

# Oog voor ogen

visueel functioneren en de ziekte van Parkinson



Spreker:  
dr. Mirjam van Tilborg

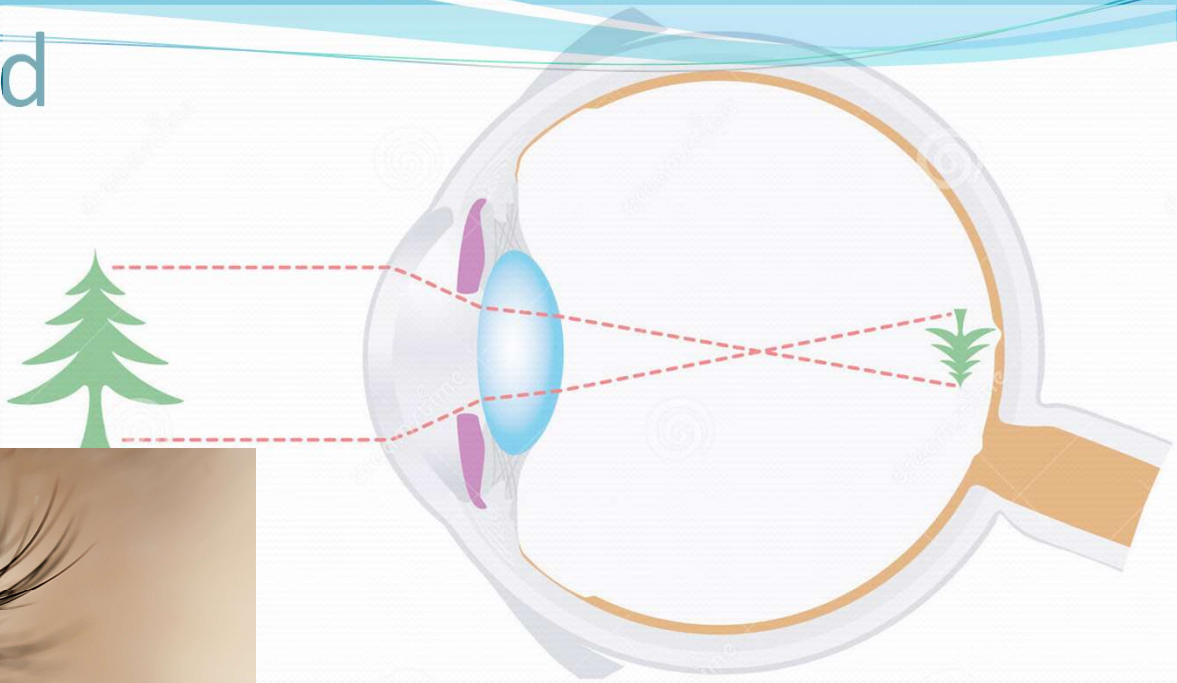
# Ooggezondheid

Hoe zit dat ook al weer met de ogen?

- Oog als optisch systeem; anatomie van het oog
- Oogproblematiek
- Oog met pathologie

# Ooggezondheid

- Oog als optisch systeem





# Oog als optisch systeem

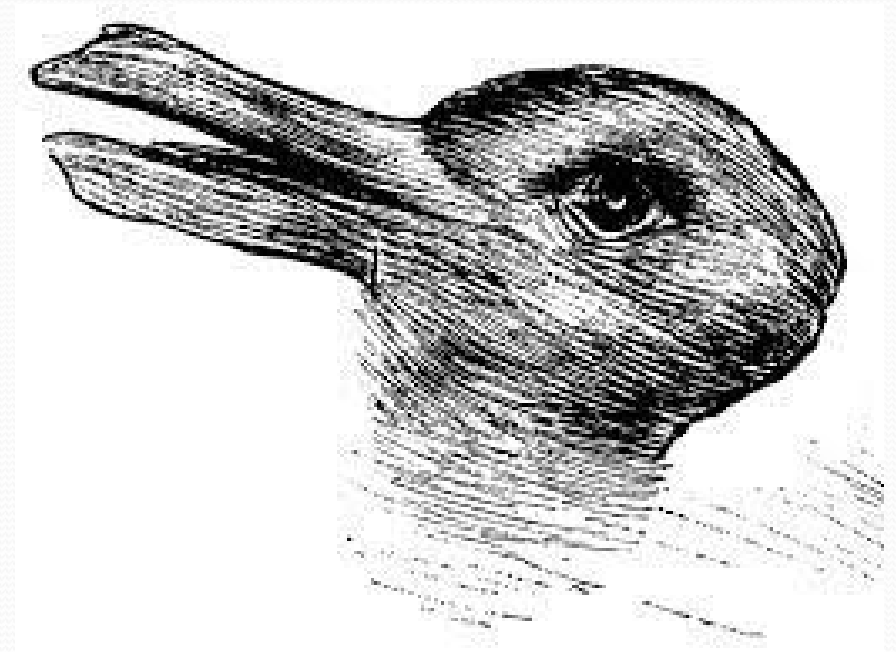
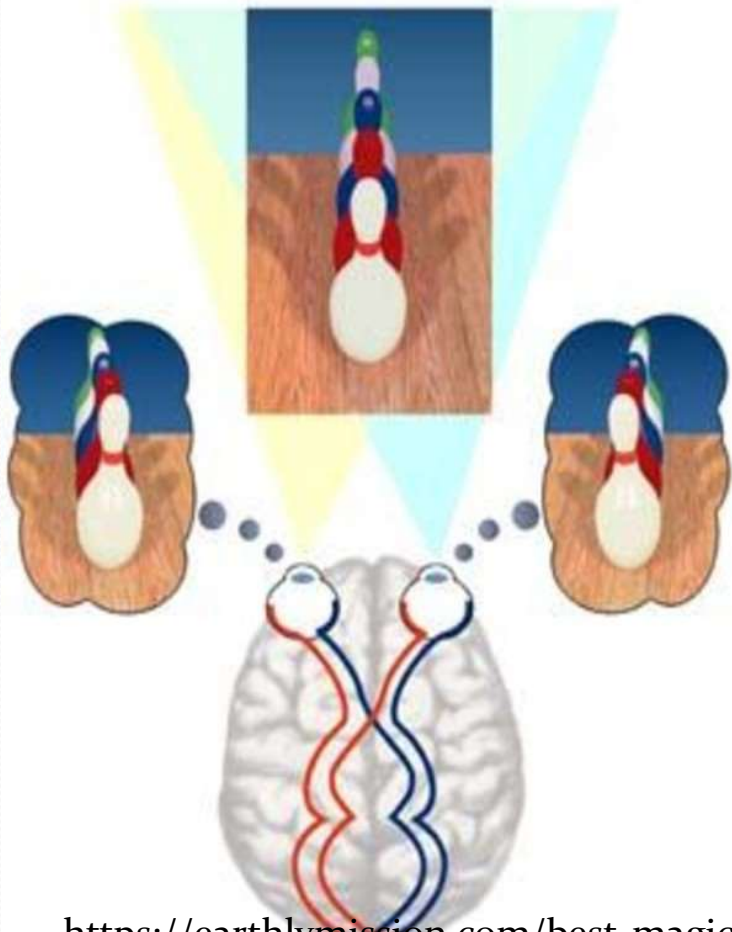
- geen sterkte nodig ; emmetroop
- Oog is te lang: betekent: Goed zien voor nabij en slecht in de verte : Myopie
- Oog is te kort; betekent; Minder goed zien nabij en goed zicht in de verte: hypermetropie
- Oog is ouder aan het worden: vermogen tot scherpstellen nabij wordt minder; presbyopie
- Hoofdpijnklachten en voor het gevoel goed zicht: Latente hypermetropie

# Ooggezondheid

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- Oog als optisch systeem; anatomie van het oog
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# Ogen en hersenen die samenwerken



<https://www.independent.co.uk/news/science/duck-and-rabbit-illusion-b1821663.html>

<https://earthlymission.com/best-magic-eye-stereograms-3d-viewing-explanation/>





Squint Eye (Strabismus)

{ MediFee.com }

Normal



(Esotropia)



eye turns inwards

(Exotropia)



eye turns outwards

(Hypotropia)



eye turns downwards

(Hypertropia)



eye turns upwards

klachten over  
horzintale  
dubbelbeelden



# Diepte zien/ inschatting kunnen maken

- Het inschatten van een afstand
- Traptrede
- Drempel
- Lezen
- Computer



<https://www.homeproved.com/nl/woonadvies/artikelen/een-snelle-en-makkelijke-traprenovatie-een-trap-schilderen-doe-je-zo>



## Kleuren zien of contrast gevoeligheid

- Verminderd kleuren zien en contrast
- Oorzaak:
- mogelijk speelt dopamine in het netvlies en de hersenen hierin een rol
- Maar ook leeftijdsgebonden normale oogafwijkingen kunnen dit veroorzaken



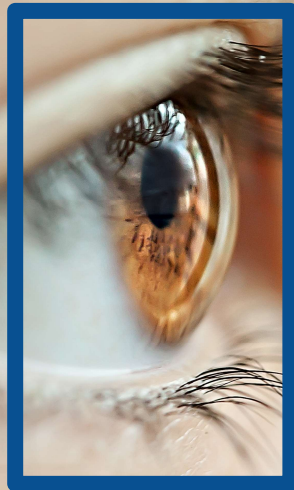
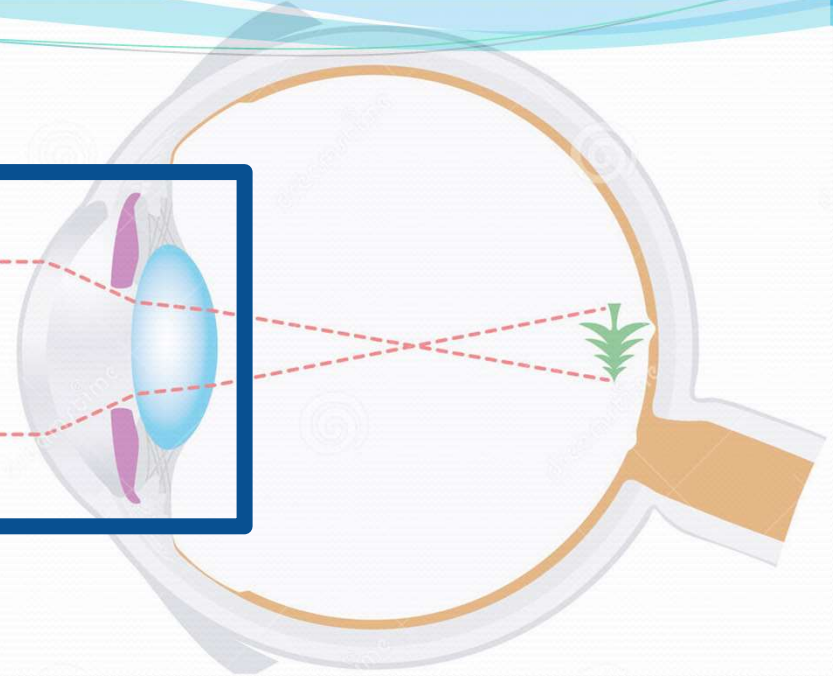
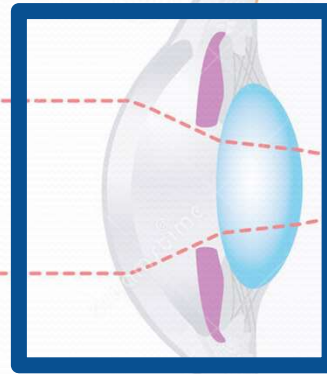
# Visuele hallucinaties



- Visuele hallucinaties: zien wat er niet echt is
- Andere hallucinaties kunnen zijn iets ruiken, voelen, horen of proeven wat er niet is
- Visueel kan door veranderingen in de hersenen komen, door bepaalde aandoeningen maar ook door (parkinson) medicatie.
- kan flitsen aan de zijkant van het gezichtsveld veroorzaken

# Ooggezondheid

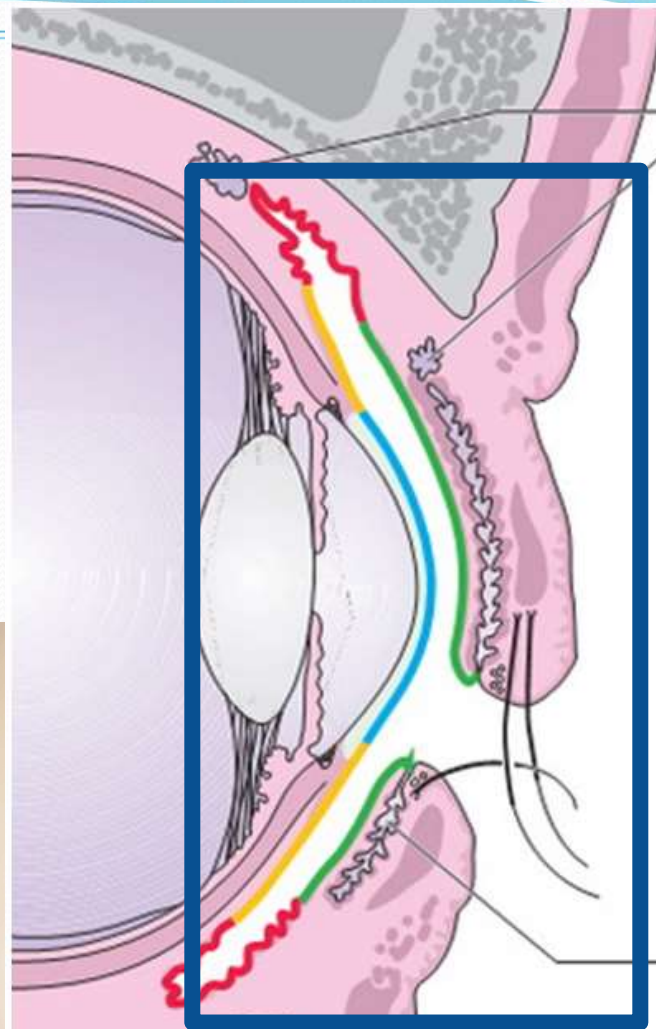
- Hoornvlies
- traanFILM
- OOGLENS







Heldere cornea en ooglens laat licht door, vrijwel zonder het licht te verspreiden (hoge orde aberraties).



