

Basic Communications Skills in Geriatrics

with the old patients

with the interdisciplinary geriatric team

Ophthalmological aspects

Prof A.B. Safran

Geneva University Ophthalmology Clinic

Interdisciplinary approach

Vision and hearing impairment predict
cognitive and functional decline in older
women

Lin MY, et al: Am J Geriatrics Soc Dec2004;
52:1996-2002

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Vision and hearing impairment predict
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... AND ASOCIATED ALTERATIONS IN VISUAL
VESTIBULAR FUNCTION

Communications Skills in Geriatrics

Ignoring (underestimating) the visual defect

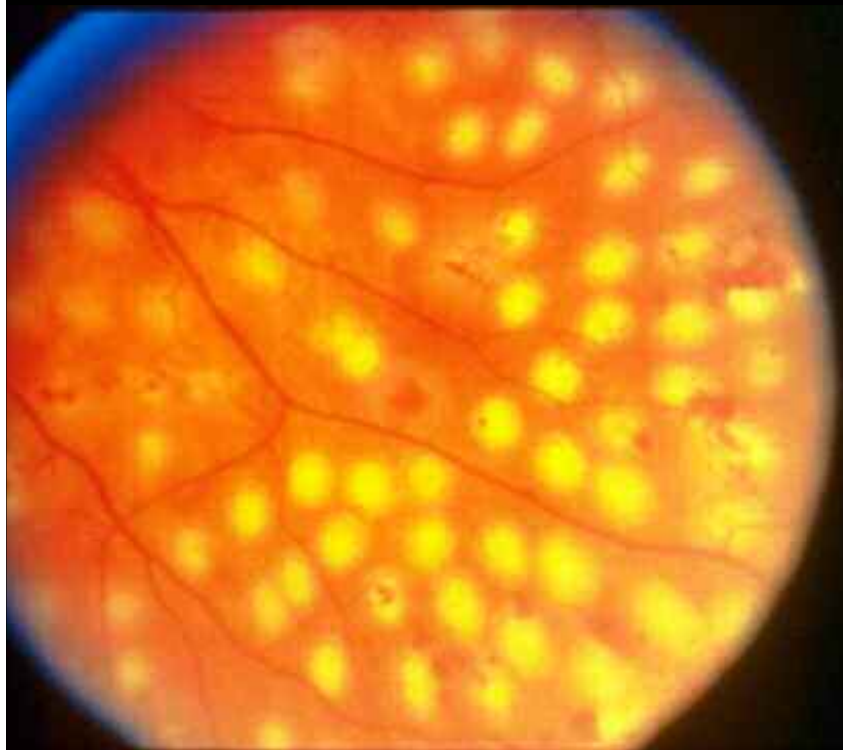
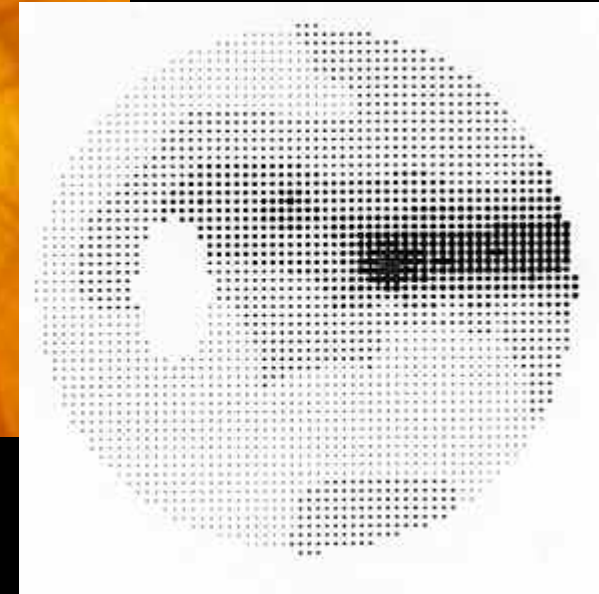
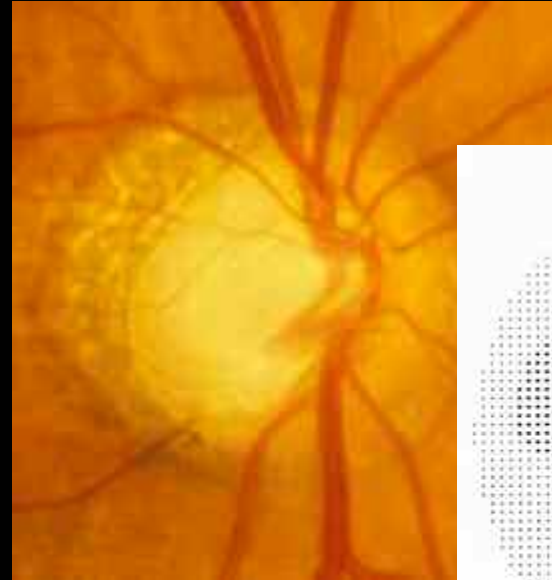
Age related macular degeneration:

the issue of looking with peripheral retina:

- a remarkable expression of brain plasticity,
- but a difficult adaptation process

Charles Bonnet syndrome

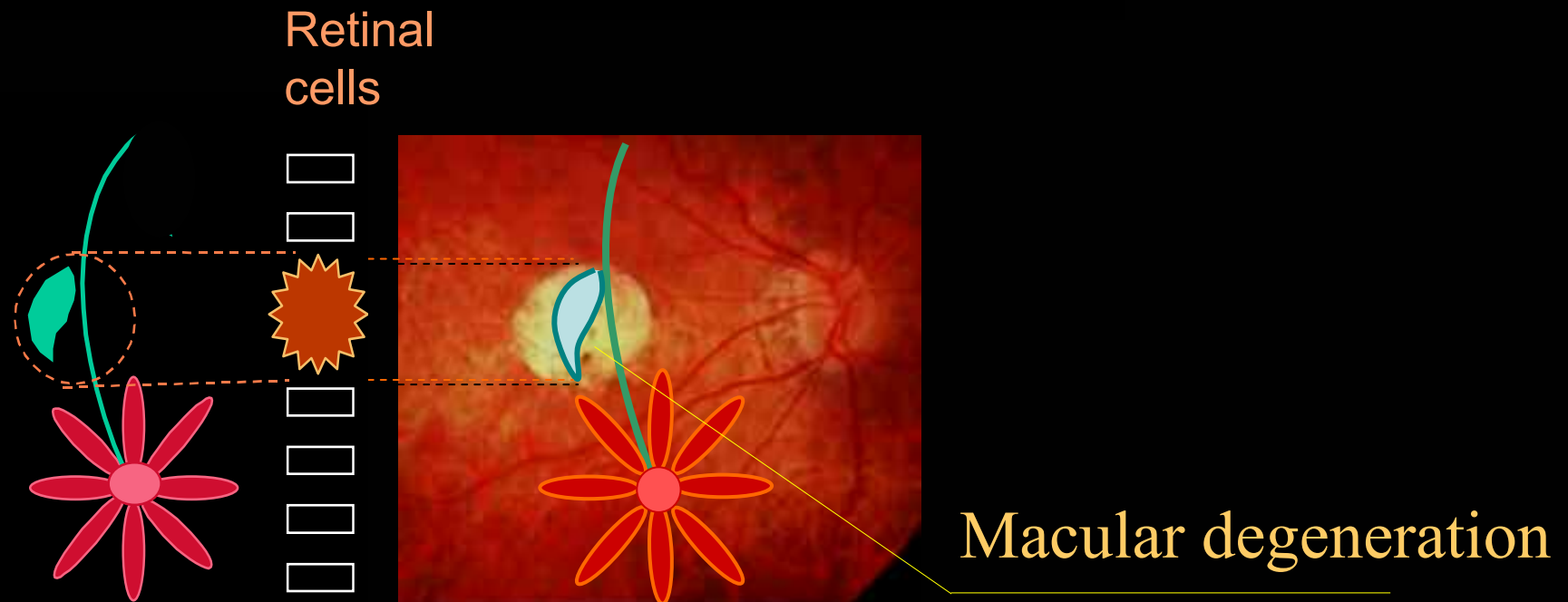
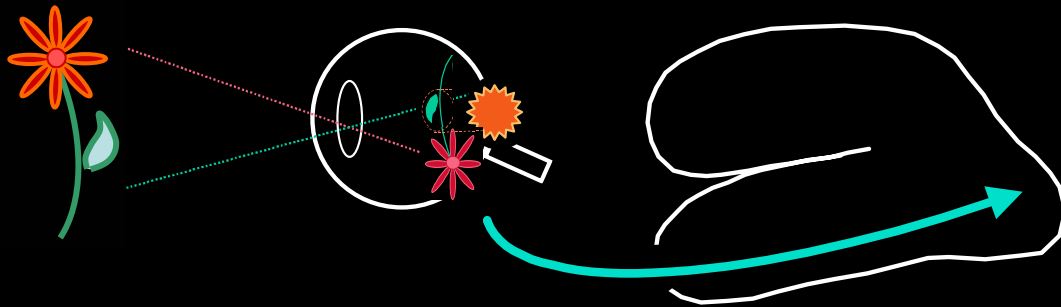
Safran A.B. : Unperceived
visual field defects.
Arch Ophthalmol 115:
686-687, 1997.



