

# Corrélation entre fonction et structure

Stratégie diagnostic devant une NO  
présumée

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# I) Interrogatoire

## Quand? Chronologie

- Brutale
- +/-rapidement progressive, insidieuse

## Comment? Caractéristiques

- Flou,
- Sombre,
- Déformé
- Couleurs délavés
- Amputation du champ visuel

## Quoi d'autre? Signes associés

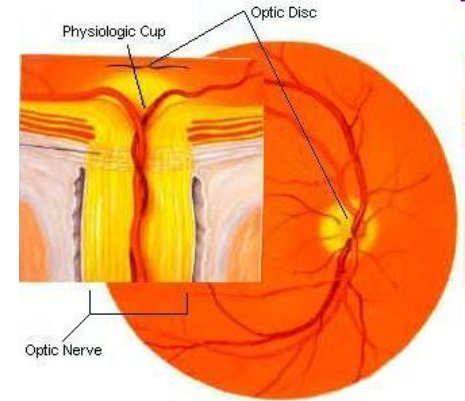
- Douleur
- Photophobie, Héméralopie
- Signes et ATCD généraux

## II) Examen clinique

- Acuité visuelle de loin et de près
- Oculomotricité
  - Extrinsèque, intrinsèque
- Segment antérieur
  - Jeu pupillaire
  - Signes inflammatoires: CA, iris, vitré
- Tonus oculaire
- Fond d'œil:
  - papille mais aussi examen de la rétine+++

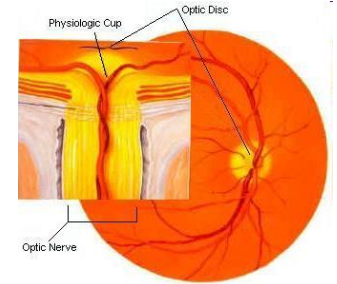
# III) Examens Complémentaires

- OCT: RNFL (et Macula !)
- Documentation photo, AF
- Vision des couleurs, Champ visuel
- IRM plan neuro-ophtalmologique,
  - Regarder les images, pas seulement le CR !!!!
- PEV, ERG, ERG multifocal, EOG
- Angiographie /Angio OCT
- Pachymétrie, aberrométrie,



# Correlation entre structure et fonction selon l'aspect de la papille

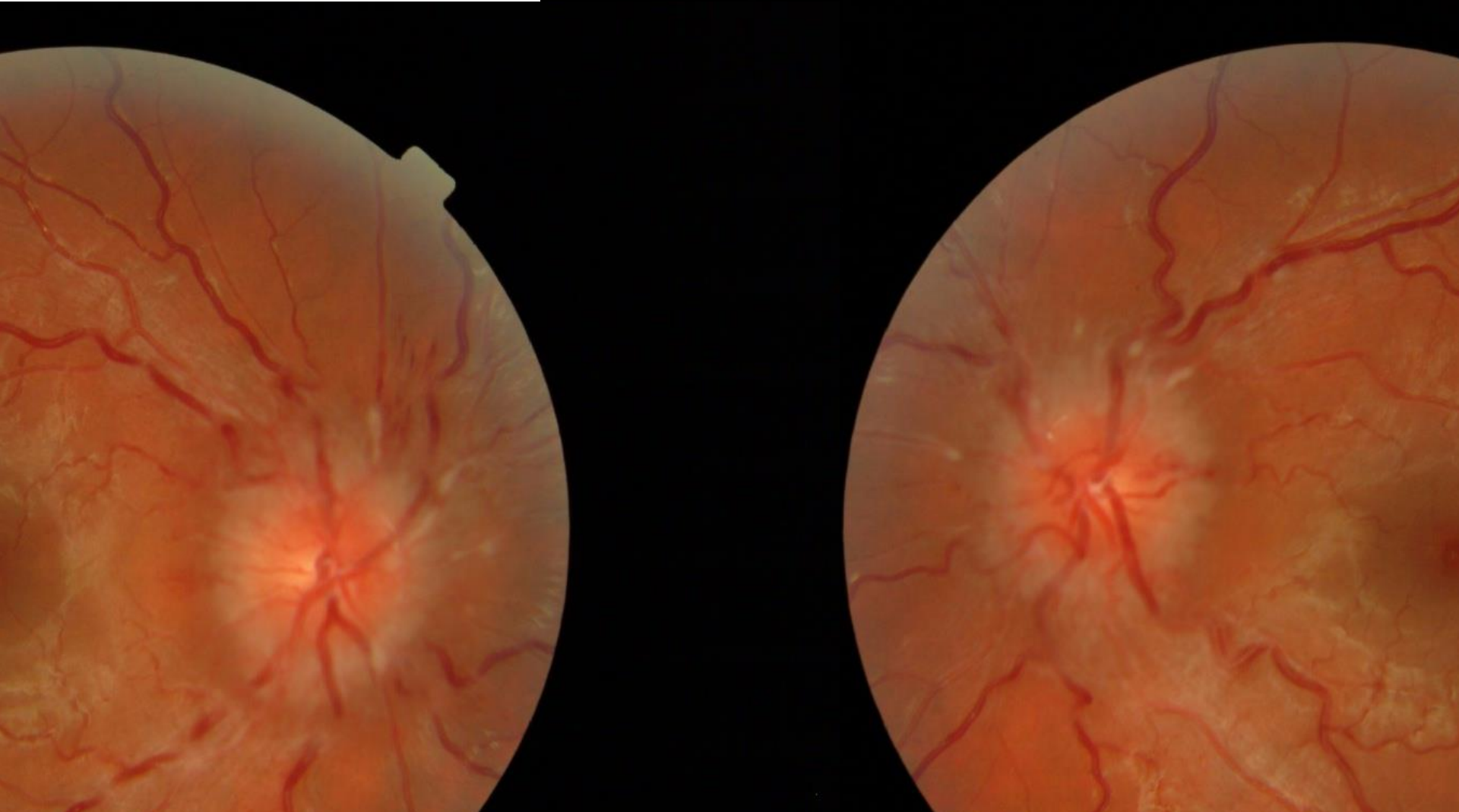
- Avant l'OCT: Aspect de la papille
  - Œdème
  - Atrophie
  - **Papille normale** (« Mon patient ne voit rien et je ne vois pas pourquoi? »)
- Après l'OCT: Couche des fibres ganglionnaires rétiniennes
  - **Epaissie** (œdème clinique ou infra-clinique)
  - **Amincie** (atrophie clinique ou infra-clinique)
  - **Normale**
    - Œdème évoluant vers l'atrophie
    - Perte axonale débutante sans retentissement sur la couche des fibres ganglionnaires
    - Pas de neuropathie optique: revoir le diagnostic

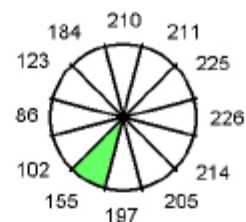
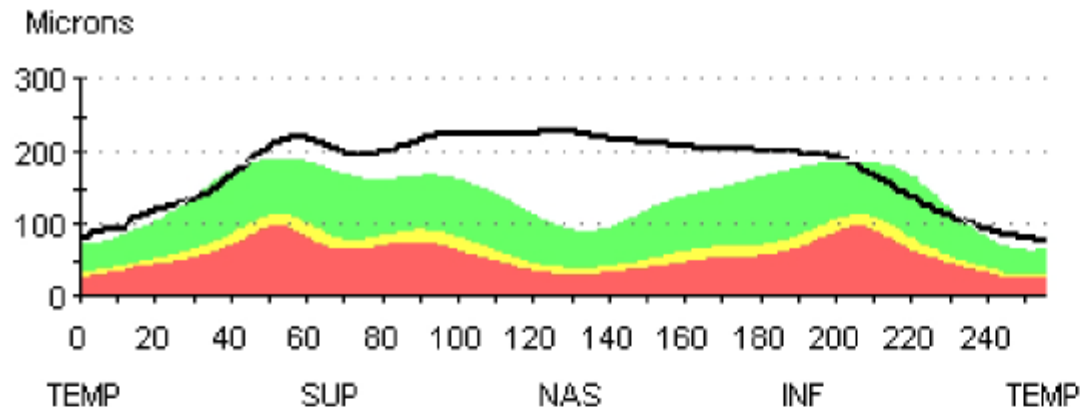


# Œdème papillaire et/ou RNFL épaissie

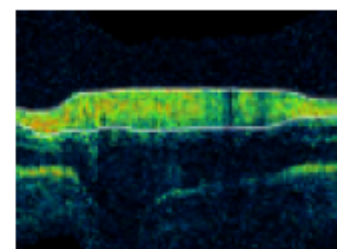
- Œdème papillaire de stase acuité conservée:
  - HTIC
- Œdème papillaire « inflammatoire »
  - Névrite optique (20%) ,
- Pseudo-œdème :
  - Leber débutant
  - Drusen de la papille
- Œdème papillaire « ischémie »
  - NOIA

Femme 24 ans, BAV bilatérale,  
Diplopie, 10/10 ODG, Parésie VI

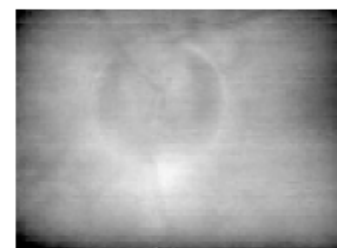
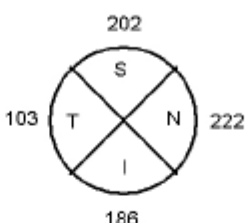
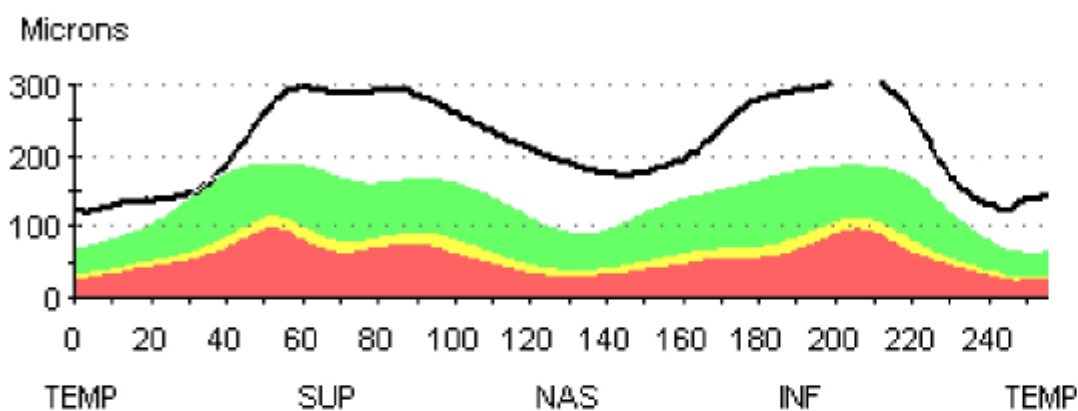




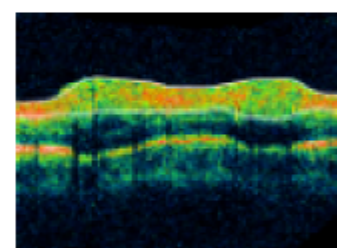
OD



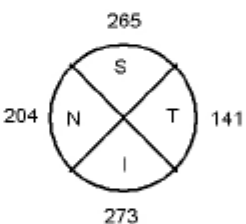
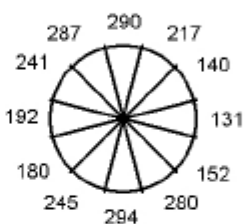
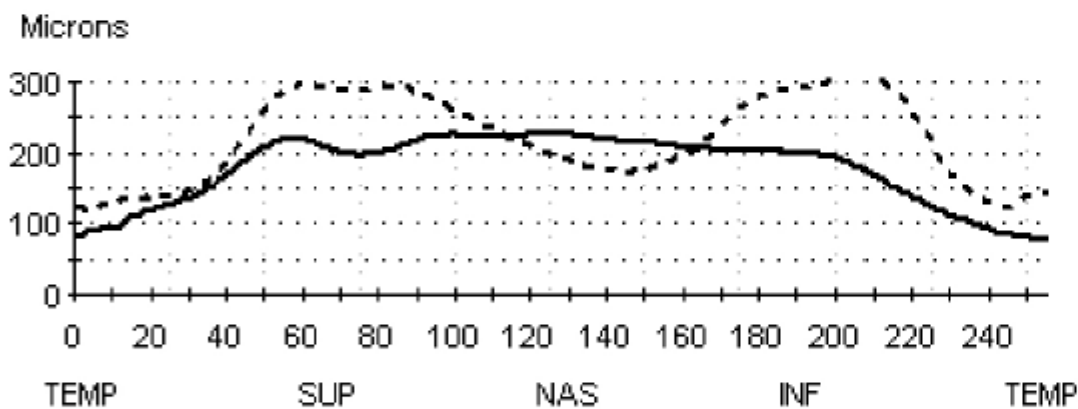
Signal Strength (Max 10)	4
Analysis Confidence Low	



OS



Signal Strength (Max 10)	7
Analysis Confidence Low	

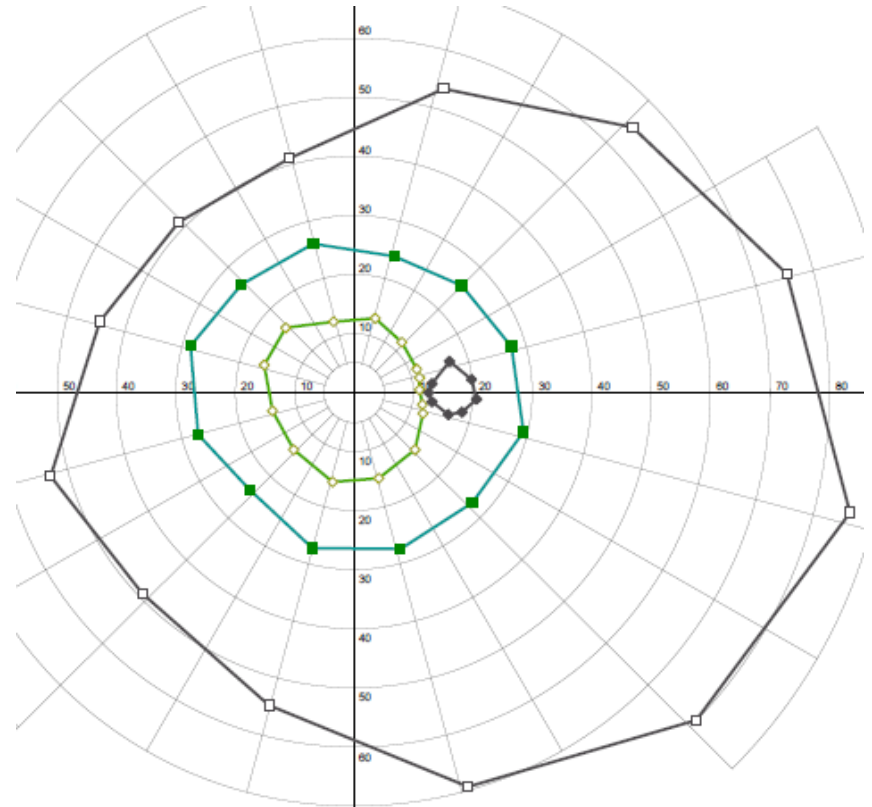
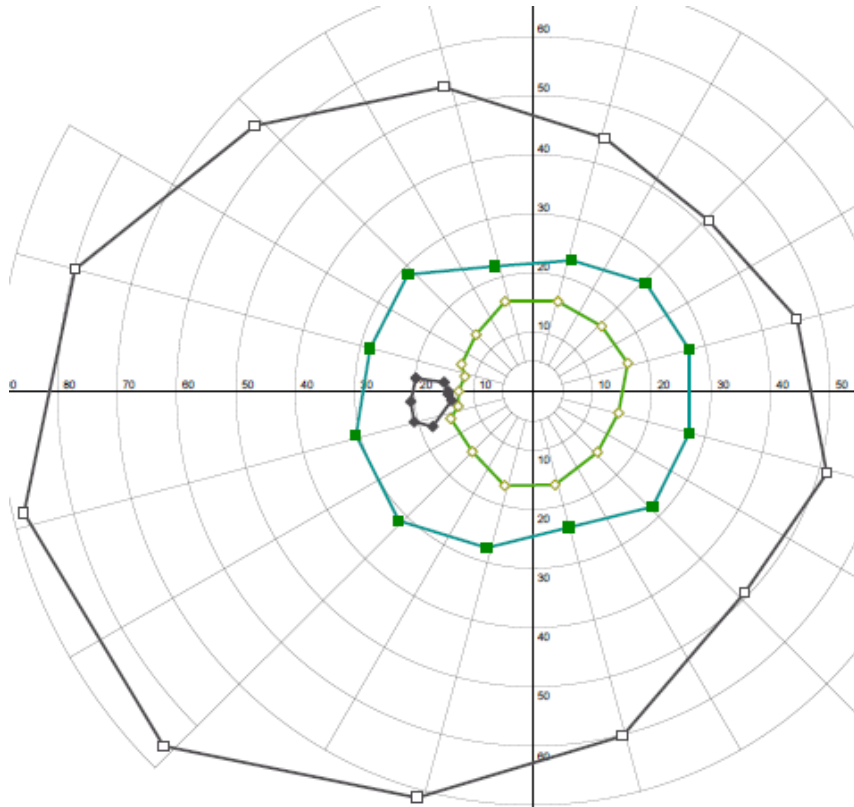


— OD    - - - - OS

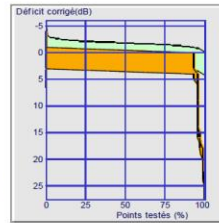
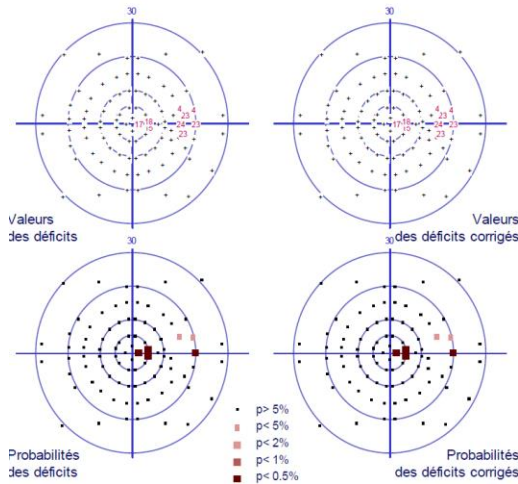
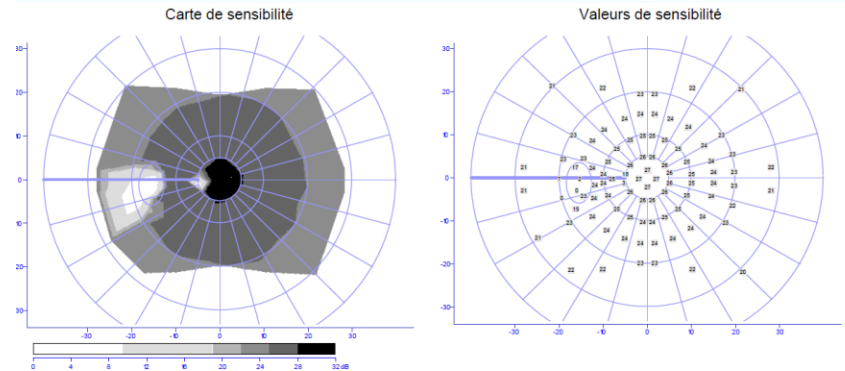
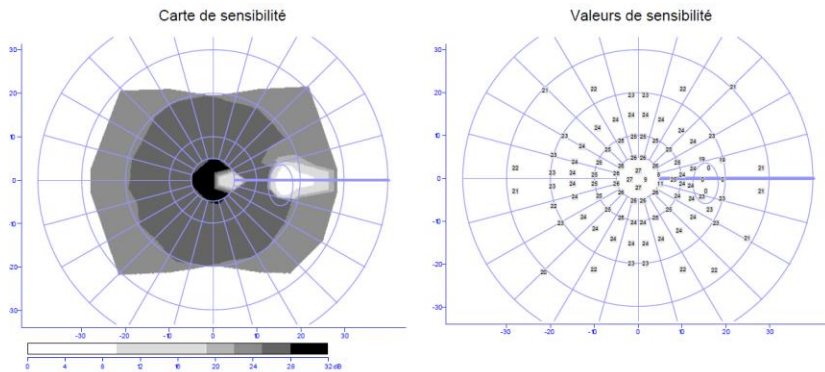
	OD (N=3)	OS (N=3)	OD-OS
Imax/Smax	0.92	1.04	-0.12



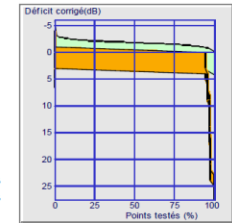
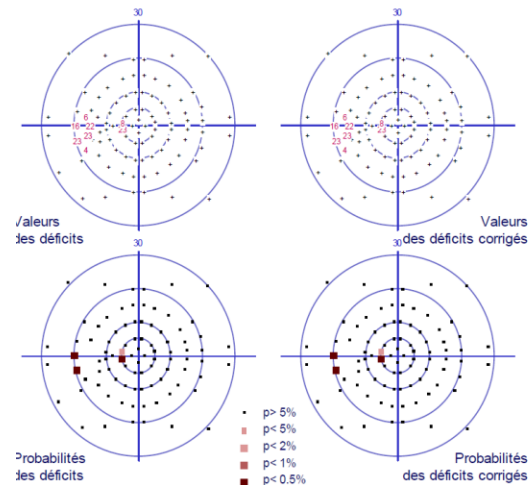
# Pas d'atteinte CV périphérique



# Elargissement tâche aveugle

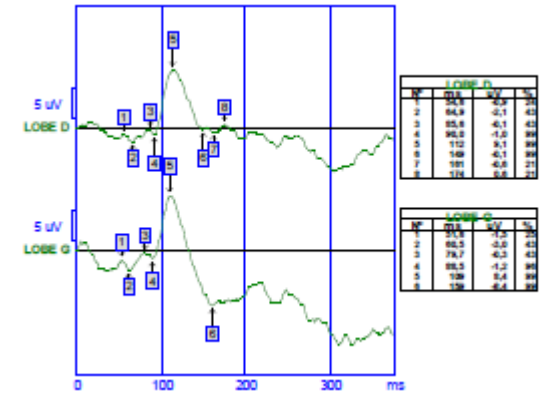
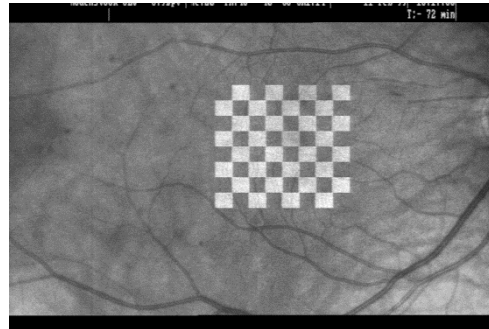
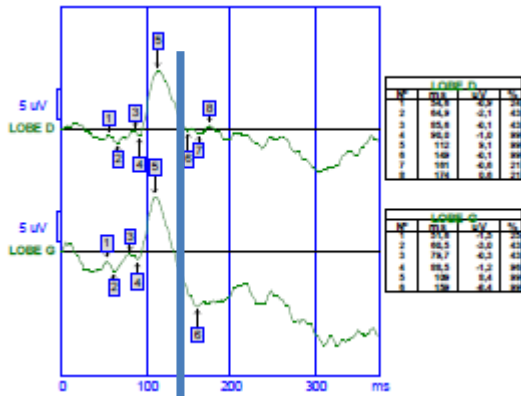


Déficit moyen (1) : 0,9 dB (perte de sensibilité)  
 Déficit moyen corrigé (2) : 0,9 dB (perte de sensibilité)  
 Variance des déficits : 15 dB<sup>2</sup>  
 Fluctuation spatiale : 1,3 dB  
 Fluctuation temporelle :  
 Temps de réponse moyen : 350 ms  
 Pertes de fixation : 0/10  
 Pertes d'attention : 0/10  
 Durée de l'examen : 3mn 48s  
 Correction carte de référence : 0 dB  
 Diamètre pupille :  
 Stimulus : Ilc  
 (1) somme des déficits globaux et locaux  
 (2) déficits locaux uniquement

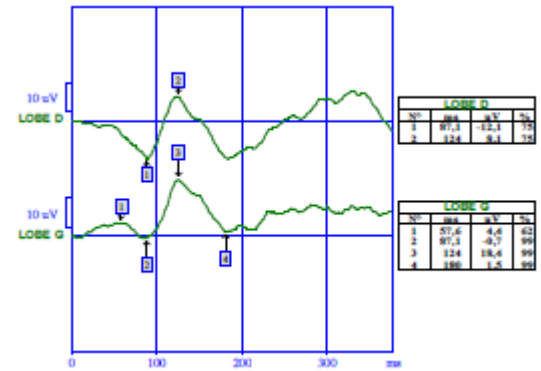
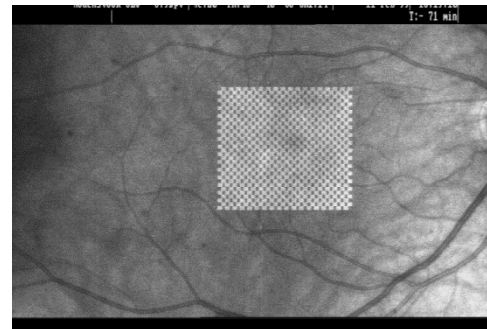
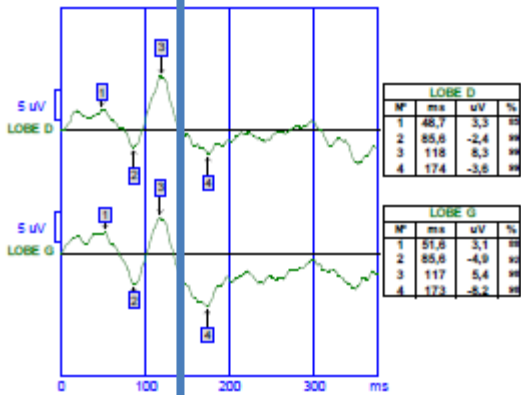


Déficit moyen (1) : 0,8 dB (perte de sensibilité)  
 Déficit moyen corrigé (2) : 0,8 dB (perte de sensibilité)  
 Variance des déficits : 15 dB<sup>2</sup>  
 Fluctuation spatiale : 1,3 dB  
 Fluctuation temporelle :  
 Temps de réponse moyen : 335 ms  
 Pertes de fixation : 0/10  
 Pertes d'attention : 0/9  
 Durée de l'examen : 3mn 14s  
 Correction carte de référence : 0 dB  
 Diamètre pupille :  
 Stimulus : Ilc  
 (1) somme des déficits globaux et locaux  
 (2) déficits locaux uniquement