Klier van Krause  
Klier van Wolfring

Bulbaire conjunctiva

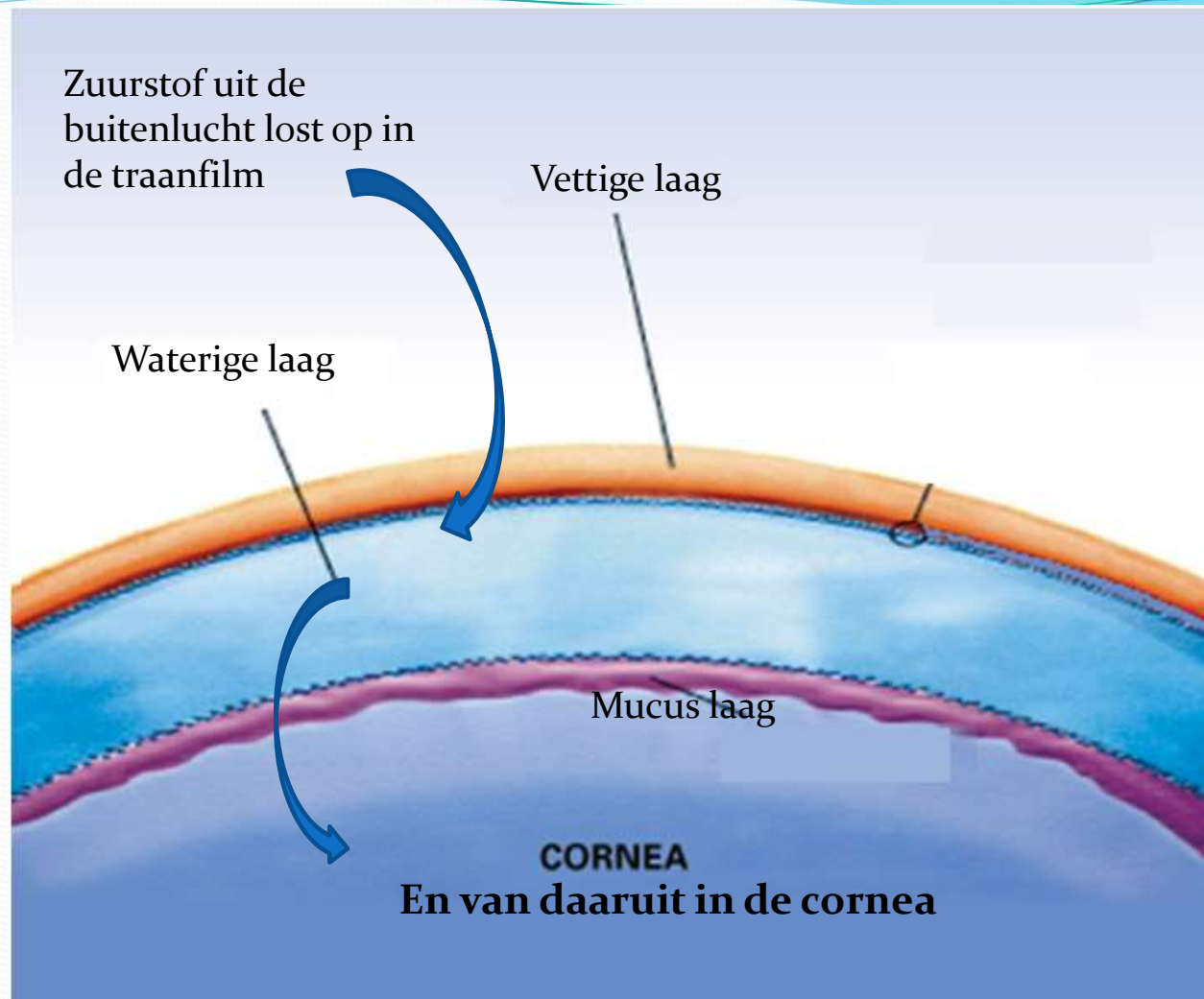
Fornix (conjunctivaalzak)

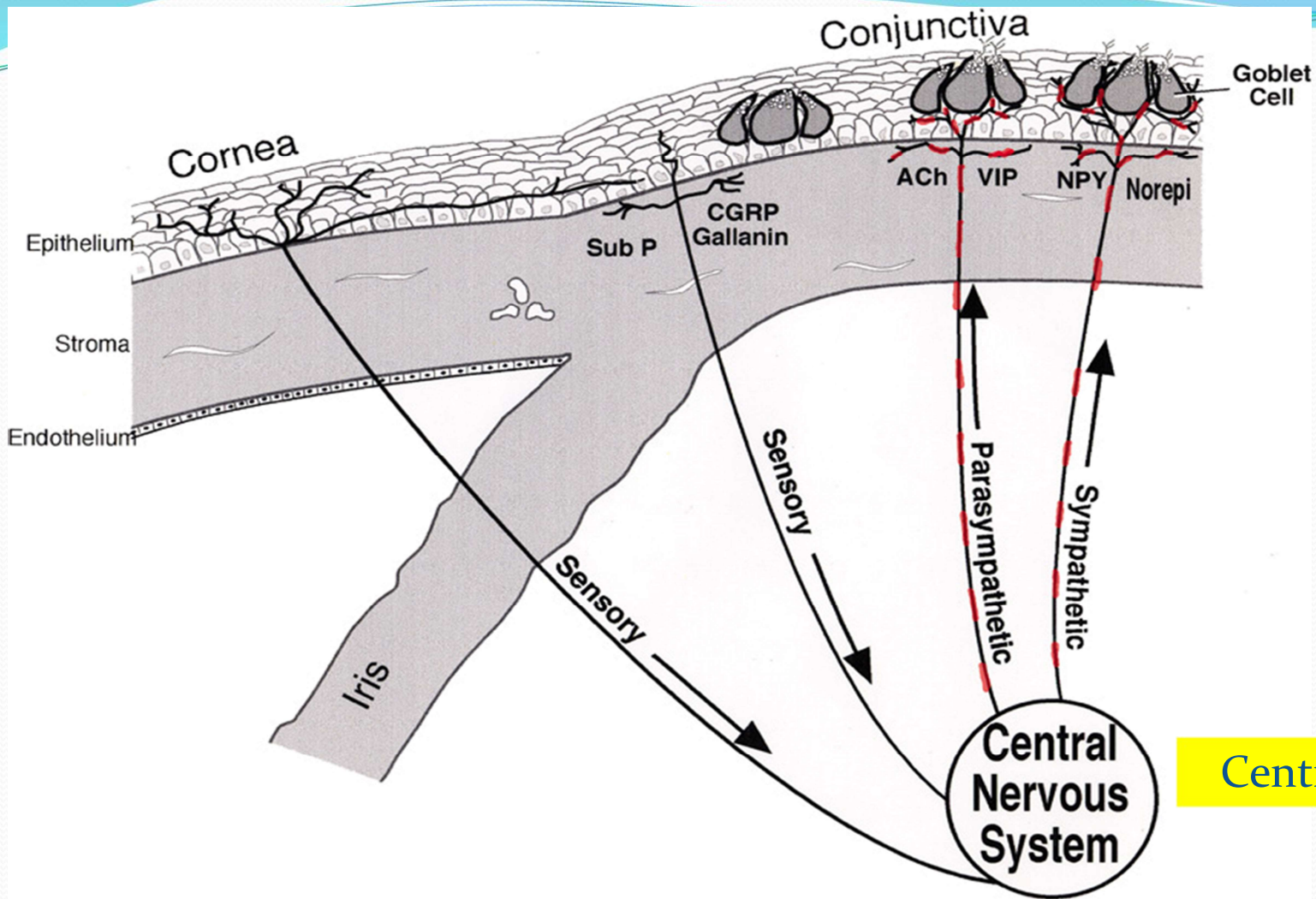
Palpebrale conjunctiva

Bekleding van de cornea

Meibom klier





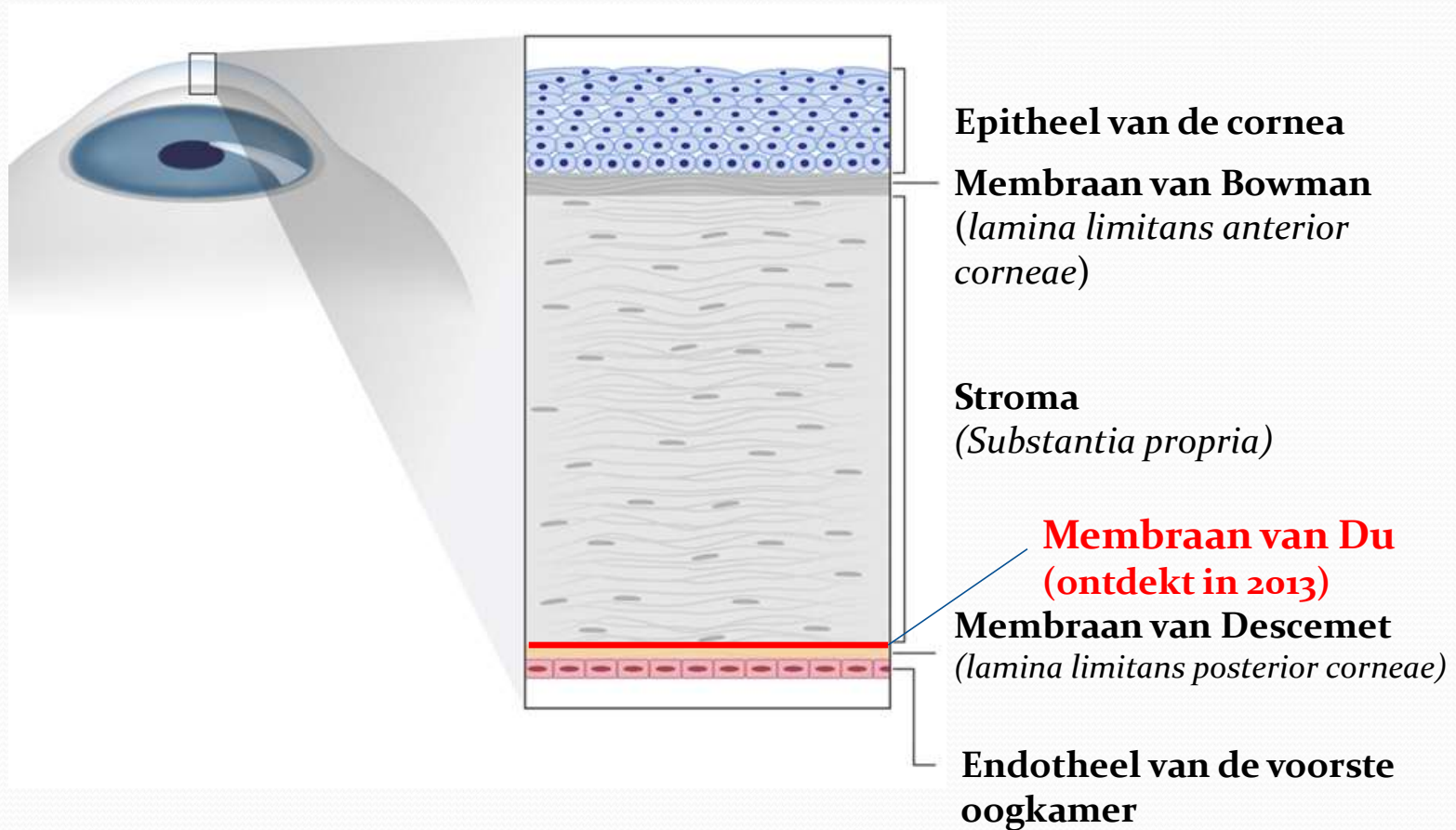


Centraal zenuwstelsel

Bron: [www.eyecalcs.com](http://www.eyecalcs.com)



## Lagen van de cornea

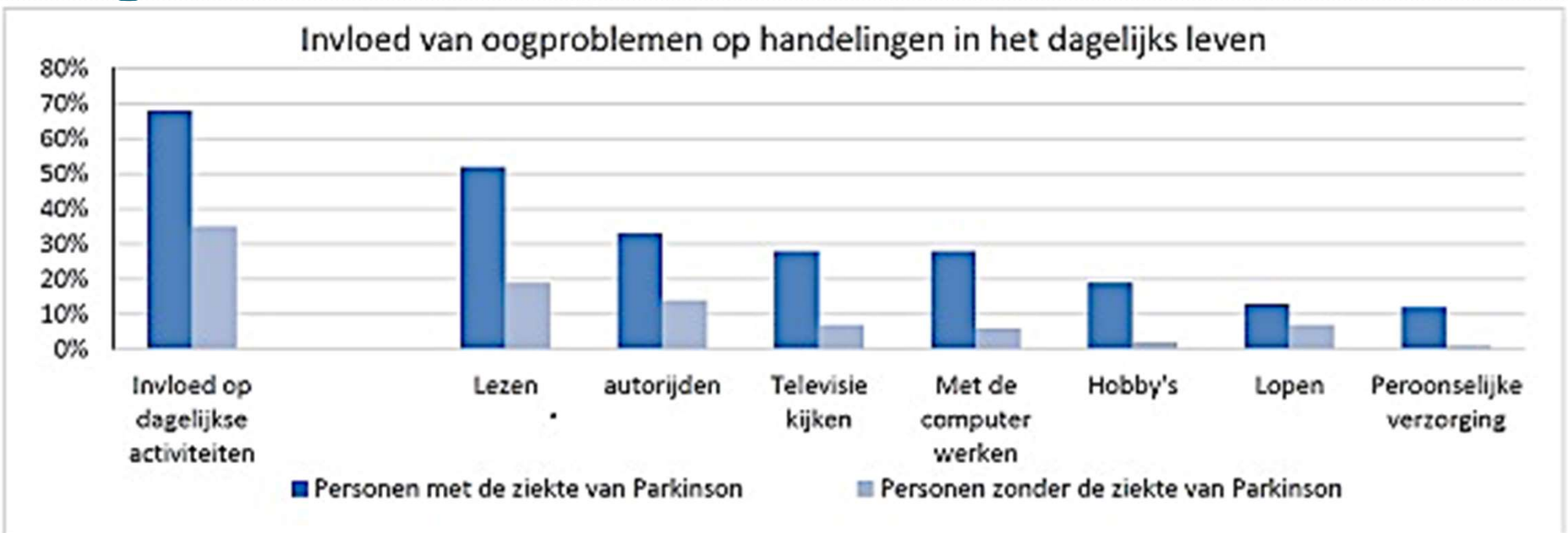


# Oogproblematiek en Parkinson?

- **Onderzoeker: Drs. Carlijn Borm, neuroloog in opleiding, PhD**  
**“VIP-studie” Dr. Nienke de Vries, onderzoeker**
- “ bijna alle deelnemers (250) met de ziekte van Parkinson gaven één of meer oogproblemen aan, vergeleken met ongeveer de helft van de deelnemers zonder de ziekte van Parkinson”



# Ogen en Parkinson



Onderzoeker: Drs. Carlijn Borm, neuroloog in opleiding, PhD "VIP-studie" Dr. Nienke de Vries, onderzoeker

# Cornea knipperreflex.

## Centraal zenuwstelsel

Ganglion van n. trigeminus  
(N. V)

n. ciliaris longus

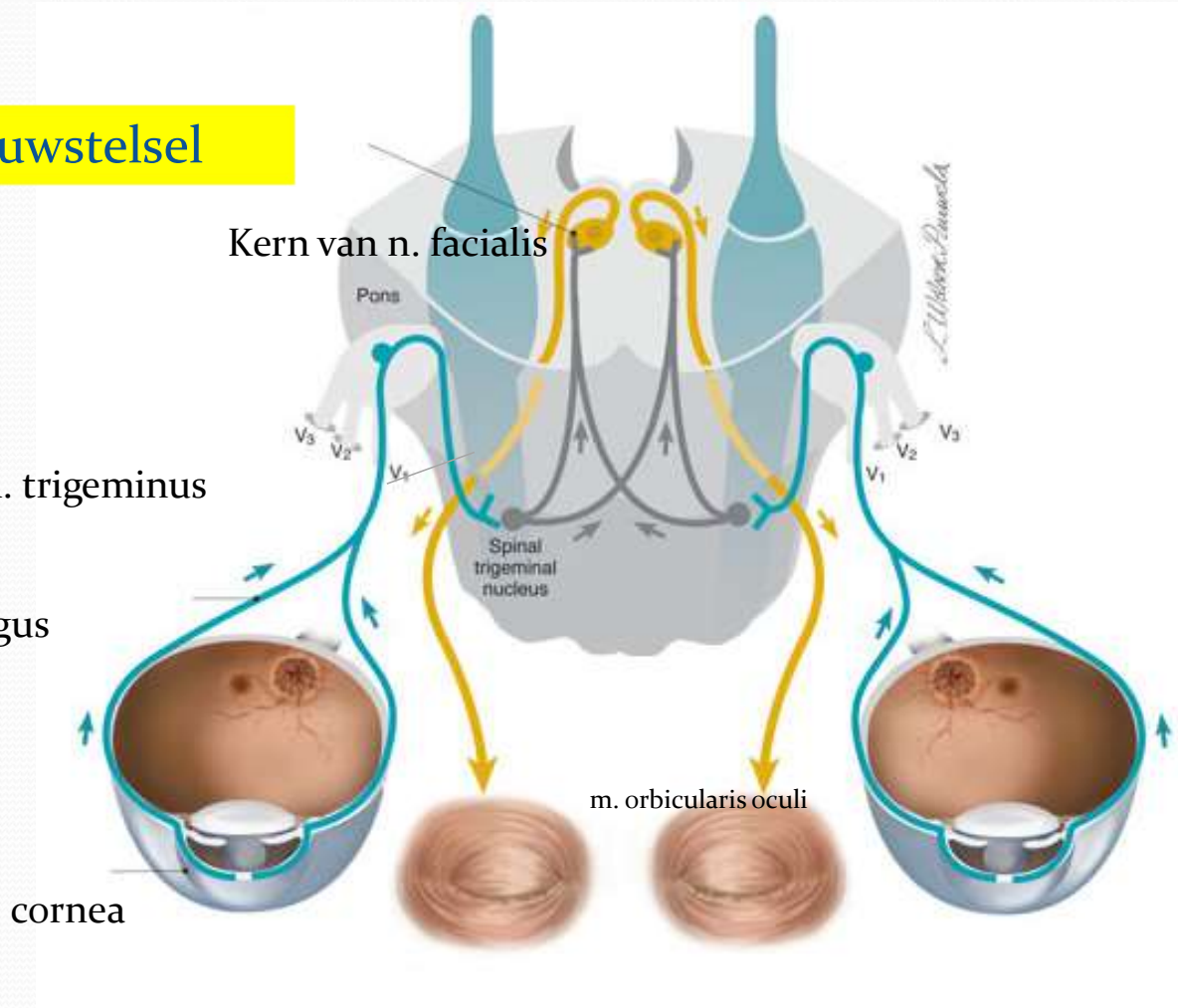
cornea

Kern van n. facialis

Pons

Spinal trigeminal nucleus

m. orbicularis oculi







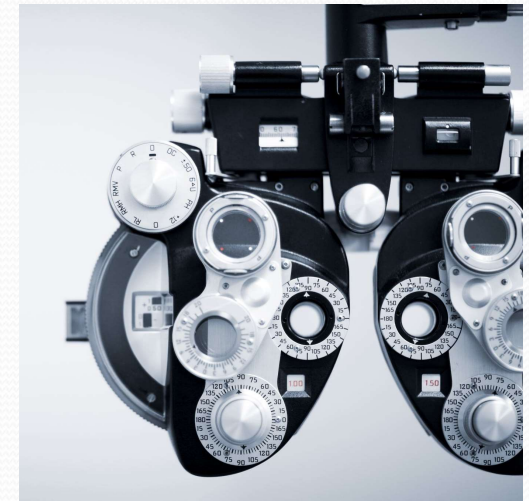
<https://www.brightnewme.co.uk/blepharospasm-treatment/>