Dosso A, Ustun F, Safran AB:
Scotomata from panretinal
photocoagulation are not
perceived, as a result of
perceptual filling-in.
Diabetes Care, 23: 1855, 2000

“Filling-in“with a retinal lesion.

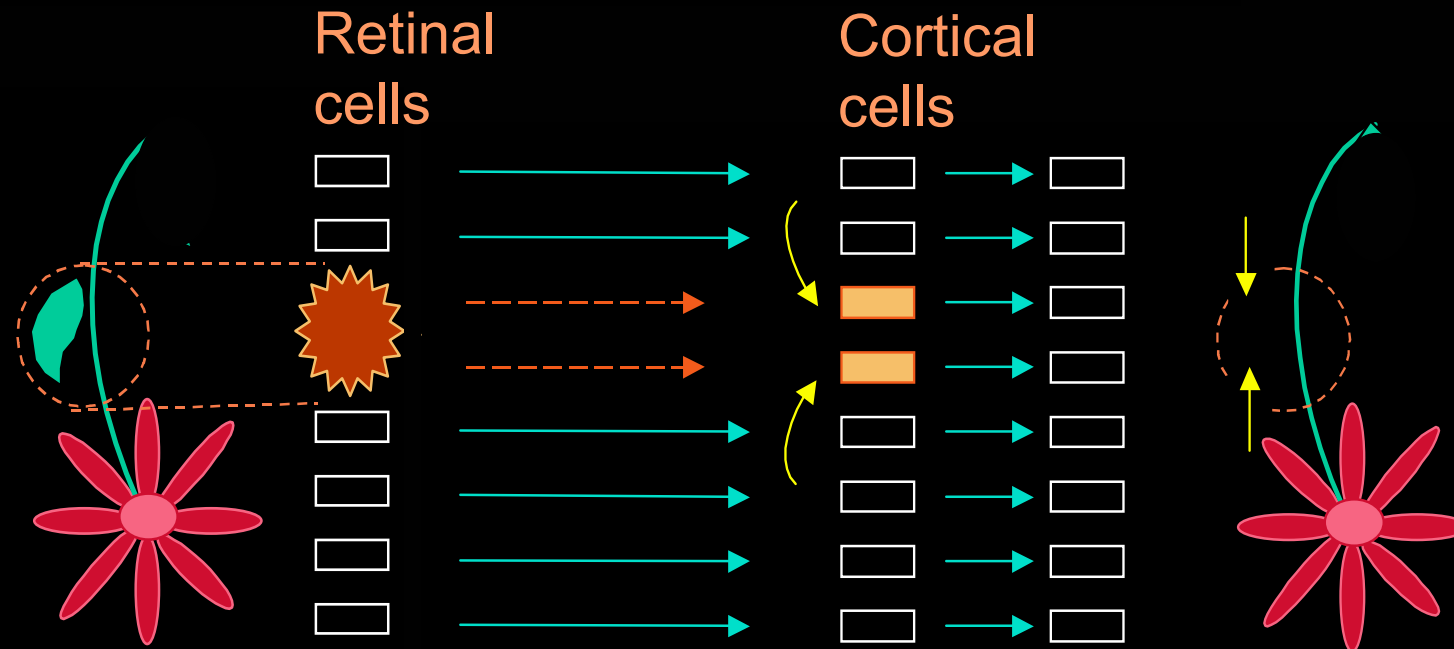
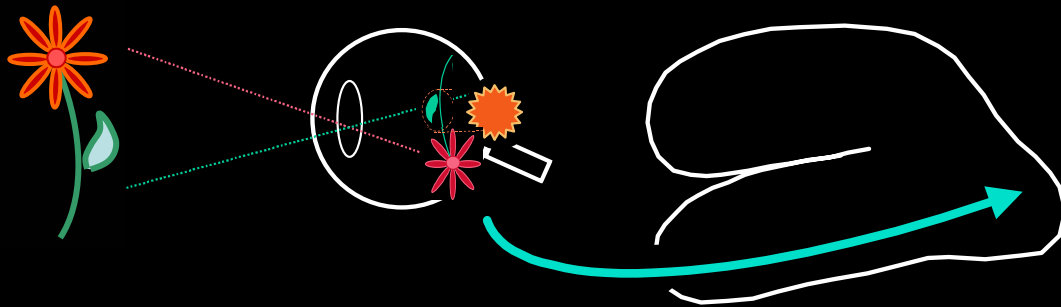
The image is projected into an eye with macular degeneration. The leaf image falls onto the retinal lesion, and therefore will not be processed.



Mechanisms of “filling-in” .

