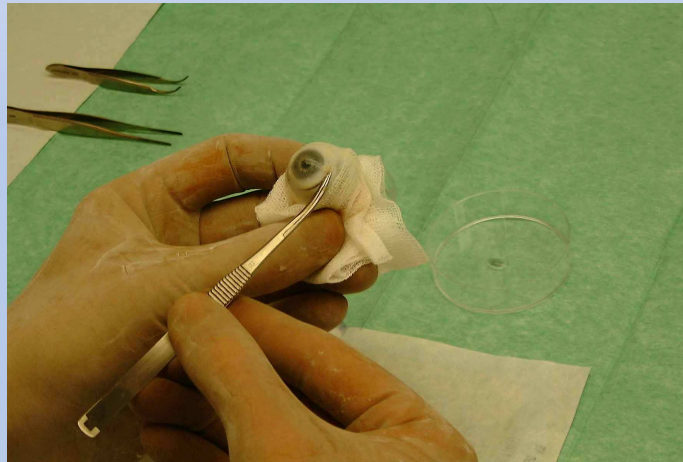
Overzetten in
transportmedium



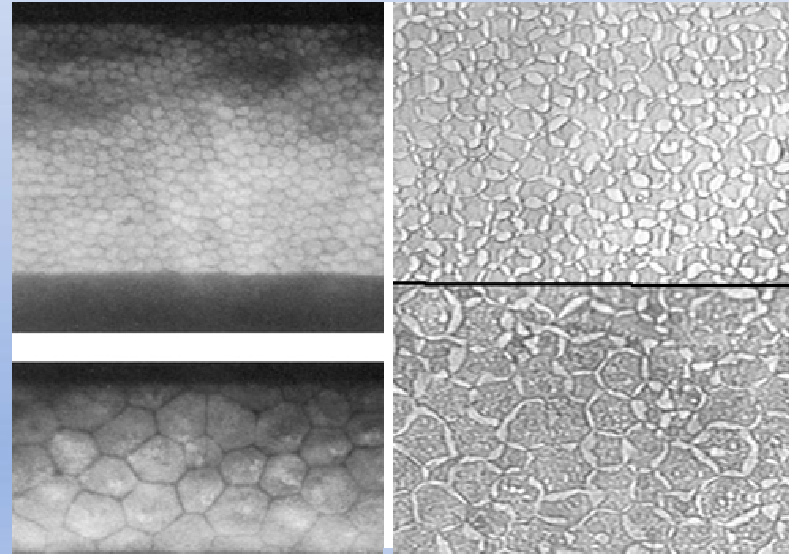
het beoordelen van het donoroog



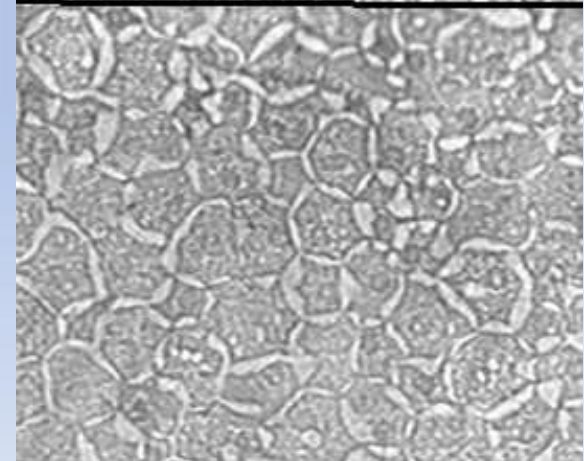
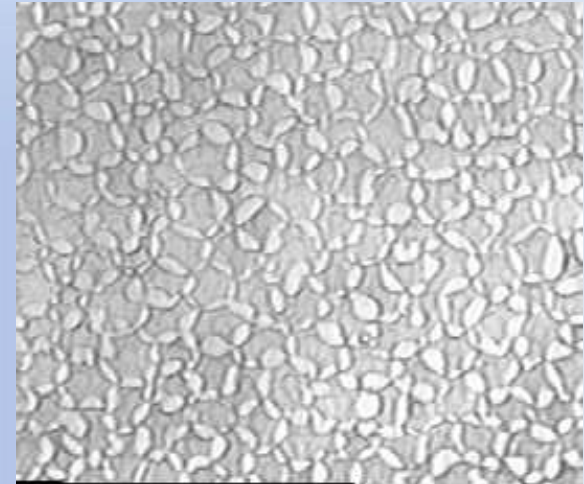
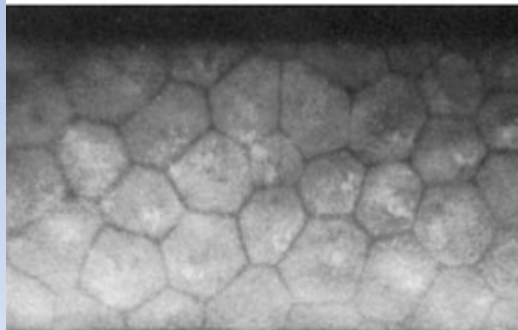
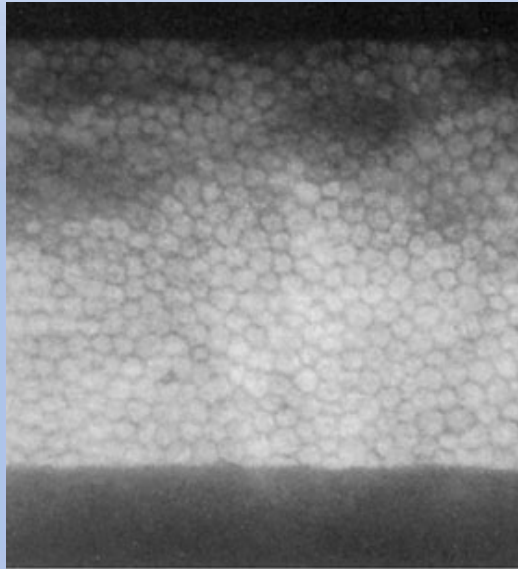
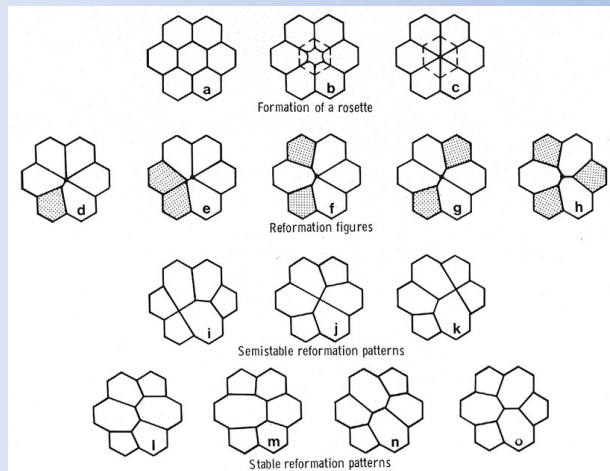
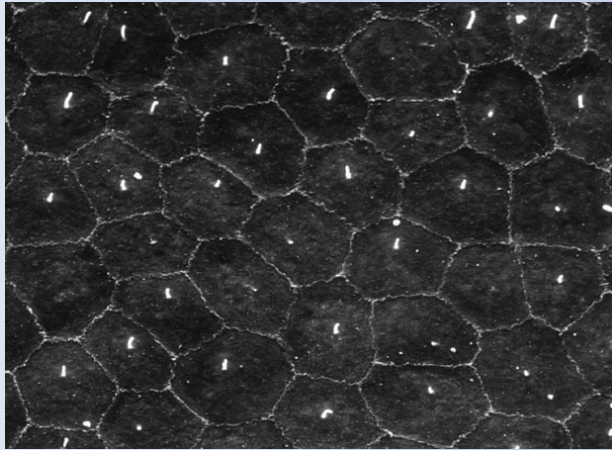
het prepareren van het oog en beoordelen van het endotheel



van belang zijn 1. endotheel evaluatie
2. microbiologische controle



Endotheel dichtheid, vorm en mozaiek



Cornea selectie

Total nr donor corneas		1966	%
Discarded for safety:			
Medical history	64		
Virology	58		
Microbiology tests in bank	36		
Total		-158	8.1 %
Discard functional aspects		-647	32.9 %
Number selected		1161	59.0 %