## blepharospasme

- Spasme voorkomen is lastig
- om de duur te verminderen of de oogleden open te krijgen kan , het helpen om te praten, zingen, naar beneden kijken, uitblazen of fluiten.,
- de wenkbrauwen omhoog te trekken
- Of de spanning te verminderen door de oogleden wat naar de zijkanten te trekken
- Bij langdurige spasme kan botox helpen

# Ooggezondheid

- Wanneer is de laatste keer dat uw ogen onderzocht zijn,
  - oogonderzoek waaronder een oogmeting **en** met druppels waardoor uw pupil groot werd en u wazig zag?
- Hoe vaak heeft u gedurende de week last van af en toe wazig zicht?
- Hoe vaak gedurende de week heeft u last van vermoeide ogen





# Ooggezondheid

- Hoe zit dat ook al weer met de ogen?
- Oog als optisch systeem; anatomie van het oog
- Oog met normaal abnormale aandoeningen
- Oog met pathologie

# Normale abnormale bevindingen

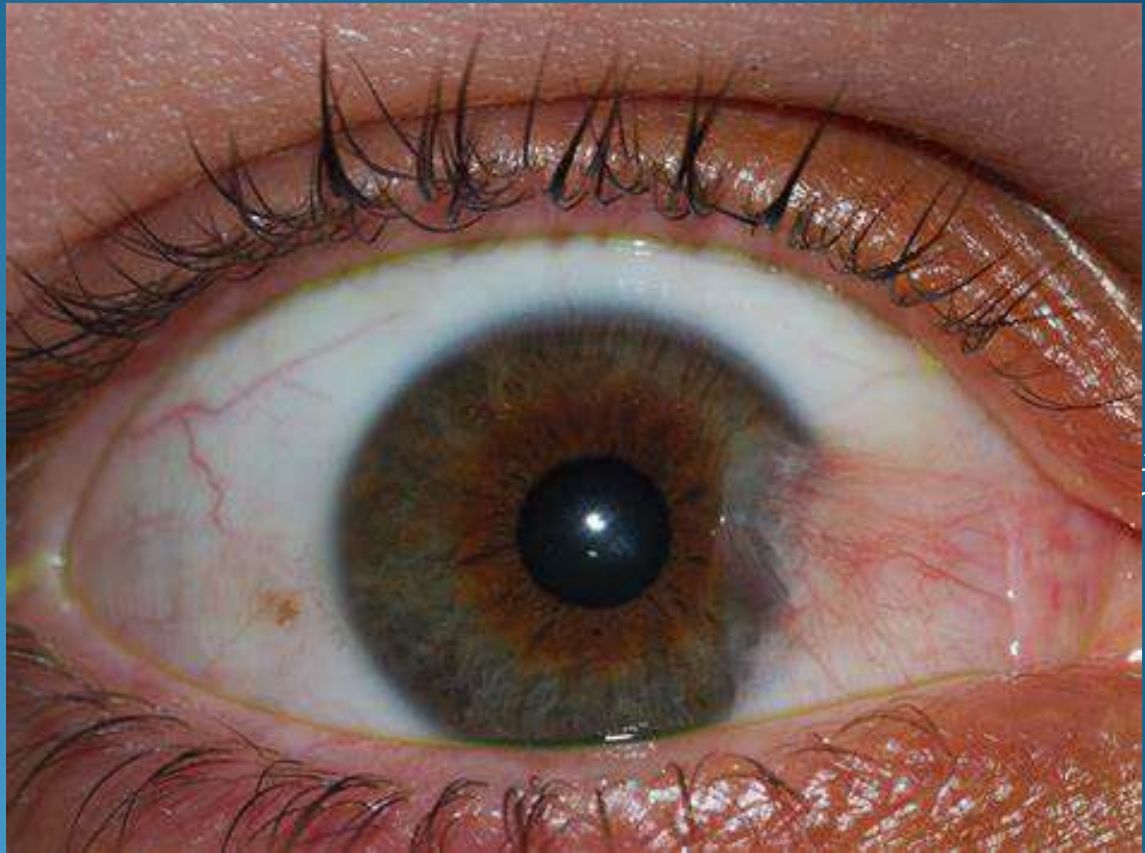
- Leeftijdsgebonden
- Presbyopie ( leesbril)
- Staar



Idiopathisch  
Hogebloeddruk gerelateerd

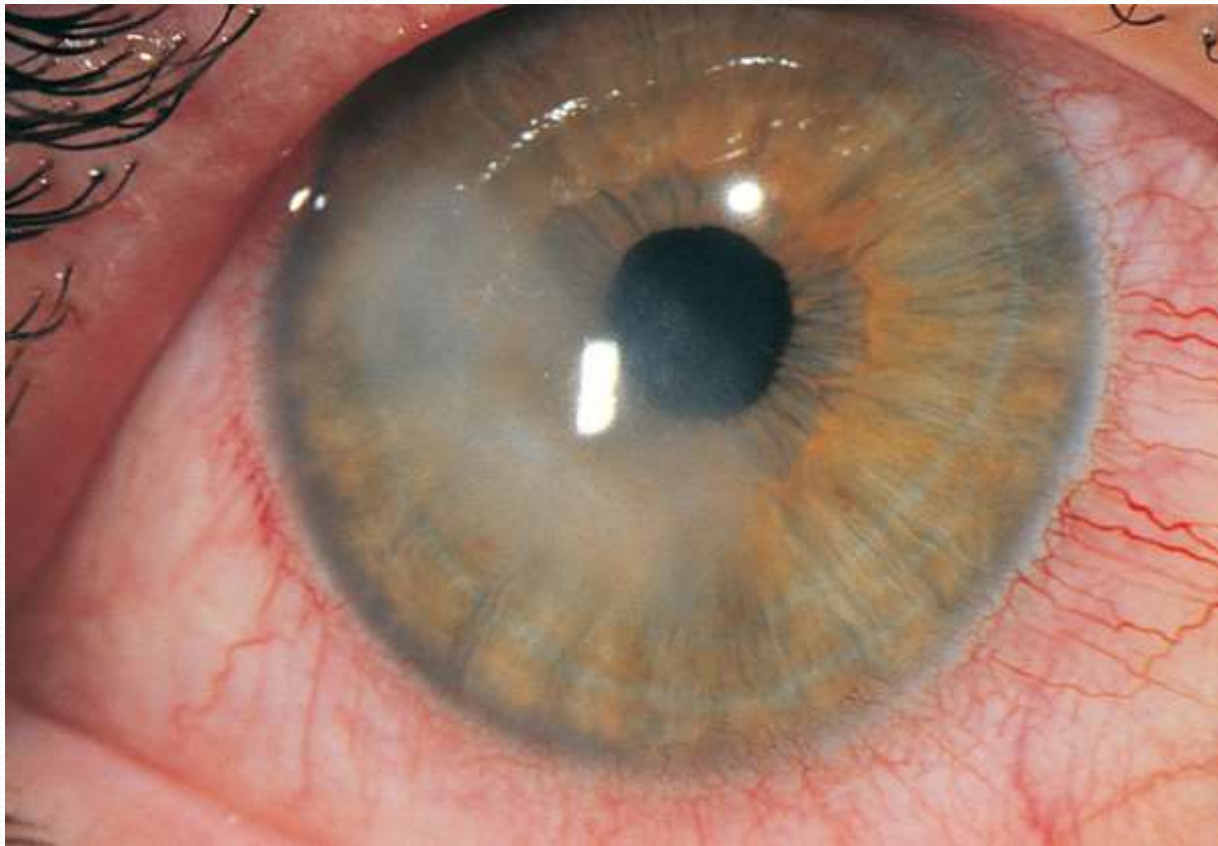
**Subconjunctivale bloeding**





de



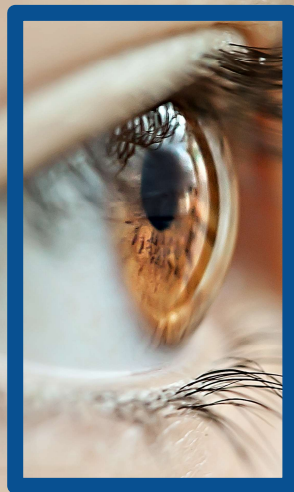
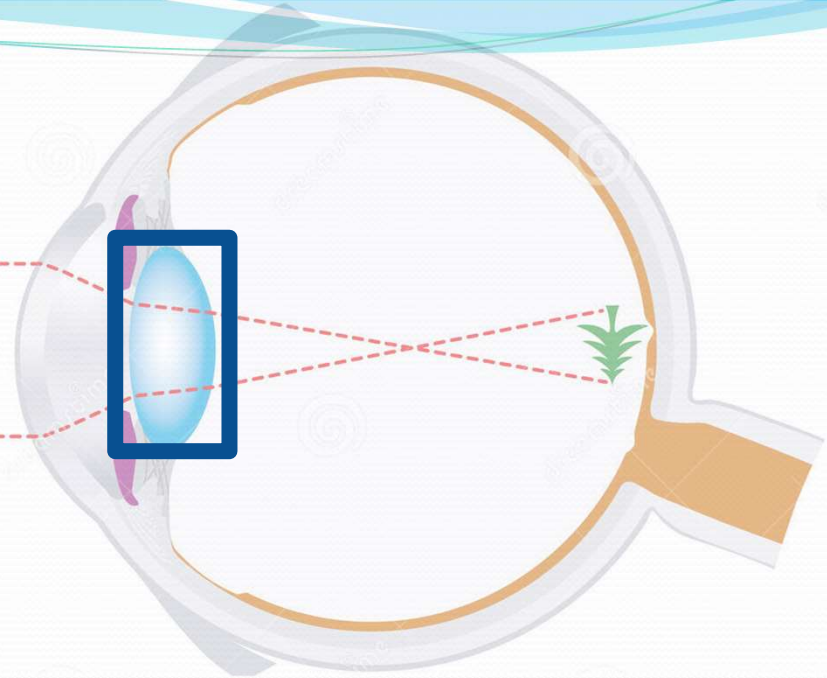


Oedeem van de cornea bij *stromale keratitis*

Bron: Tasman W, Jaeger E. Atlas of Clinical Ophthalmology

# Ooggezondheid

- Hoornvlies
- traanFILM
- OOGLENS





# Monet

- Ooglens: Staar ( cataract)

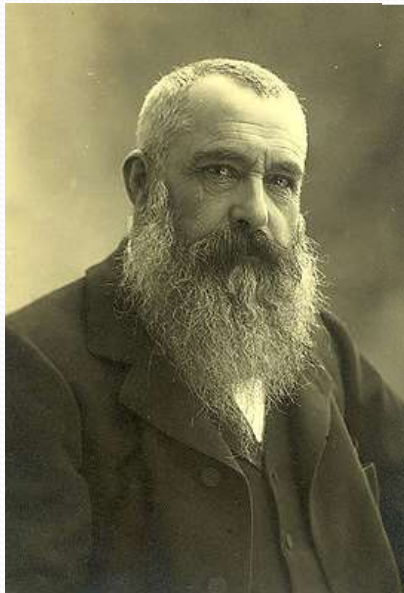


Figure 2. Author's Father on Monet's bridge in Giverny in 2004.



The French impressionist Claude Monet (1840–1926) is best remembered for the iconic paintings of his garden and water lily pond in Giverny (Figures 1 & 2). In his 60s, Monet started to develop bilateral age-related cataracts (or nuclear sclerosis), which would eventually affect his work dramatically. In 1913, Monet travelled to London to consult the German ophthalmologist Richard Liebreich, who had been appointed chair of ophthalmology at St Thomas' Hospital. Interestingly, Liebreich himself had a keen interest in art and had published an article on the effect of eye disease on the painters Turner and Mulroady.<sup>1,2</sup>

Liebreich prescribed new glasses and recommended cataract surgery for the right eye, but Monet refused. By 1914–1915, he began to struggle quite severely, complaining that 'colours no longer had the same intensity for me', that 'reds had begun to look muddy' and that 'my painting was getting more and more darkened'.<sup>3</sup> To avoid choosing the wrong colours, Monet started to label his tubes of paint and keep a strict order on his palette. Glare from bright sunlight complicated things further forcing Monet to wear a big straw hat outside (Figure 3). His brush strokes became broader and his paintings, like his cataracts, more brunescient.