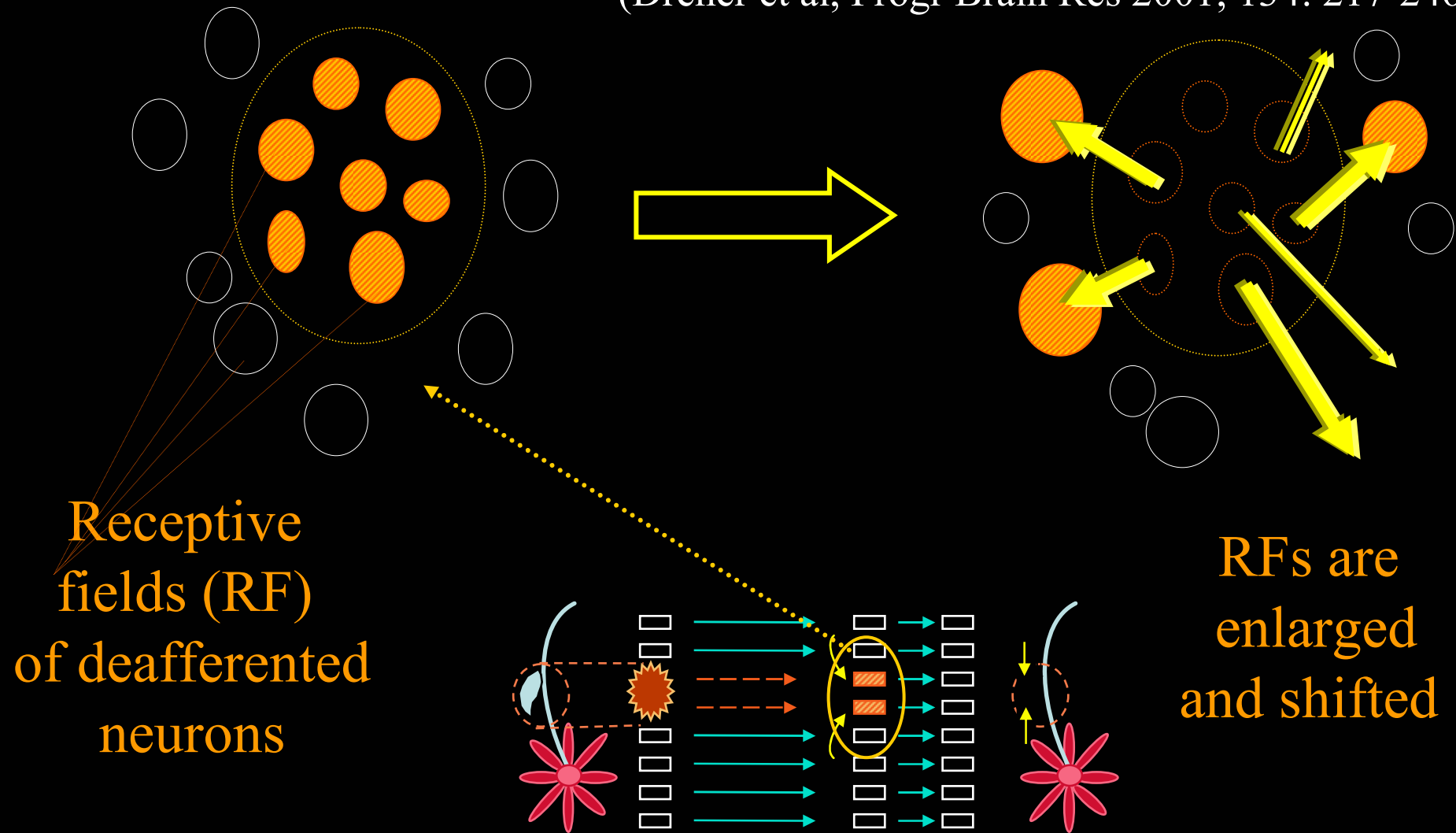
Cortical cells which are deafferented following the retinal lesion, collect information from areas surrounding the scotoma, and contribute to a percept of the image, which has

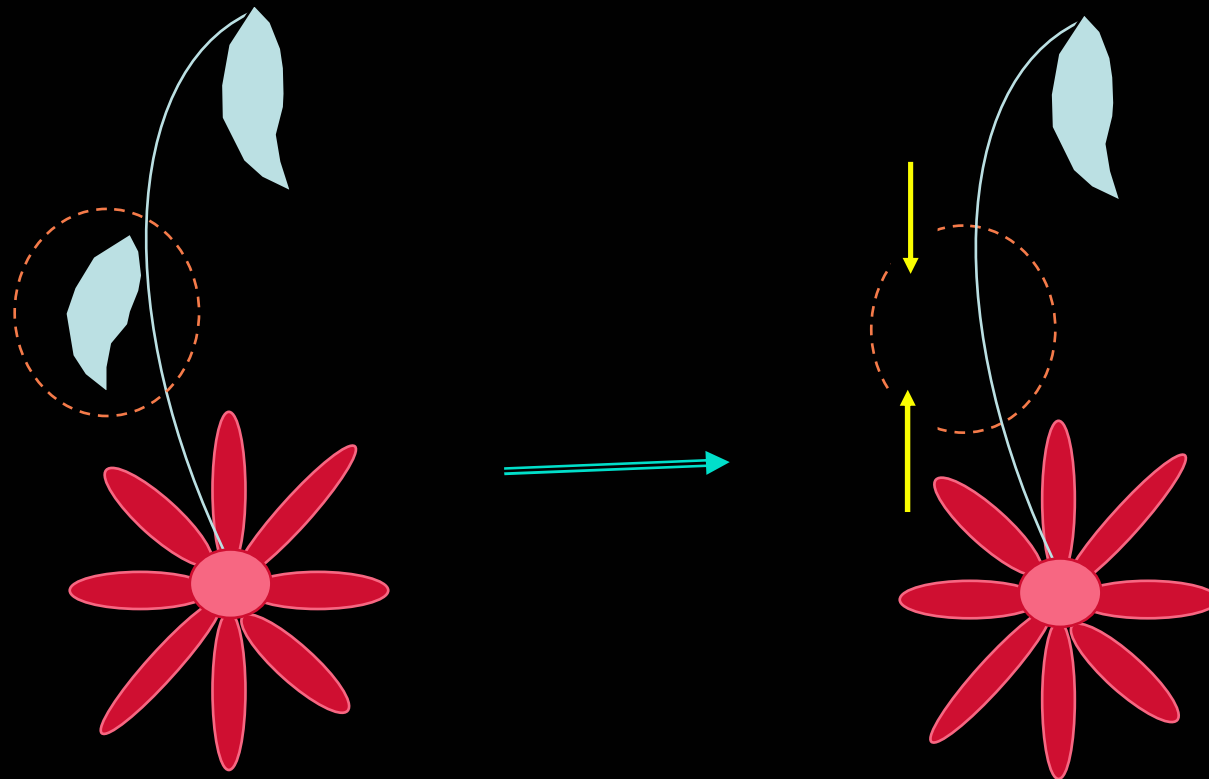
been completed by interpolation.