# Potentiel évoqué visuel normal

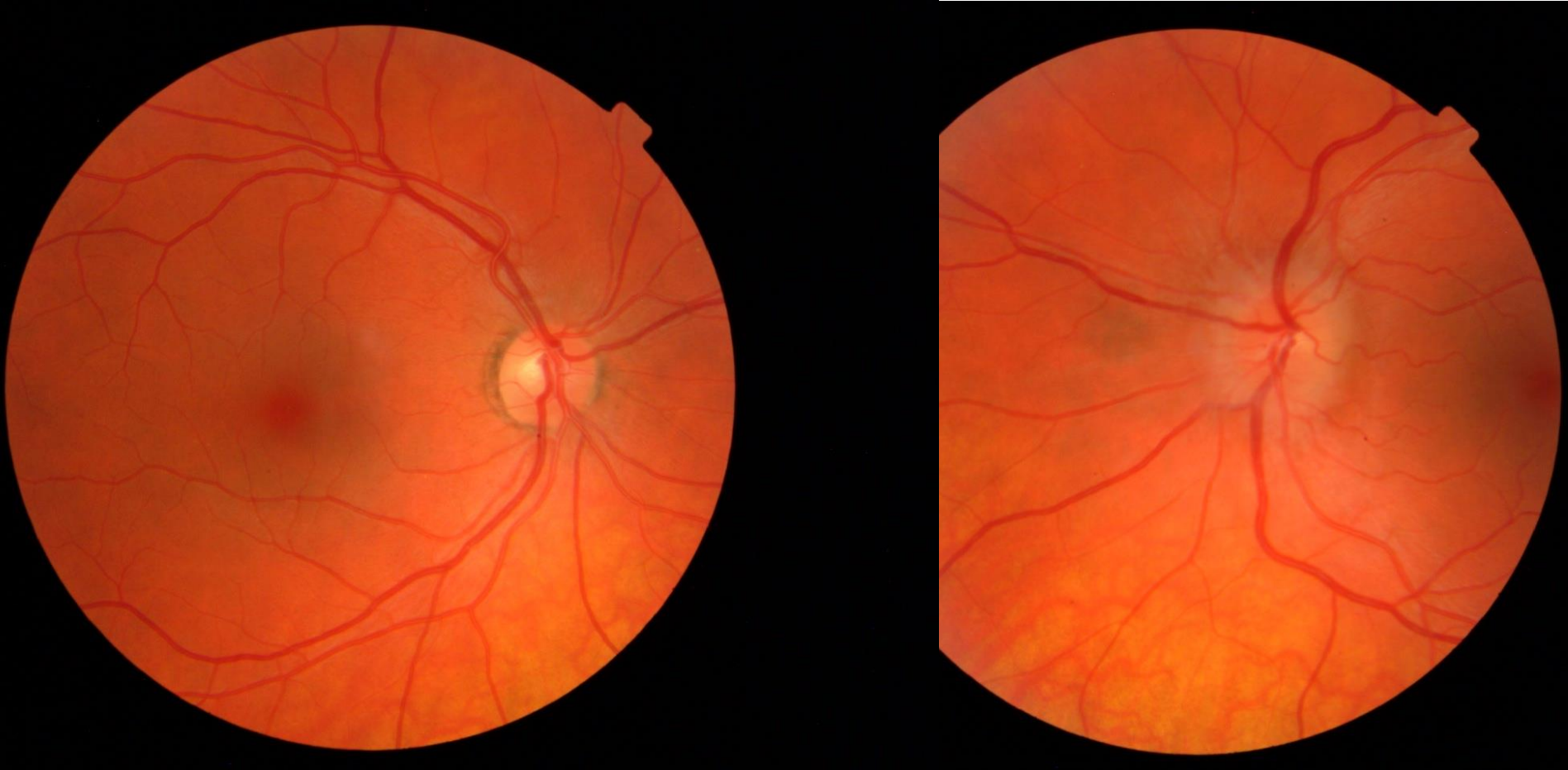


Grand damier 60' = 1°  
1/10 < Acuité < 3/10

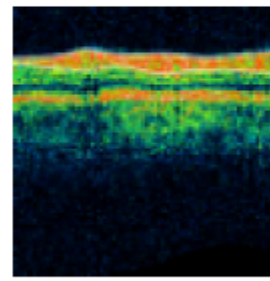
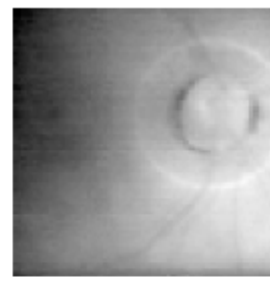
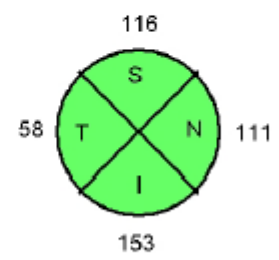
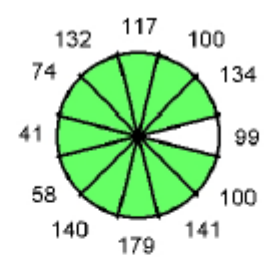
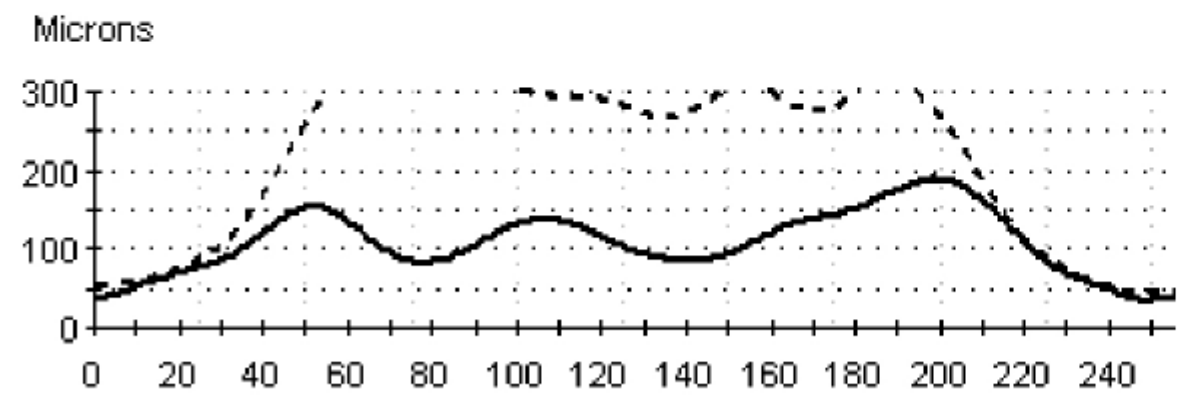
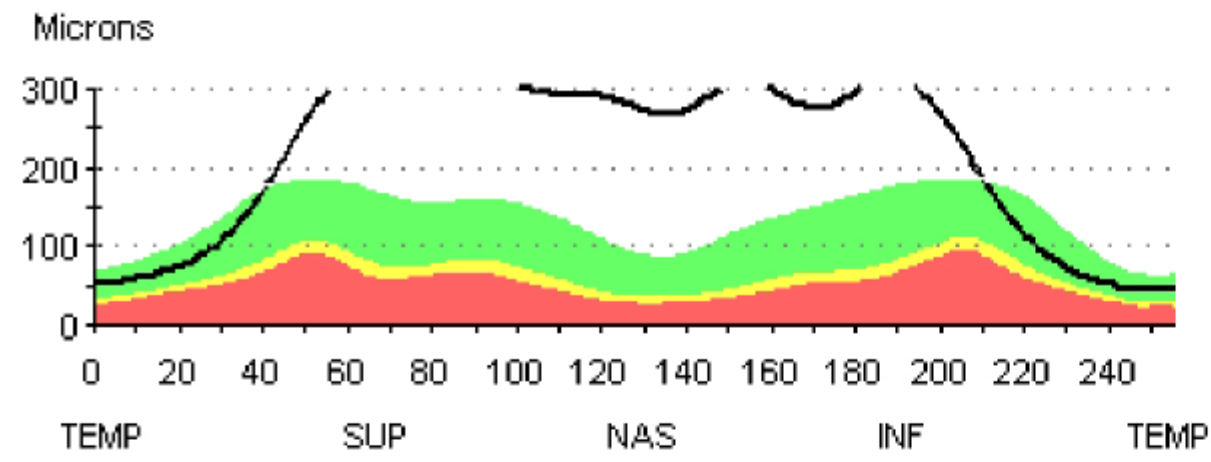
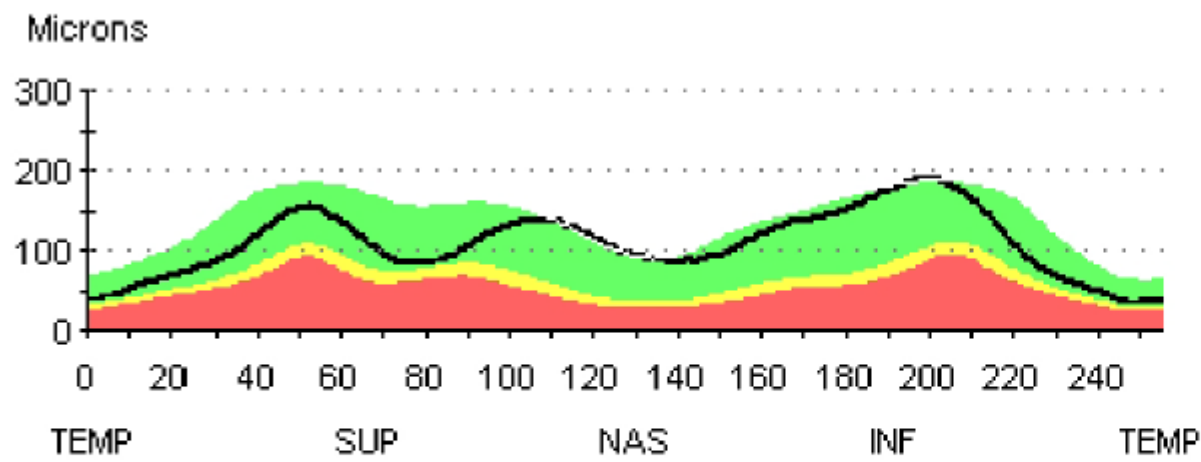


Petit damier 15' = 1/4°  
Acuité > 3/10

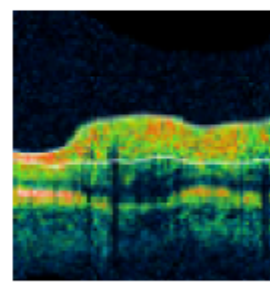
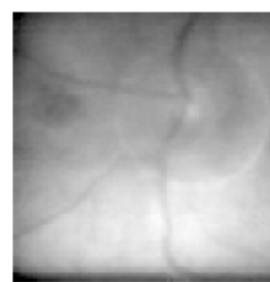
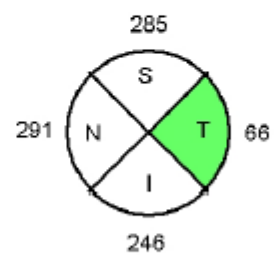
Femme de 30 ans BAV OG brutale  
10/10 à droite et à gauche



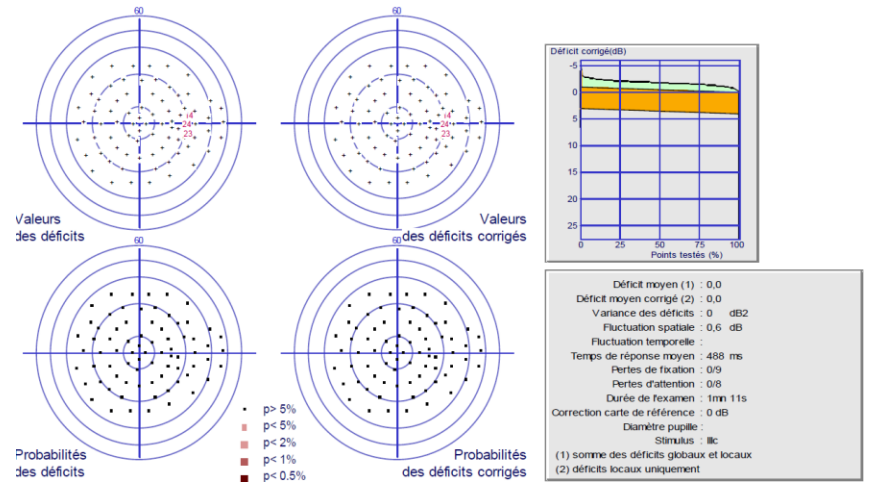
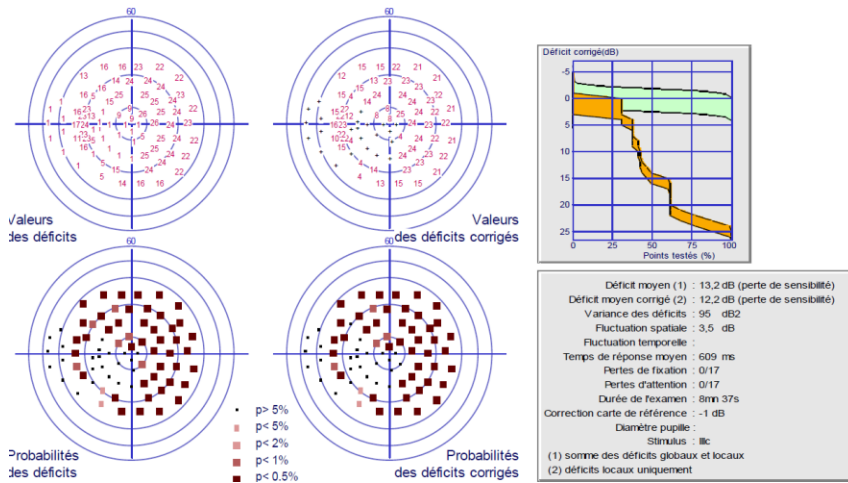
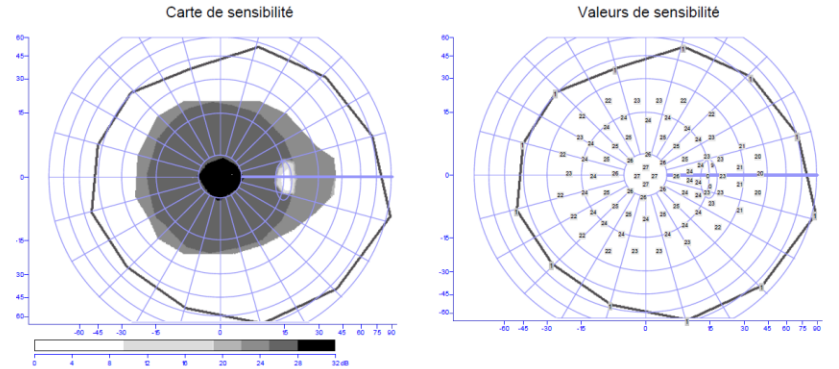
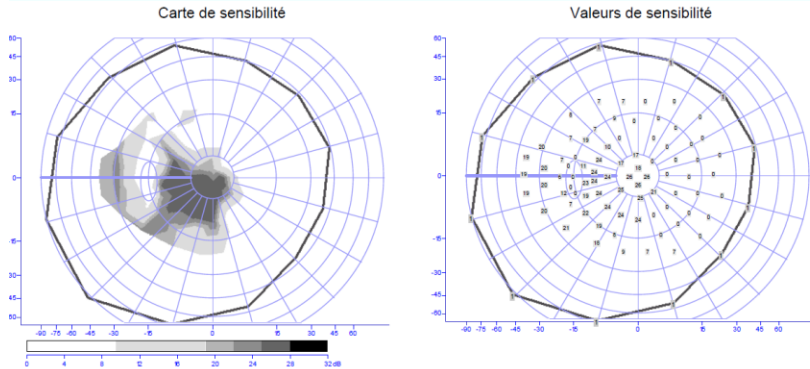
Question ?



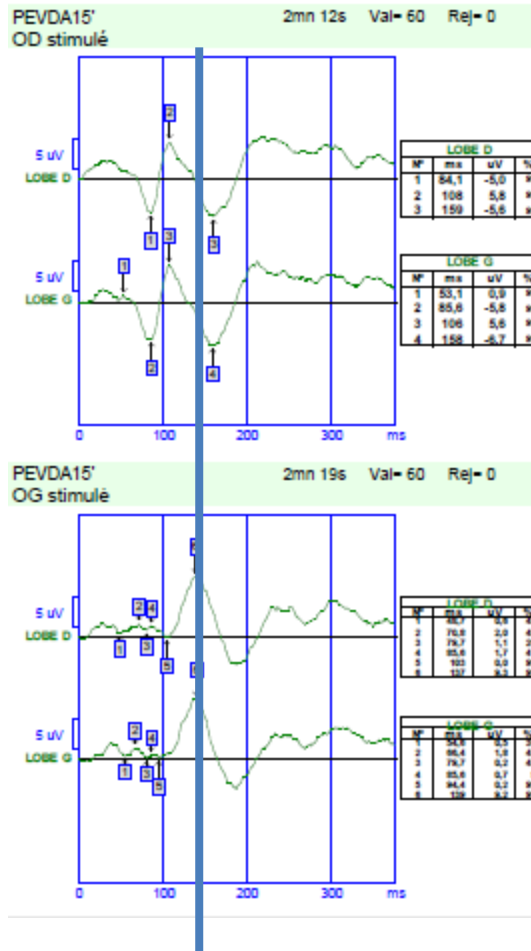
Signal Strength (Max 10)	8
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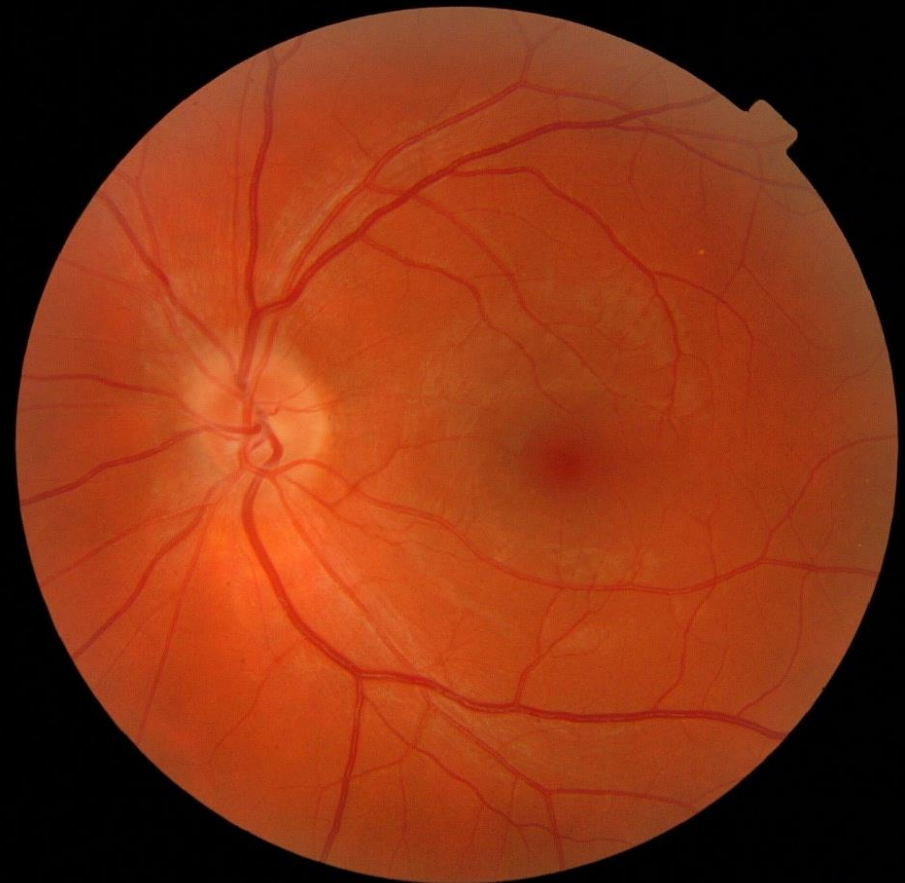
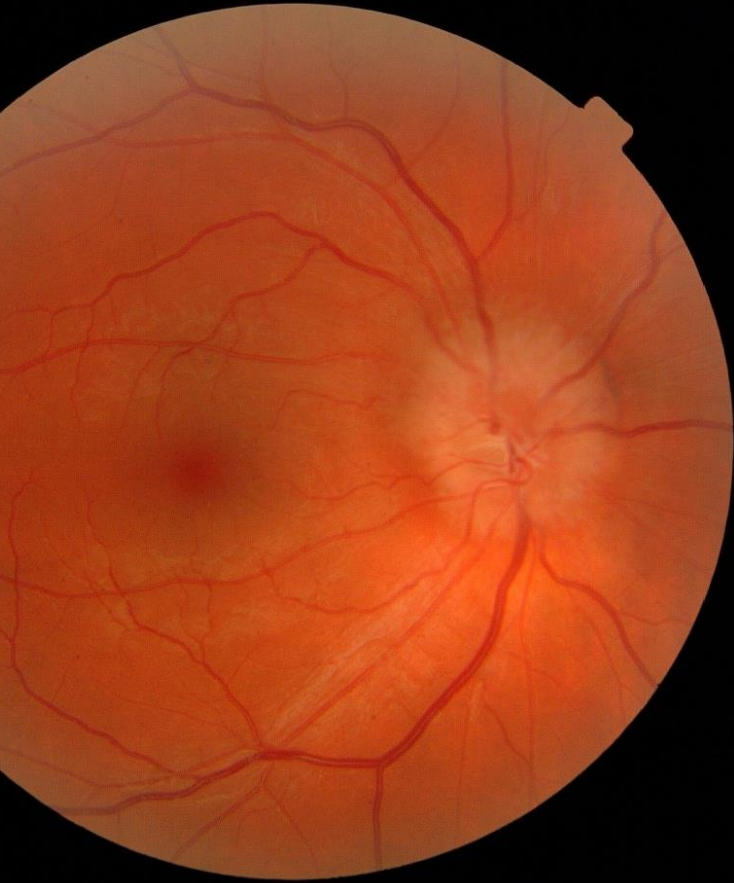
Signal Strength (Max 10)	7
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# Retard de latence OG: névrite optique



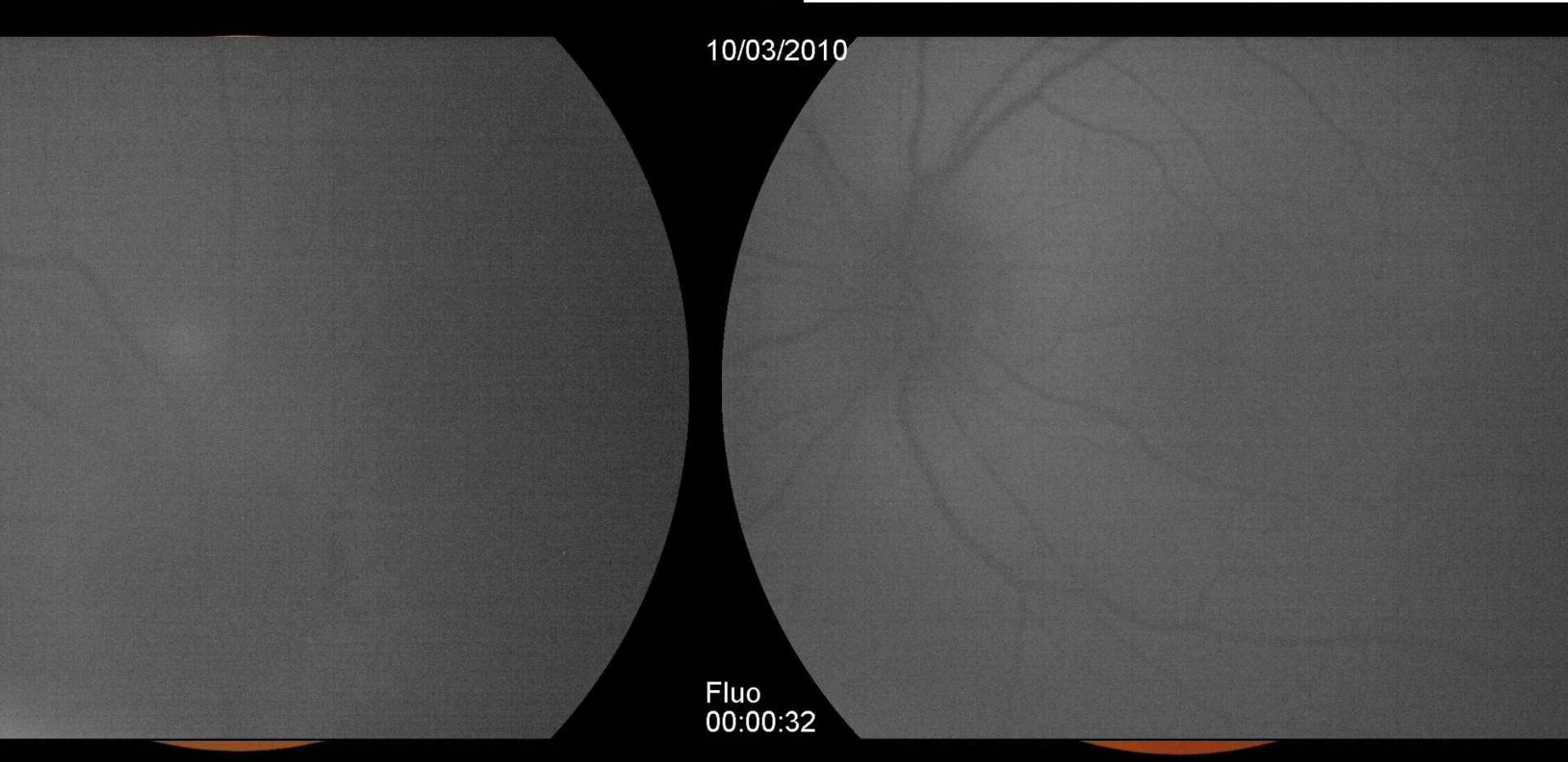
Homme de 34 ans BAV OD brutale  
10/10 à droite et à gauche



Question ?

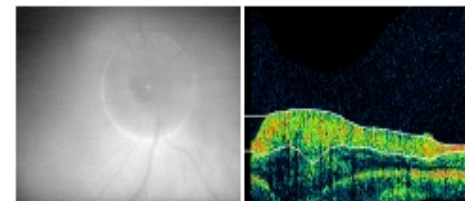
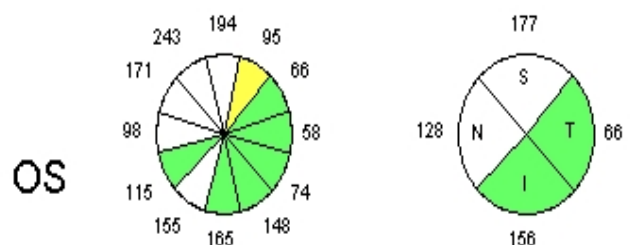
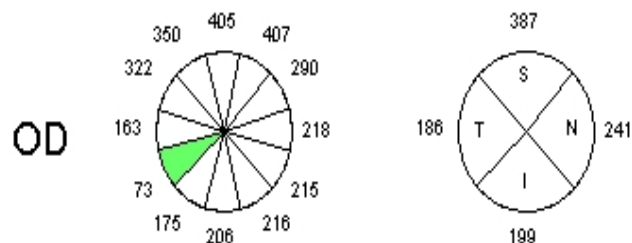
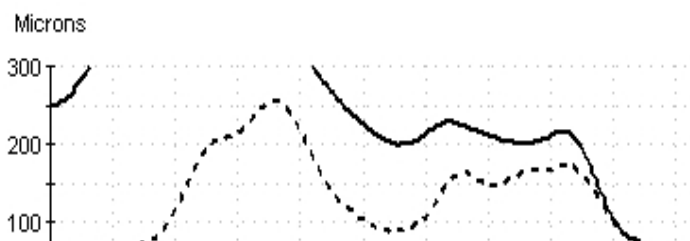
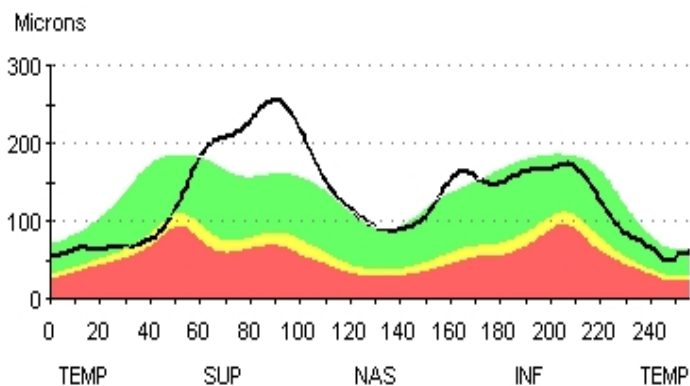
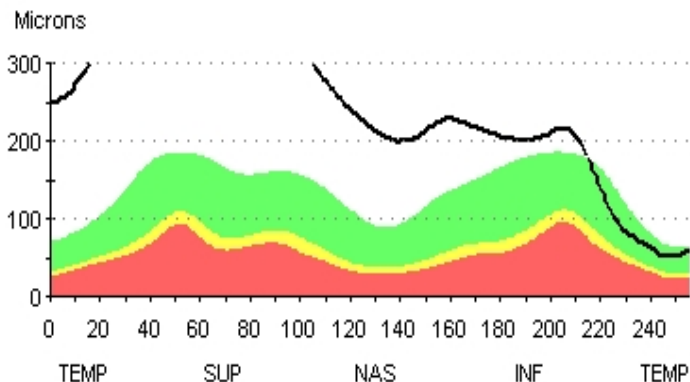


# Homme de 34 ans BAV OG brutale 10/10 à droite et à gauche

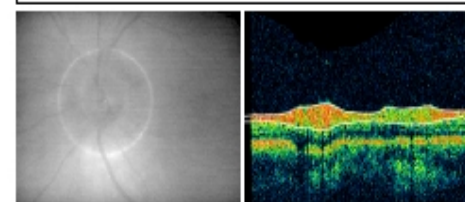


Question ?