After Monet became increasingly despondent and less productive, Georges Clemenceau, former French prime minister and physician, urged his friend to consider cataract surgery. Frightened, however, by the fate of his fellow artists Honoré Daumier and Mary Cassatt, whose cataract operations had been unsuccessful, Monet



Figure 1. Claude-Oscar Monet. The Water-Lily Pond 1899 © National Gallery, London.

was adamant to avoid surgery at all costs. He argued that:

*I prefer to make the most of my poor sight, and even give up painting if necessary, but at least be able to see a little of these things that I love.<sup>3</sup>*

In 1922, Monet consulted another ophthalmologist, Charles Coutela, who recorded a visual acuity of PL (light perception only) on the right, and 6/60 on the left.<sup>4</sup> As Monet was still reluctant to undergo surgery, Coutela prescribed mydriatics in the hope of allowing more light to pass through his cataractous lens. Before a week was up, Monet wrote enthusiastically to Coutela:

*It is all simply marvellous. I have not seen so well for a long time, so much so that I regret not having seen you sooner. The drops have permitted me to paint good things rather than the bad paintings which I had persisted in making when seeing nothing but fog.<sup>4</sup>*

The positive effect of the drops was, not surprisingly, short-lived. Monet finally agreed to surgery to his right eye, which, in a two-stage procedure (partial iris removal followed by lens extraction), was subsequently carried out in early 1923. Having to lie flat on his back with sandbags placed next to him to prevent any movement, Monet soon got fed up. Argumentative, impatient, and completely non-compliant with any instructions, he rendered the post-operative period a nightmare for himself and his surgeon. After a minor third procedure to incise the thickened posterior capsule, Monet wrote to Coutela:

*It is to my great chagrin that I regret having had this fatal operation. Pardon me for speaking so frankly and let me tell you that it is criminal to have put me in this situation.<sup>5</sup>*

Getting used to aphakic spectacles was another hurdle for Monet, who complained of cyanopsia (seeing everything with a bluish



# Monet



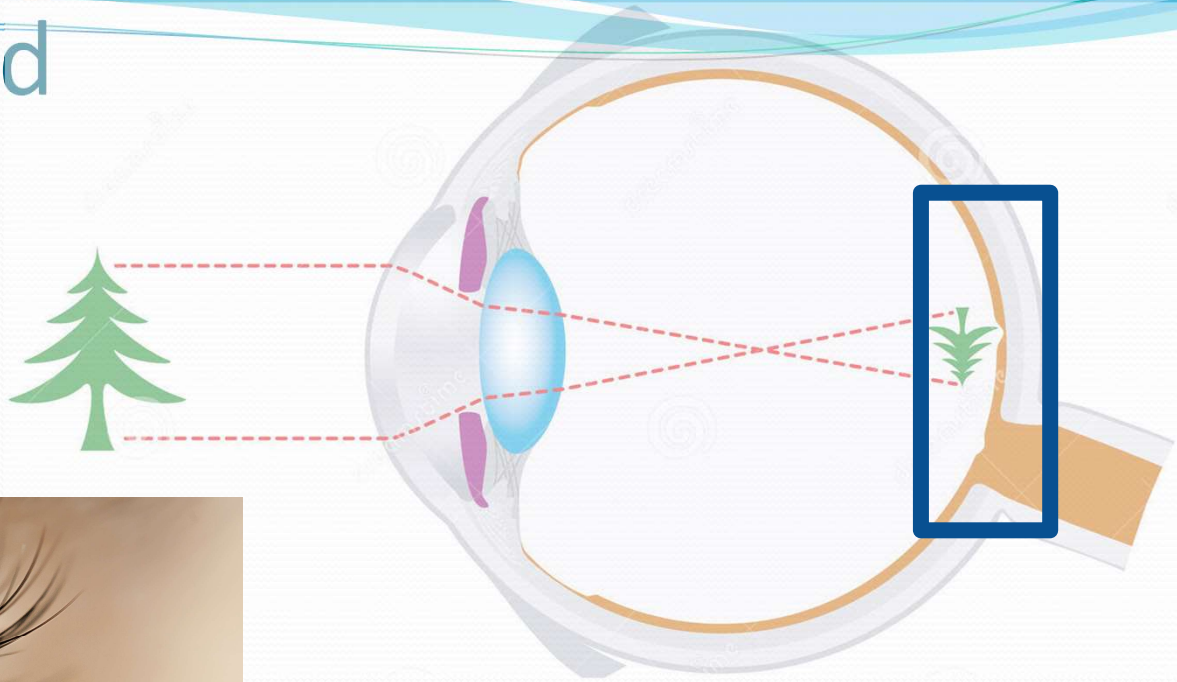


# Ooggezondheid

- Oog afwijking; optisch systeem
- Oog afwijkingen; normaal abnormale aandoeningen
- Oog afwijkingen; pathologie
- Oog hygiëne; zorgen voor ogen

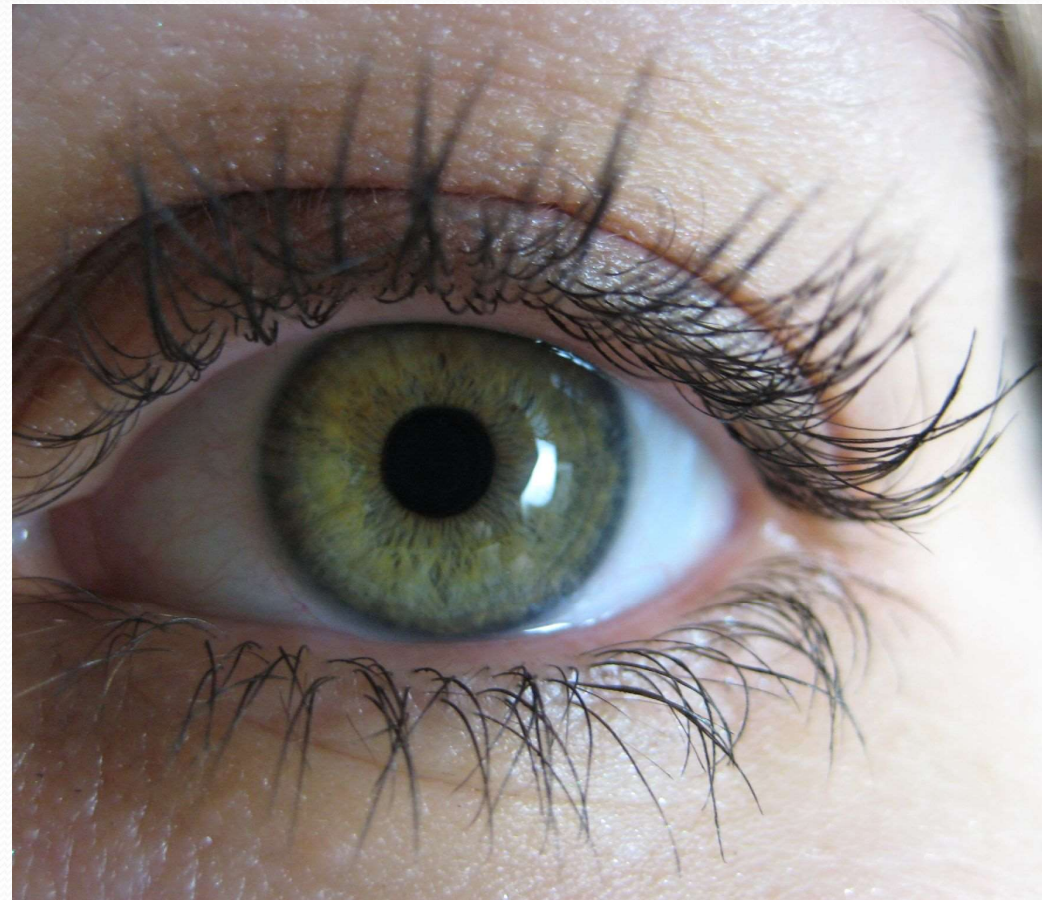
# Ooggezondheid

- Netvlies





# Netvlies

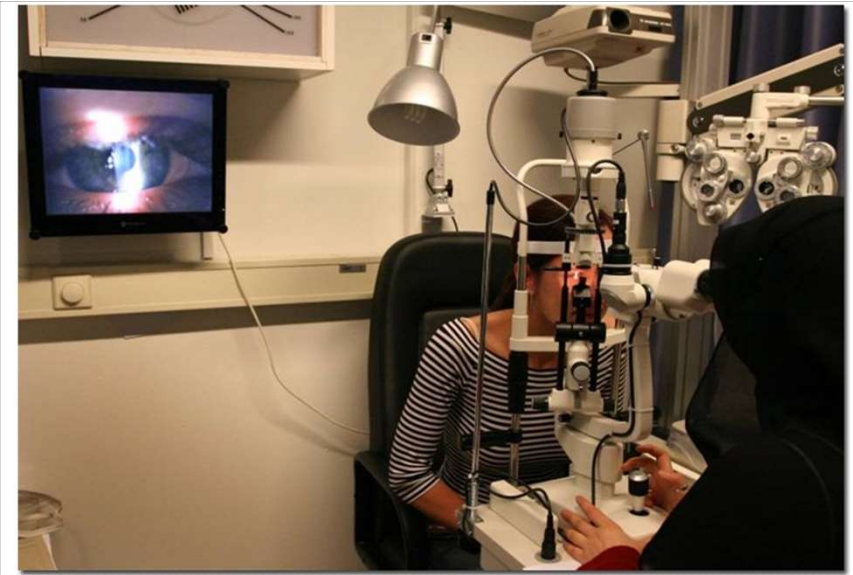


# Netvlies



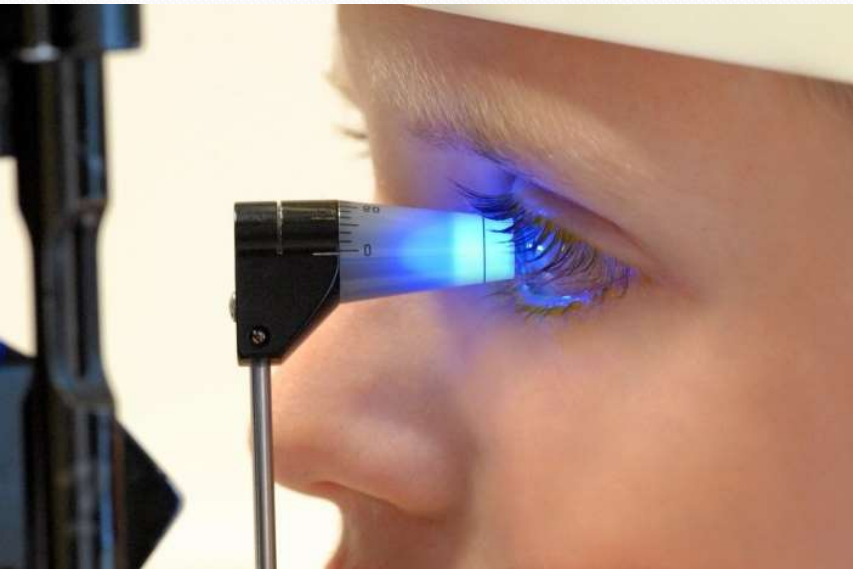
<http://shoppen.blog.nl/files/2014/08/optometrist.jpg>

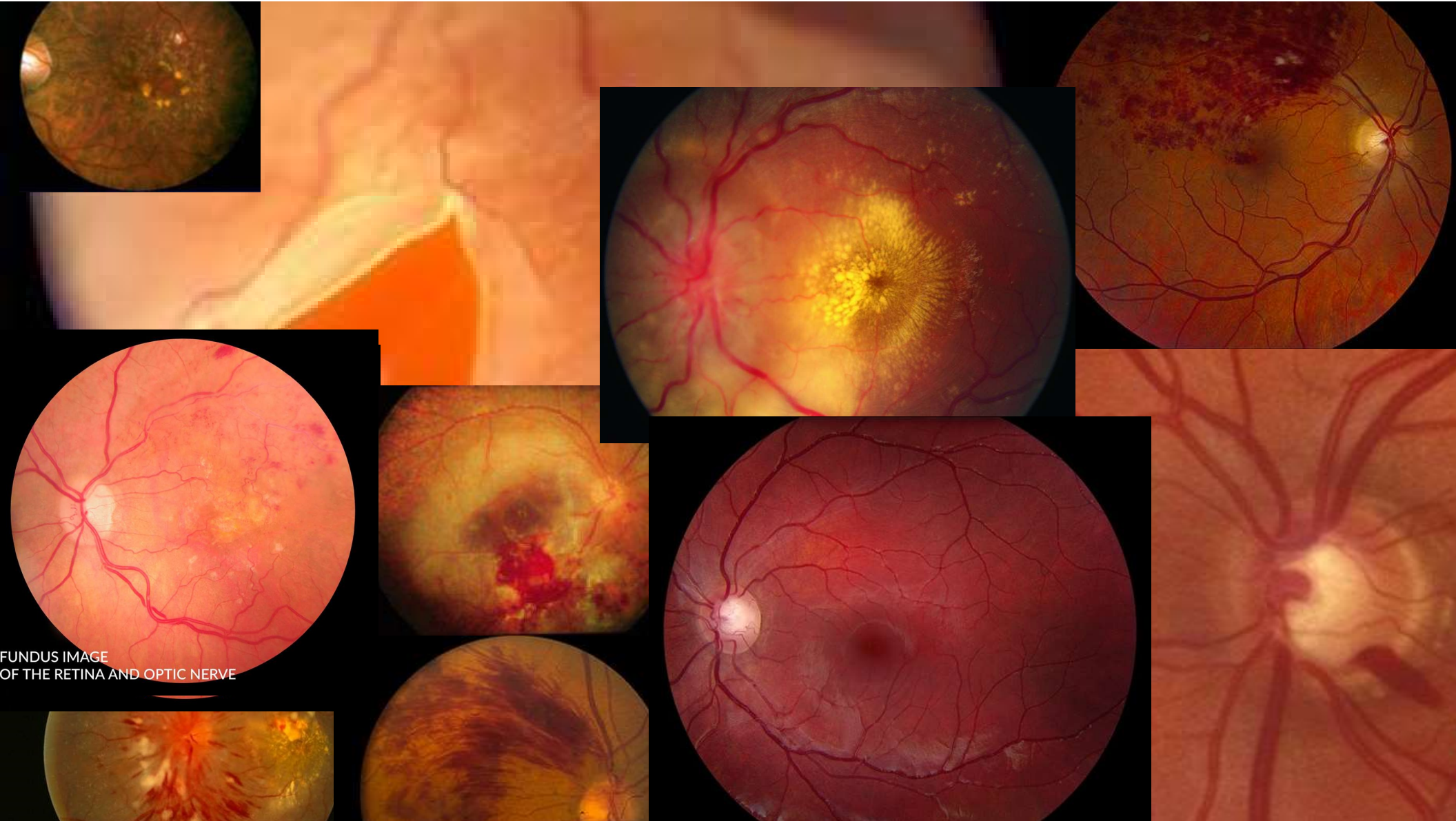




# Ooggezondheid

- Beoordelen gezondheid van het oog





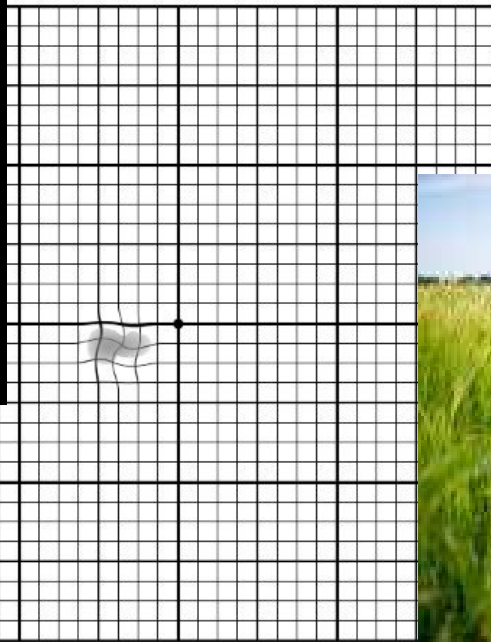
FUNDUS IMAGE  
OF THE RETINA AND OPTIC NERVE



# Oogezondheid; pathologie

- Macula degeneratie
- Glaucoom
- Diabetische retinopathie
- Stress

# Macular degeneration



**NORMAL VISION**



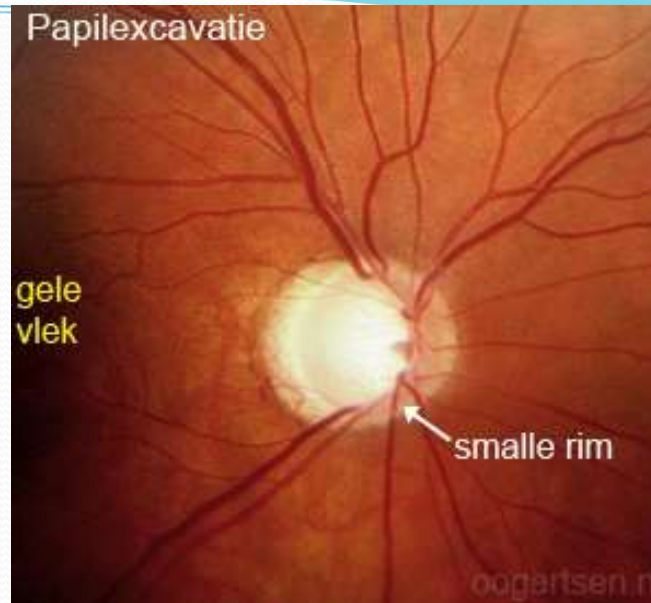
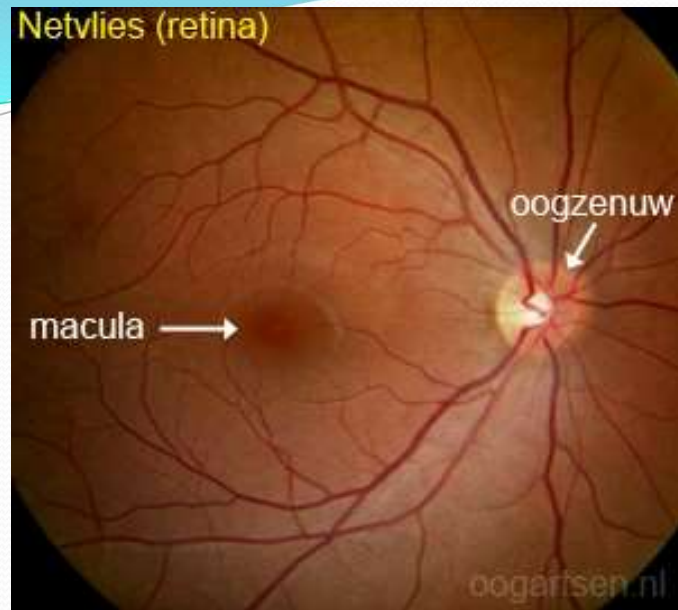
**MACULAR DEGENERATION**