To achieve this interpolation process, cortical deafferented neurons show receptive fields that are increased in size, and shifted functionally to areas surrounding the scotoma

(Dreher et al, Progr Brain Res 2001; 134: 217-246)



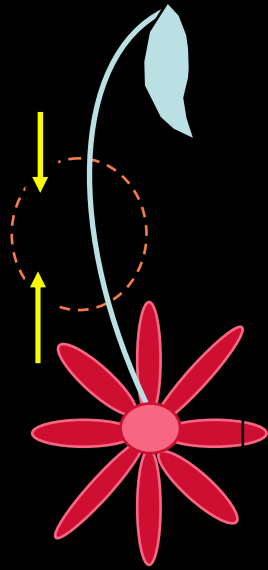


Completion

interpolation

no restitution

unawareness of the process

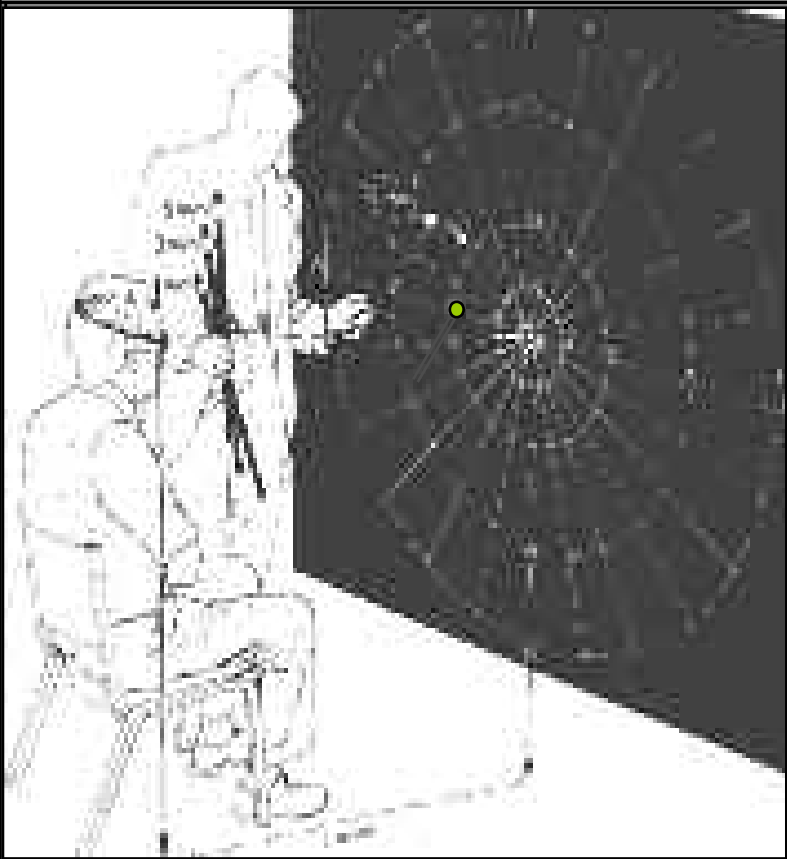


Clinical implications of completion

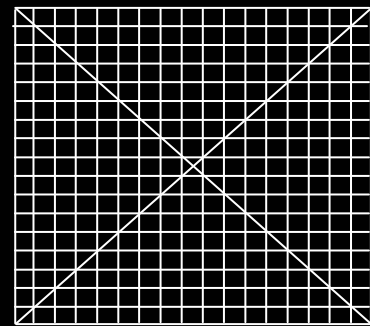
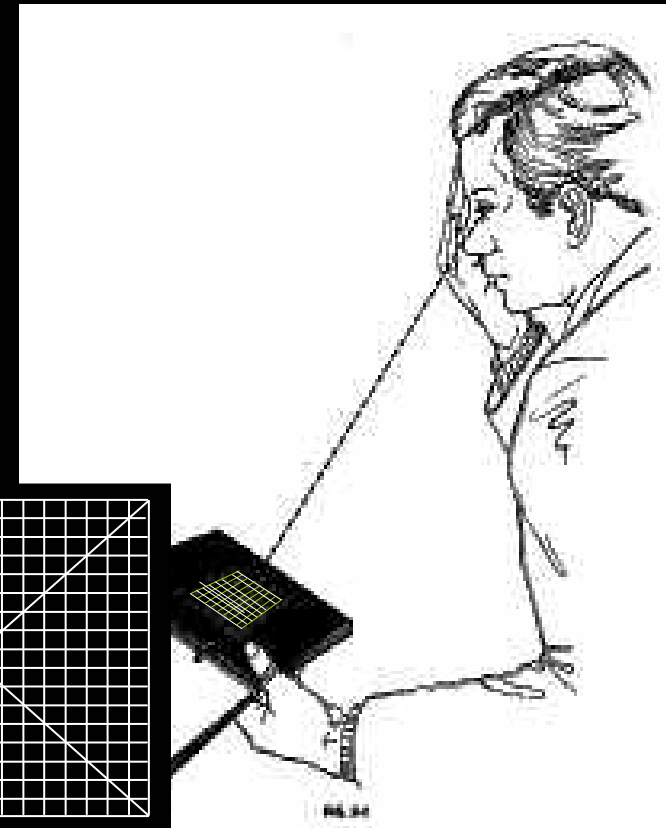
- non-recognition of the defect
- **under-evaluation of the defect**

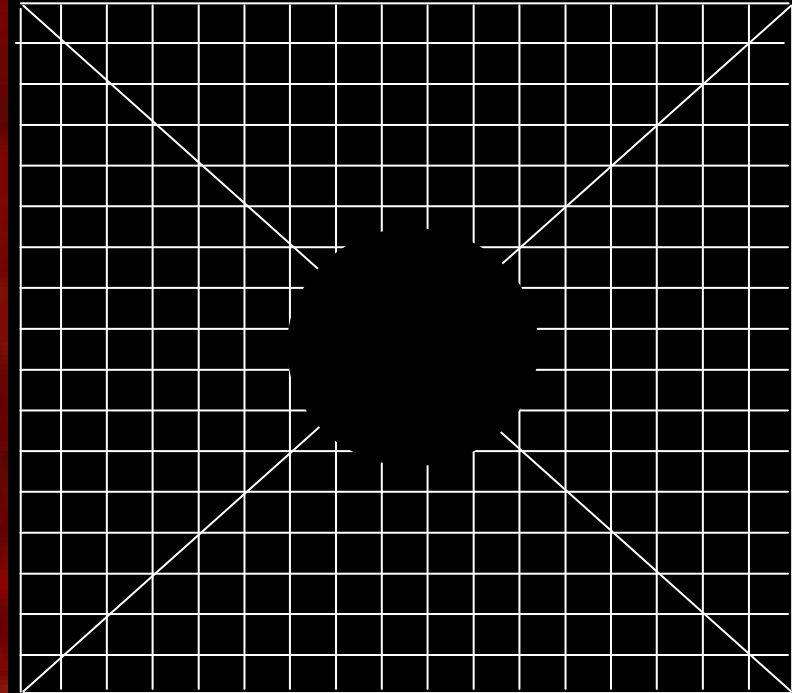
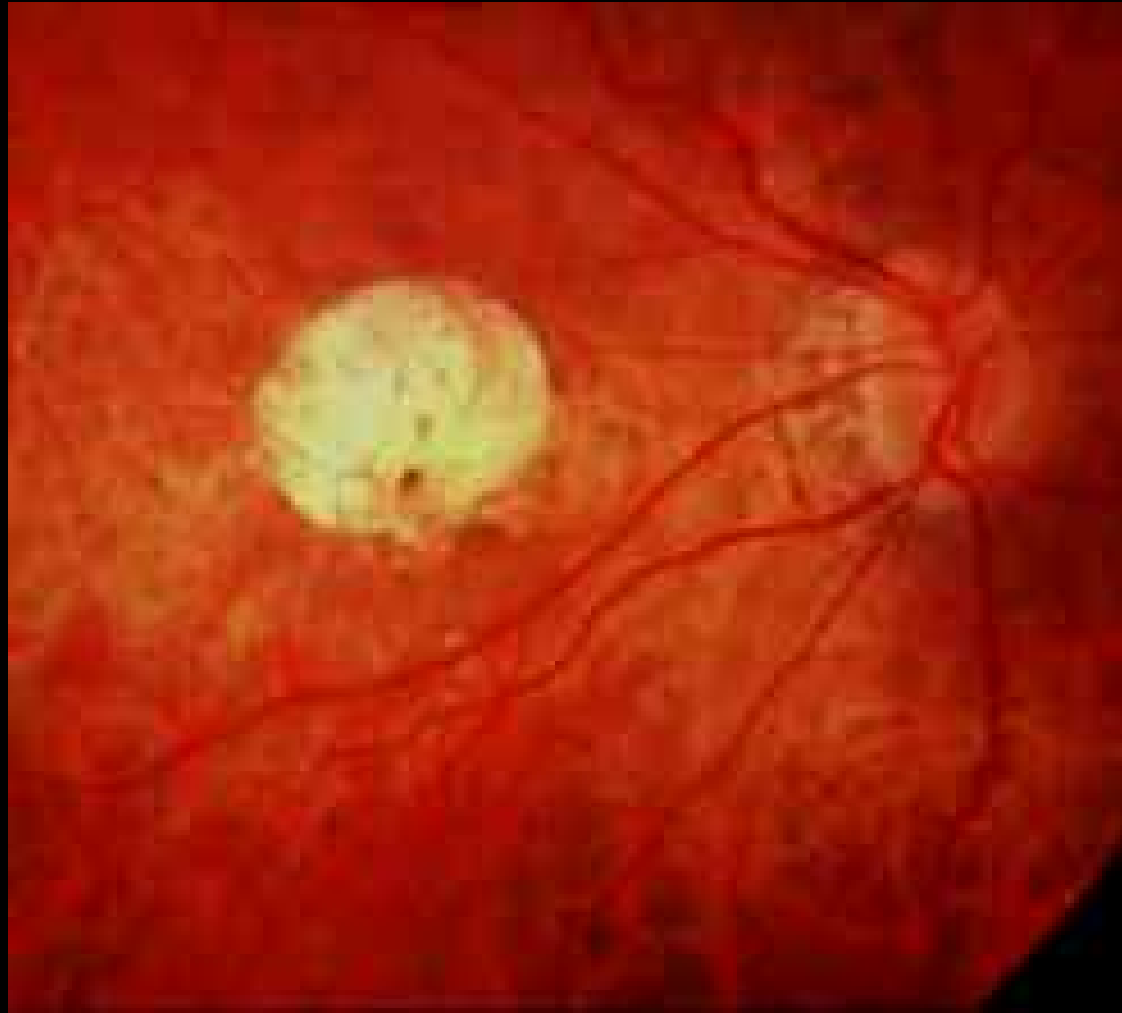
Visual field testing