# KNFL THICKNESS AVERAGE ANALYSIS

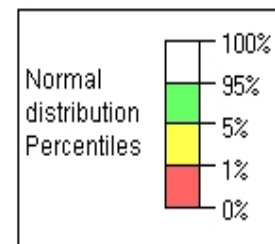


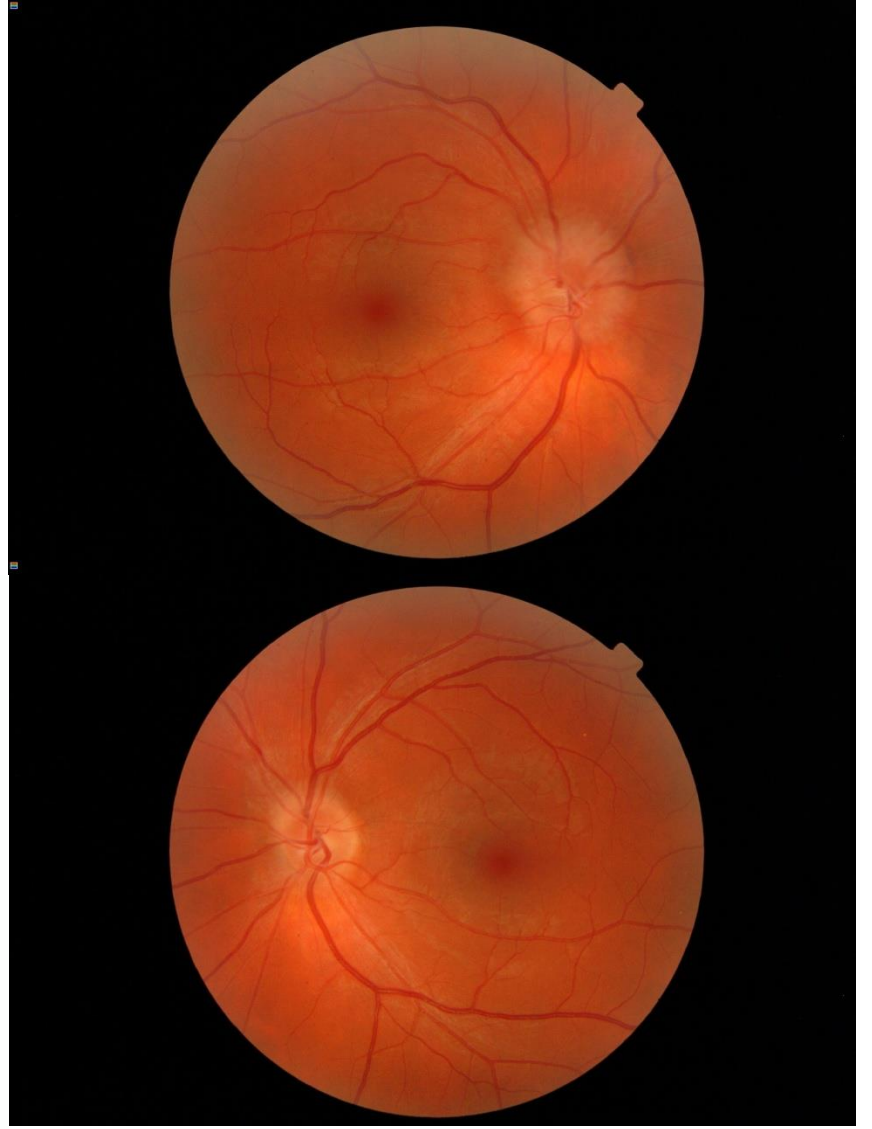
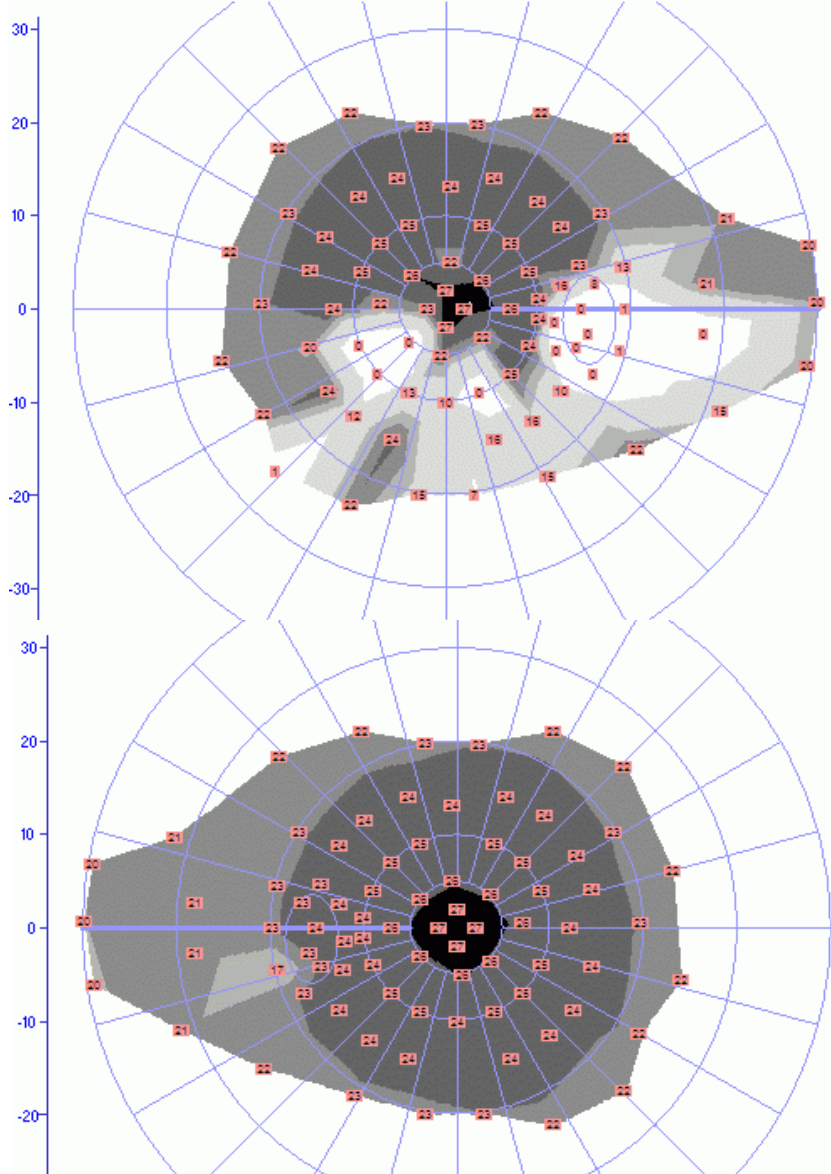
Signal Strength (Max 10)	5
Analysis Confidence Low	



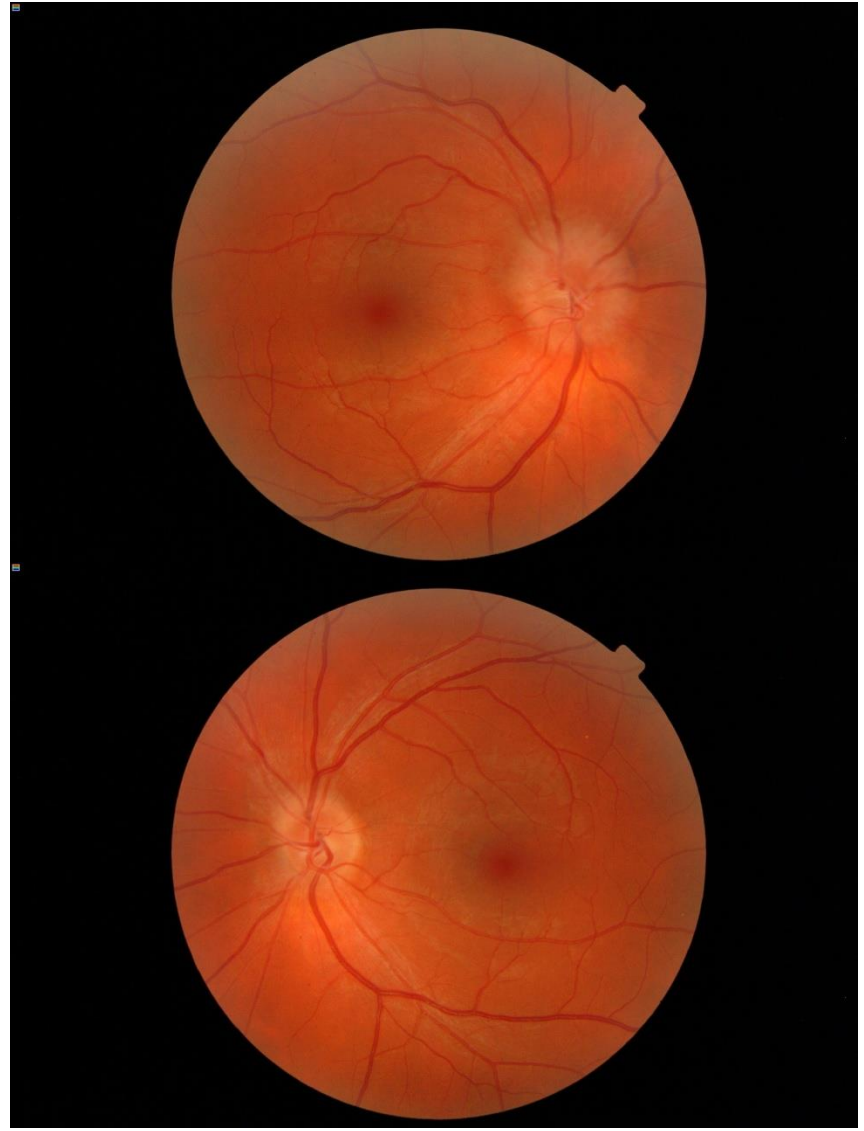
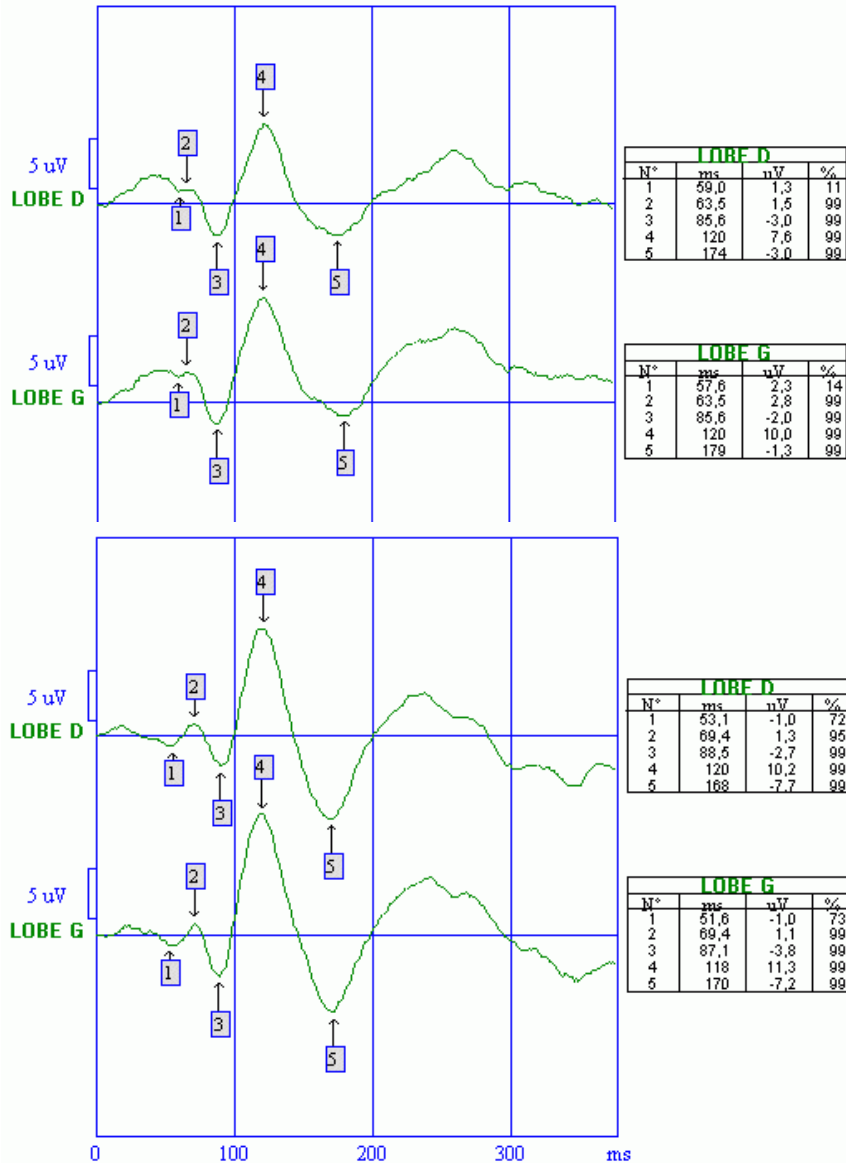
Signal Strength (Max 10)	5
Analysis Confidence Low	

	OD (N=3)	OS (N=3)	OD-OS
lmax/Smax	0.50	0.68	-0.17
Smax/lmax	1.99	1.48	0.51
Smax/Tavg	2.43	3.87	-1.44
lmax/Tavg	1.22	2.62	-1.40
Smax/Navg	1.87	1.99	-0.12
Max-Min	399.00	205.00	194.00
Smax	451.00	255.00	196.00
lmax	227.00	173.00	54.00
Savg	387.00	177.00	210.00
lavg	199.00	156.00	43.00
Avg.Thickness	253.12	131.96	121.16





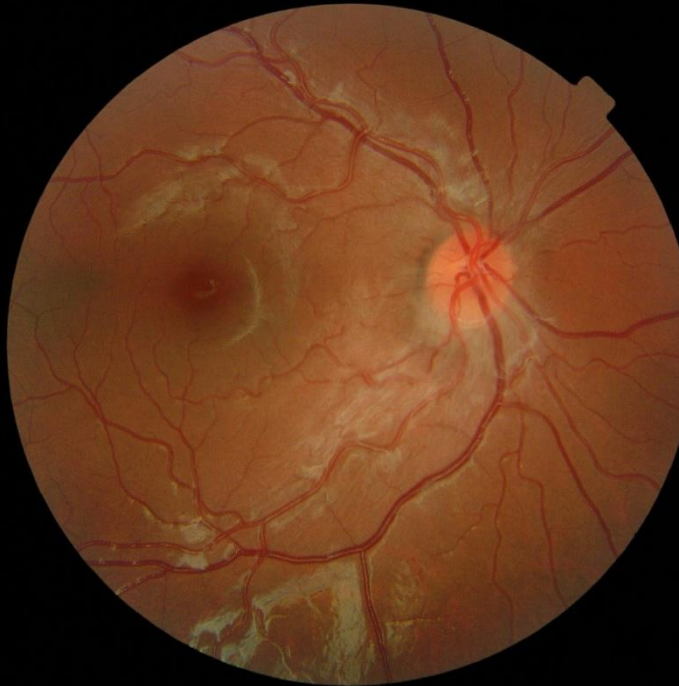
# Diagnostic

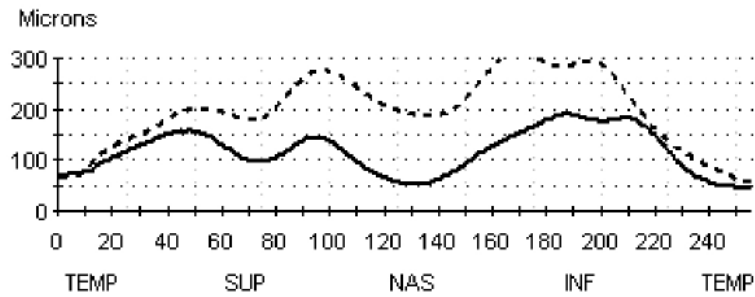
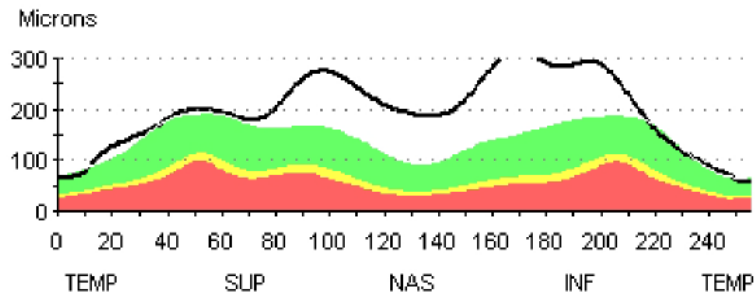
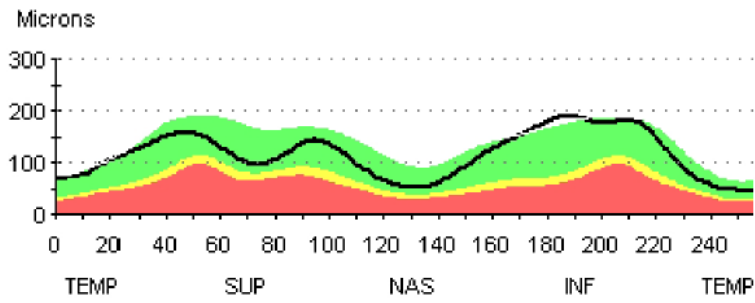


# Diagnostic

- Pression d'ouverture  
LCS 28 mm Hg

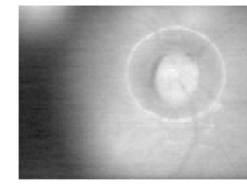
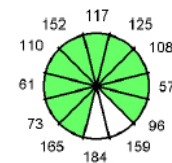
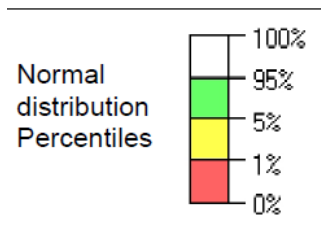
Fille de 8 ans, céphalées, hypermétrope  
de 2,5 dioptries ODG, AV 10/10 ODG



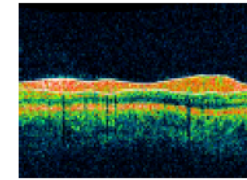
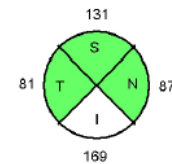


— OD    - - - - OS

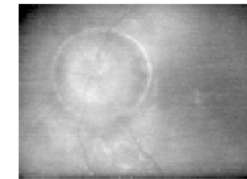
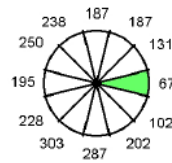
<b>OD</b>	Scans used	1, 2, 3
<b>OS</b>	Scans used	1, 2, 3



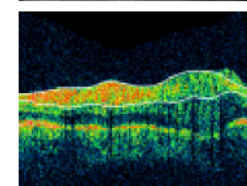
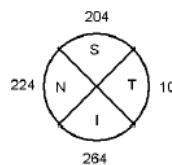
OD



Signal Strength (Max 10)	8
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OS



Signal Strength (Max 10)	6
Analysis Confidence Low	

	OD (N=3)	OS (N=3)	OD-OS
Imax/Smx	1.21	1.14	0.06
Smx/Imax	0.83	0.88	-0.05
Smx/Tavg	1.93	2.75	-0.82
Imax/Tavg	2.33	3.14	-0.81
Smx/Navg	1.81	1.22	0.58
Max-Min	143.00	257.00	-114.00
Smx	157.00	275.00	-118.00
Imax	190.00	314.00	-124.00
Savg	131.00	204.00	-73.00
Iavg	169.00	264.00	-95.00
Avg.Thick	117.19	198.01	-80.82

# Fille de 8 ans, céphalées, hypermétrope de 2,5 dioptries ODG

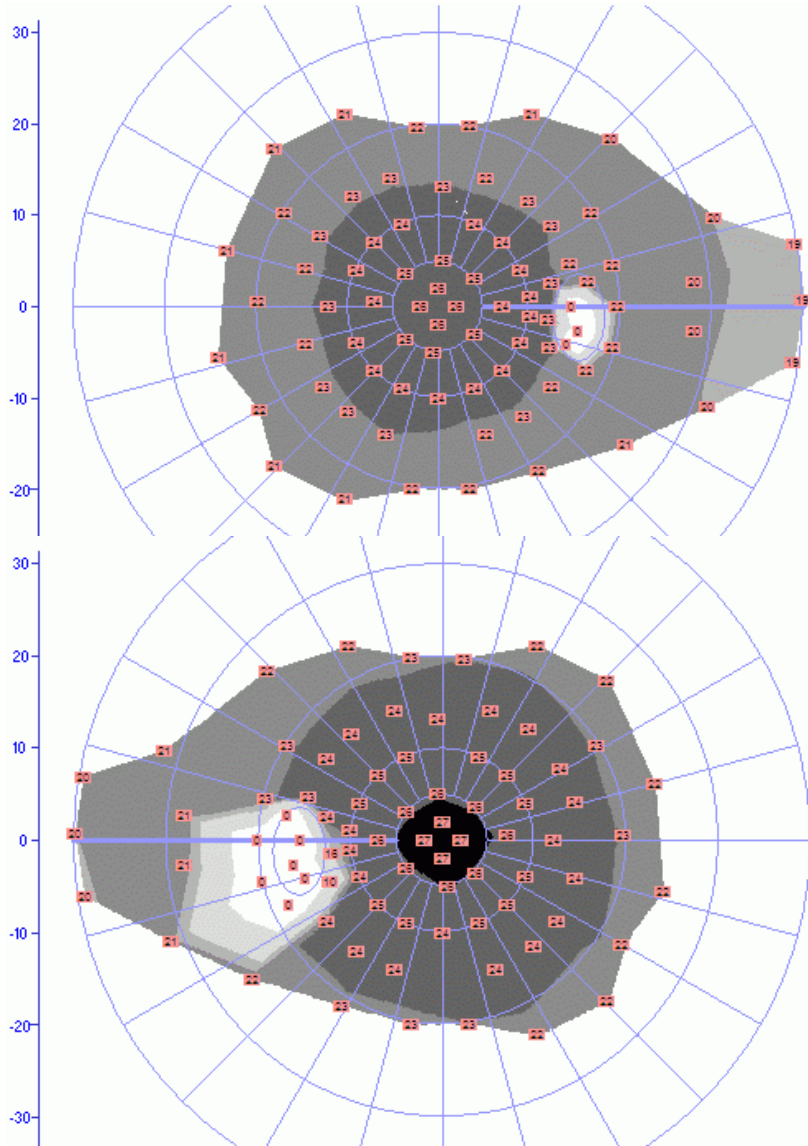
Autofluorescence: validation du diagnostic de Drusen



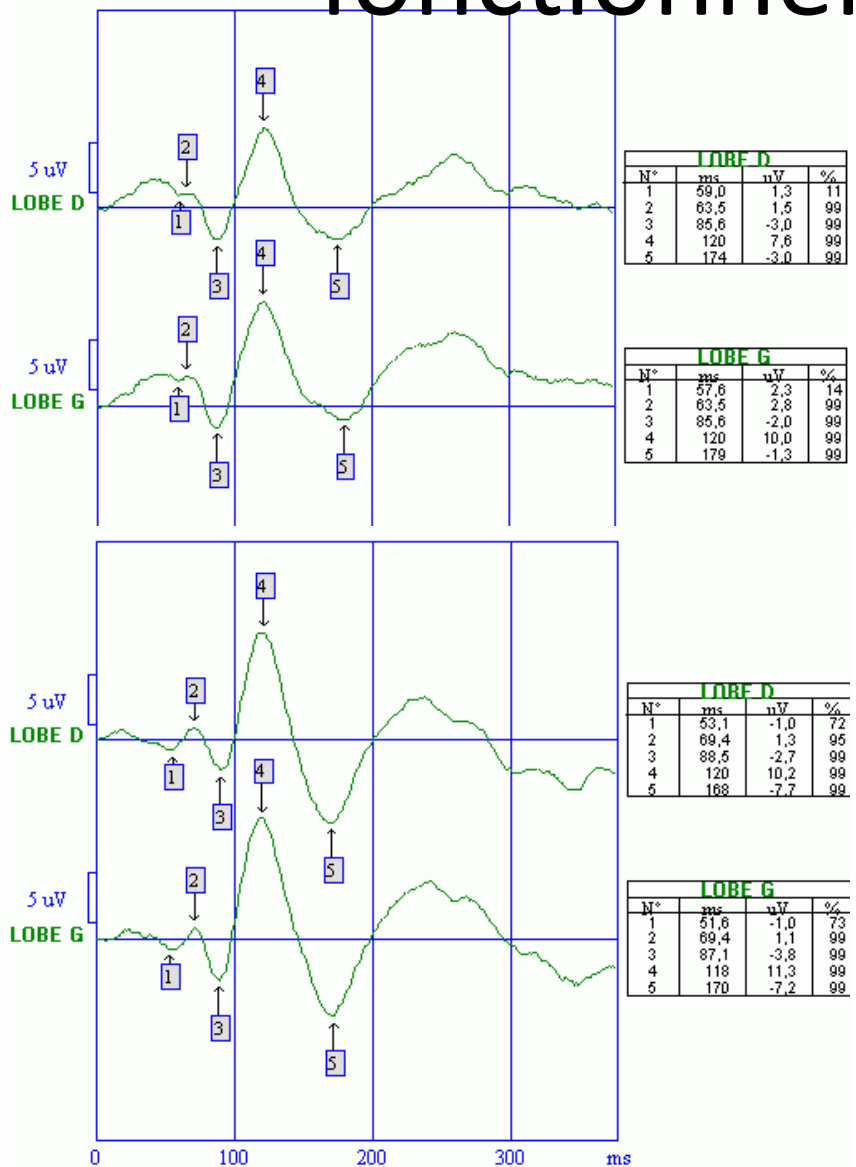
Si AF négative, quels autre(s) examen pour le diagnostic de Drusen



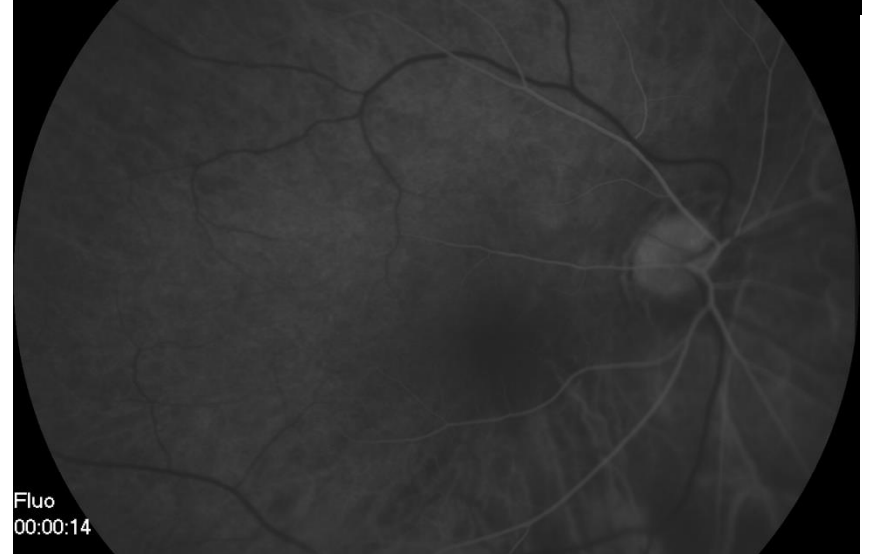
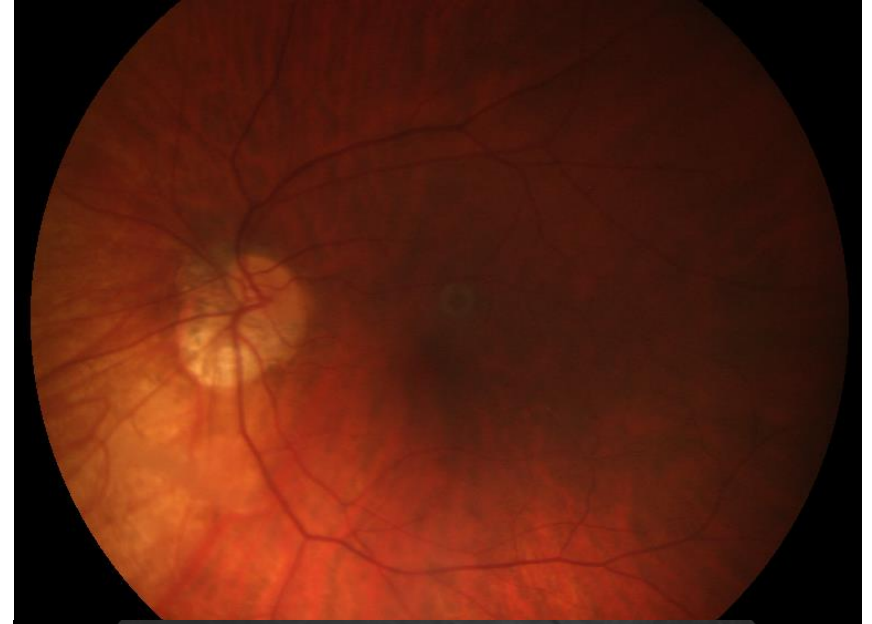
# Intérêt des examens fonctionnels?