<https://www.oogvereniging.nl/oogaandoeningen/oogaa-overzicht/maculadegeneratie/>

<https://allabouteyes.com/need-know-macular-degeneration/>



# Glaucoom



<https://www.oogartsen.nl/overige-oogziekten/glaucoom-glaucoma-oogdruk/>



Normaal beeld

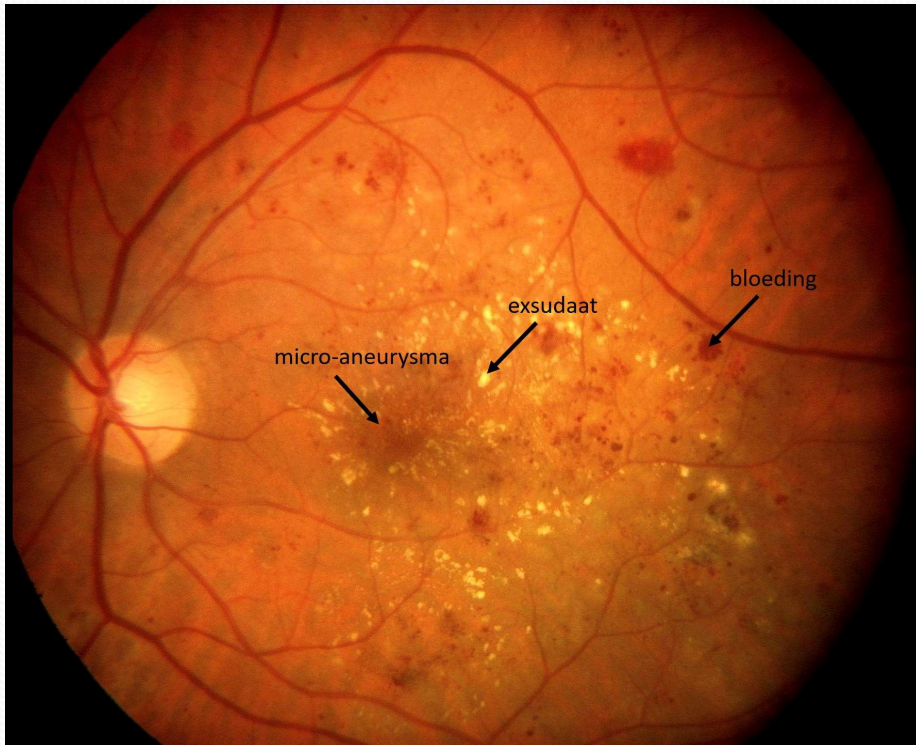


Glaucoom  
vroeg stadium



Glaucoom  
later stadium

# Diabetische retinopathie



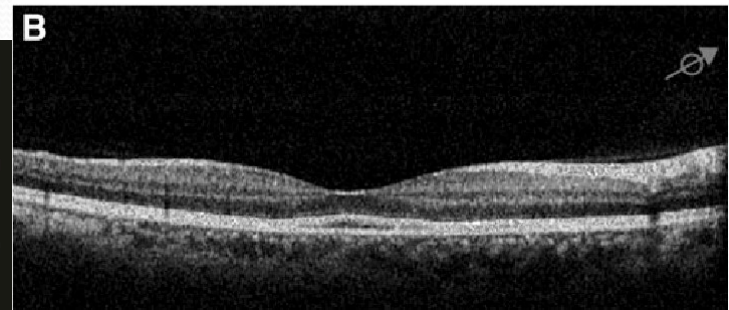
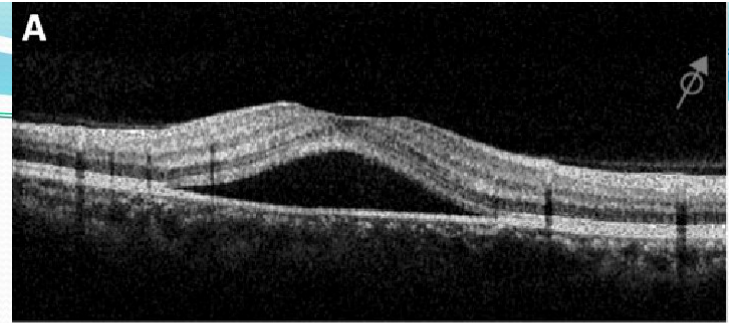
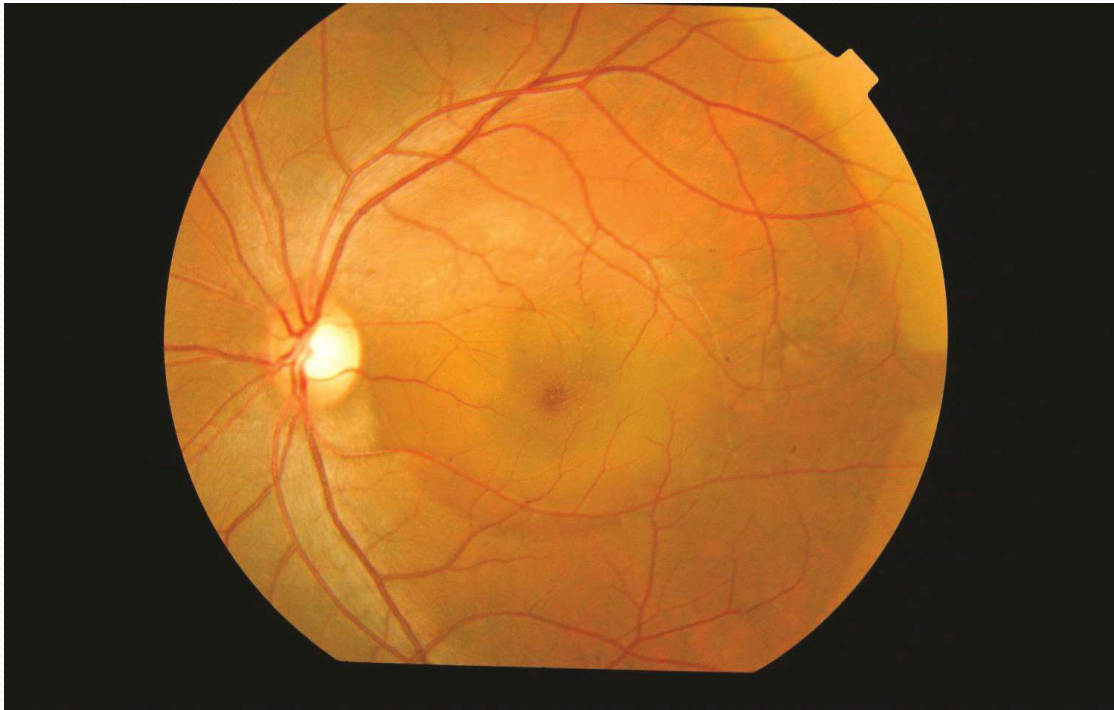
Slechte instelling DM  
Controle periodiek nodig

<https://www.oogartsen.nl/glasvocht-netvlies/diabetes-mellitus-suikerziekte-retina-retinopathie-ogen/>



# Stress

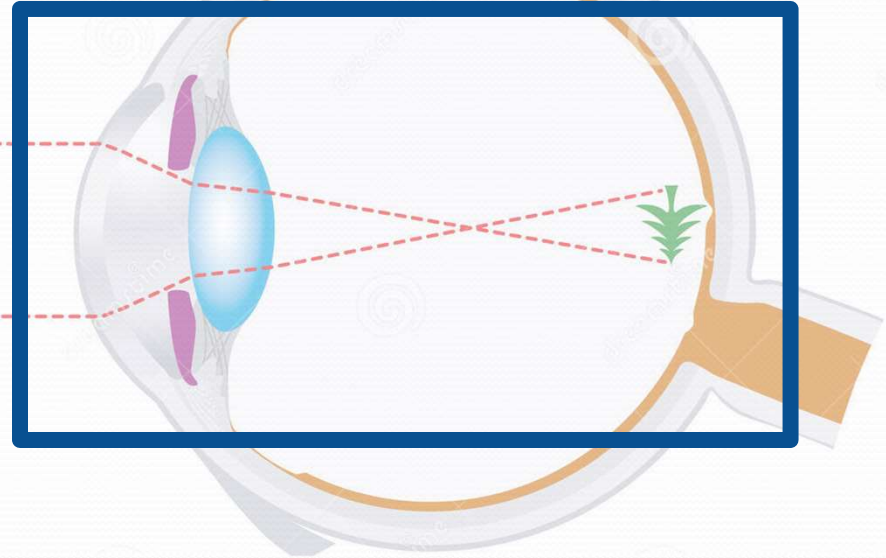
<https://www.researchgate.net/profile/Osman-Olcaysu>



<https://www.asrs.org/patients/retinal-diseases/21/central-serous-chorioretinopathy>

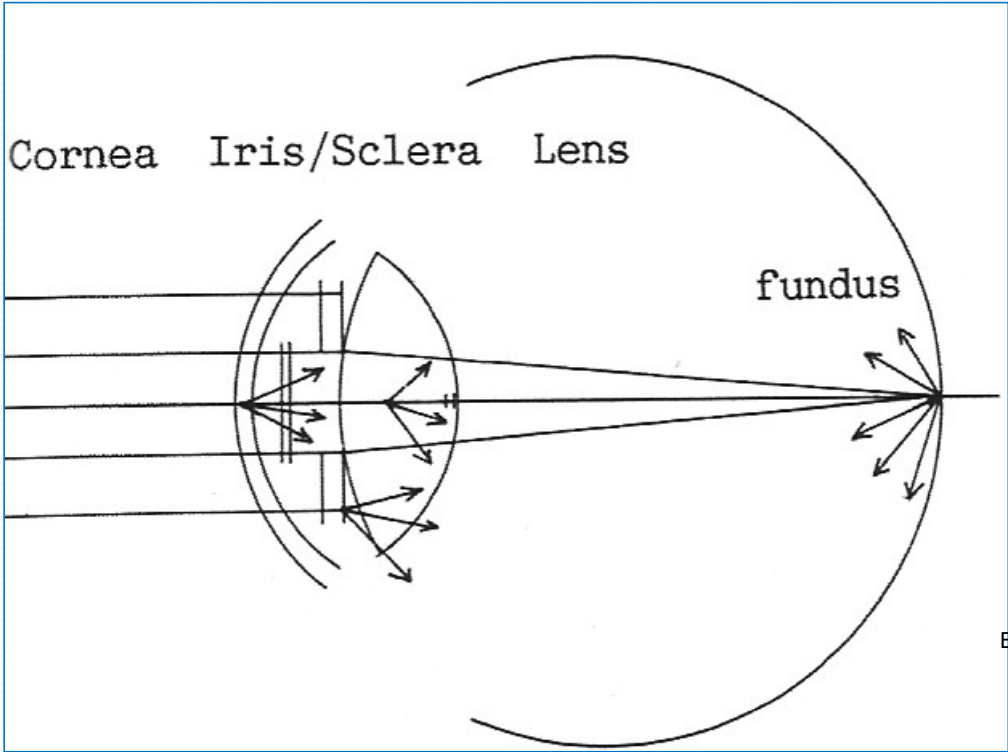
# Ooggezondheid

- Netvlies





# Strooilicht



Bron: Franssen, Coppens 2007

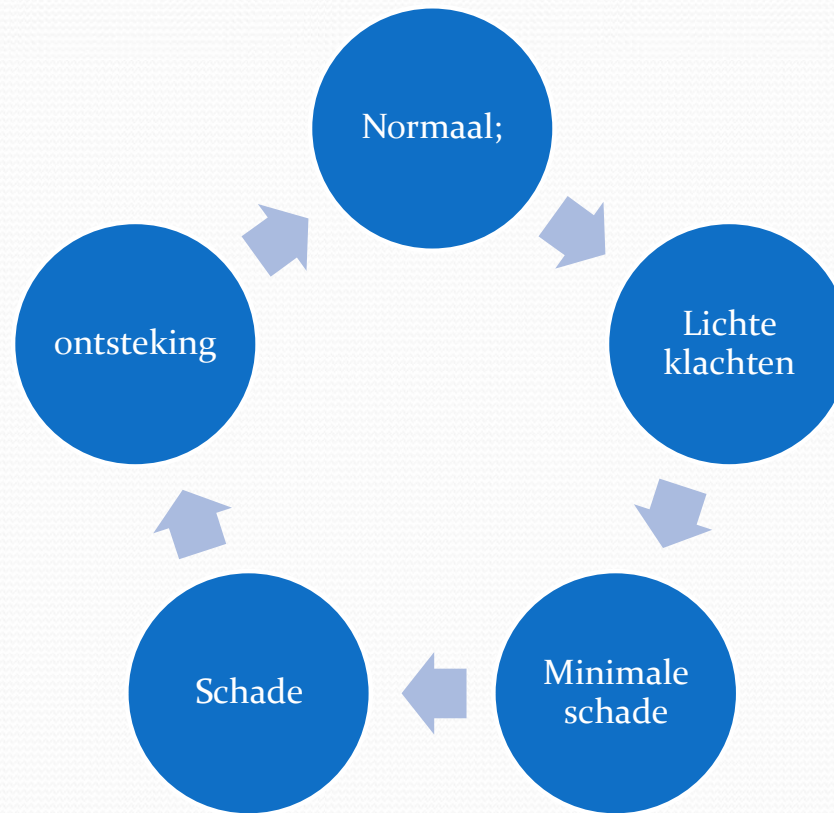
# Traanfilminstabiliteit/ oogdroogte en klachten

- Brandende ogen
- Geïrriteerde ogen
- Rode ogen
- Droge ogen
- Tranende ogen
- Verminderd zicht
- Lichtgevoelig
- Vermoeide ogen

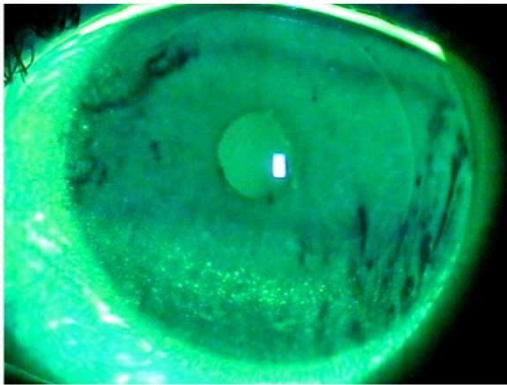
- Hoofdpijn boven de ogen
- Pijnlijke ogen
- Slijmdraden
- Pijnlijke oogleden
- Jeukend/ stroef gevoel
- Rode ooglidranden
- Plakkende oogleden in de ochtend