Weefsel specificaties

Designated by bank for:	Keratoplasty procedure	Criteria bank
PKP good	PKP regular PKP inverted mushroom PKP mushroom other	• no endothelial or stromal pathology • regular cellmosaic • >2300 cells/mm² • no stromal opacities
ALKP good	ALKP DALK	• no stromal pathology • no guttata, cell mosaic and cellnumber not important • prepared centrally
PLKP good	PLKP	• good endothelium • epithelium and superficial opacities not important • prepared centrally • max time in preservation medium 14 days • max time in transport medium 3 days
Code O	Emergency grafts	• criteria as for PKP except either cell mosaic or cells 2000-2300 /mm² • max time in transportmedium 7 days

De bank en de veranderde vraag uit het veld

donoren
categorieën



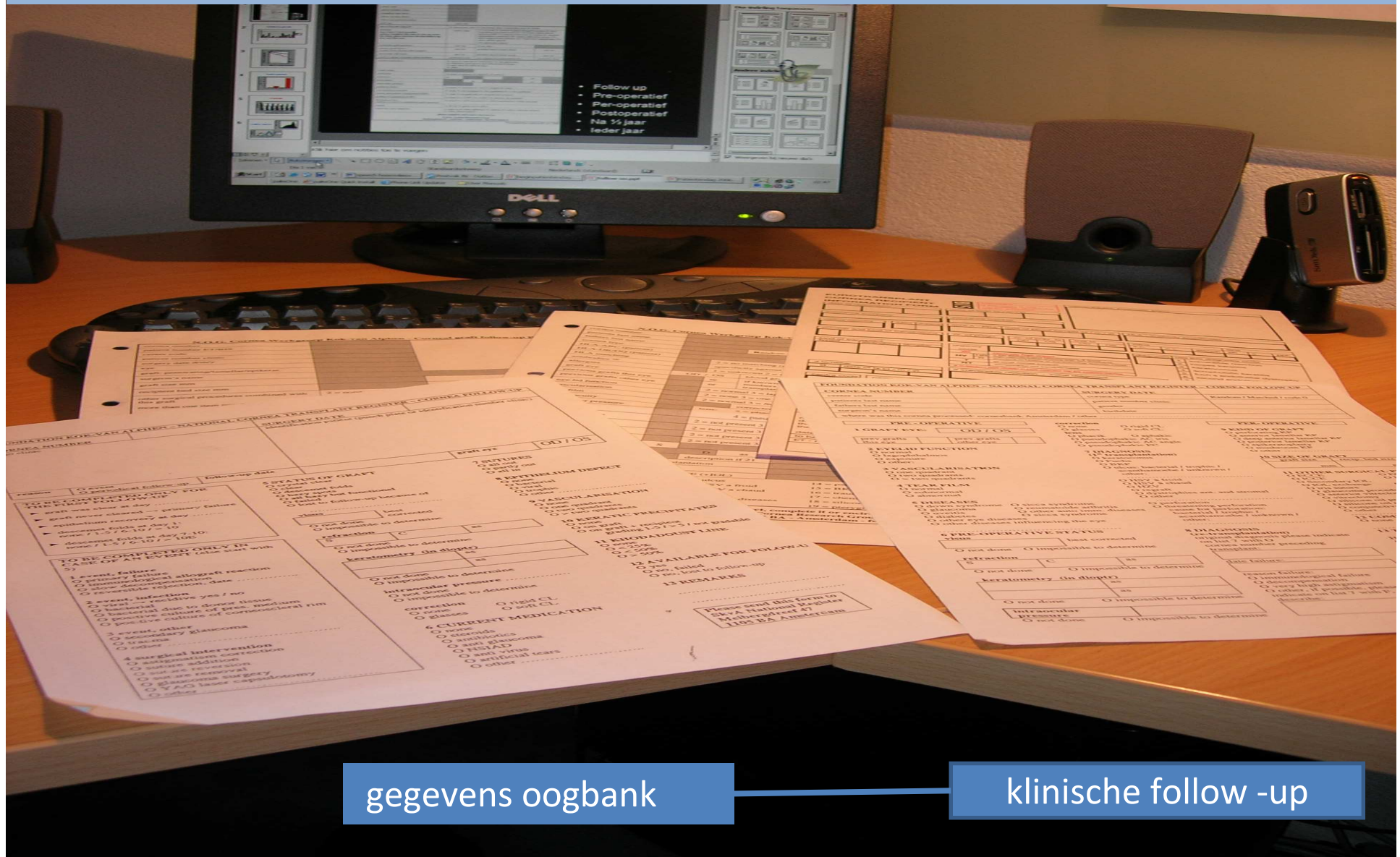