# Evaluer le retentissement fonctionnel des drüsen

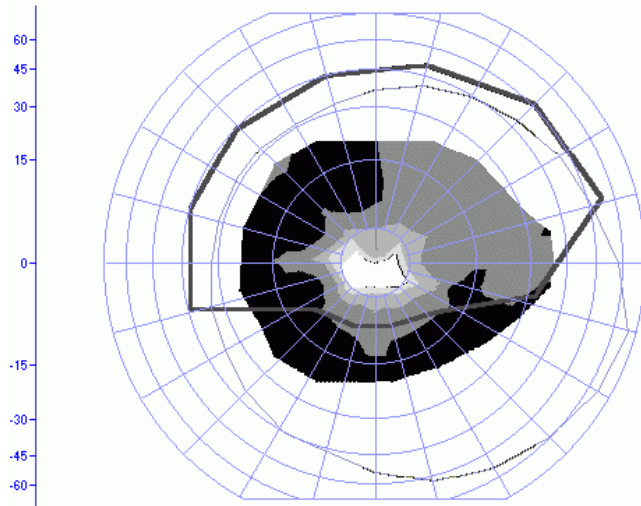
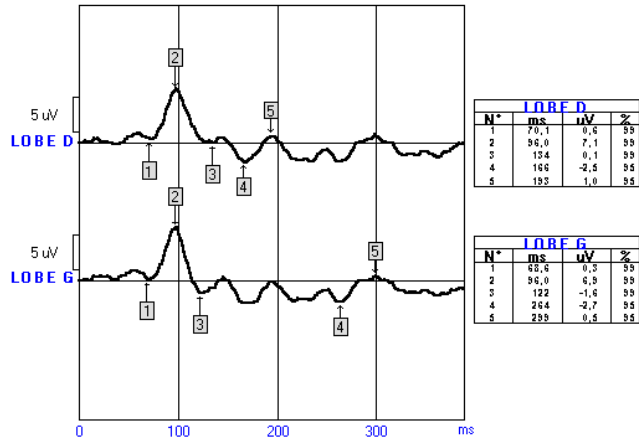


# Parfois le retentissement est plus difficile à évaluer

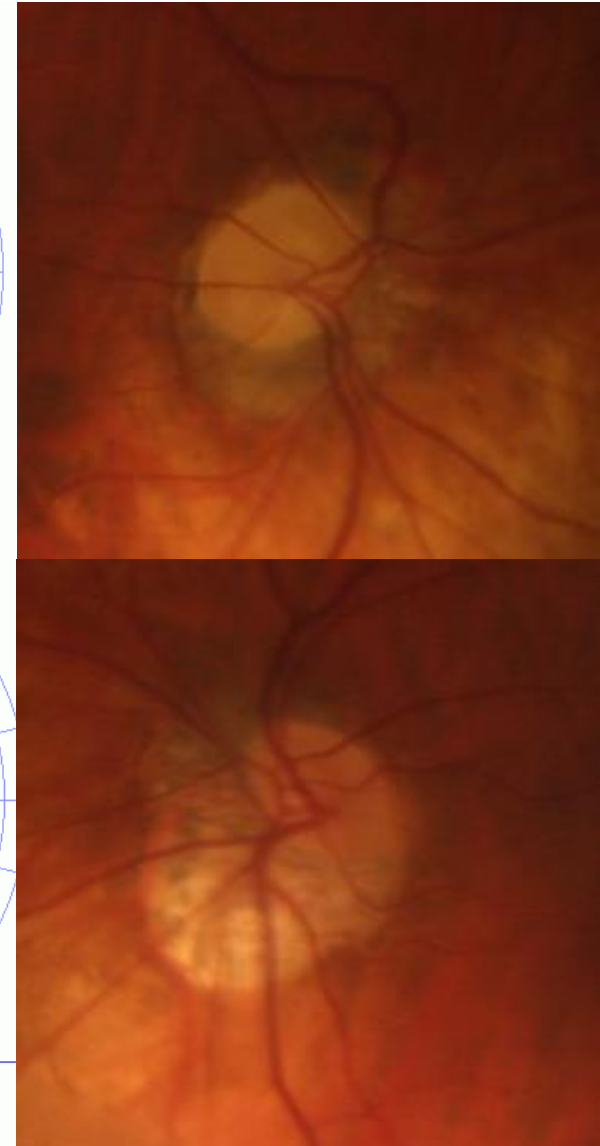
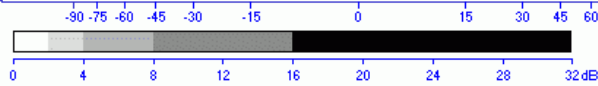
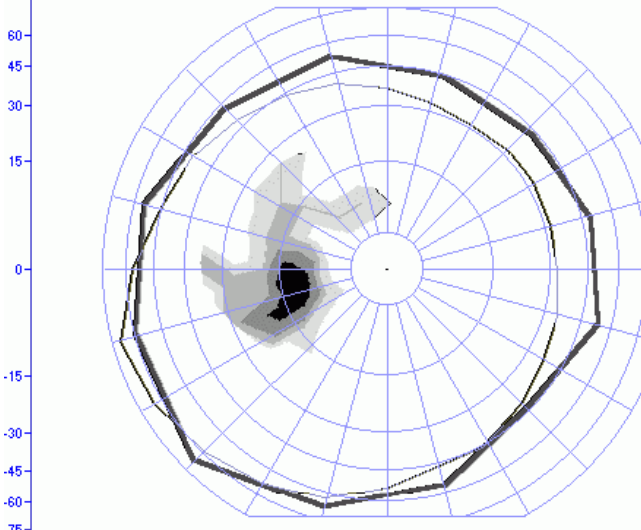
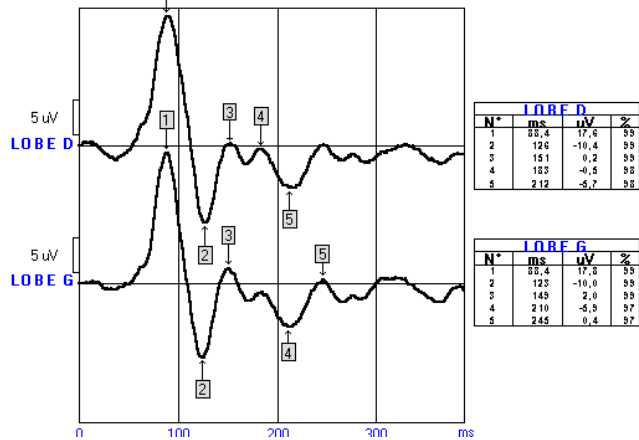


# Parfois plus compliqué à évaluer

Dam-60' OD 0mn 57s val=34 rej=0  
enreg 45058 -10(-1)160



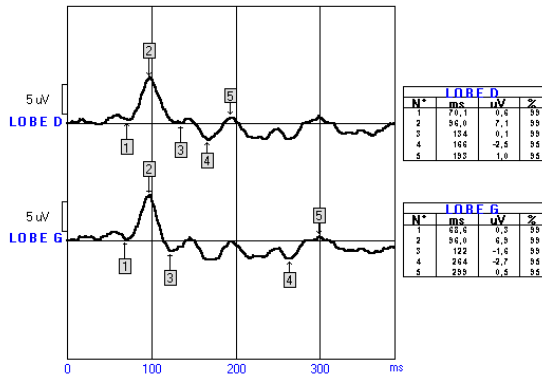
Dam-60' OG 1mn 36s val=24 rej=0  
enreg 45063 -7(-2.25)90



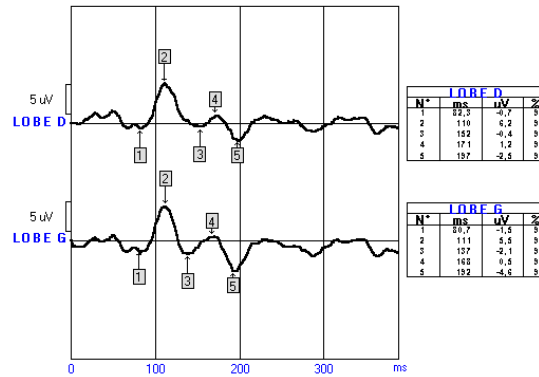
nom : POK  
 dossier : 02012805  
 date naissa. : 30/11/1951

correction : cp  
 date examen : 28/01/2002  
 examen : PEV-STD

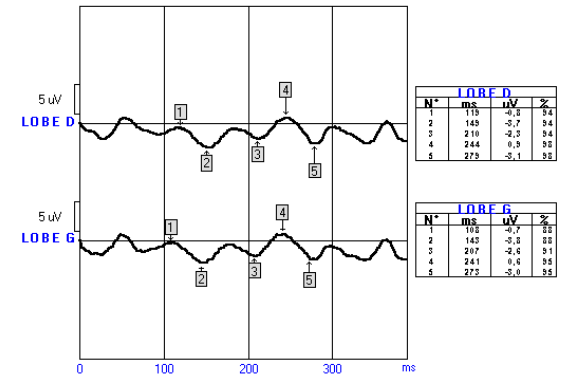
Dam-60' OD 0mn 57s val=34 rej=0  
 enreg 45058 -10(-1)160



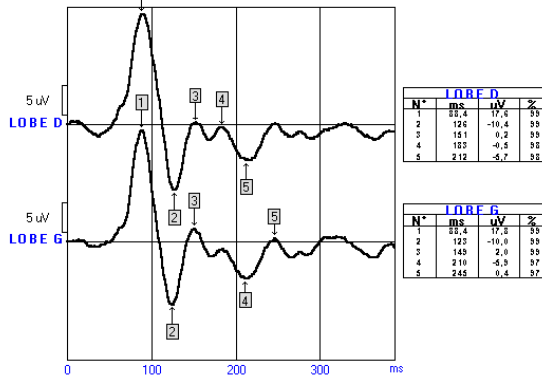
Dam-15' OD 1mn 37s val=30 rej=0  
 enreg 45059 -10(-1)160



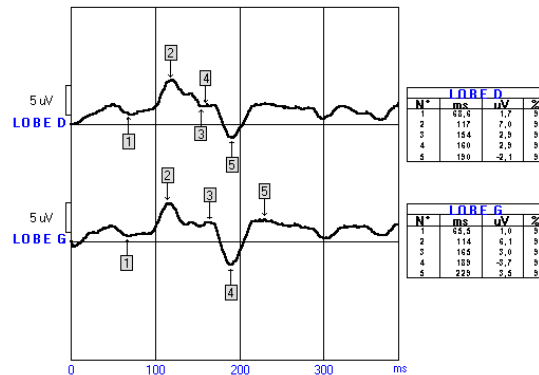
60'16Hz OD 3mn 9s val=60 rej=0  
 enreg 45061 -10(-1)160



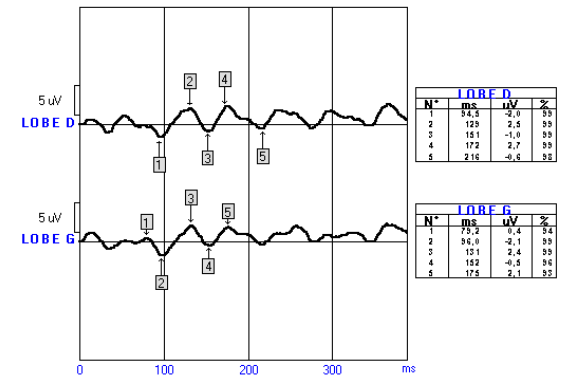
Dam-60' OG 1mn 36s val=24 rej=0  
 enreg 45063 -7(-2.25)90



Dam-15' OG 2mn 52s val=60 rej=0  
 enreg 45064 -7(-2.25)90



60'16Hz OG 4mn 43s val=60 rej=0  
 enreg 45066 -7(-2.25)90

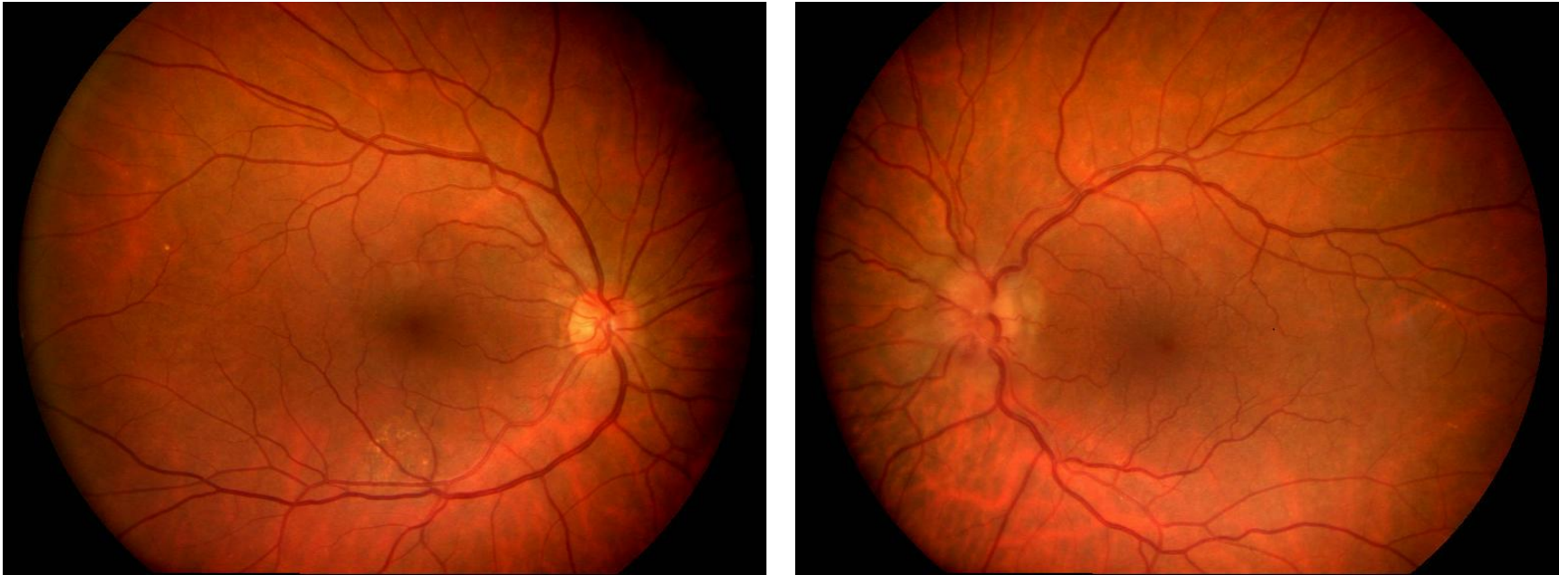


EXPLORATIONS FONCTIONNELLES  
 DE LA VISION  
 CHRU de LILLE

*Moniteur*  
 Ophtalmologique  
 6000C  
 Metrovision  
 4 rue des platanes  
 59840 Péniches  
 France  
 tel 33 (0)3 20 17 19 50  
<http://www.metrovision.fr>

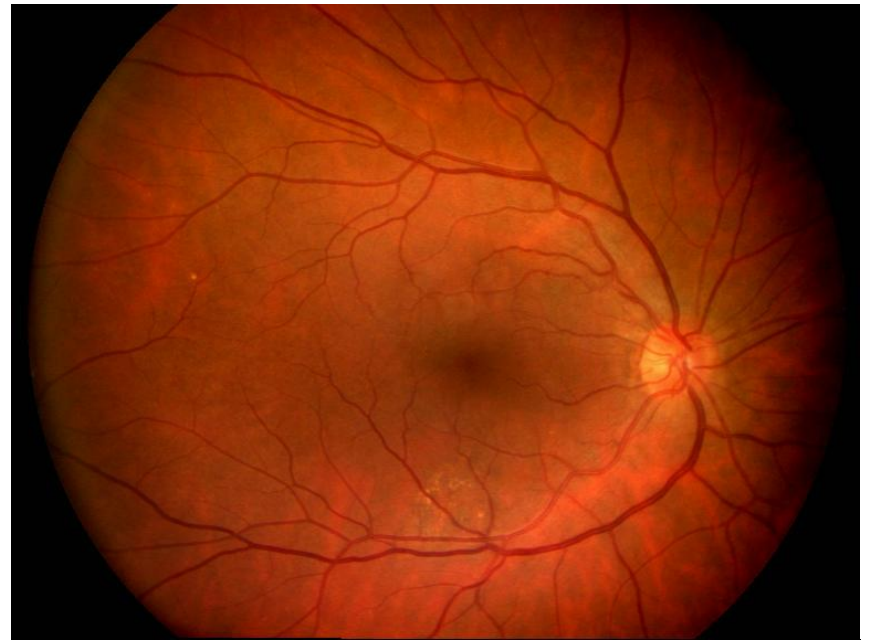
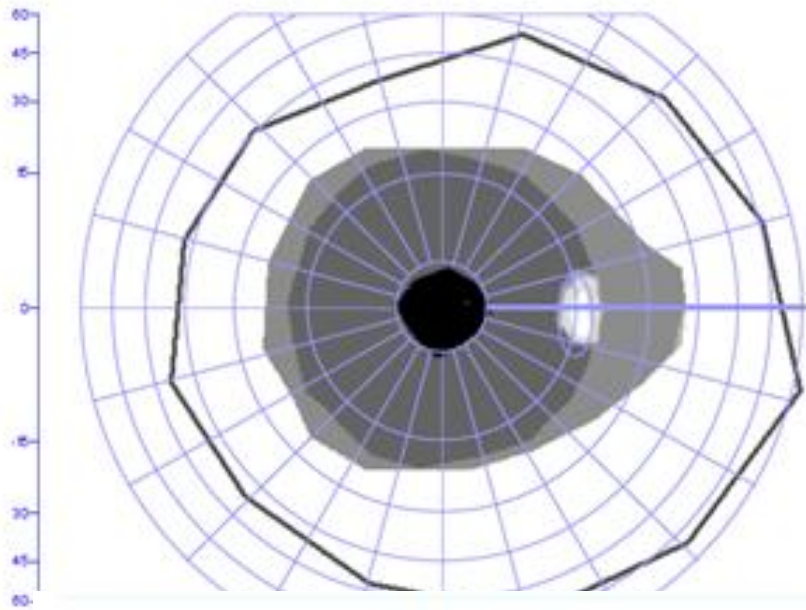


# Femme de 58 ans

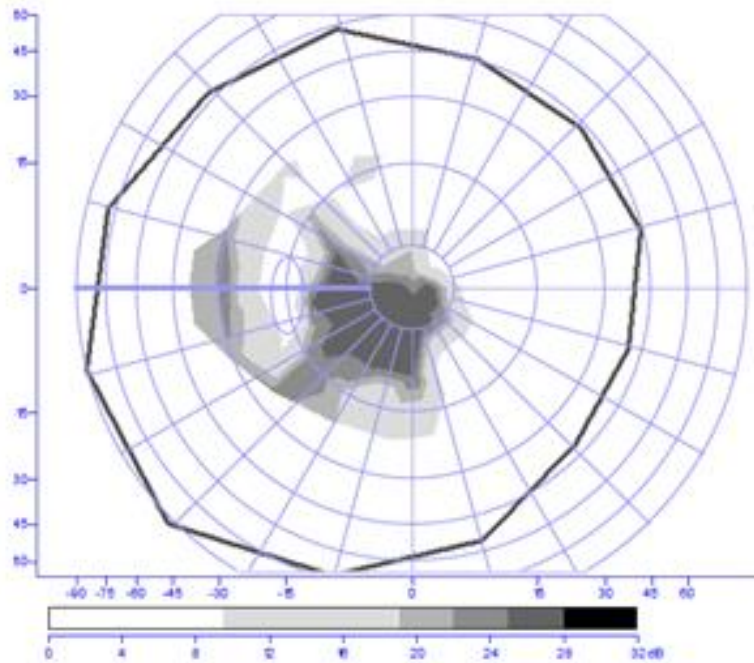


- Douleur à la mobilisation de l'œil gauche
- Acuité visuelle OD 10/10, 5/10 P3
- Œdème papillaire gauche

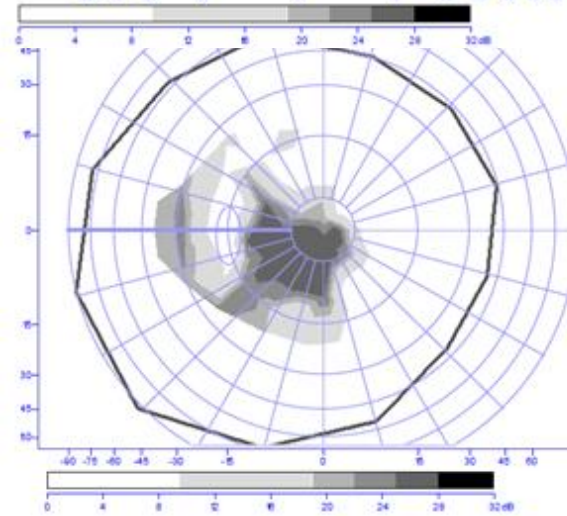
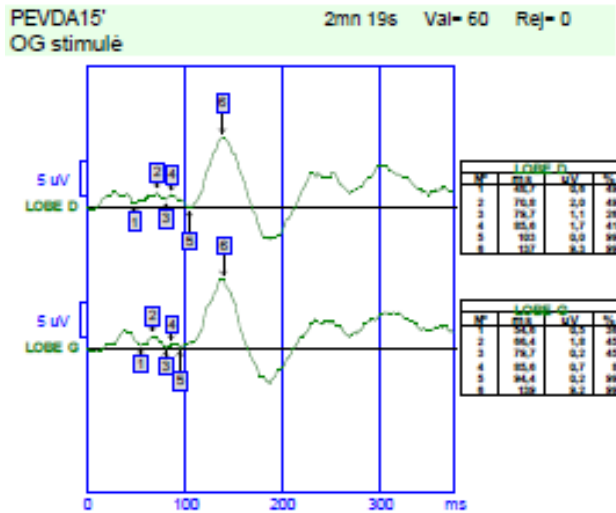
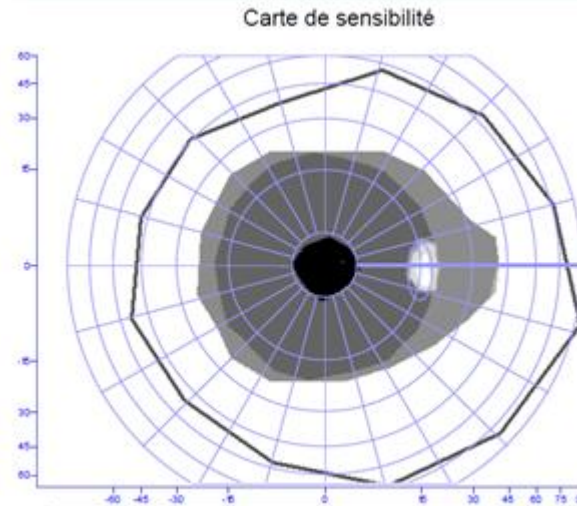
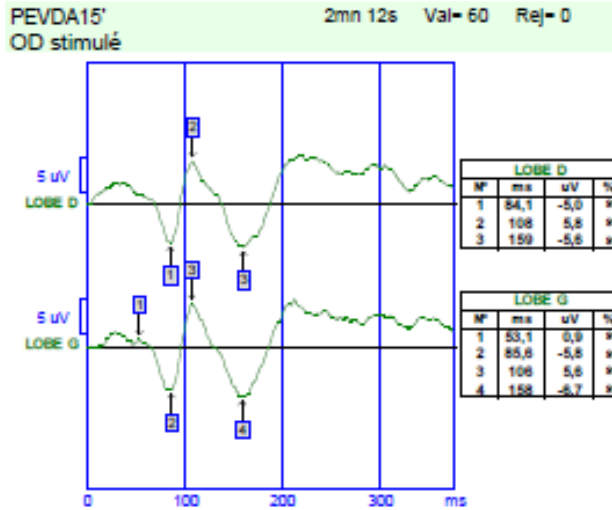
Carte de sensibilité



Carte de sensibilité



# Retard de latence au PEV



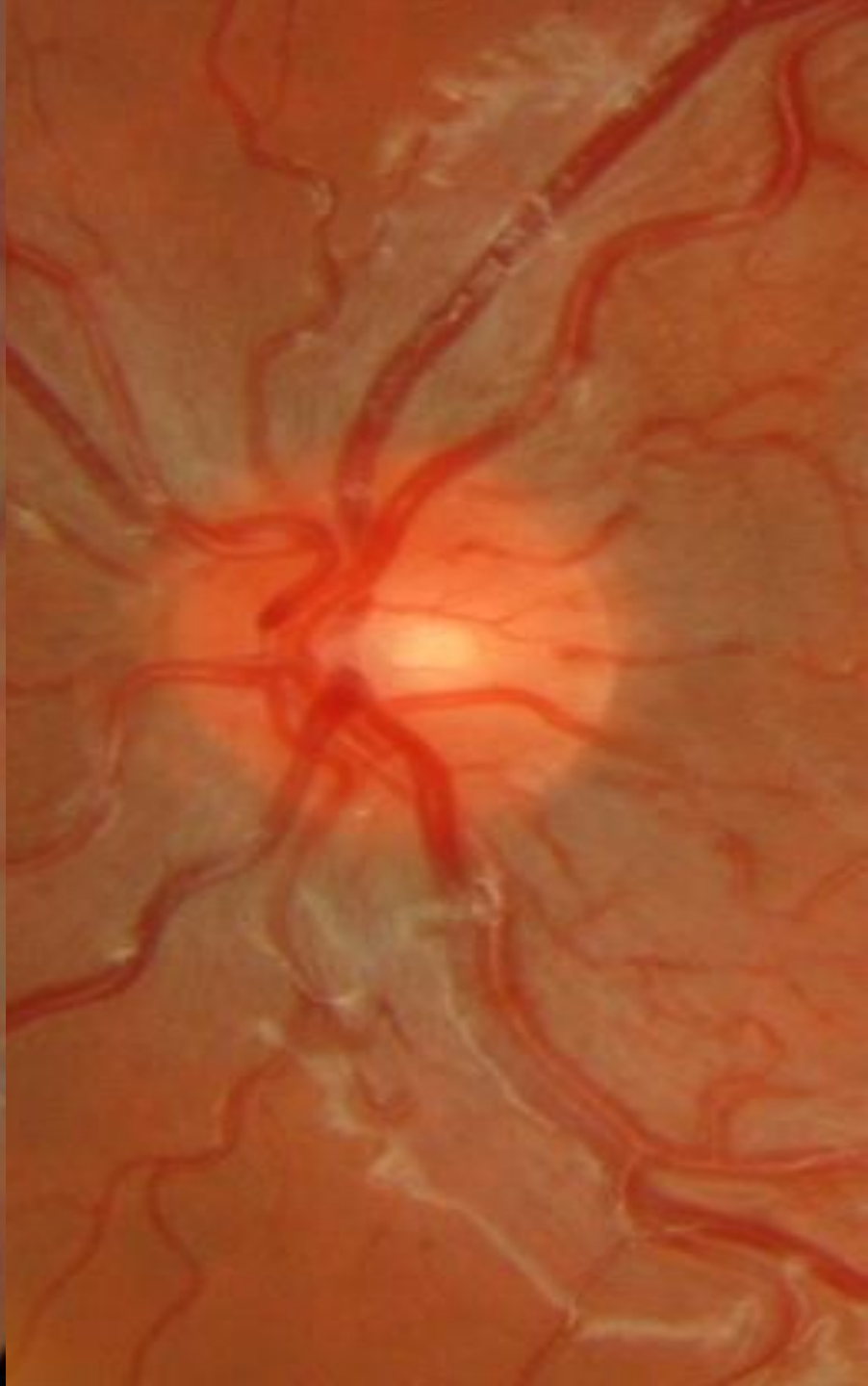


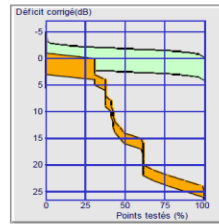
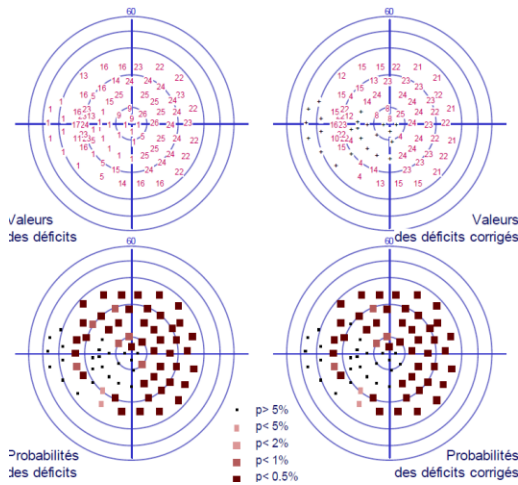
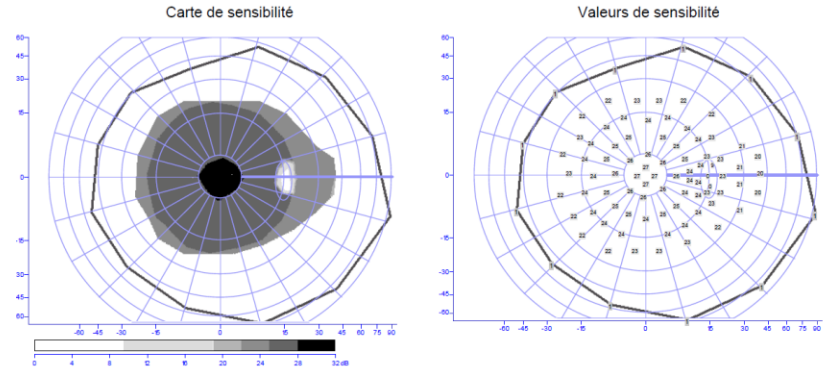
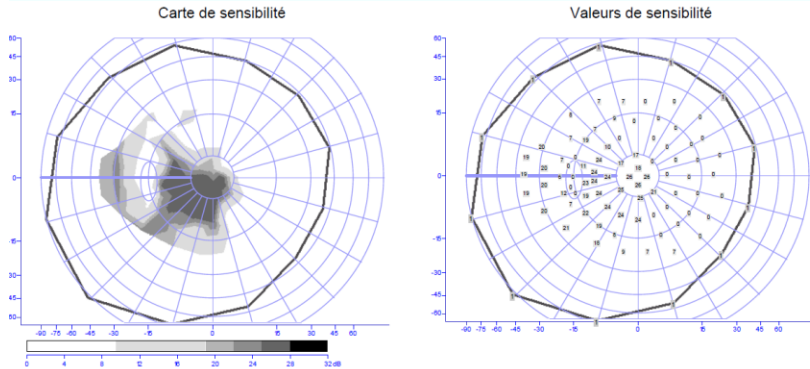
# Méningiome dans le canal optique