# Van Normaal naar Droog



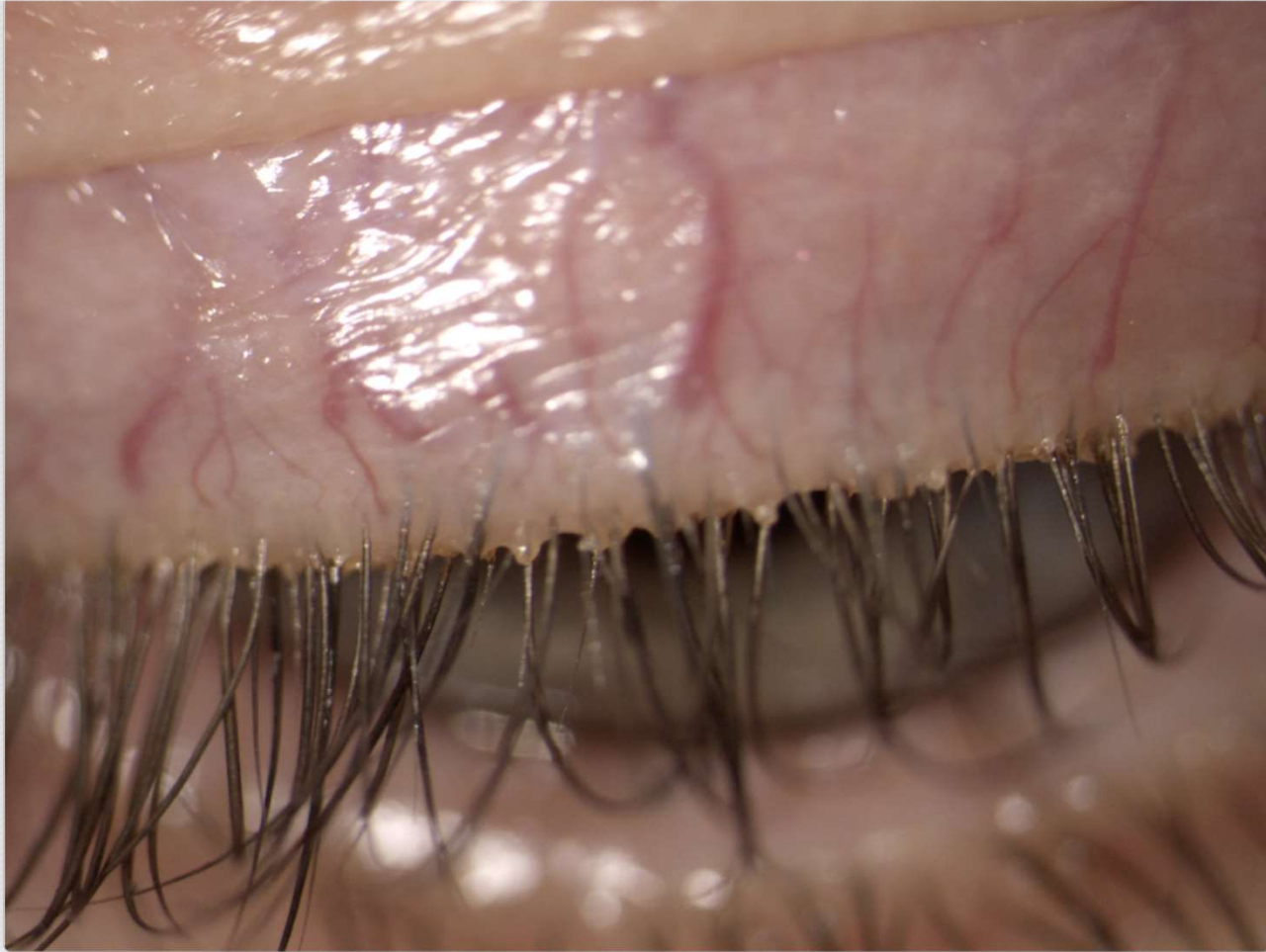
# Droog oog



- [http://www.eyeworld.org/images/New\\_Articles/2011/04/12\\_b.jpg](http://www.eyeworld.org/images/New_Articles/2011/04/12_b.jpg)



# stabiliteit van de traanfilm



# Droge ogen

Survey of 589 subjects (190 with DED) (1)

Activity	Odds ratio to report problems associated with DED
Reading	3.64
Specific tasks	3.49
Using a computer	3.37
Watching television	2.84
Driving – day	2.80
Driving – night	2.20

MiljanovicBetal.AmJOphthalmol.2007;143(3):409-415.

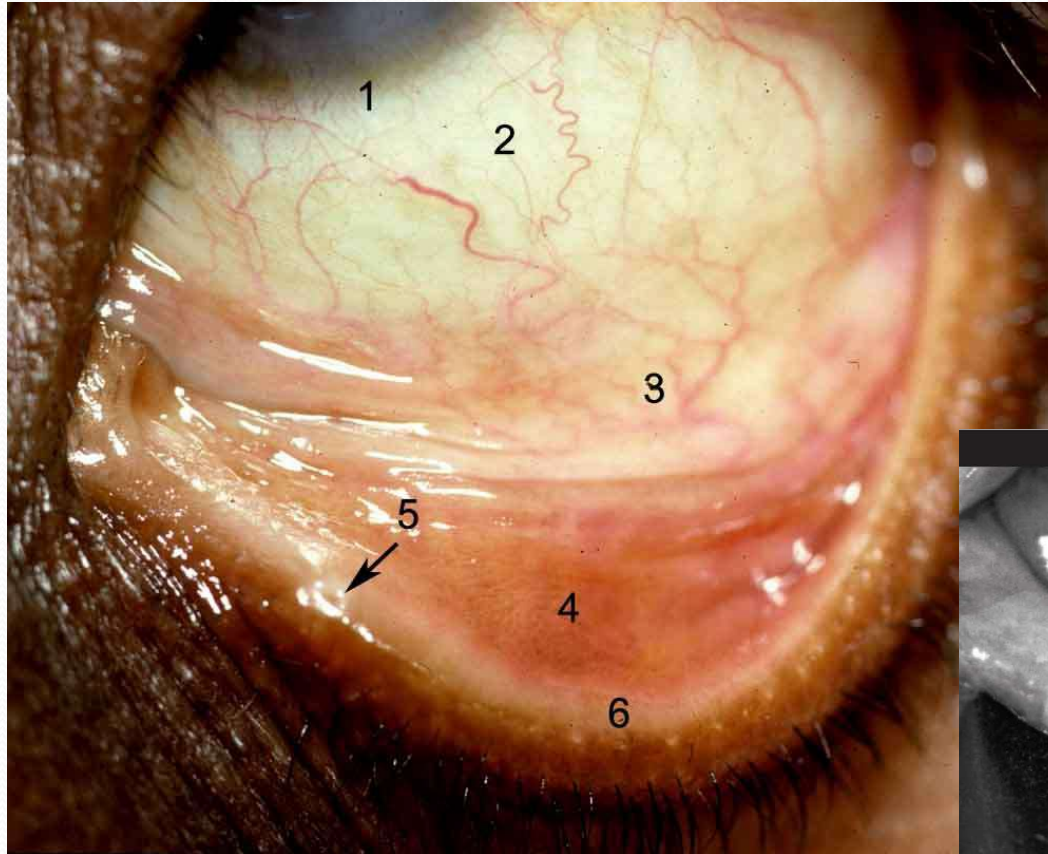


# Onvolledige knipperslag

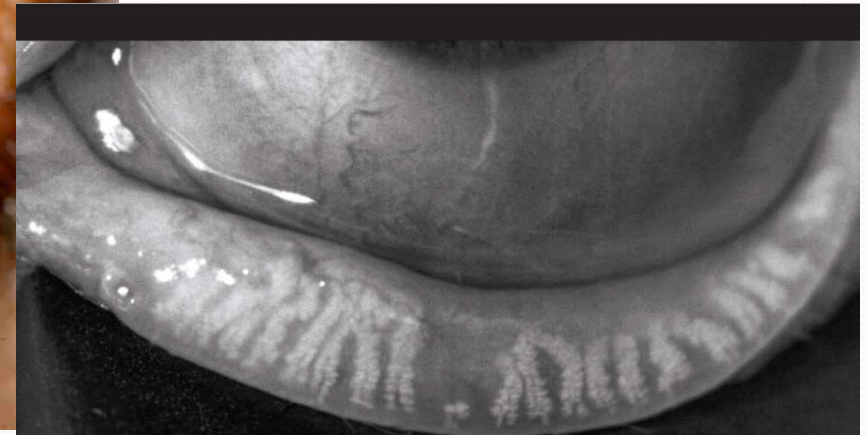
- Minder gevoel om te knippen
- Meer oppervlak luchtstroming
- Geen goede lipide verspreiding
- Lezen
- Geconcentreerd focussen



<https://www.allaboutvision.com/conditions/blepharitis.htm>



1. Limbus
2. Bulbaire conjunctiva
3. Fornix
4. Palpebrale conjunctiva
5. Punctum

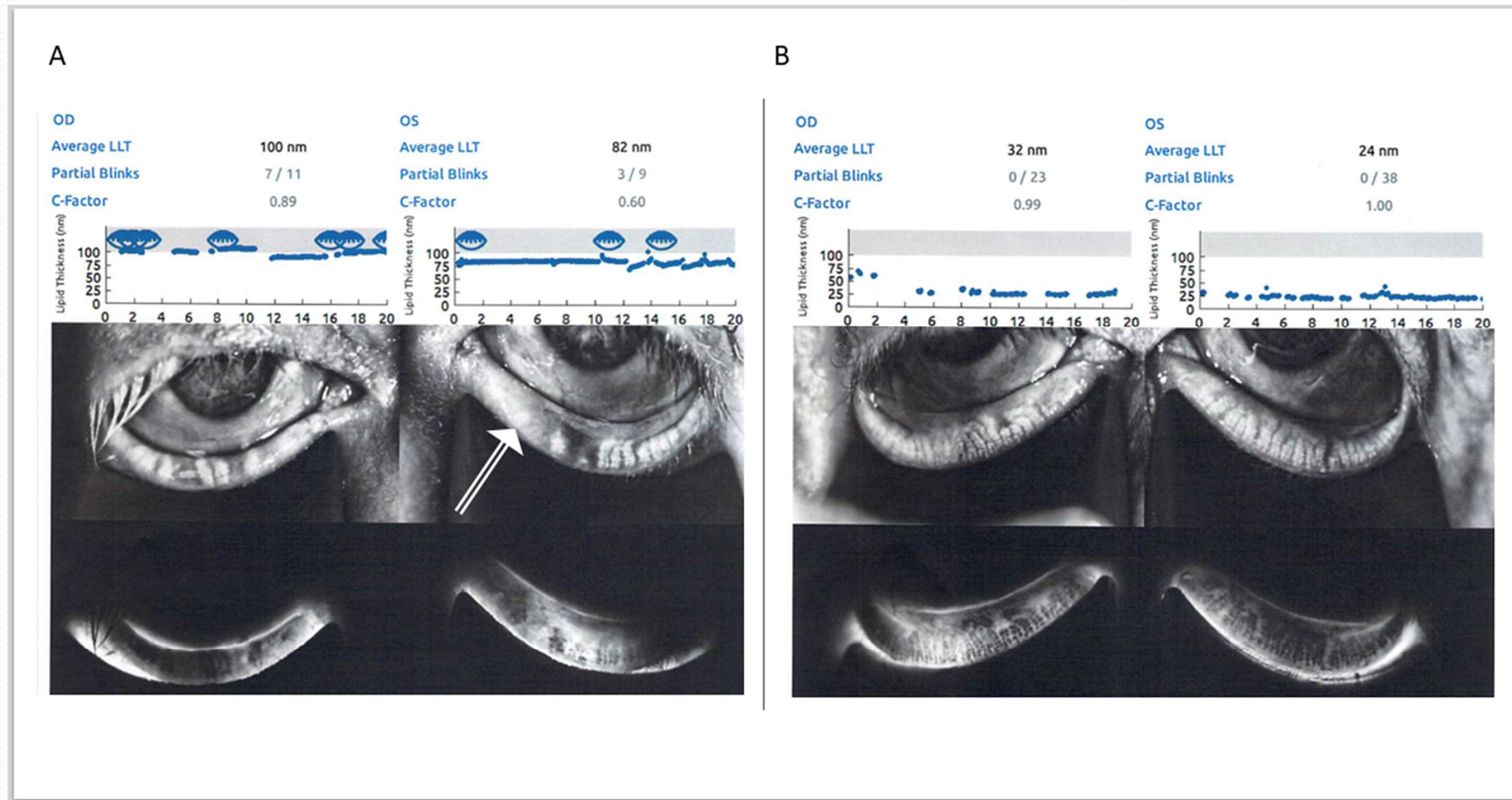


Bron: [www.images.missionforvisionusa.org](http://www.images.missionforvisionusa.org)



## Evaluation of incomplete blinking as a measurement of dry eye disease

YingJie<sup>ab</sup>RutiSella<sup>a</sup>JunFeng<sup>b</sup>Maria L.Gomez<sup>a</sup>Natalie A.Afshari

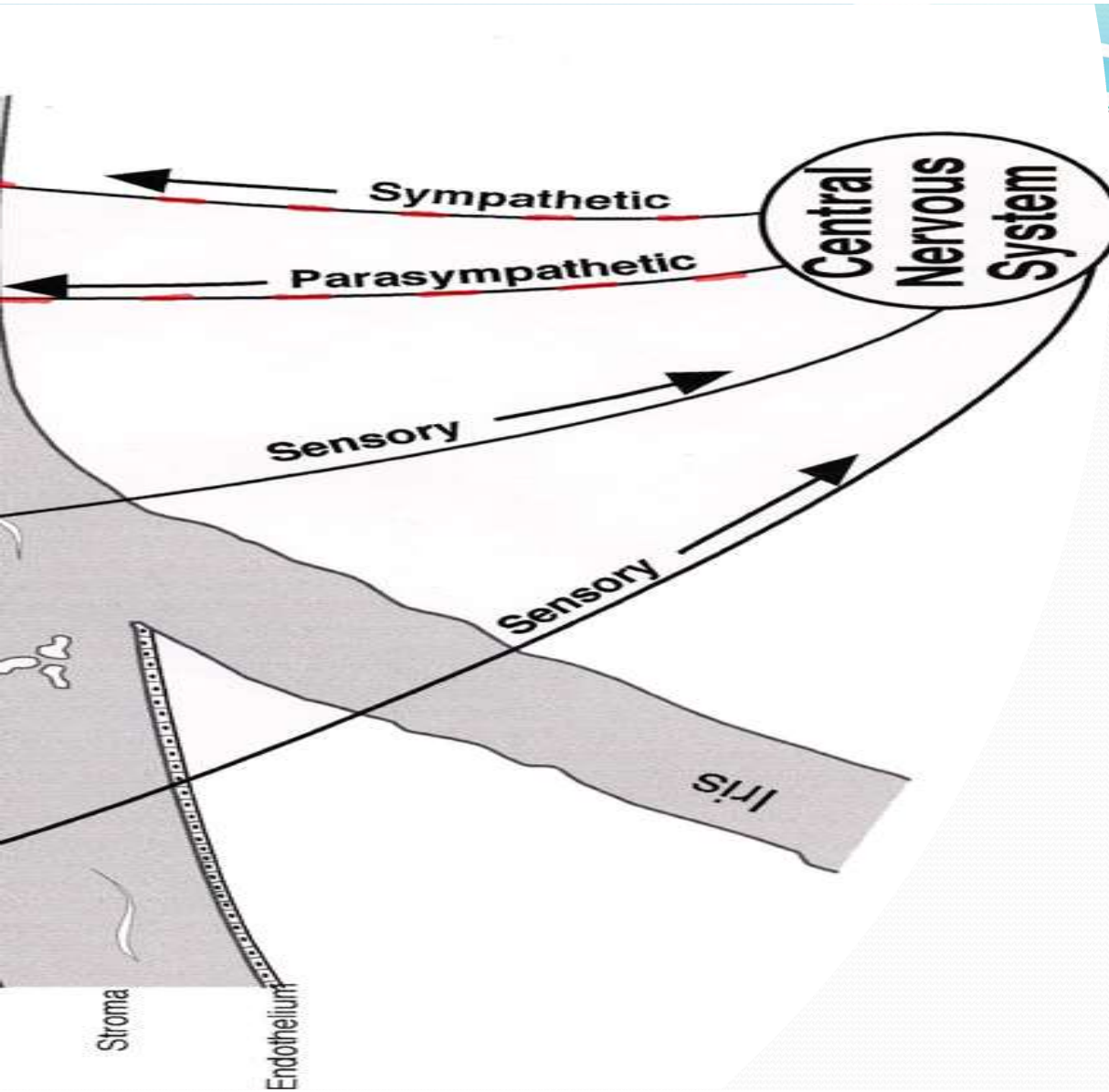


A. A dry eye patient with 7/11 partial blinks in the right eye, and 3/9 partial blinks in the left eye. B. A dry eye patient with no partial blinks measured.