vraag &
aanbod

indicatie



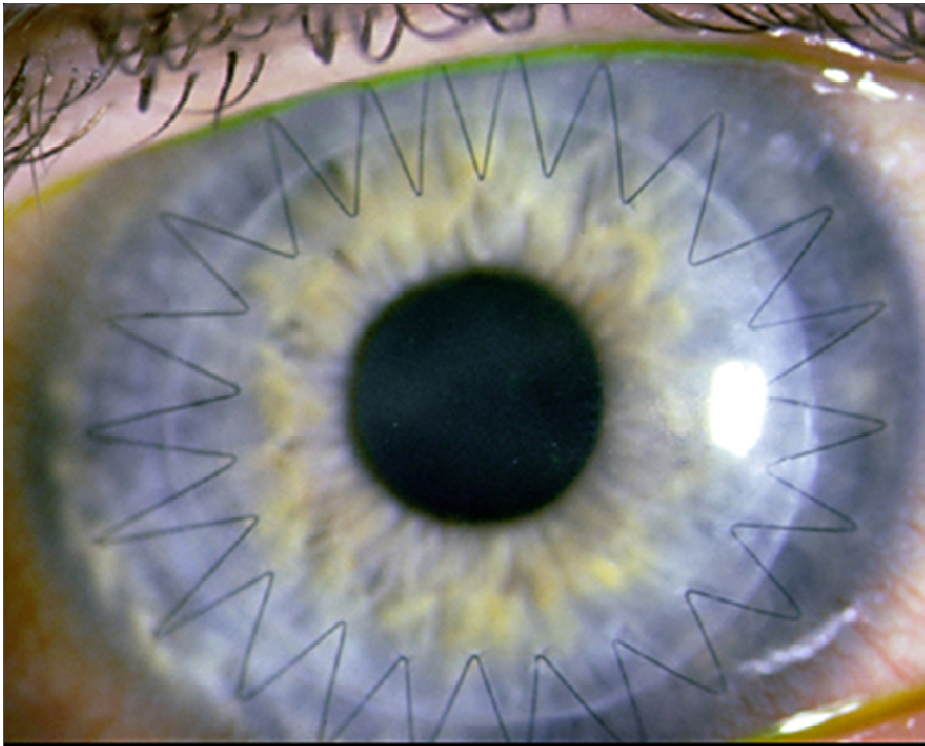
voorbewerkt
weefsel

Follow - up, het vervolgen



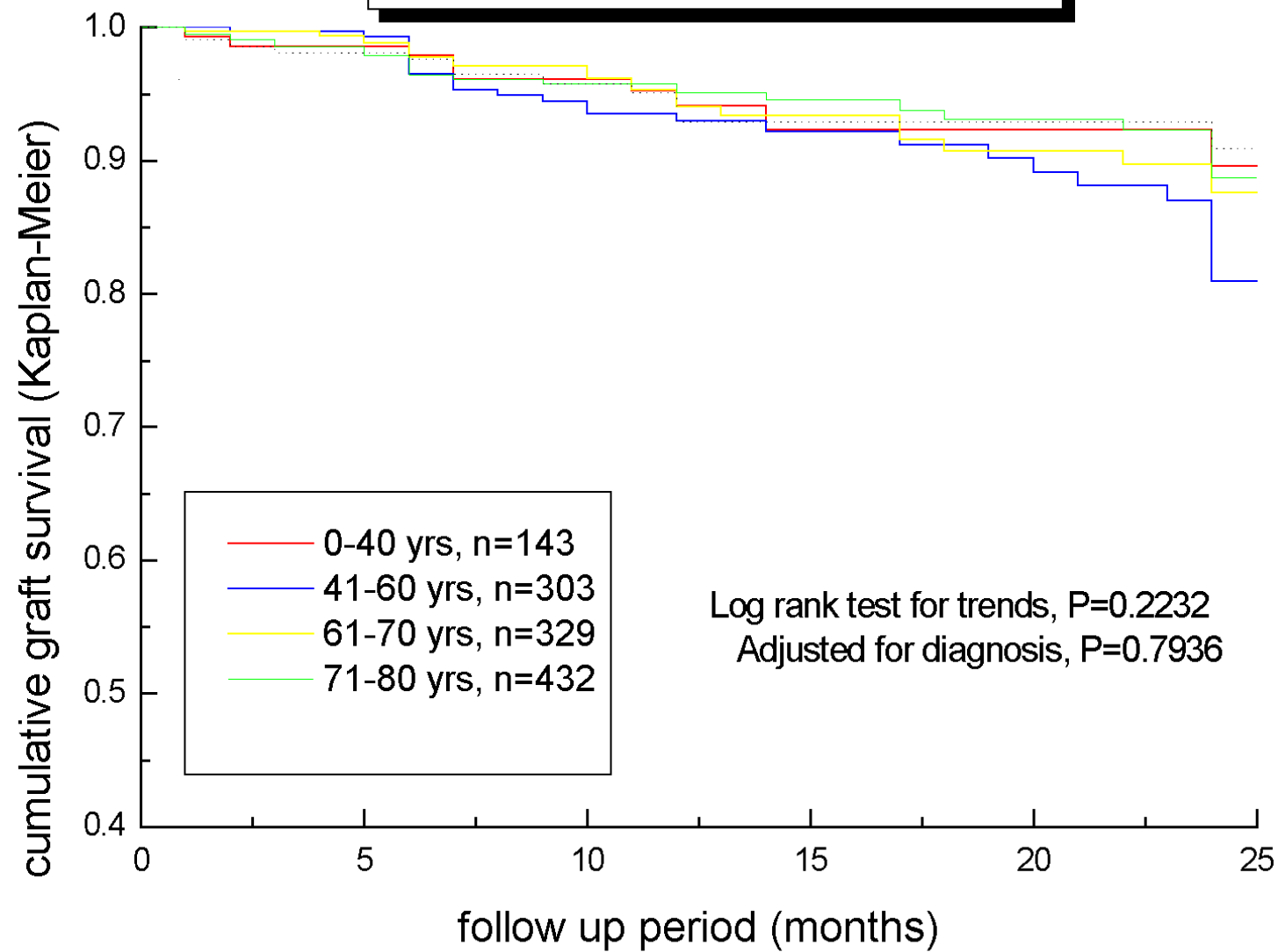
gegevens oogbank

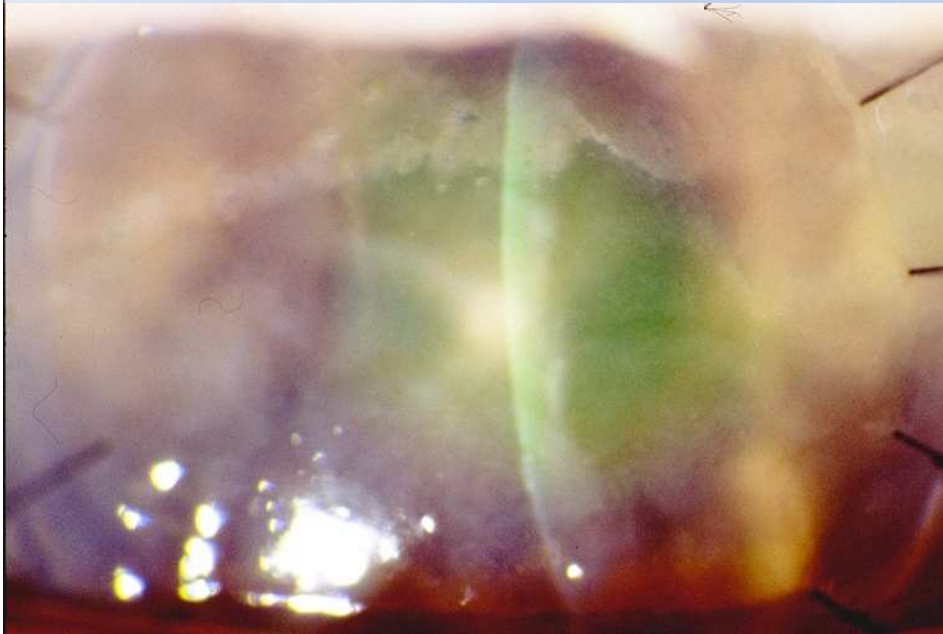
klinische follow-up



- Helderheid van het transplantaat
- Afstoting
- Survival curves
- Visus
- Vorm
- Dikte
- Endotheelcelaantal
- SAEs & SARs