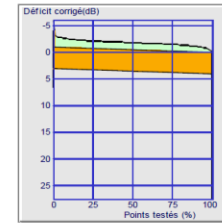
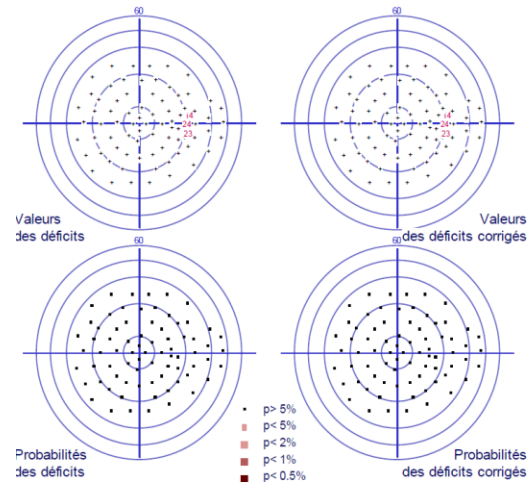
# Valentine 10 ans

- Baisse d'acuité visuelle de l'oeil droit 1/10
- 10/10 de l'œil gauche
- Fond d'œil normal
- Doute sur une cause anorganique



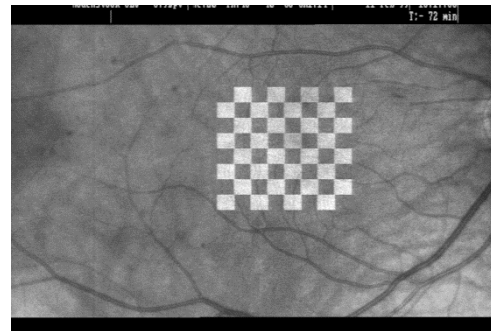
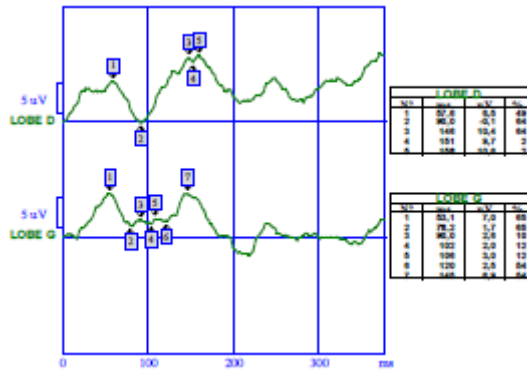


Déficit moyen (1) : 13,2 dB (perte de sensibilité)  
 Déficit moyen corrigé (2) : 12,2 dB (perte de sensibilité)  
 Variance des déficits : 95 dB2  
 Fluctuation spatiale : 3,5 dB  
 Fluctuation temporelle :  
 Temps de réponse moyen : 609 ms  
 Pertes de fixation : 0/17  
 Pertes d'attention : 0/17  
 Durée de l'examen : 8mn 37s  
 Correction carte de référence : -1 dB  
 Diamètre pupille :  
 Stimulus : Ilc  
 (1) somme des déficits globaux et locaux  
 (2) déficits locaux uniquement

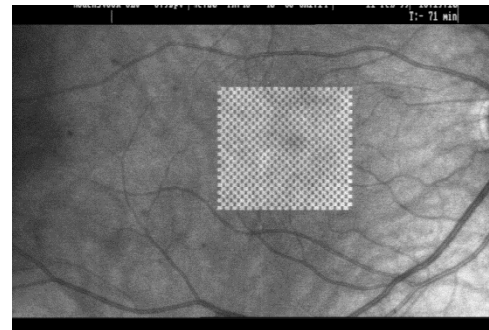
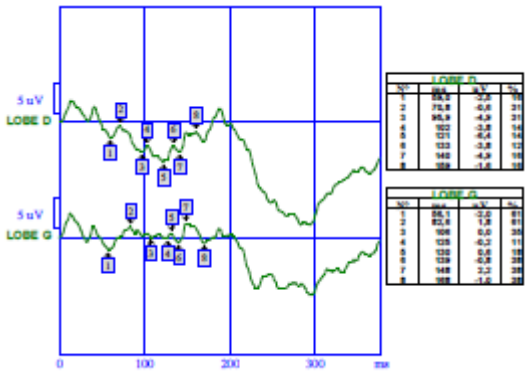
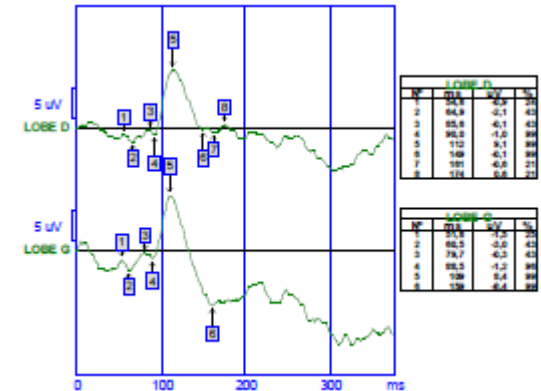


Déficit moyen (1) : 0,0  
 Déficit moyen corrigé (2) : 0,0  
 Variance des déficits : 0 dB2  
 Fluctuation spatiale : 0,6 dB  
 Fluctuation temporelle :  
 Temps de réponse moyen : 488 ms  
 Pertes de fixation : 0/9  
 Pertes d'attention : 0/8  
 Durée de l'examen : 1mn 11s  
 Correction carte de référence : 0 dB  
 Diamètre pupille :  
 Stimulus : Ilc  
 (1) somme des déficits globaux et locaux  
 (2) déficits locaux uniquement

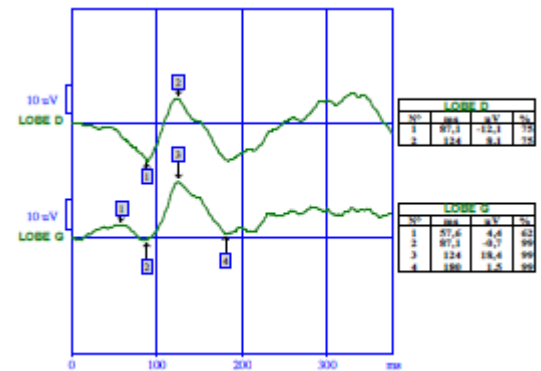
# Potentiel évoqué visuel altéré à droite/normal à gauche



Grand damier 60'=1°



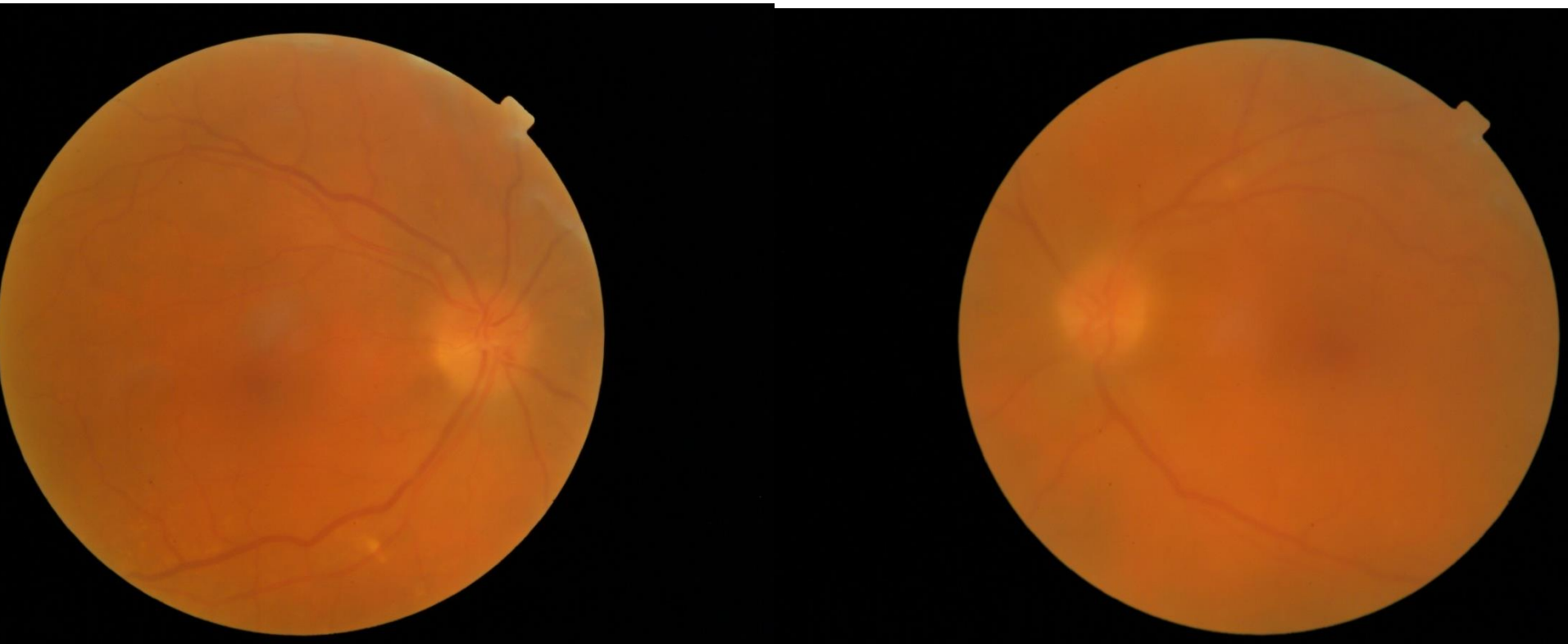
Petit damier 15'=1/4°

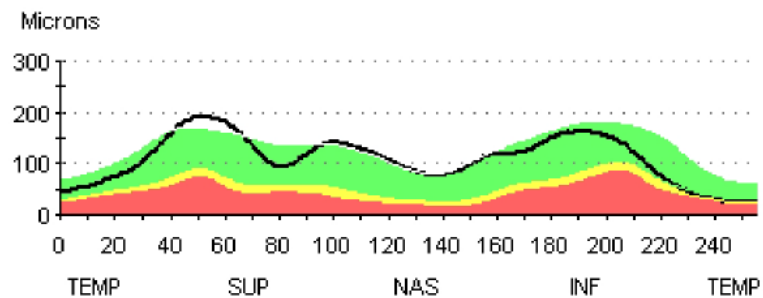
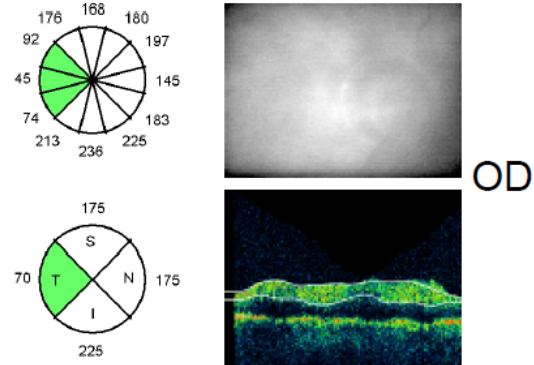
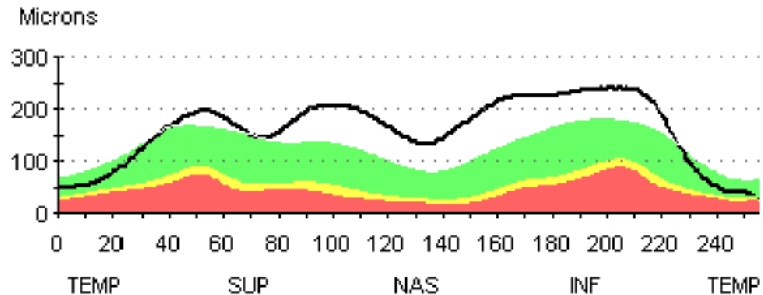


Acuité 10/10

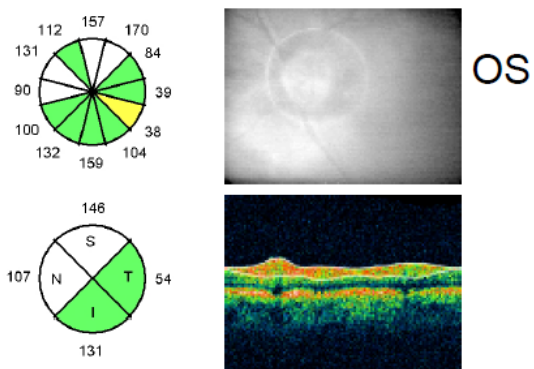
Acuité 2/10

Femme de 86 ans baisse d'acuité visuelle droite,  
hypermétrope +2 VOD 3/10 P5, VOG 4/10 P2,  
cataracte OD > OG?

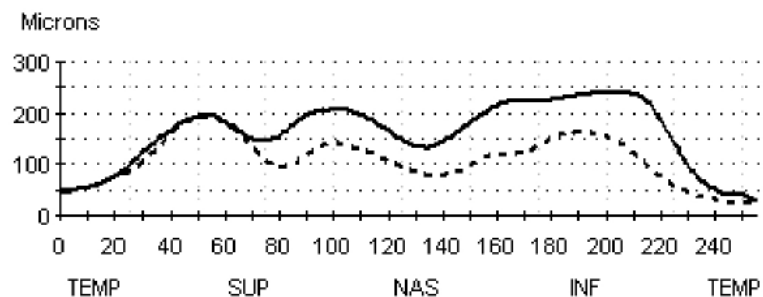




Signal Strength (Max 10)	3
Missing Data	

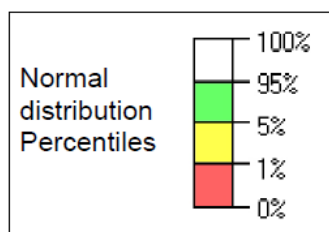


Signal Strength (Max 10)	7
Missing Data	

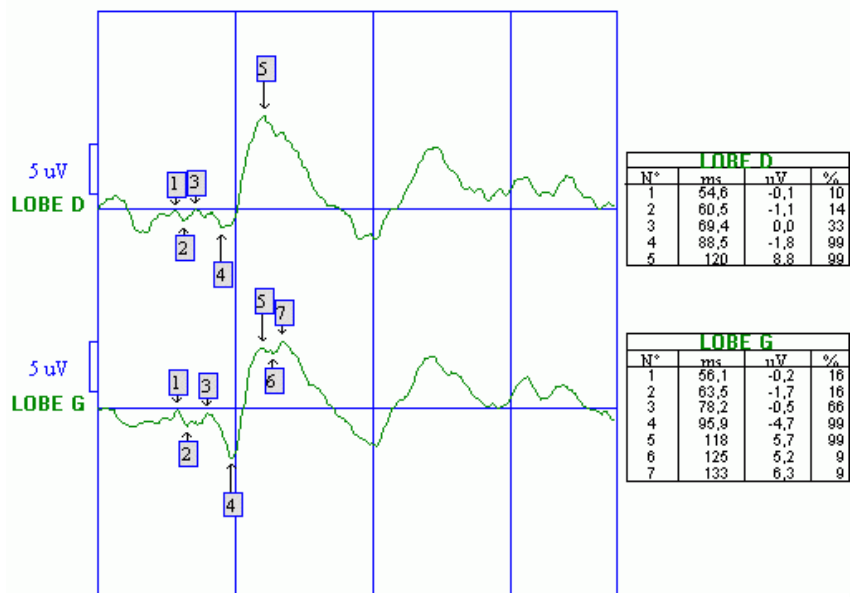


— OD - - - - OS

<b>OD</b>	Scans used	1, 2, 3
<b>OS</b>	Scans used	1, 2, 3

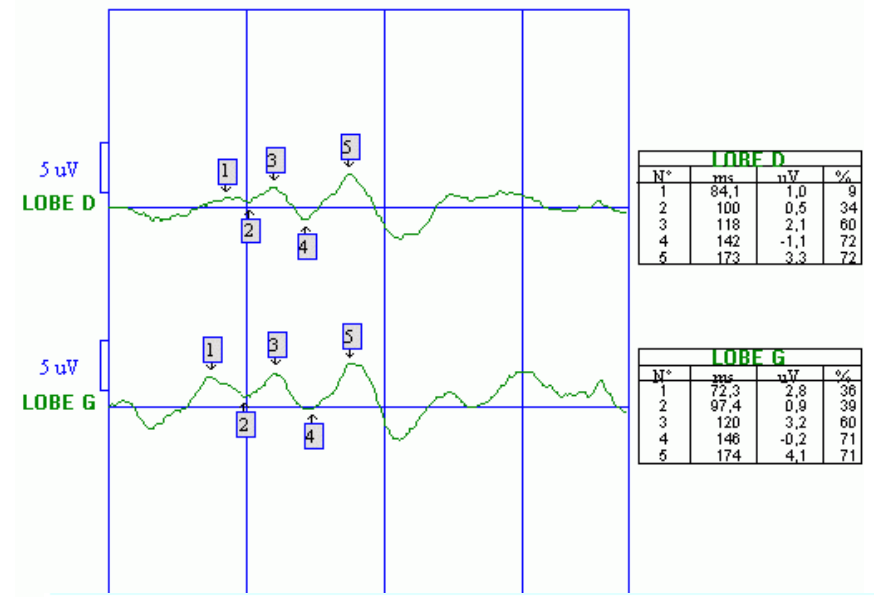
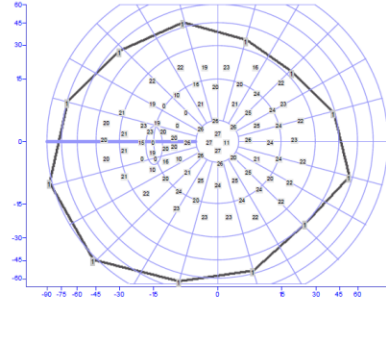
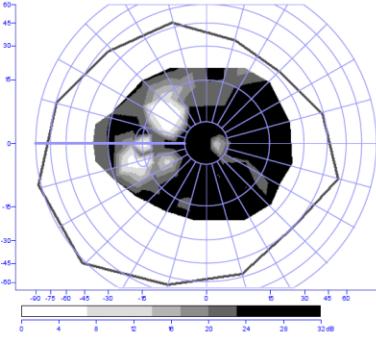


	OD (N=3)	OS (N=3)	OD-OS
lmax/smax	1.17	0.85	0.32
smax/lmax	0.86	1.18	-0.33
smax/tavg	2.91	3.57	-0.66
lmax/tavg	3.40	3.02	0.39
smax/navg	1.17	1.80	-0.62
Max-Min	210.00	166.00	44.00
smax	205.00	192.00	13.00
lmax	240.00	163.00	77.00
savg	175.00	146.00	29.00
lavg	225.00	131.00	94.00
Avg.Thick	161.21	109.61	51.60



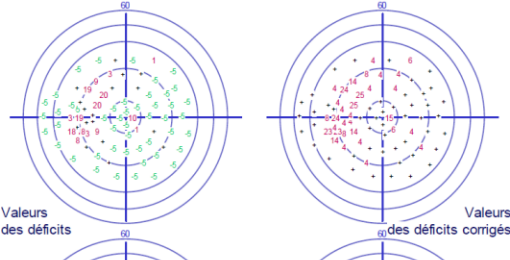
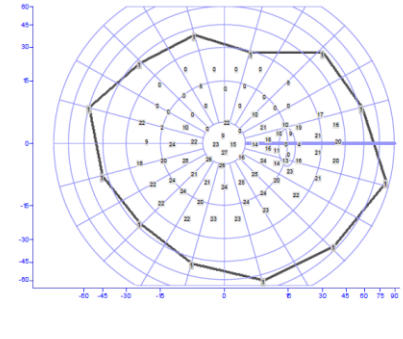
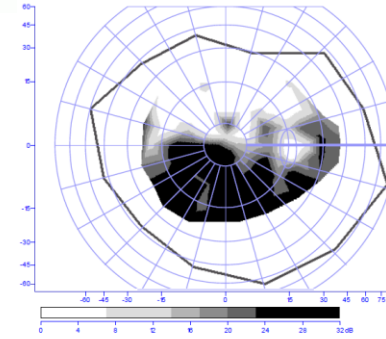
Carte de sensibilité

Valeurs de sensibilité



Carte de sensibilité

Valeurs de sensibilité

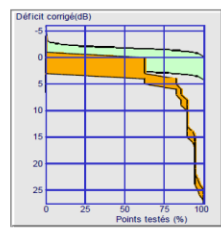


Valeurs des déficits

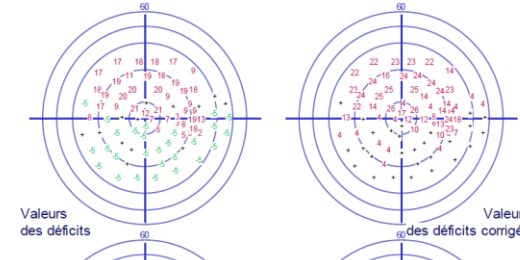
Valeurs des déficits corrigés

Probabilités des déficits

Probabilités des déficits corrigés



Déficit moyen (1) : -1,7 dB (meilleur que la normale)  
 Déficit moyen corrigé (2) : -3,3 dB (perte de sensibilité)  
 Variance des déficits : 37 dB2  
 Fluctuation spatiale : 3,1 dB  
 Fluctuation temporelle :  
 Temps de réponse moyen : 579 ms  
 Pertes de fixation : 3/17  
 Pertes d'attention : 4/19  
 Durée de fixation : 8mn 59s  
 Correction carte de référence : 5 dB  
 Diamètre pupille :  
 Stimulus : ilc  
 (1) somme des déficits globaux et locaux  
 (2) déficits locaux uniquement

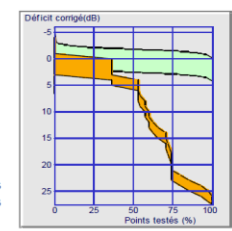


Valeurs des déficits

Valeurs des déficits corrigés

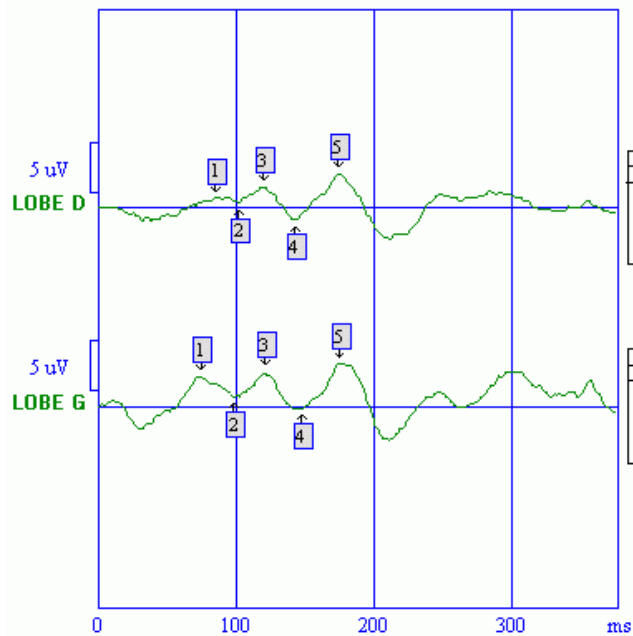
Probabilités des déficits

Probabilités des déficits corrigés



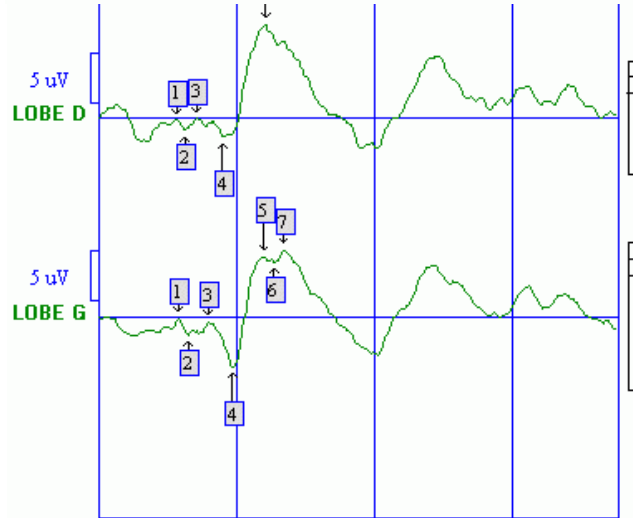
Déficit moyen (1) : 4,3 dB (perte de sensibilité)  
 Déficit moyen corrigé (2) : 9,3 dB (perte de sensibilité)  
 Variance des déficits : 92 dB2  
 Fluctuation spatiale : 4,0 dB  
 Fluctuation temporelle :  
 Temps de réponse moyen : 562 ms  
 Pertes de fixation : 1/17  
 Pertes d'attention : 4/24  
 Durée de fixation : 8mn 58s  
 Correction carte de référence : 5 dB  
 Diamètre pupille :  
 Stimulus : ilc  
 (1) somme des déficits globaux et locaux  
 (2) déficits locaux uniquement