# Ooglid hygiëne







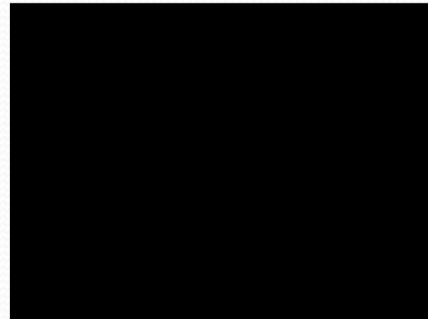
Tranend  
oog wanneer u  
buiten loopt of  
fietst... laat uw  
ogen  
controlern



“While blinking is an aspect of eye function that's easy to overlook, it can be a revealing sign of a patient's overall ocular health”



# Knipperslag



# Impulse om te knippen

- Autonoom en vrijwillig
- Motorische zenuwen worden geïnnerveerd door de nerves in the n VII en n III voor samentrekken van de m orbicularis en levator palpebrae
- Ooglid sluiten ontstaat spontaan, door een reflex of door vrijwillige contractie.
- Dopamine en invloed op de knipperslag is nog niet geheel bekend.





# Beïnvloeding

- Actief denken, mentale uitdagingen ( spelletjes) wiskundige opdrachten ( hoofdrekenen) geven een verhoogde knipperslag
- Verminderde knipperslag
  - Dagdromen
  - Focus/ concentratie



# Knipperslag en emotionele staat

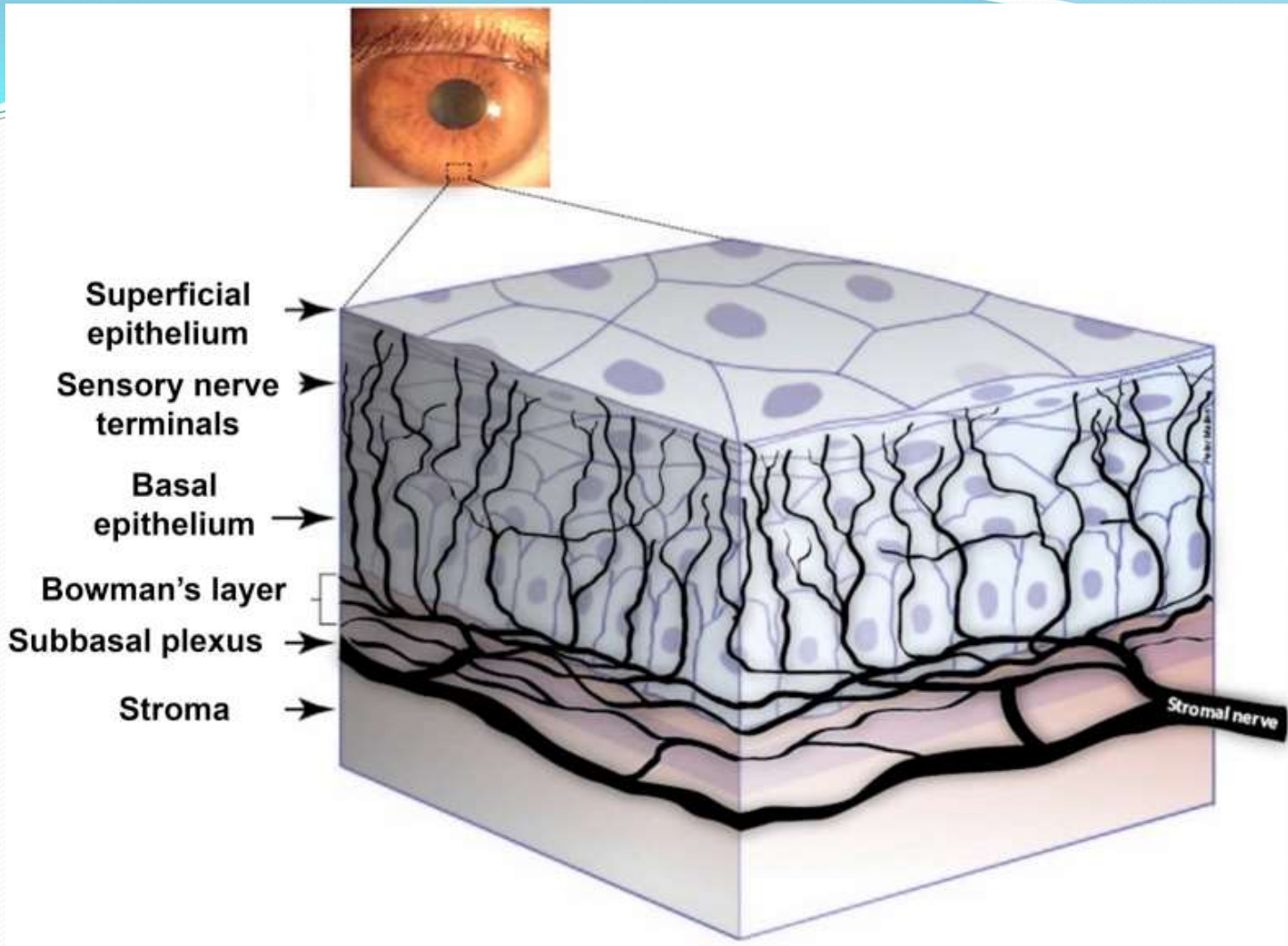
- Vermoeidheid
- Emoties
- Frustratie en angst ( verhoogd)
- Schuldig voelen ( verminderd)





# Knipperslag en invloed van oogoppervlak

- Droge ogen geven op ten duur een verminderde knipperslag
- Chronische droge ogen
- Veel pijn klachten



## Gedachten

10 procent reageert op kou, verdamping van de traanfilm. Koude vloeistoffen etc

70 procent poly modal nociceptors ( chemie / mechanische irritatie , warmte/ meer chronische irritatie gevoel)

20 procent reageert met scherpe pijn bij een mechanisch contact





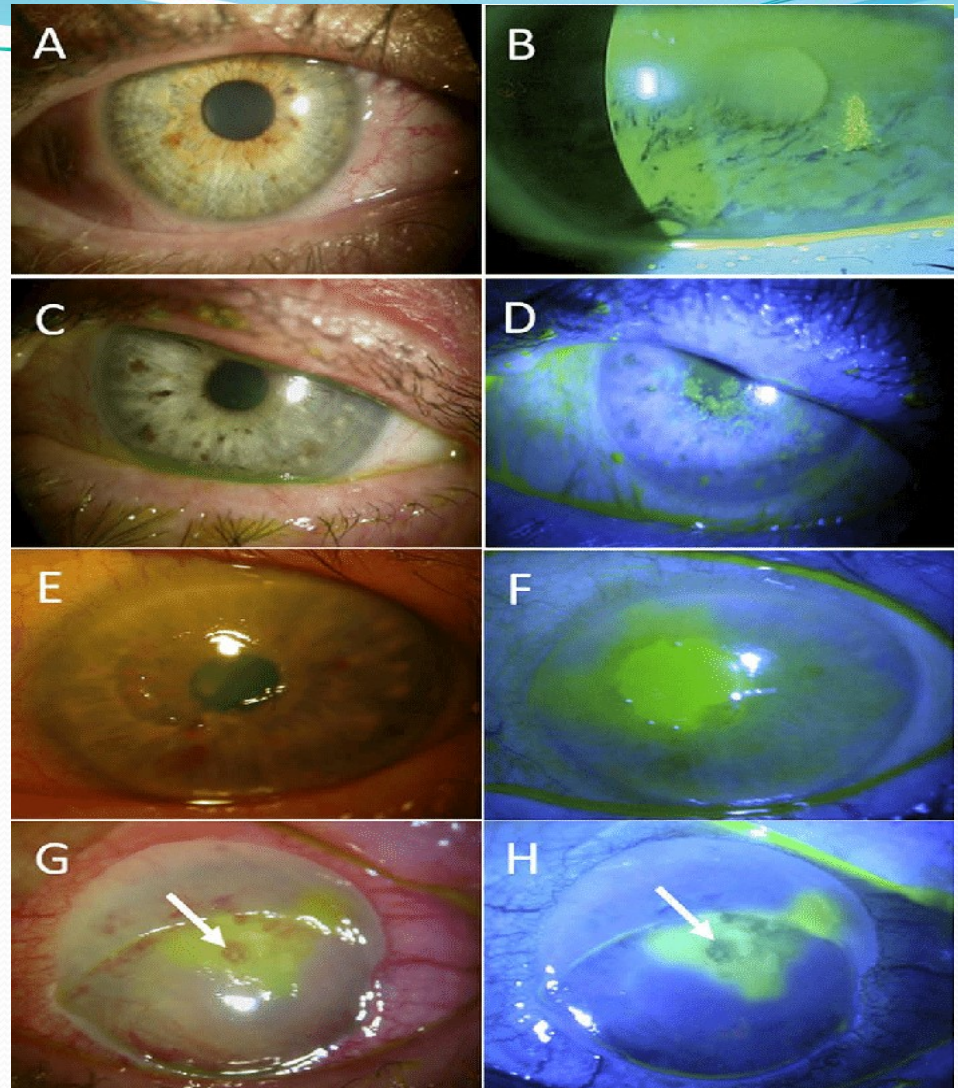
# Cornea zenuwen zorgen voor

- Wond genezing
- Verlies van de zenuwen kunnen zorgen voor neurotrofisch keratopathie
- verminderde cornea gevoeligheid, traanfilm instabiliteit, en in mogelijk chronisch aanwezig beschadigd epitheel, , mogelijk ulceratie en perforatie van stroma.



- Begint zo normaal.....

# ofische keratitis







# Verminderde gevoeligheid cornea

- Herpes keratitis
- Droge ogen aandoening
- Keratoconus.
- Glaucoom medicatie
- Refractie chirurgie/ cataract chirurgie
- Parkinson
- Diabetes



# Reflex knipperslag

Bescherming van het oogoppervlak

Verwijderen van debris, pollen, stof etc.

Actieve knipperslag stimuleert de secretie van tranen, mucine en Meibom.





# Systemische aandoeningen en medicatie

- Allergie
- Depressie
- epileptie
- Ziekte van Parkinson



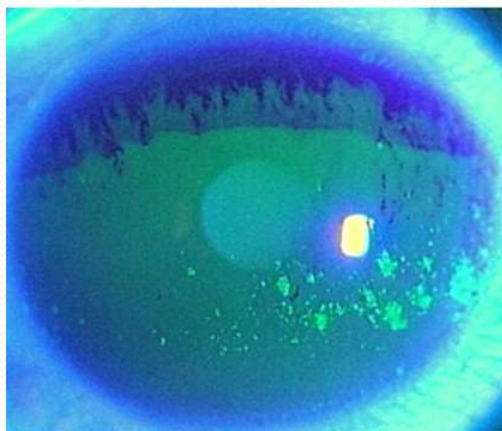
# Visueel functioneren en instabiele traanfilm

- Geen tv kunnen kijken
- Moeite met lezen van papier
- Moeite met lezen van een scherm
- Lichtgevoelig
- Negatieve invloed op sociaal en emotioneel vlak

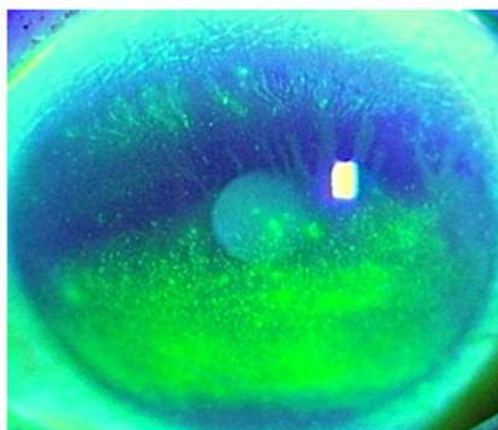


From: Corneal Fluorescein Staining Correlates with Visual Function in Dry Eye Patients  
Invest. Ophthalmol. Vis. Sci.. 2011;52(13):9516-9522. doi:10.1167/iovs.11-8412

**No staining of fluorescein  
in the central cornea**



**Mild staining of fluorescein  
in the central cornea**



**Severe staining of fluorescein  
in the central cornea**

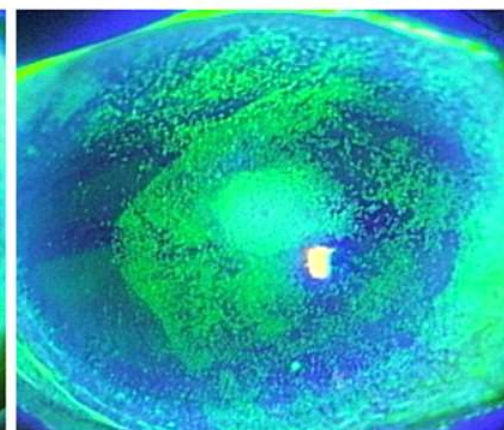


Figure Legend:

Severity of epithelial damage at the central zone in the cornea.

n we?

- Slaap problemen ?
- Dehydratie!
- Lage Vitamine D ?
- Angst/ depressie?
- Medicatie !

**Dry eye disease in the elderly in a French population-based study (the Montrachet study: Maculopathy, Optic Nerve, nuTRition, neurovAsCular and HEarT diseases): Prevalence and associated factors.**

Ferrero A<sup>1</sup>, Alassane S<sup>2</sup>, Biquet C<sup>2</sup>, Bretillon L<sup>3</sup>, Acar N<sup>2</sup>, Arnould L<sup>1</sup>, Muselier-Mathieu A<sup>1</sup>, Delcourt C<sup>4</sup>, Bron AM<sup>5</sup>, Creuzot-Garcher C<sup>6</sup>.

**Author information**

**Abstract**

**PURPOSE:**

To estimate the prevalence of dry eye disease (DED) in the elderly and to describe systemic and ocular factors associated with DED in a population-based study, the Montrachet (Maculopathy Optic Nerve nuTRition neurovAsCular and HEarT diseases) study.

**RESULTS:**

A total of 1045 subjects were included in the study. The mean age was  $82.2 \pm 3.8$  years. The prevalence of DED according to symptoms, signs, or both was 34.4% [95% confidence interval (CI) 31.5-37.2], 34.5% [95% CI 31.6-37.3] and 13.0% [95% CI 10.9-15.0], respectively. Compared with men, women were more likely to self-report DED and artificial tear use, more often displayed an OSDI >22, and more often suffered from subjective and definite DED. In multivariate analysis, associated factors with definite DED were an educational level of short secondary school (to age 15 years), best-corrected visual acuity <20/60, dark iris color, systemic hypertension, and anxiolytic agent and antihistamine eye drop use.