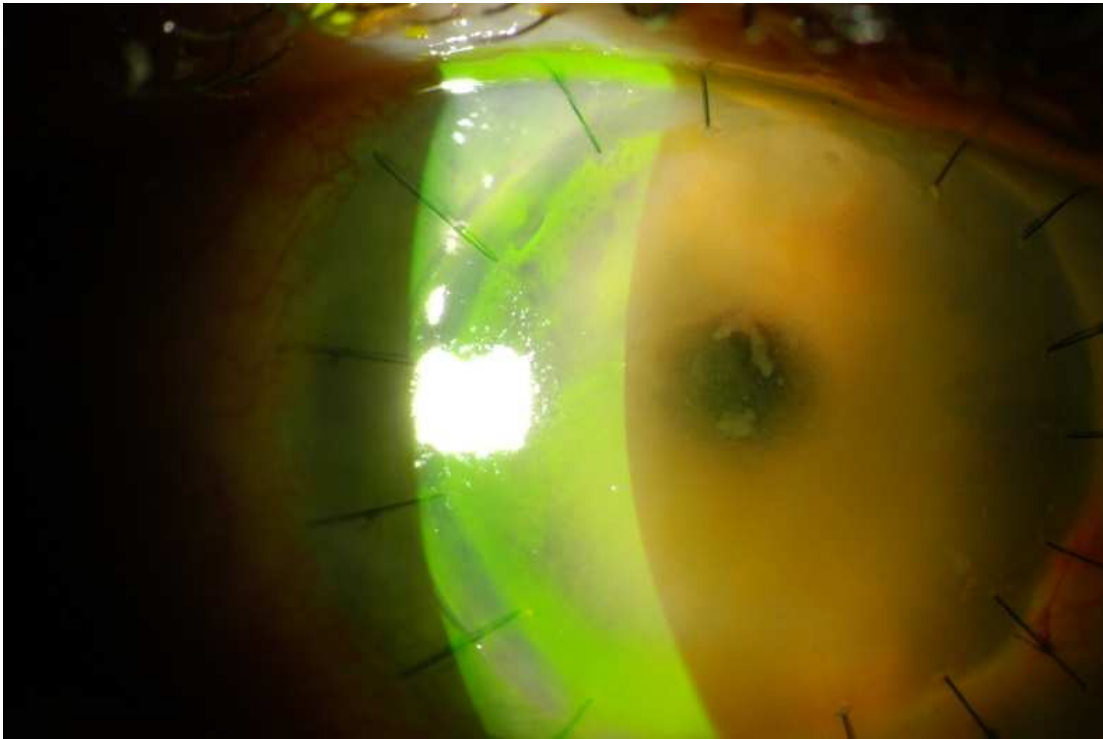
Donor age and corneal graft survival