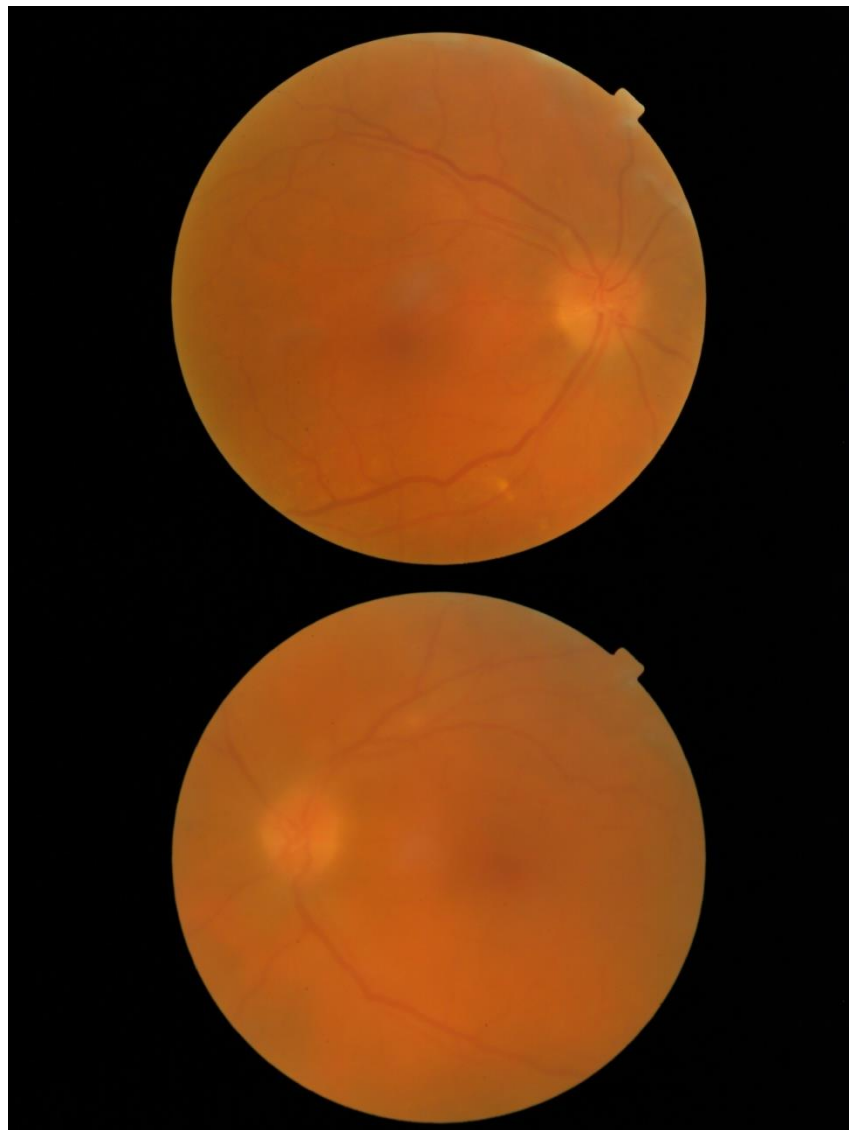
LOBE D			
N°	ms	mV	%
1	84,1	1,0	9
2	100	0,5	34
3	118	2,1	60
4	142	-1,1	72
5	173	3,3	72

LOBE G			
N°	ms	mV	%
1	72,3	2,8	36
2	97,4	0,9	39
3	120	3,2	60
4	146	-0,2	71
5	174	4,1	71

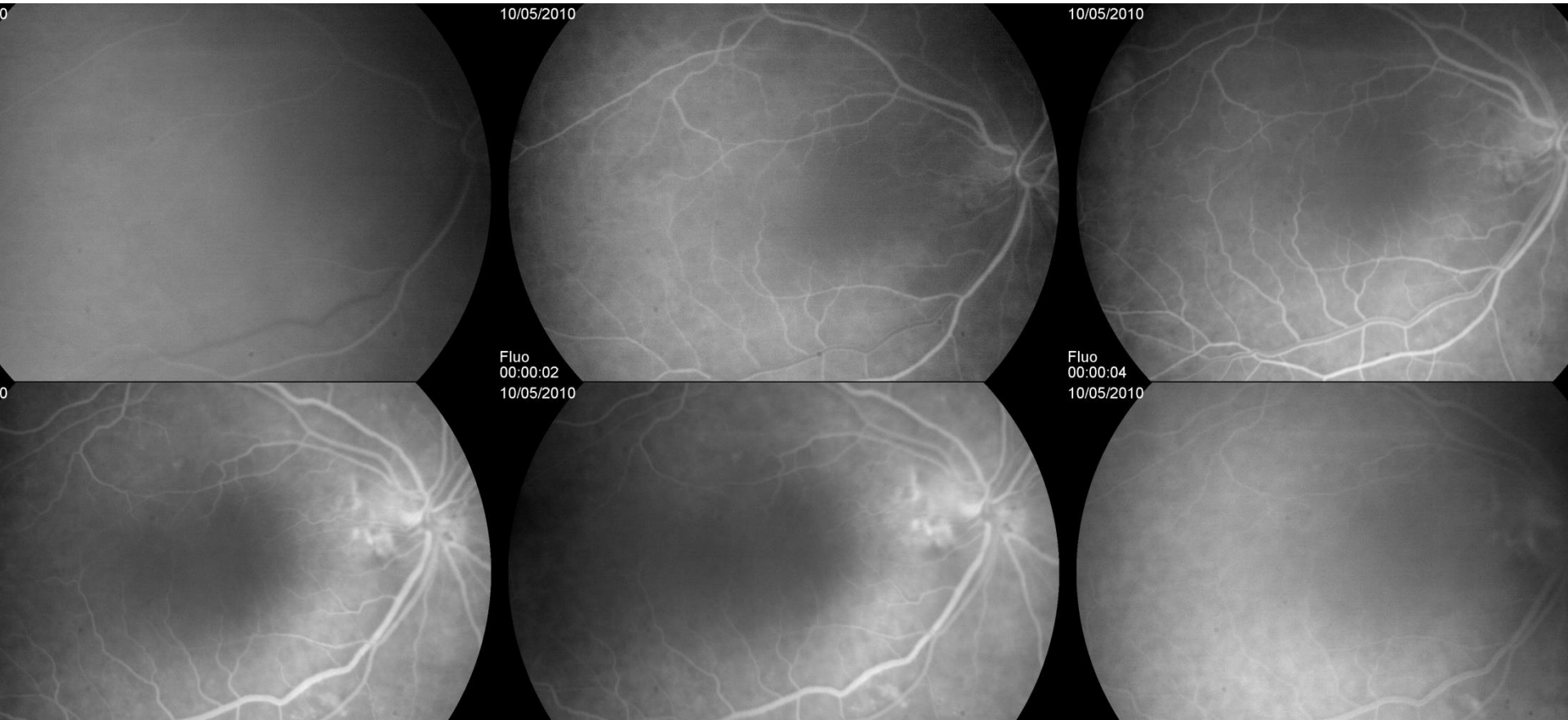


LOBE D			
N°	ms	mV	%
1	54,6	-0,1	10
2	60,5	-1,1	14
3	69,4	0,0	33
4	88,5	-1,8	99
5	120	8,8	99

LOBE G			
N°	ms	mV	%
1	56,1	-0,2	16
2	63,5	-1,7	16
3	78,2	-0,5	66
4	95,9	-4,7	99
5	118	5,7	99
6	125	5,2	9
7	133	6,3	9



Angiographie: doute sur un retard d'injection  
choroïdien mais VS: 5 mm, CRP normale pas de  
claudication intermédiaire de la mâchoire,  
BAT x 2 négative  
NOIA non artéritique



# Paleur/atrophie/RNFL aminci

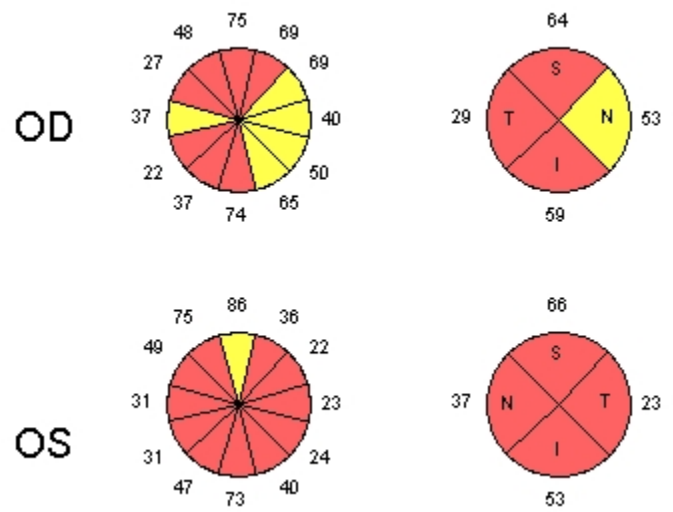
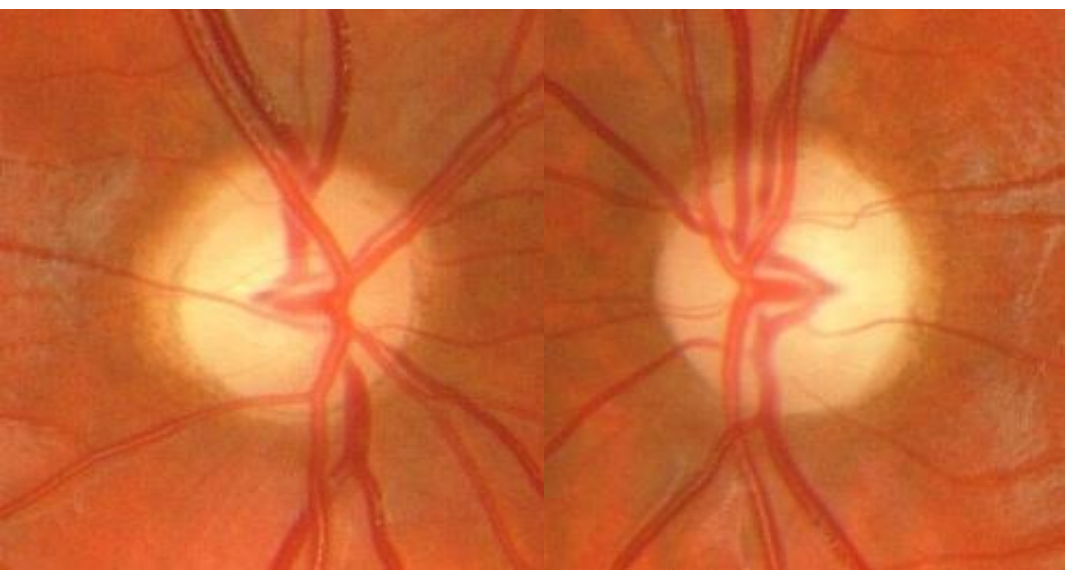
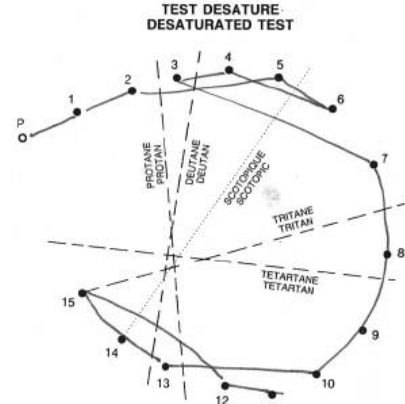
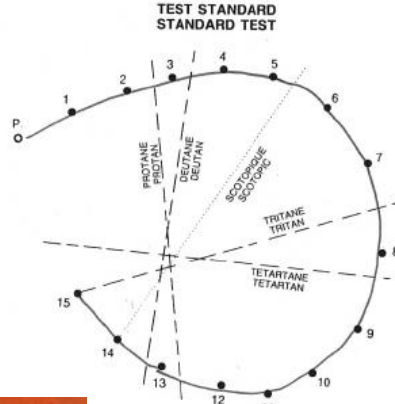
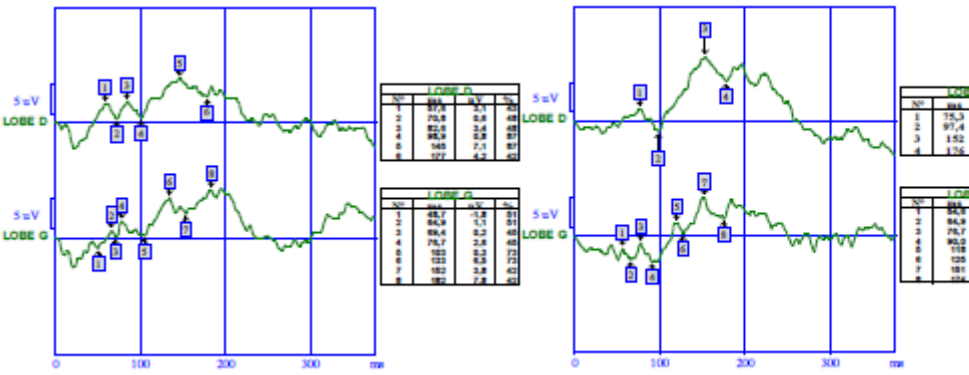
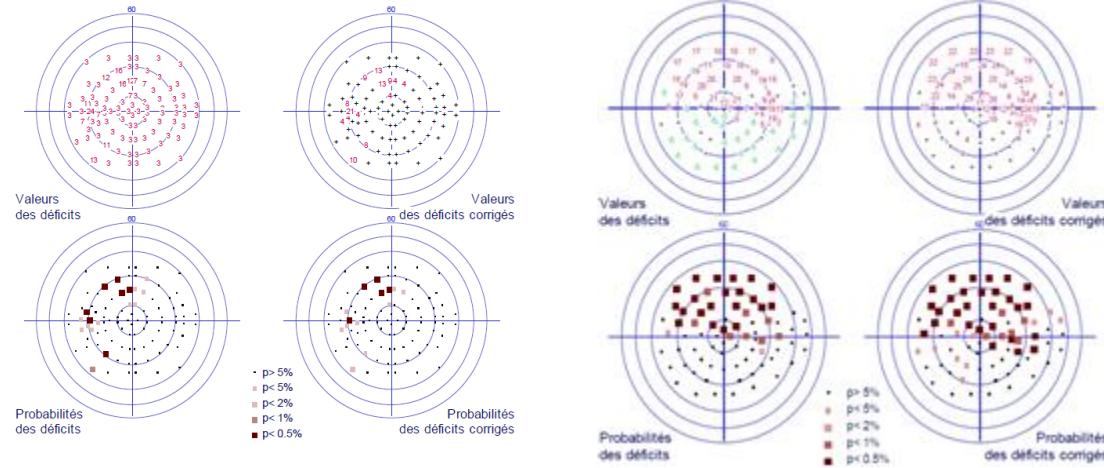
- Paleur papillaire uni ou bilatérale:
  - > 60 ans NOIA ancienne
  - 20- 30 ans Névrite optique ancienne
- Paleur papillaire bilatérale
  - 10-20 ans: NOD ou Dystrophie des cônes, RP évolué sans pigment
  - CAT: PEV avant le Champ visuel
- Atrophie optique
  - De 7 à 77 ans : maladie de Leber
- Excavation papillaire: glaucome

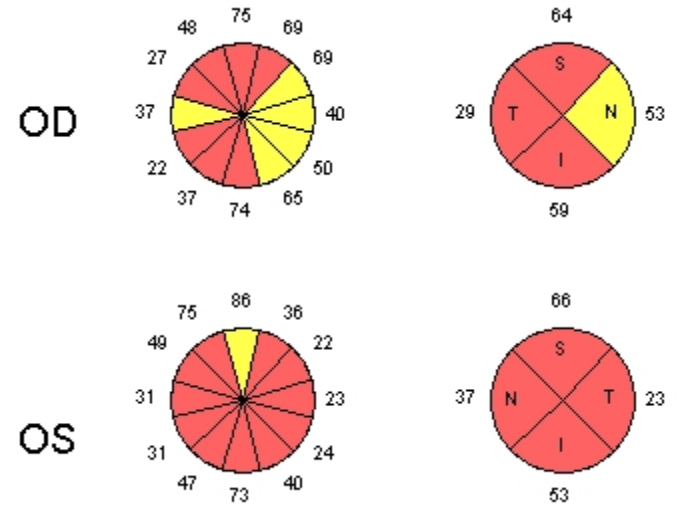
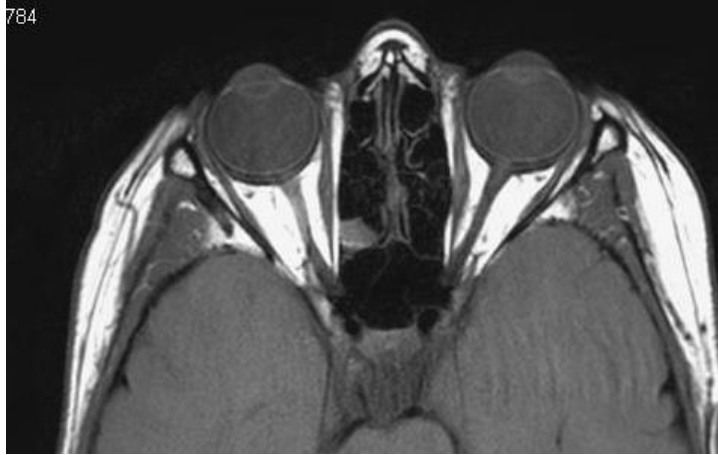
# Ophélie 10 ans

## BAV

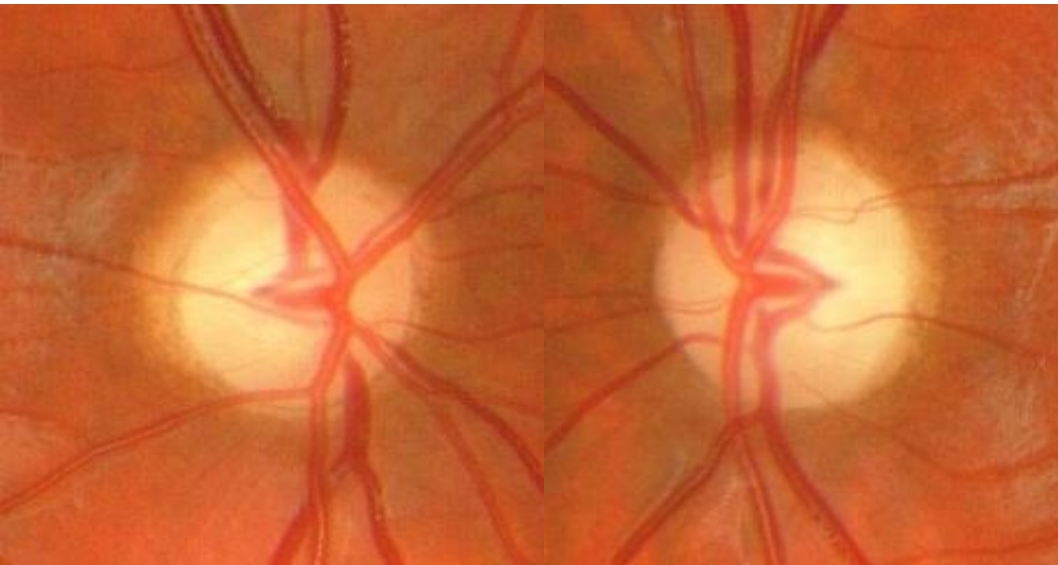
### AVOD 3/10 P3

### AV OG 5/10 P2

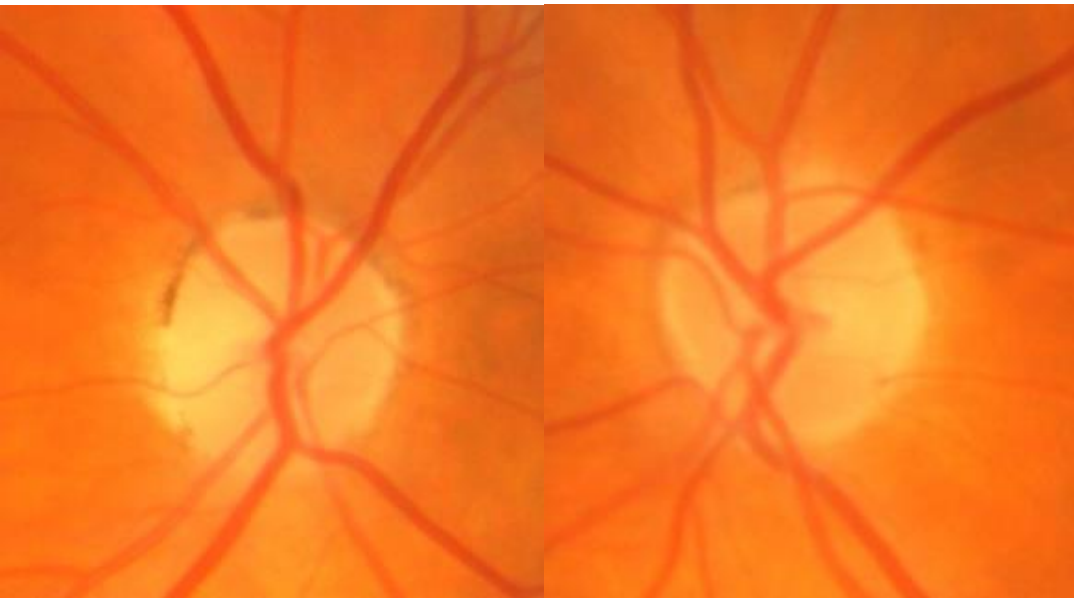
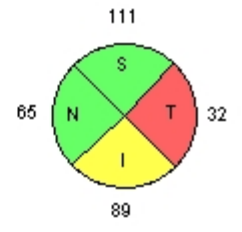
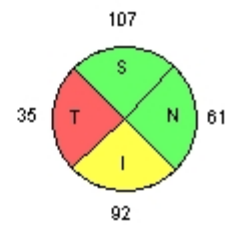
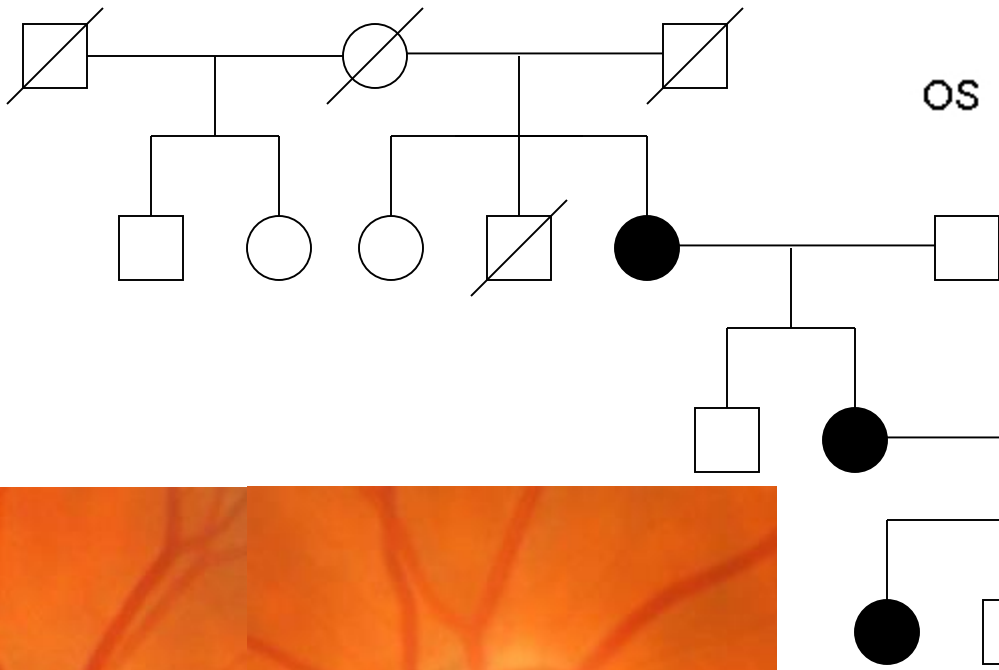




# Neuropathie héréditaire?



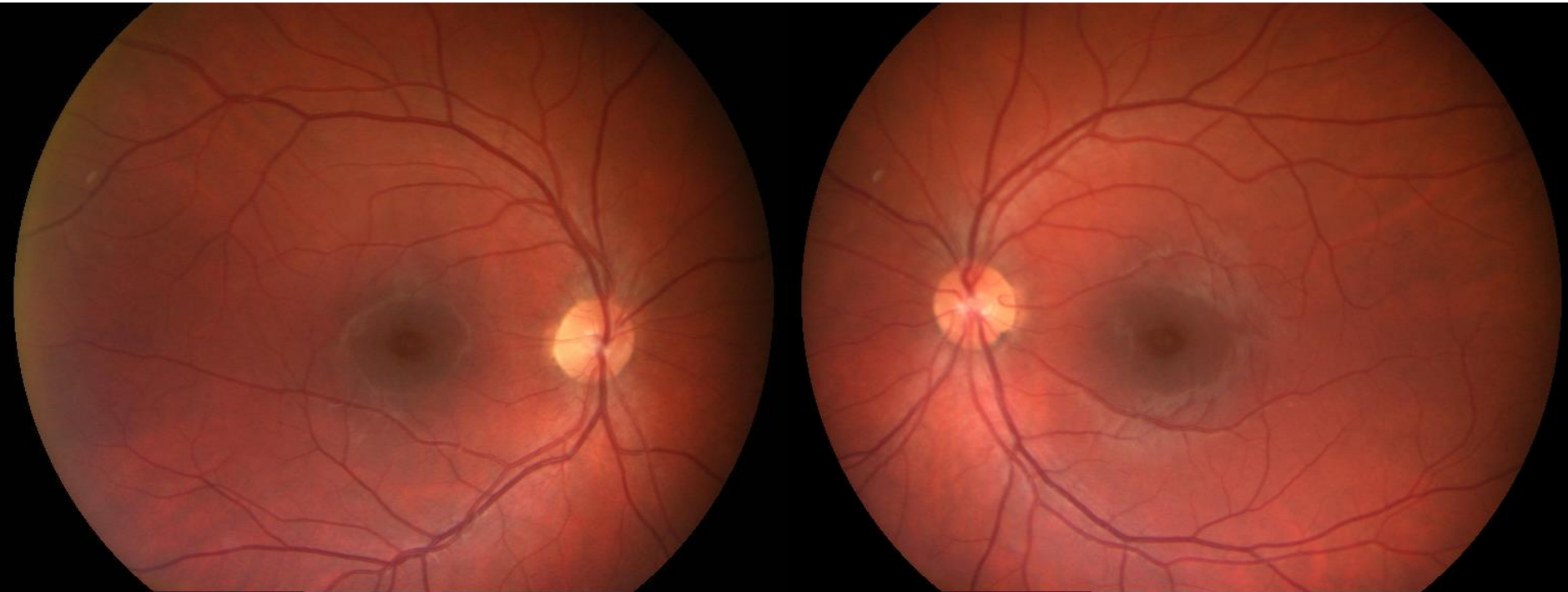
Ophélie 10 ans  
 BAV, dyschromatopsie  
 AVOD 3/10 P3  
 AV OG 5/10 P2



Martine 58 ans  
 Dyschromatopsie  
 AVOD 8/10 P2  
 AVOG 8/10 P2

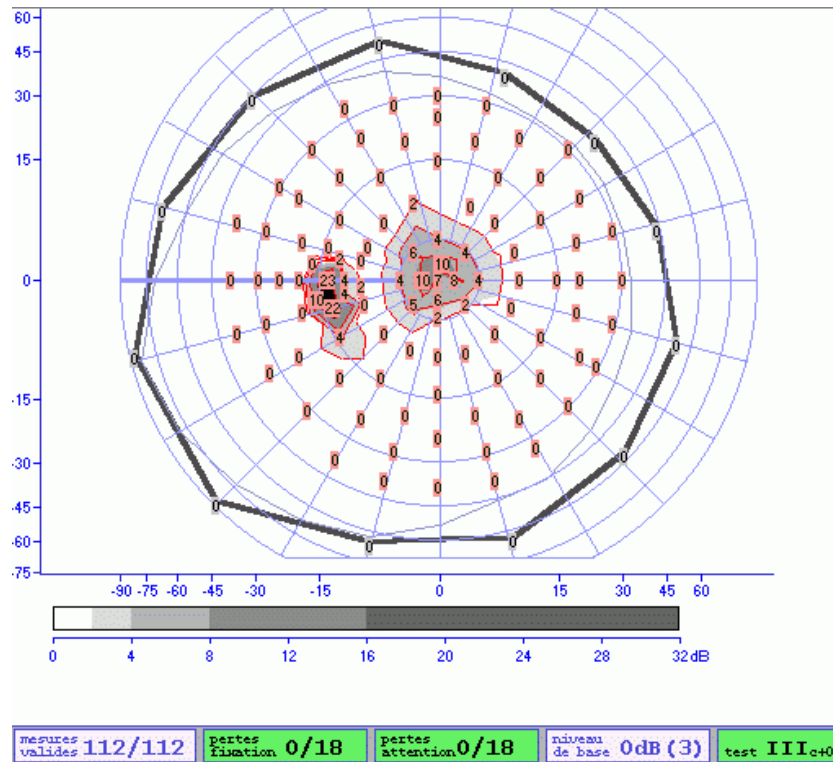
# 14 ans BAV bilatérale

## 2/10 P3, 3/10 P5

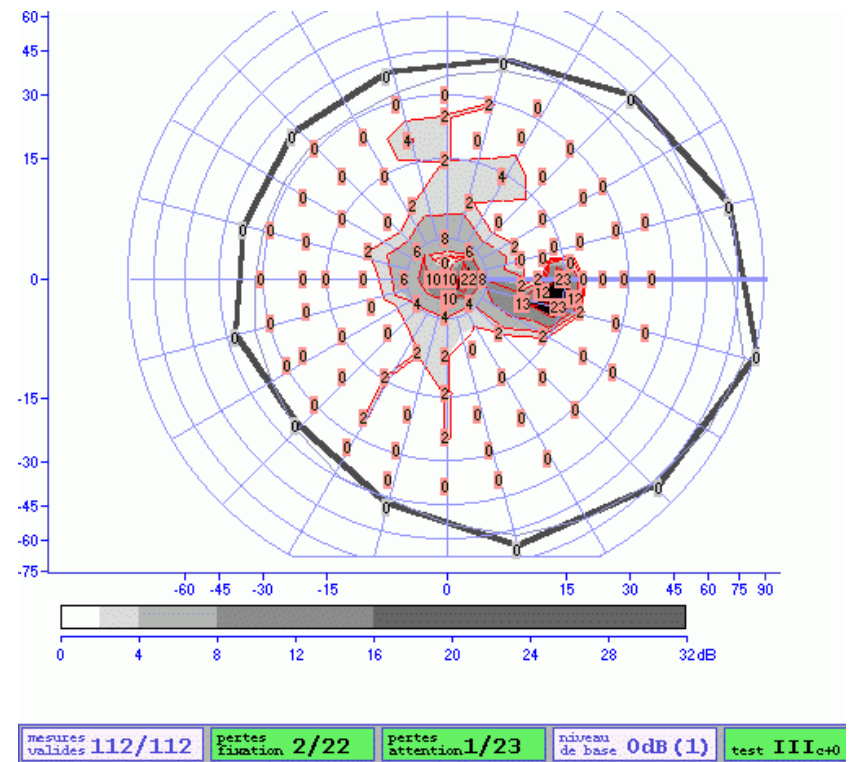


Quels examens complémentaires?