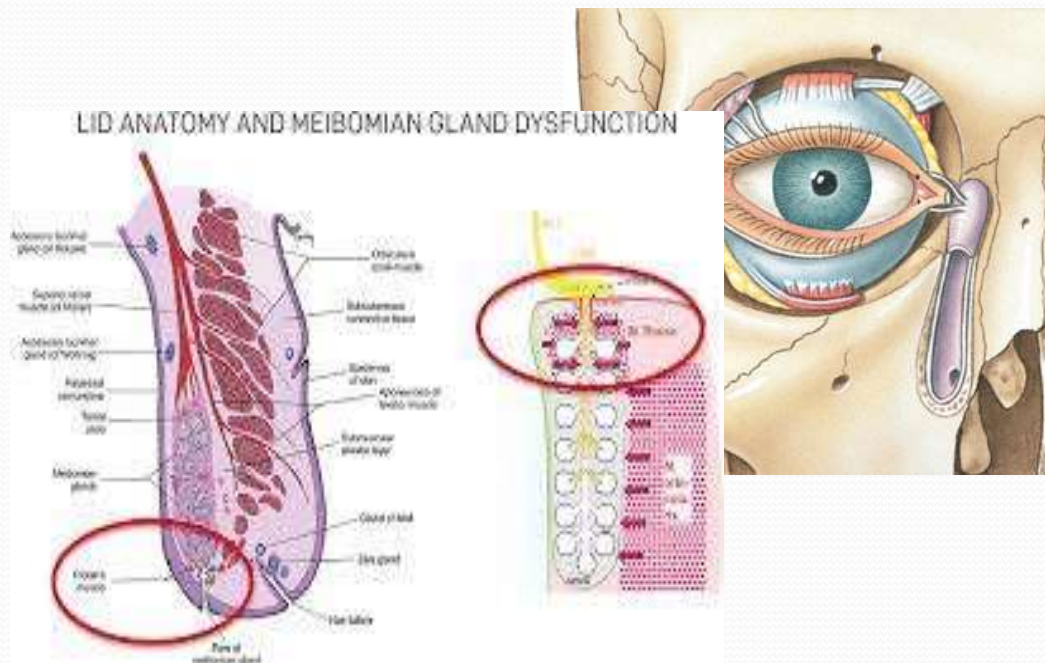
**CONCLUSION:**

Dry eye disease is a major ophthalmologic condition with a high prevalence among the elderly. We report well-documented factors associated with DED and new associations deserving further investigation.

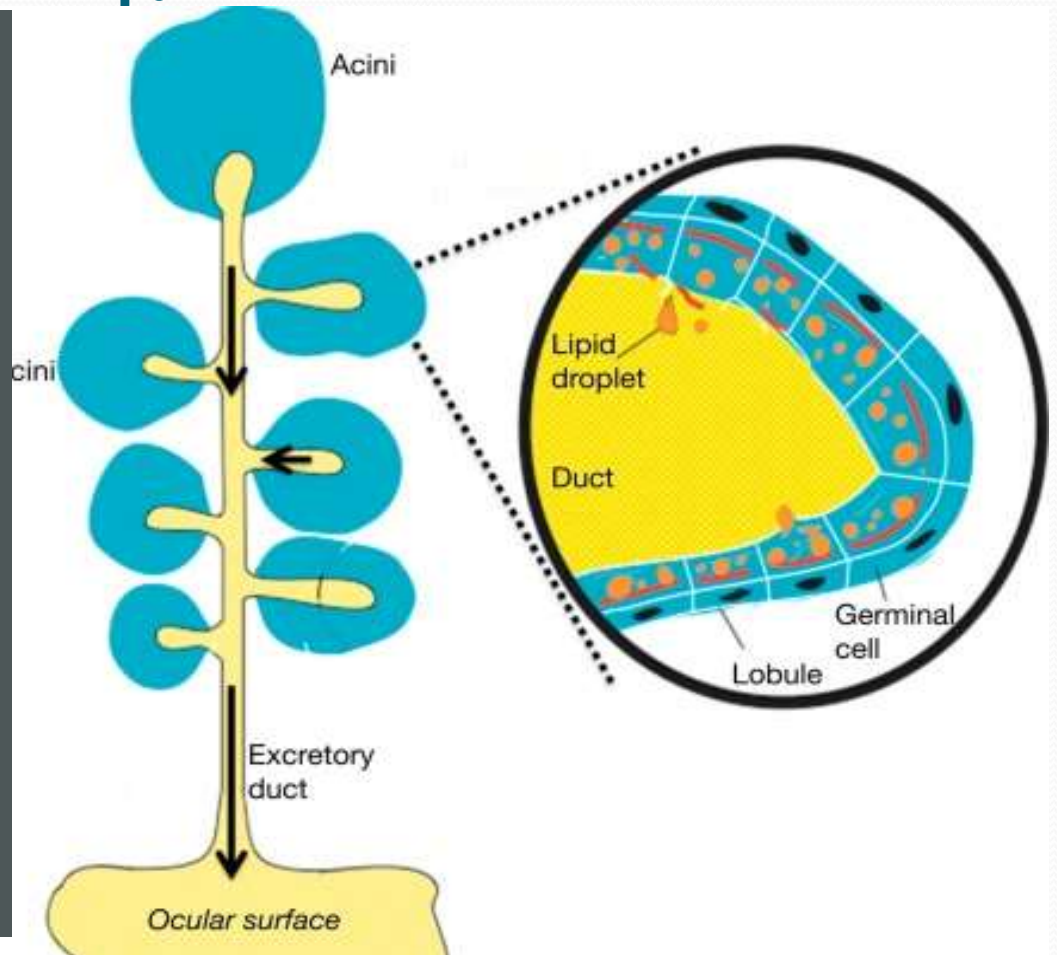
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# Knipperen als kracht functie

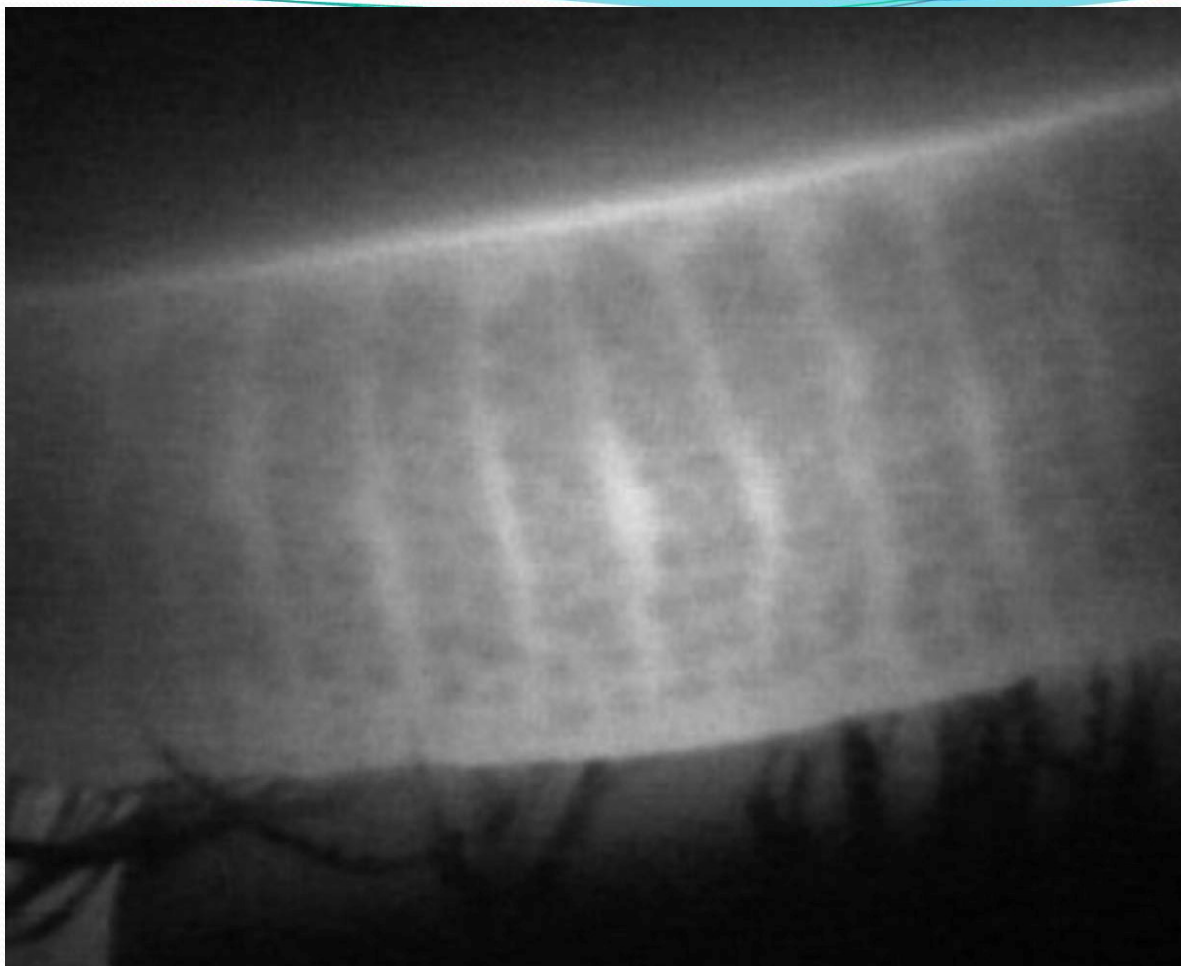
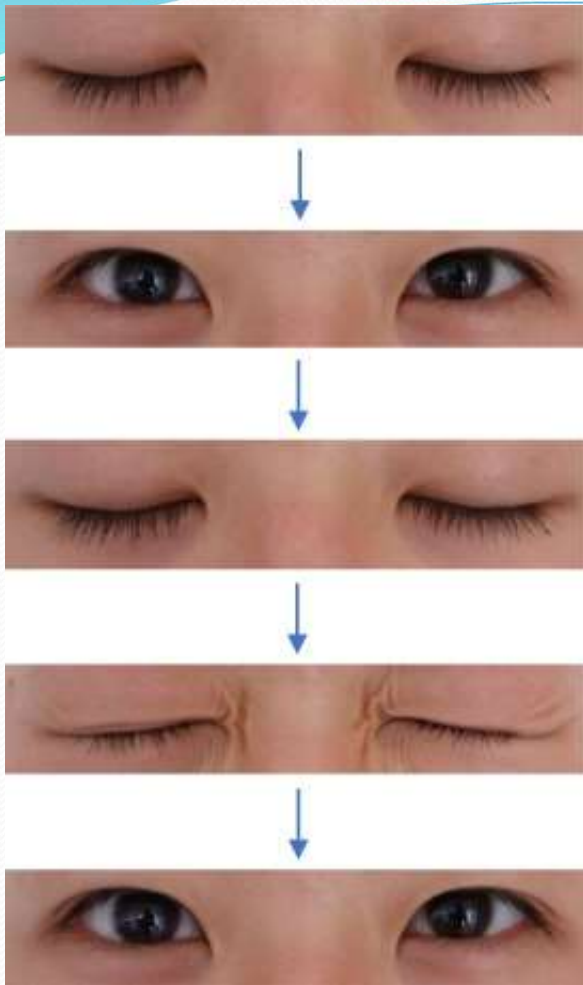


ni ... ..









[https://www.contactlensjournal.com/article/S1367-0484\(20\)30087-4/fulltext](https://www.contactlensjournal.com/article/S1367-0484(20)30087-4/fulltext)



# Druppelen en zalven



# pharitis

Schoonmaken

- Doekjes
- Schuim
- Fysiek schoonmaken, Blephex, Nulids, blephadex applicator

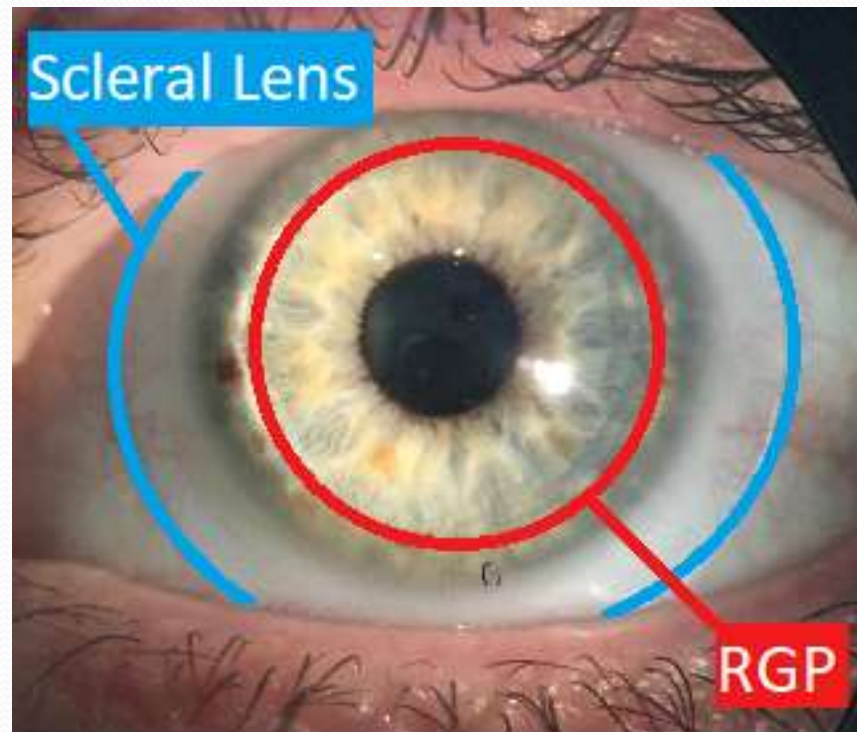


<https://www.butterflies-eyecare.co.uk/products/nulids-device>



# Therapeutische lenzen

- Bandage lenzen
- Sclerale lenzen



<https://www.google.com/url?sa=i&url=https%3A%2F%2Fsimpsonoptometry.com.au%2F%2Fscleral-lenses-for-complex-corneas&psig>

# Kappenbril



<https://jongsmamedical.nl/de-kappenbril-handwerk-voor-de-optimale-pasvorm/>



# Punctumplugjes

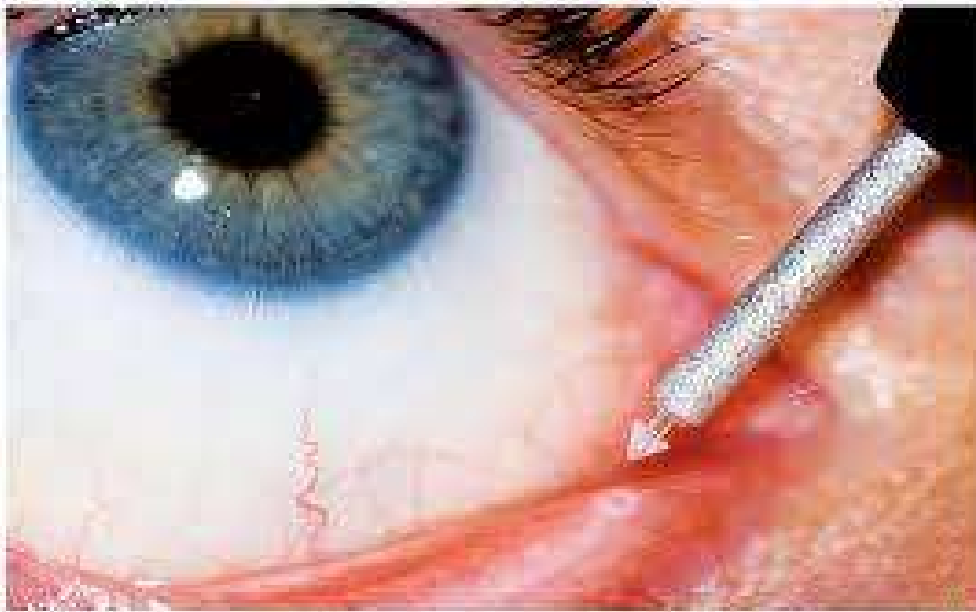


Figure 1. Insertion of the Paracel Punctal Occluder.

<https://www.reviewofophthalmology.com/article/plugs-reduce-dry-eye-symptoms-improve-vision>

# Amniotisch membraan



<https://markhawkinsdesigns.com/plugins/demos/demobox.html>



# Autologe serum druppels



<https://www.oogziekenhuis.nl/system/files/inline/Informatie%20onderzoeksdeelnemers%20%27Beoordeling%20van%20het%20gebruik%20van%20allogene%20microserum%20ogdruppels%27%20%282017-27%29.pdf>