Amsler grid



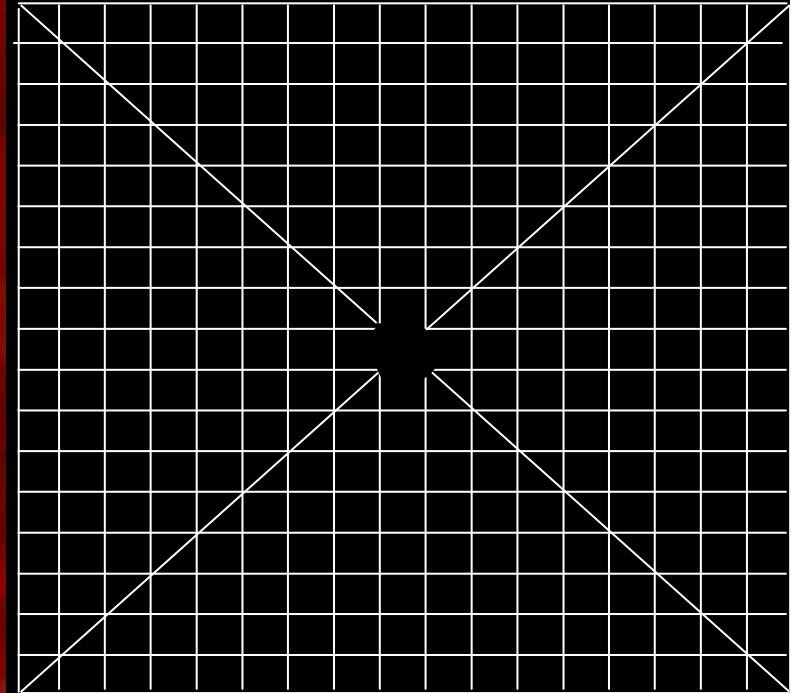
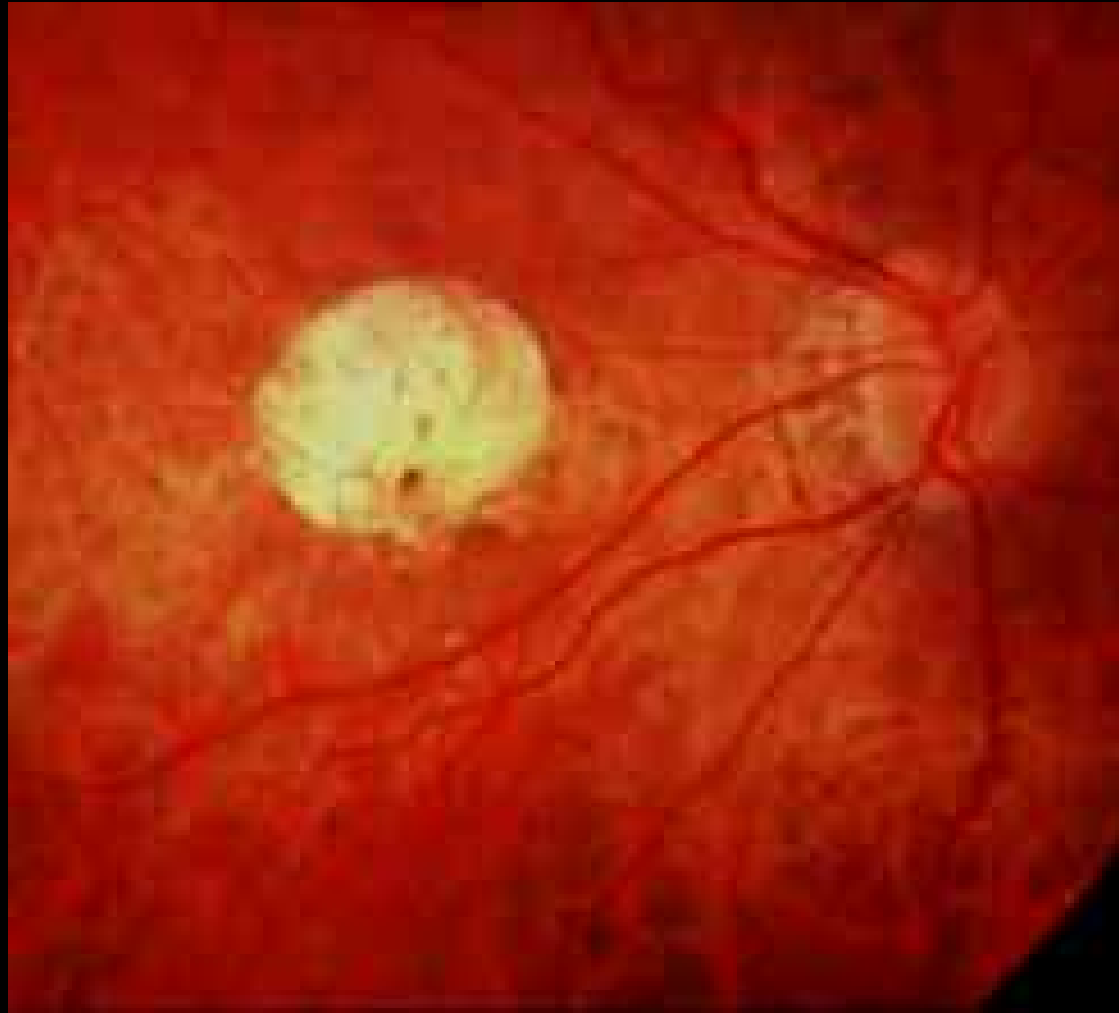
Tangent screen