# Champ visuel: Scotome central



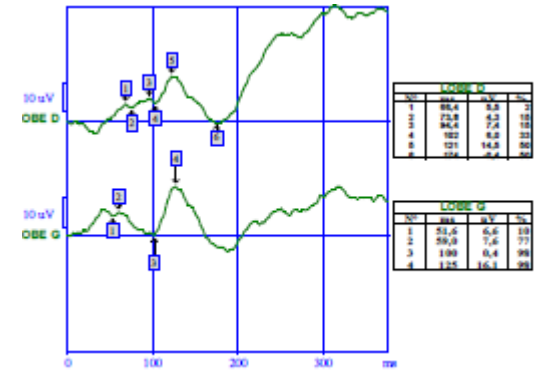
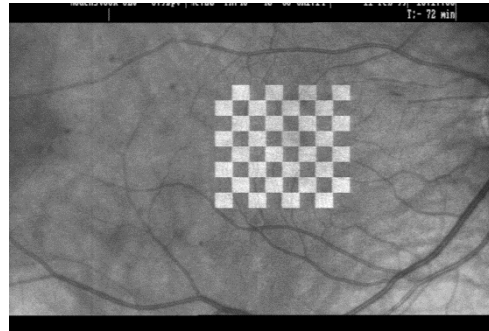
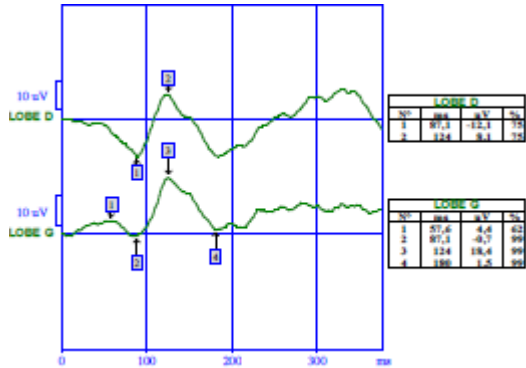
Œil gauche



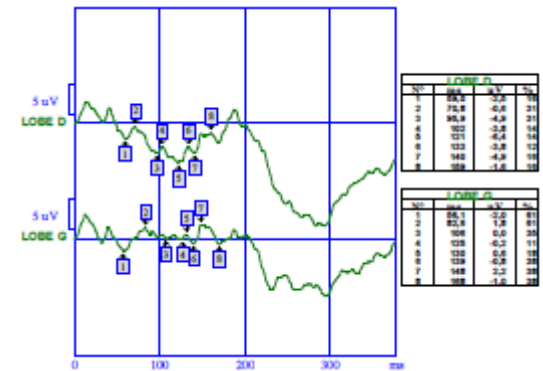
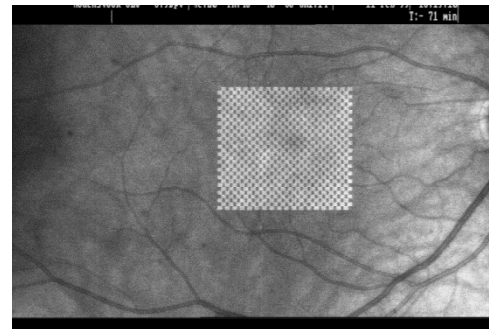
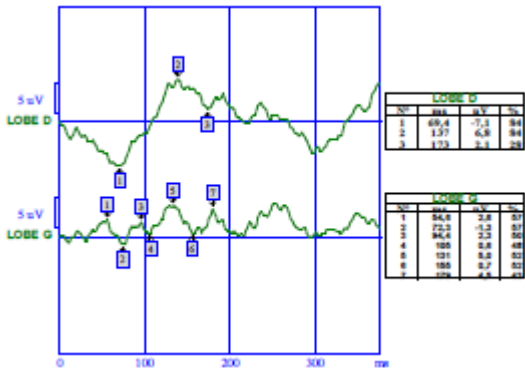
Œil droit



# Potentiel évoqué visuel



Grand damier 60' = 1°  
 1/10 < Acuité < 3/10

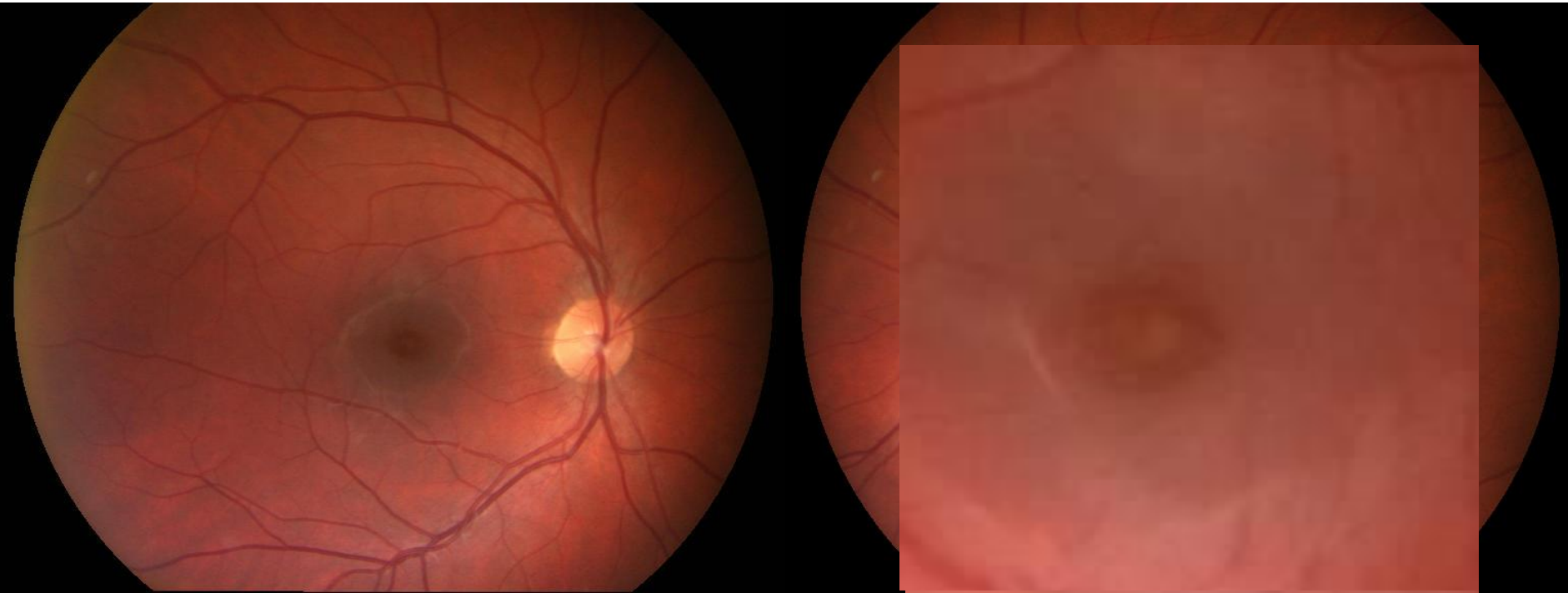


Acuité = 1/10 P6

Petit damier 15' = 1/4°  
 Acuité > 3/10

Acuité = 1/10 P8

# Fond d'œil dilaté

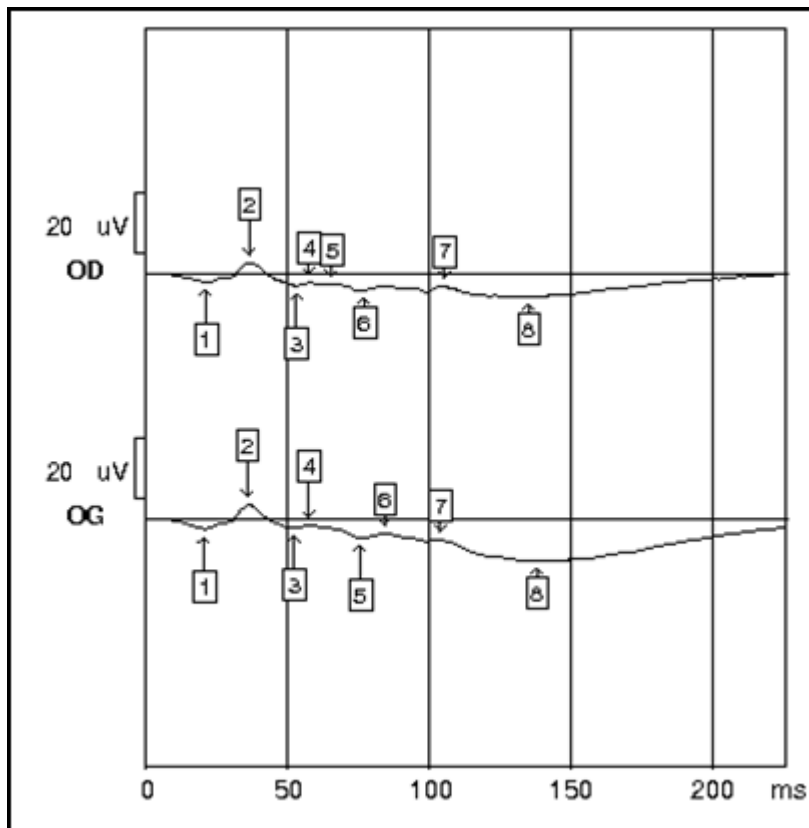


Œil gauche

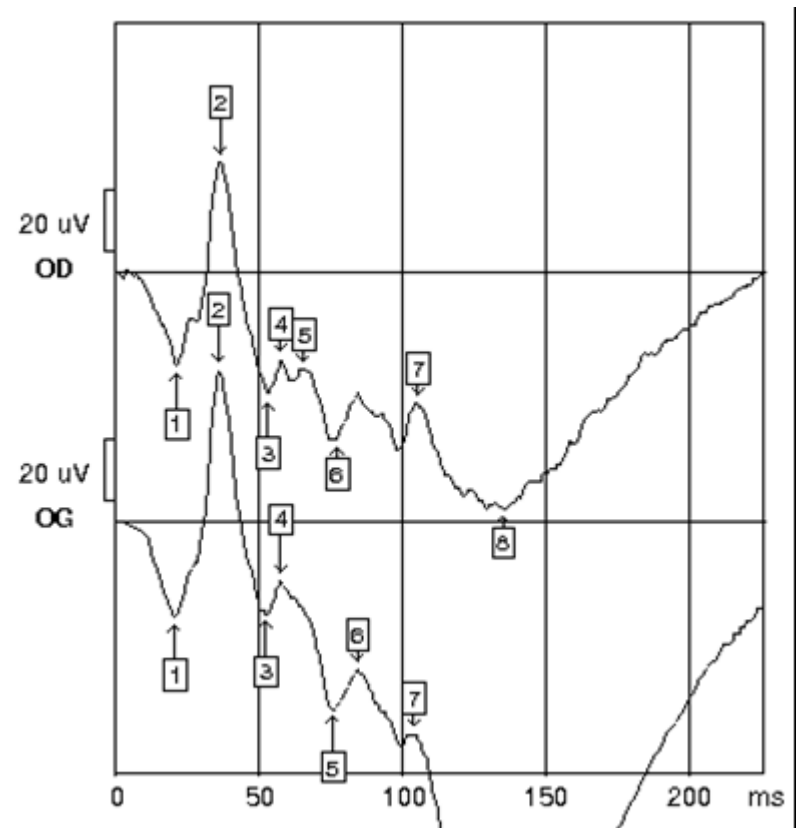
Œil droit

# ERG photopique: réponse des cônes altérée

**Patient**



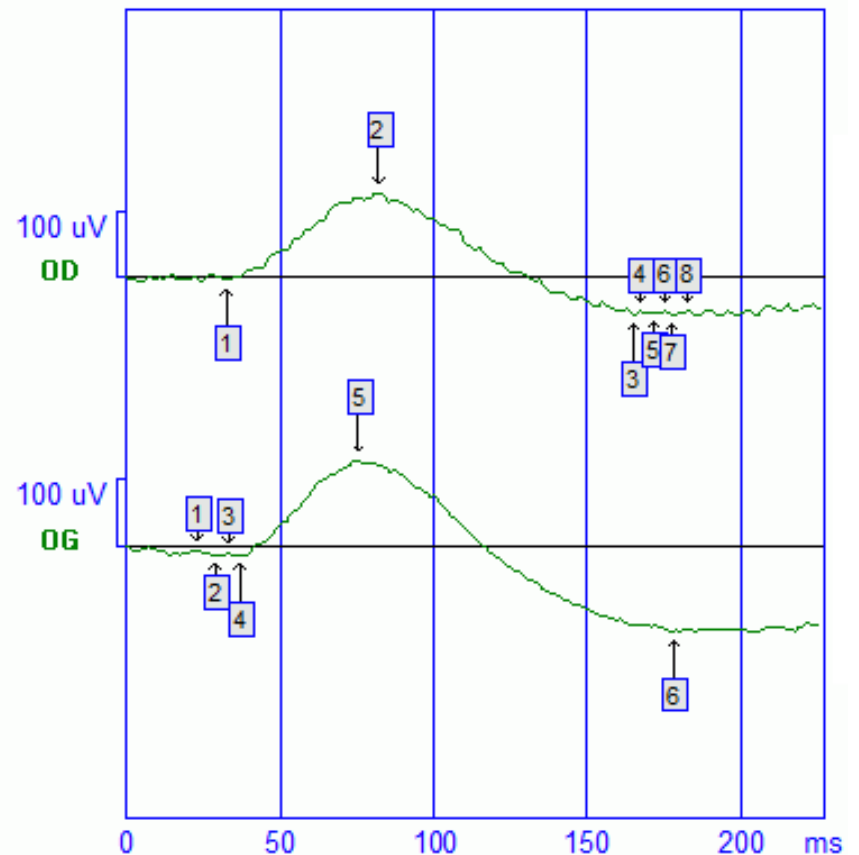
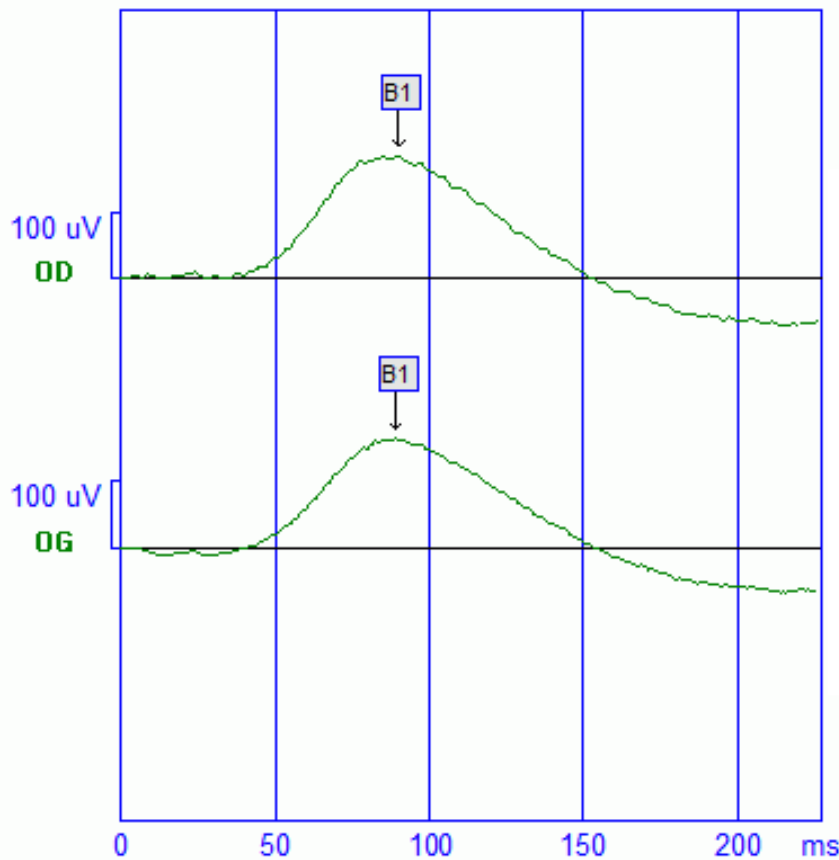
**Normal**



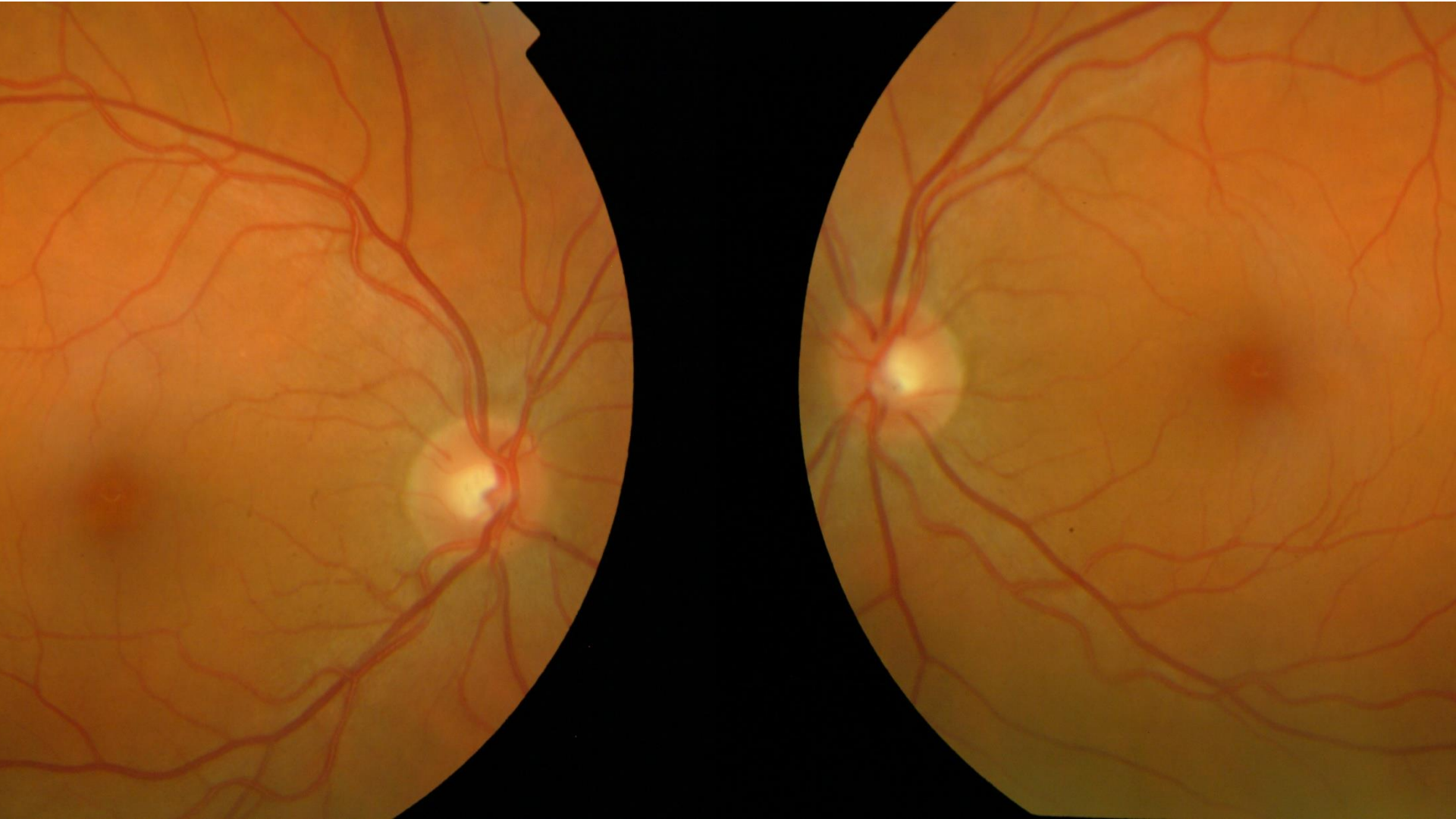
# ERG scotopique: réponse des bâtonnets normale

Patient

Normal

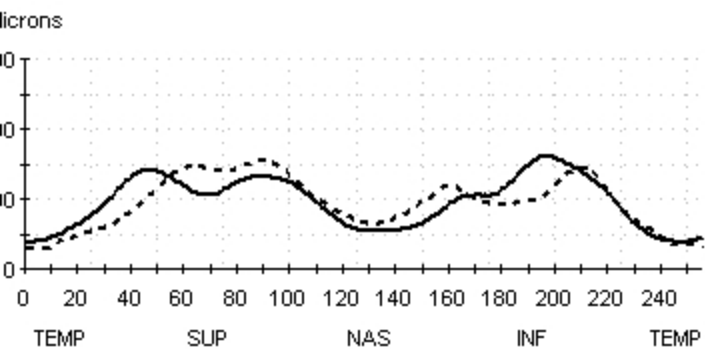
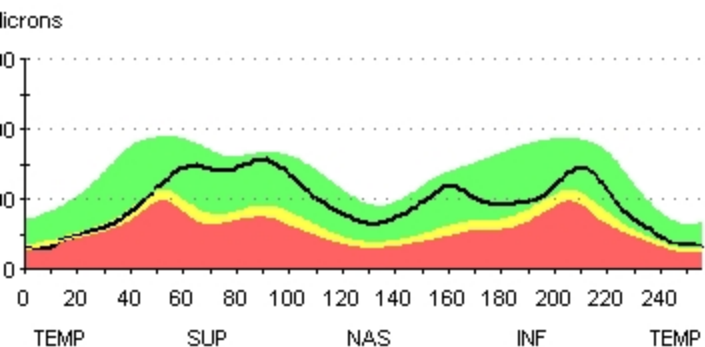
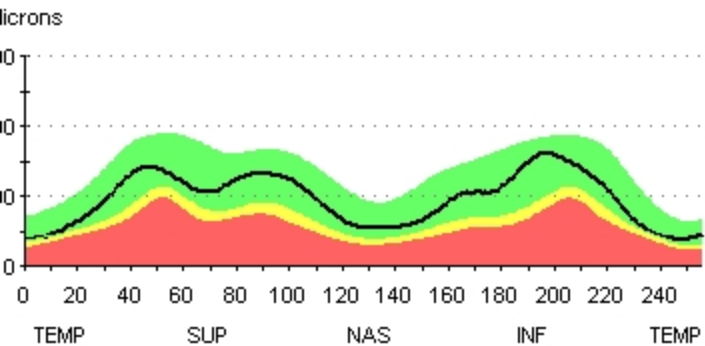


F 25 ans 10/10 OD, 10/10 OG,  
6 mois après épisode de névrite optique

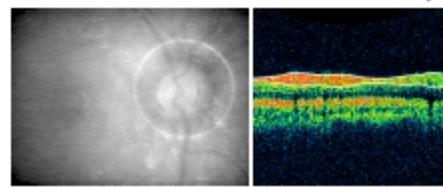
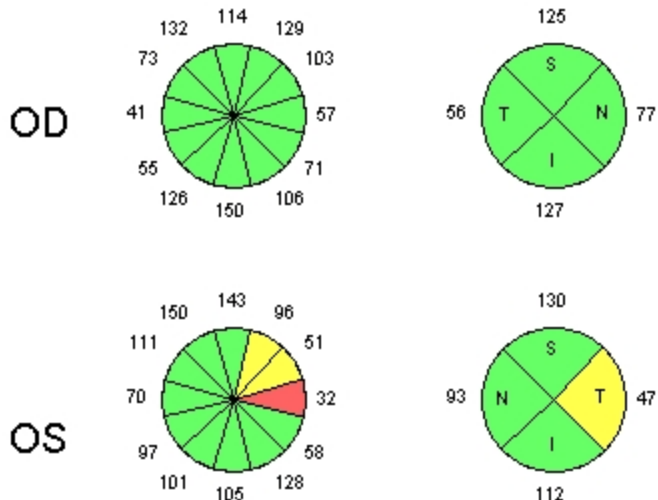




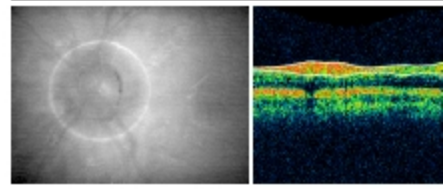
# RNFL THICKNESS AVERAGE ANALYSIS



— OD      - - - - OS

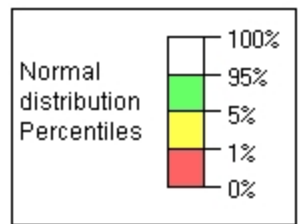


Signal Strength (Max 10)      7



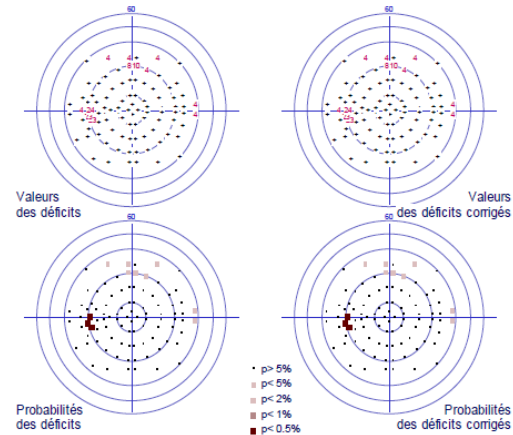
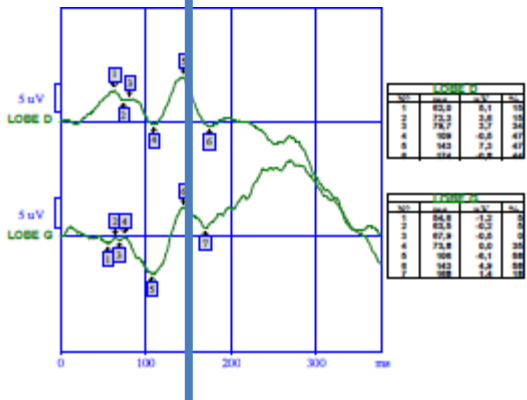
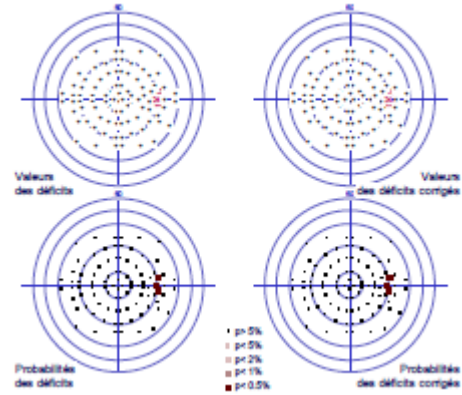
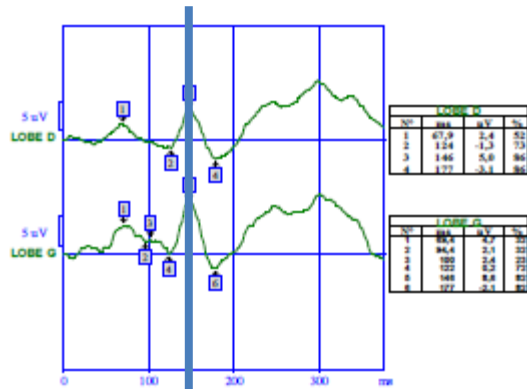
Signal Strength (Max 10)      6