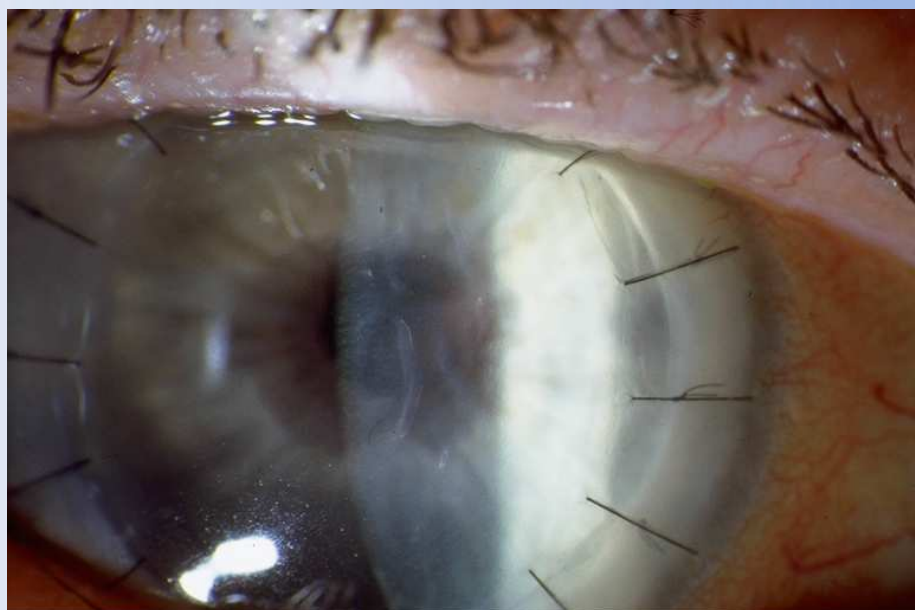
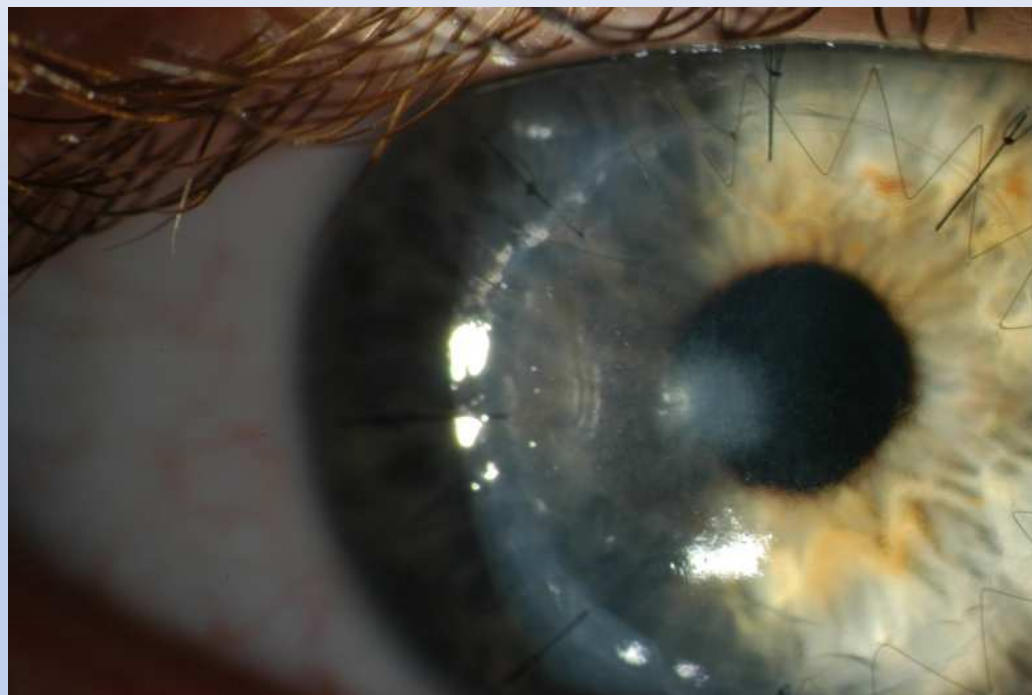