Achard O., Safran A.B.,
Duret F.C., Ragama E. :

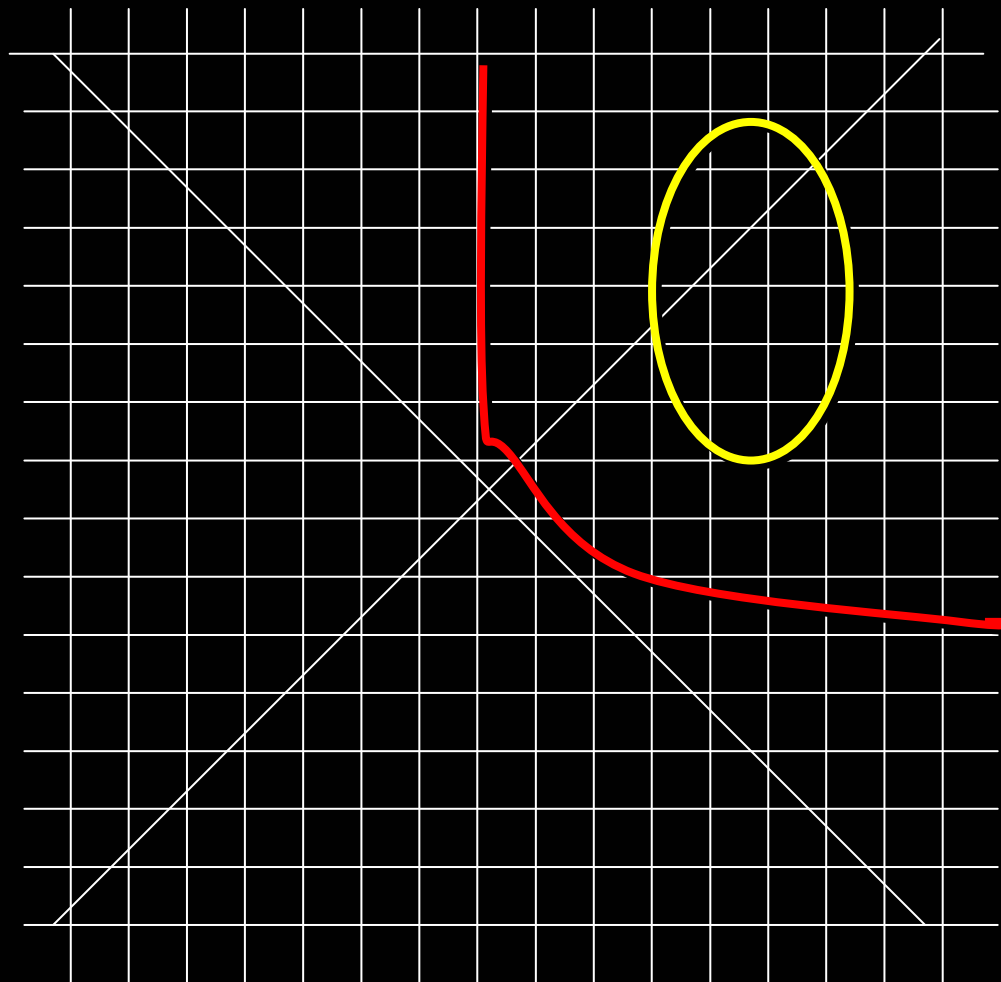
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of Amsler grid results. *Am J Ophthalmol* 120 : 322-329, 1995.



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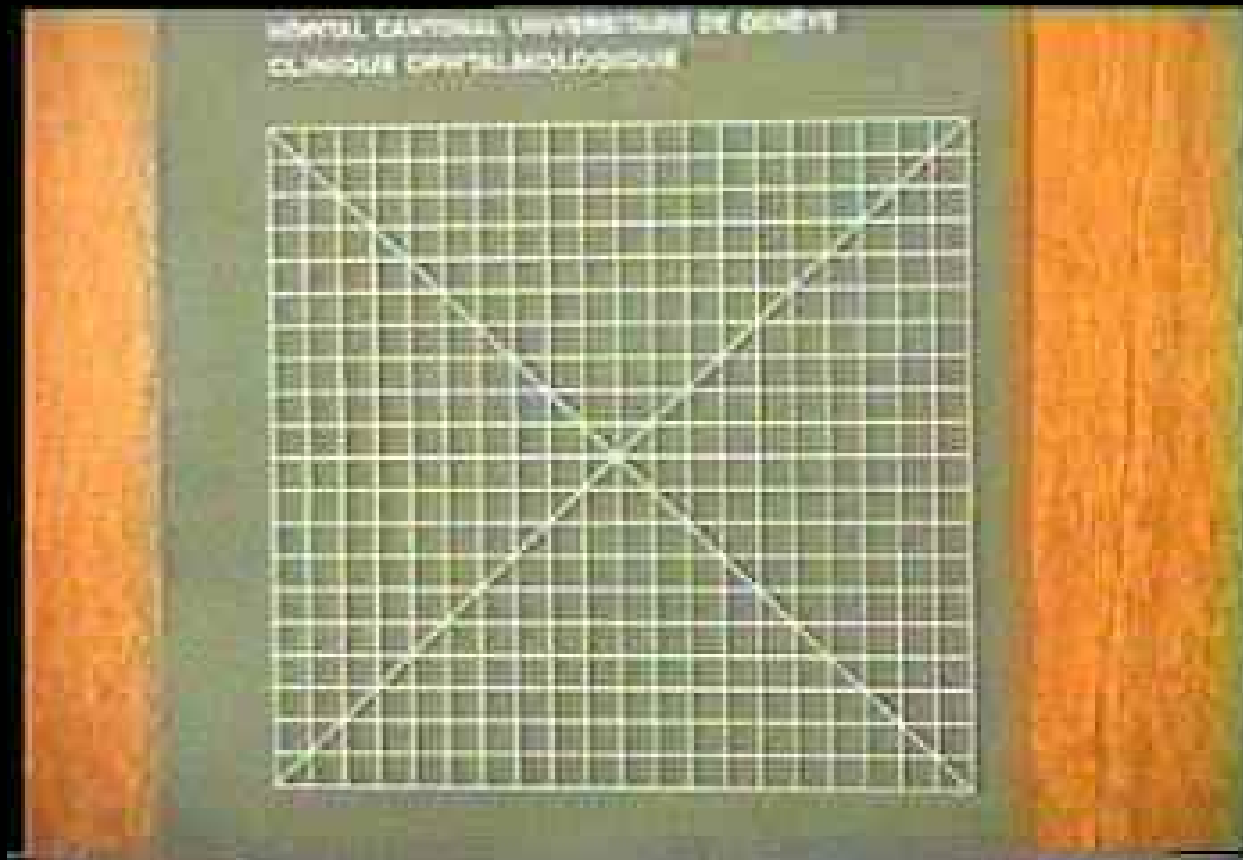
" Filling-in " experienced by a patient with right homonymous paracentral scotoma.