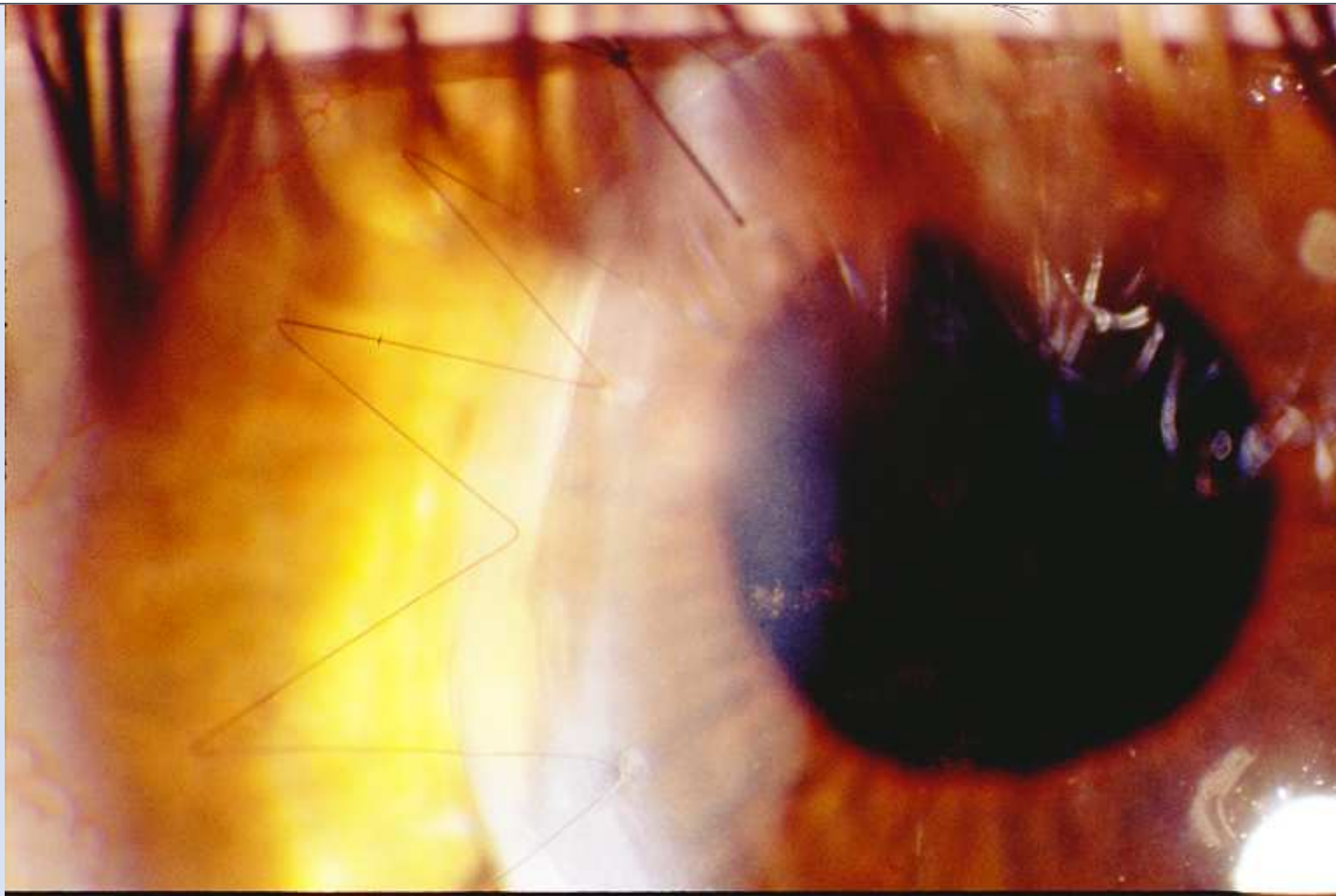


SARs

- primary failures (<0.08%)
- infecties (endophthalmitis 0.4 %)
- vertraagde epitheelgenezing
- niet heldere transplantaten

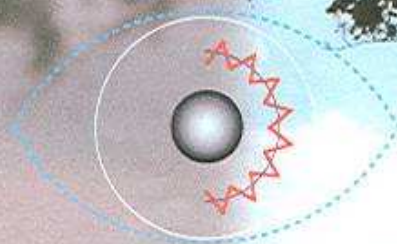






- Cornea transplantaties vanaf 1939 in Nederland
- 16.000 operaties
- follow up vanaf 1995

HOORNVLIES AANDOENING ?



Er is een patiëntenvereniging



Postbus 557 - 2300 AN Leiden
Tel: 071 XXXXXXX

Kijk op:

www.oogvooru.nl

of vraag de folder

bij de secretaresse