Scotoma borders defined using Amsler grid

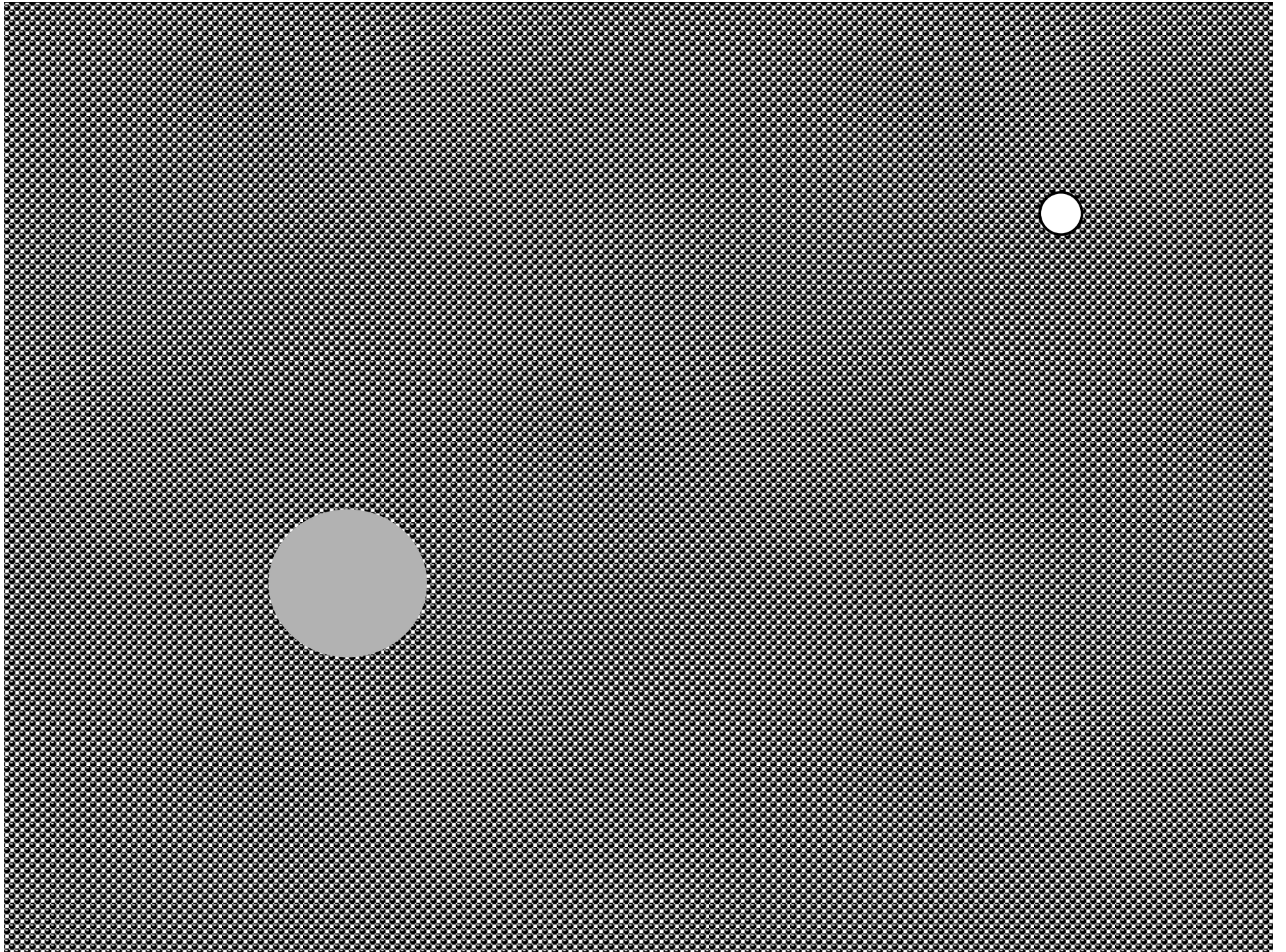
Scotoma borders plotted using a tangent screen – like technique

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Scotoma borders defined using Amsler grid

Scotoma borders plotted using a tangent screen – like technique





*Safran, Landis. The vanishing of the Sun.
A sign of cortical plasticity. Surv Ophthalmol, 1998*

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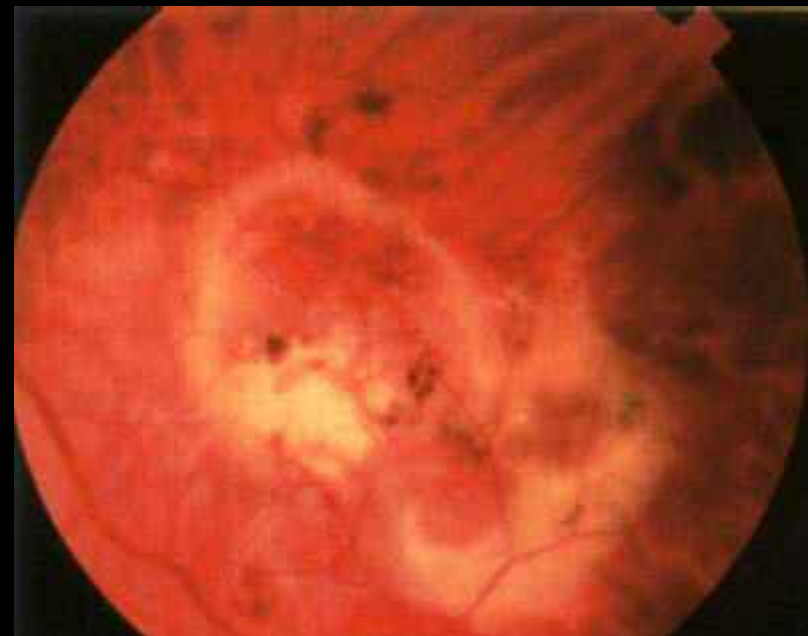
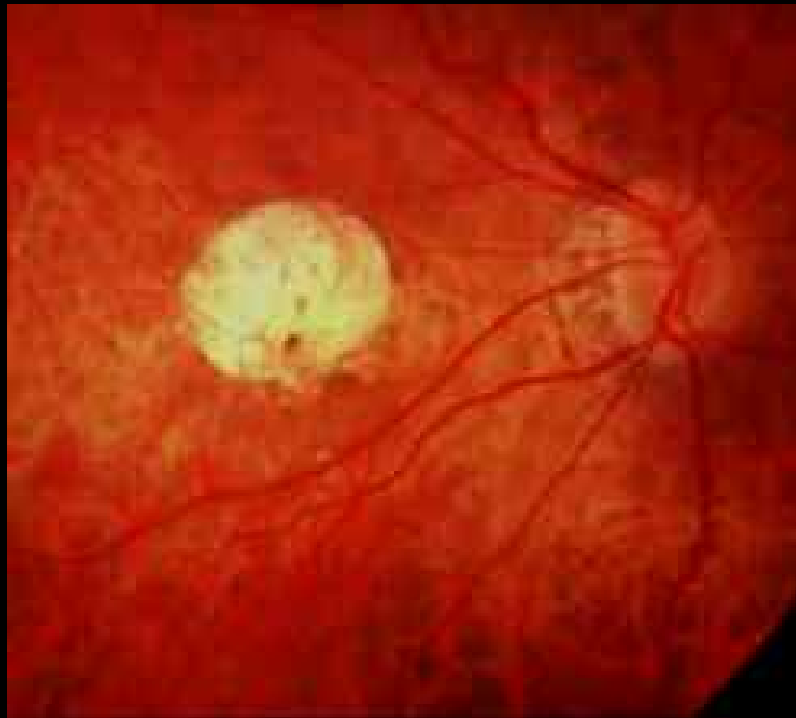
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the issue of looking with peripheral retina:

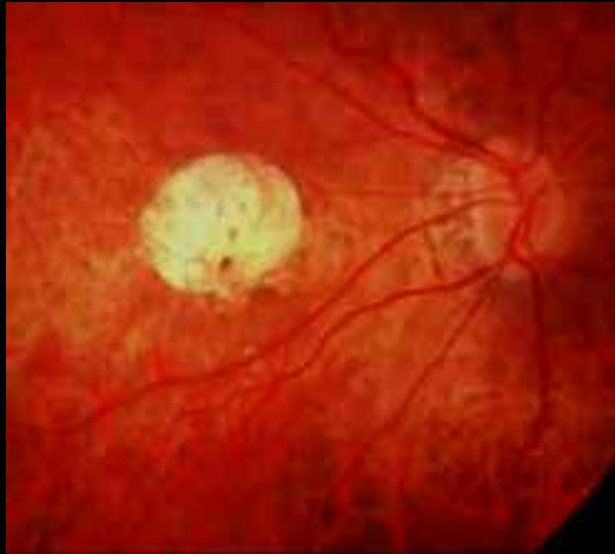
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Charles Bonnet syndrome

Age related macular degeneration



Cerebral plasticity processes



- Loss of visual acuity
- Reorientated selective attention
- Ocular motor to be reorganised
- Réorganisation du contrôle oculomoteur

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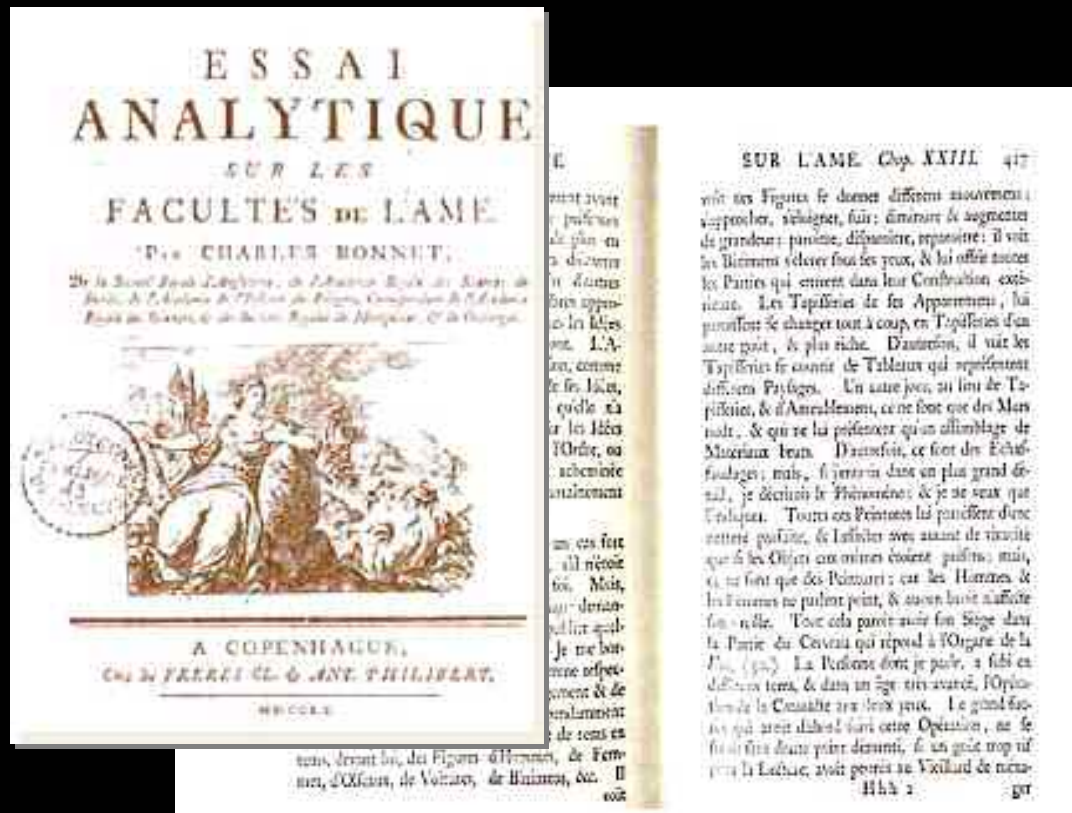
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Charles Bonnet syndrome

Charles Bonnet Syndrome (CBS)

Comments by Avinoam B. Safran, MD
Geneva University Eye Clinic



Charles Bonnet
Philosopher and naturalist
Geneva, 1720-1793

Complex Visual Hallucinations in the Visually Impaired

A Structured History-Taking Approach

G. Jayakrishna Menon, FRCS, FRCOphth

Objective: To study complex visual hallucinations in visually impaired individuals.

Methods: A prospective comparative study involving structured history taking and cognitive assessment in 48 consecutive visually impaired individuals with best-corrected visual acuity of 20/200 or worse and an age-matched cohort of 48 consecutive patients with visual acuity of 20/40 or better in at least 1 eye.

Results: Thirty visually impaired subjects (63%) experienced hallucinations, unrelated to specific ocular pathology. None volunteered the symptom; 2 admitted hallucinations on nonleading questioning and 28 on direct questioning. All displayed insight into the unreality of their hallucinations, although 18 (60%) achieved this after initial deception. Seventeen (57%) expressed concern; 7 (23%) experienced disturbing images. Nineteen (63%) feared being labeled as insane were they to admit to hallucina-

tions, while 10 (33%) were fearful of impending insanity. Sixteen (94%) of 17 concerned patients derived comfort from sympathetic reassurance that their hallucinations did not represent sinister pathology. In contrast, none of the individuals with normal vision experienced any hallucinations ($P < .001$). Cognition was intact in all groups.

Conclusions: Complex visual hallucinations with insight commonly occur in visually impaired, cognitively intact individuals due to acquired visual impairment and are unrelated to chronological age. Hallucinatory experiences are almost invariably admitted to only on direct questioning, due to fears of being considered insane. Although generally pleasant, hallucinations may cause distress, because of content or implications of the hallucinatory activity. Sympathetic explanation affords significant emotional relief.

Arch Ophthalmol. 2005;123:349-355

Cognitive function in Charles Bonnet Syndrome

Cognitive
scores

- *Hallucinating* subjects : **27,2** \pm 1.0
- *Non hallucinating* subjects : **26.8** \pm 1.4
- *Control* group : **26.4** \pm 1.3

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