	OD (N=3)	OS (N=3)	OD-OS
lmax/Smax	1.13	0.93	0.20
Smax/lmax	0.88	1.07	-0.19
Smax/Tavg	2.52	3.31	-0.79
lmax/Tavg	2.86	3.08	-0.23
Smax/Navg	1.84	1.68	0.17
Max-Min	123.00	126.00	-3.00
Smax	141.00	155.00	-14.00
lmax	160.00	145.00	15.00
Savg	125.00	130.00	-5.00
lavg	127.00	112.00	15.00
Avg.Thickness	96.34	95.28	1.06



Patient/Scan Information	
Scan Type	Fast RNFL Thickness (3.4)
Scan Date	11/5/2008
Scan Length	10.87 mm

# Retard au PEV, CV normal





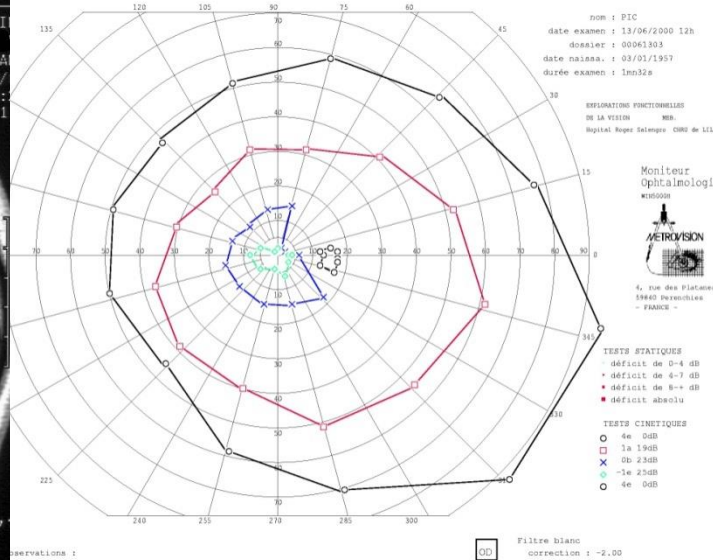
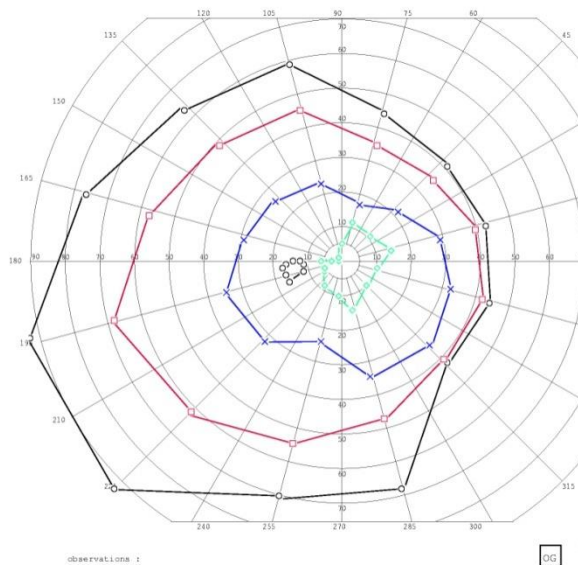
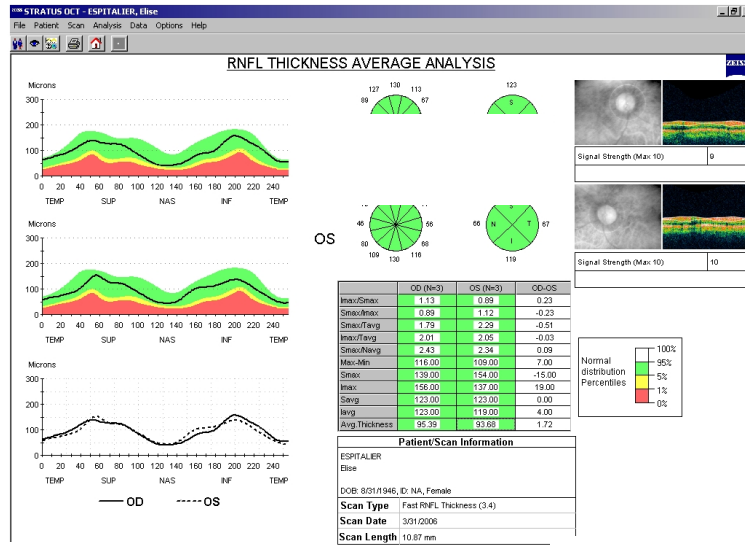
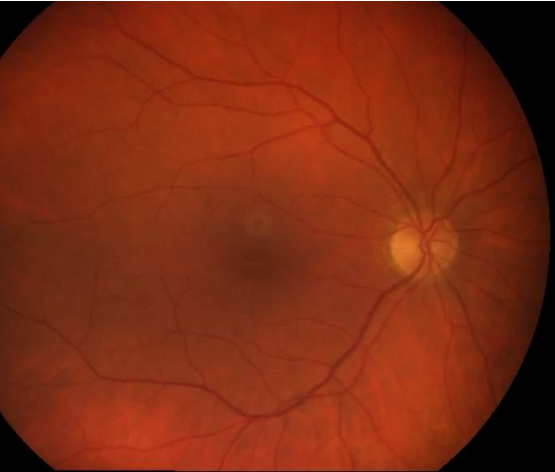
**Photo T. Garcia**



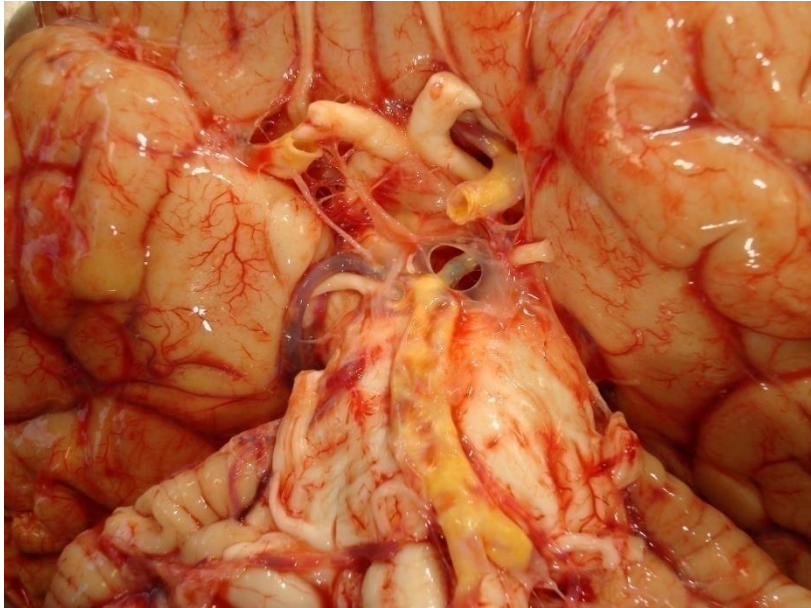


Photo T. Garcia  
la Tour de David,  
Jérusalem

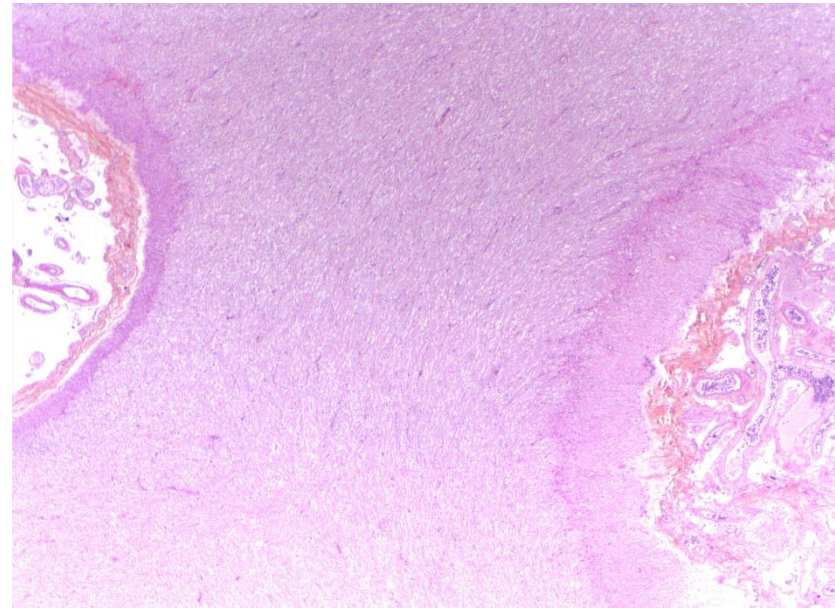
# Compression Chiasma



# Compression Chiasma



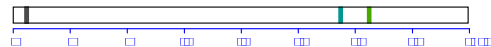
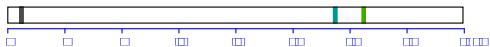
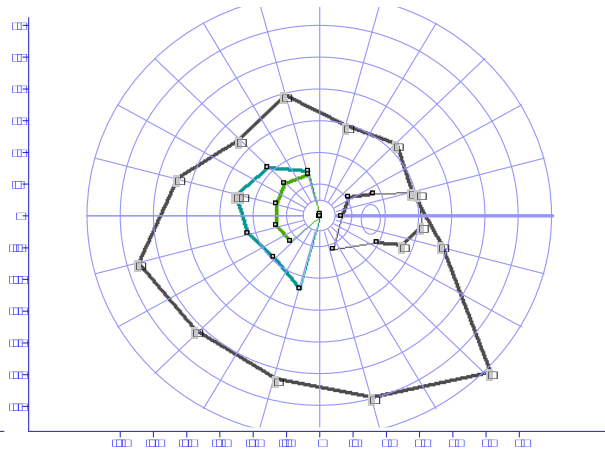
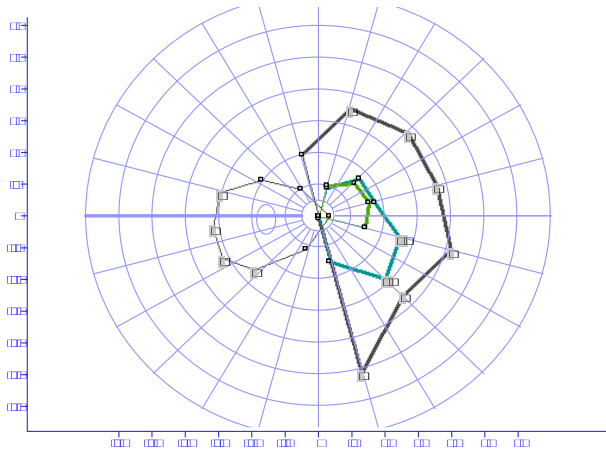
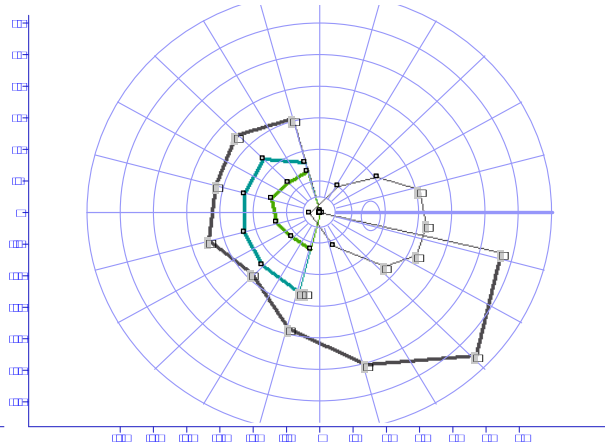
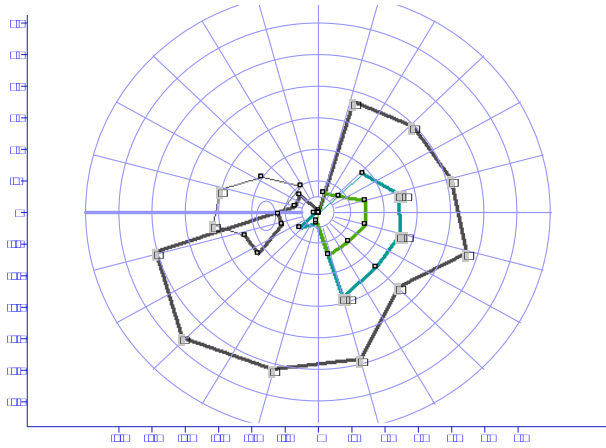
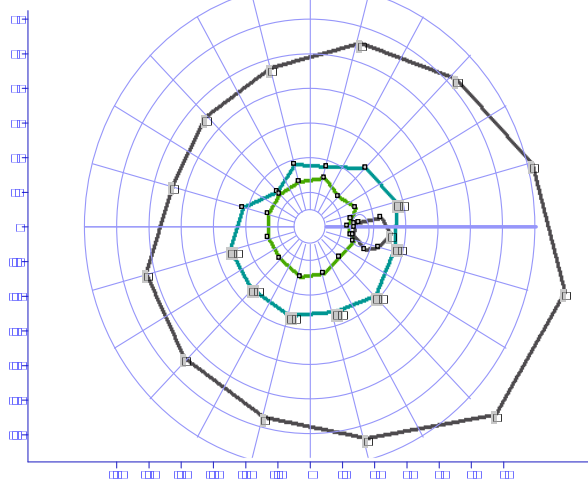
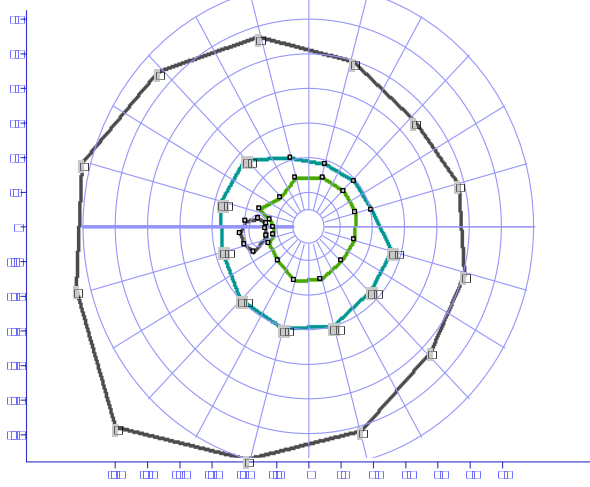
Chiasma : état frais



MO x 25 coloration HPS

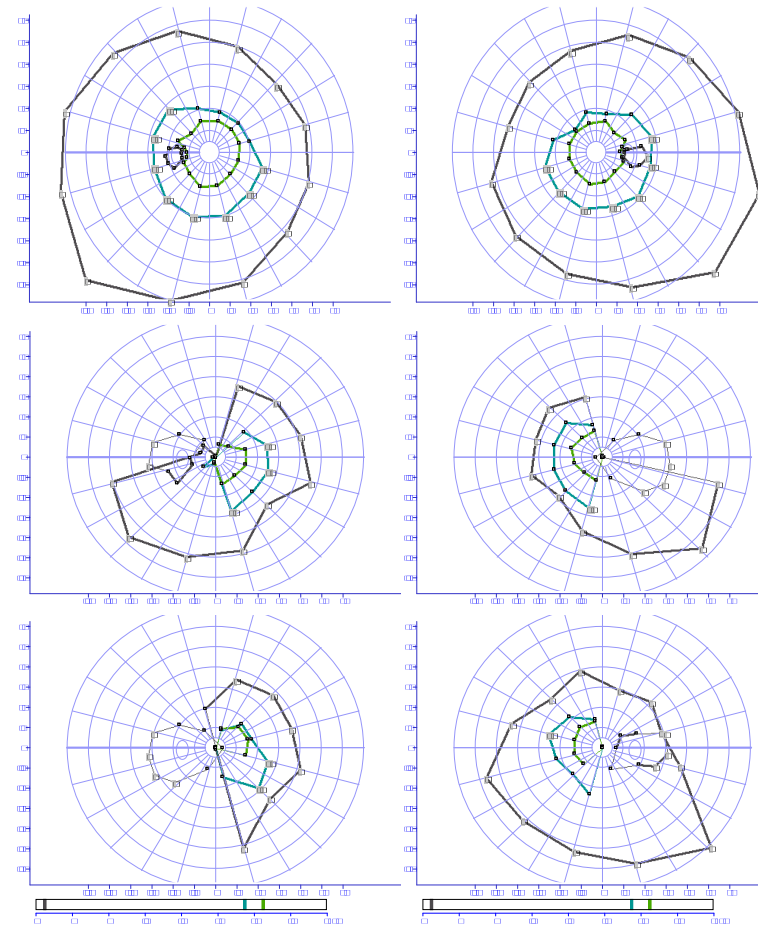
Camille Boulagnon  
Laboratoire d'Anatomie et Cytologie Pathologiques, Pr Diebold, CHU Reims

**Importance du faisceau décussant +++**



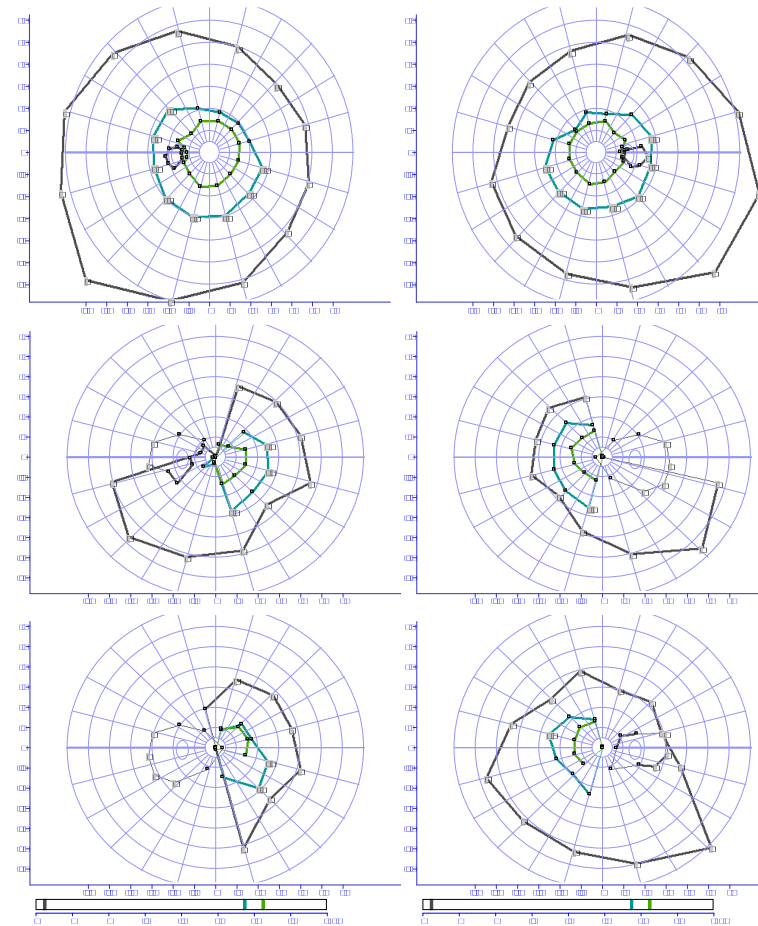
# Champ visuel

- 1) Diagnostic et suivi
- 2) Sévérité
  - Indication opératoire :
  - Etat fonctionnel et extension
- 3) Pronostic post-opératoire  
?



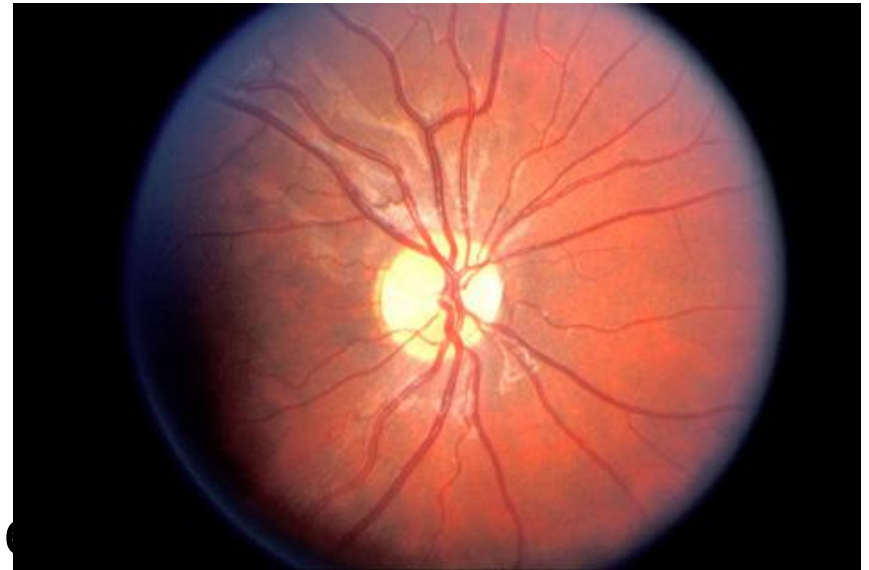
# Facteurs pronostiques

- Âge
- Durée compression chiasma
- Taille tumeur
- Voie d'abord
- **AV et CV pré-opératoires**
- Apparence de la tête du nerf optique (papille)



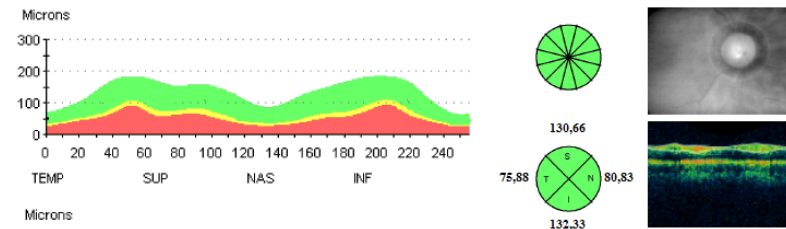
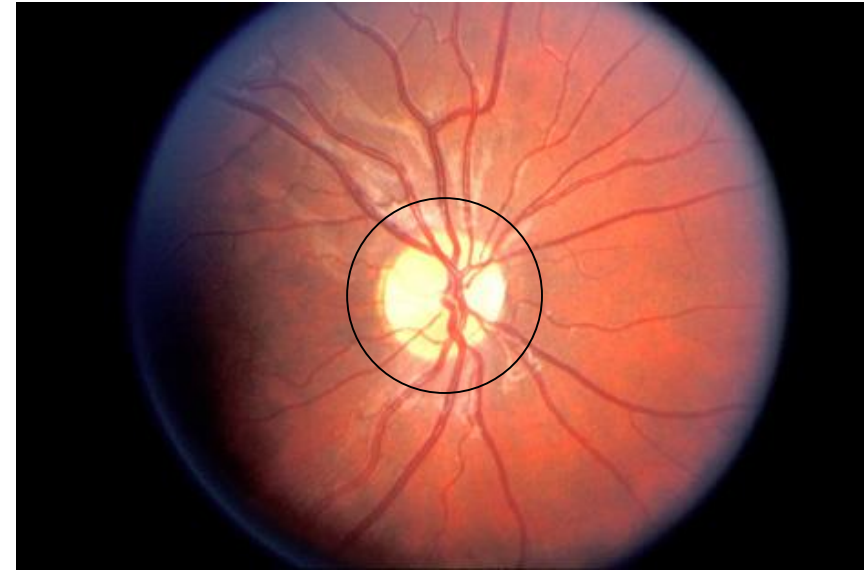
# Facteurs pronostiques

- Âge
- Durée compression chiasma
- Taille tumeur
- Voie d'abord
- Acuité Visuelle + Champ visuel
- **Apparence de la tête du nerf optique (papille): normale, pâleur, atrophie**



# Facteurs pronostiques

- Âge
- Durée compression chiasma
- Taille tumeur
- AV + CV
- Voie d'abord
- Apparence de la tête du nerf optique
- **Tomographie par cohérence optique (OCT) de la couche des fibres ganglionnaires**



OCT RNFL MOYENNE



# Physiopathologie

Compression



Lésions ischémiques

Lésions mécaniques

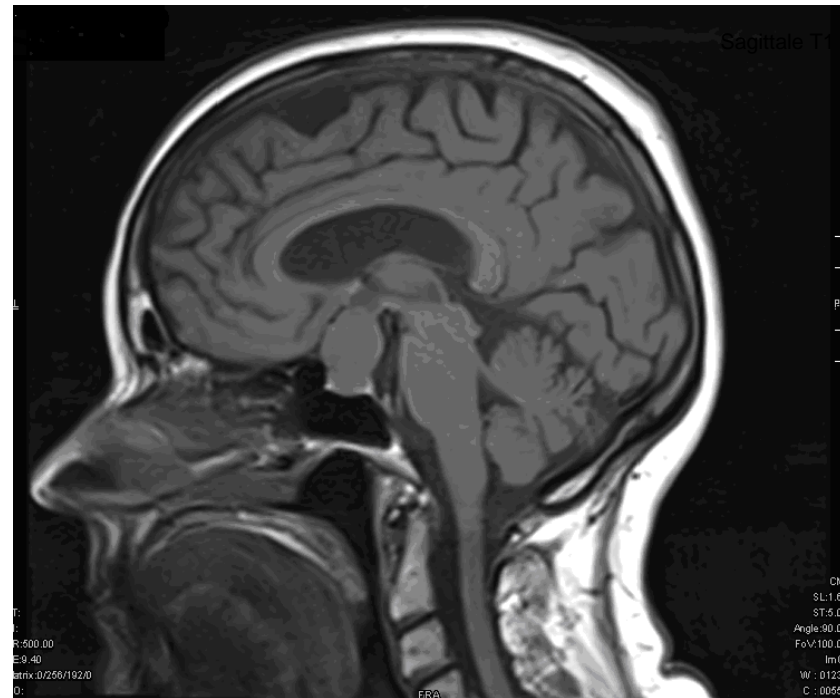


Bloc de conduction nerveuse

Arrêt transport axoplasmique

Démyélinisation

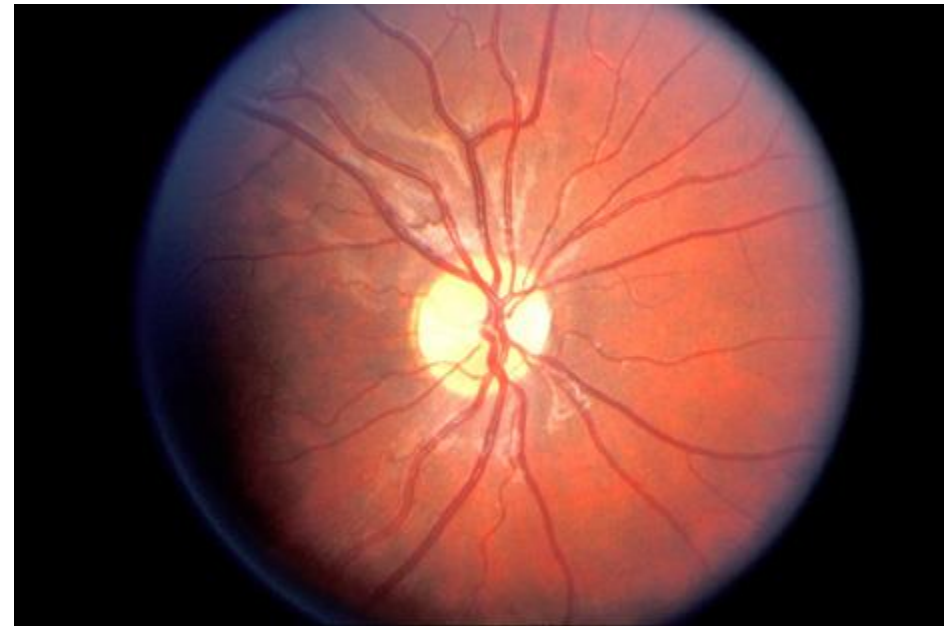
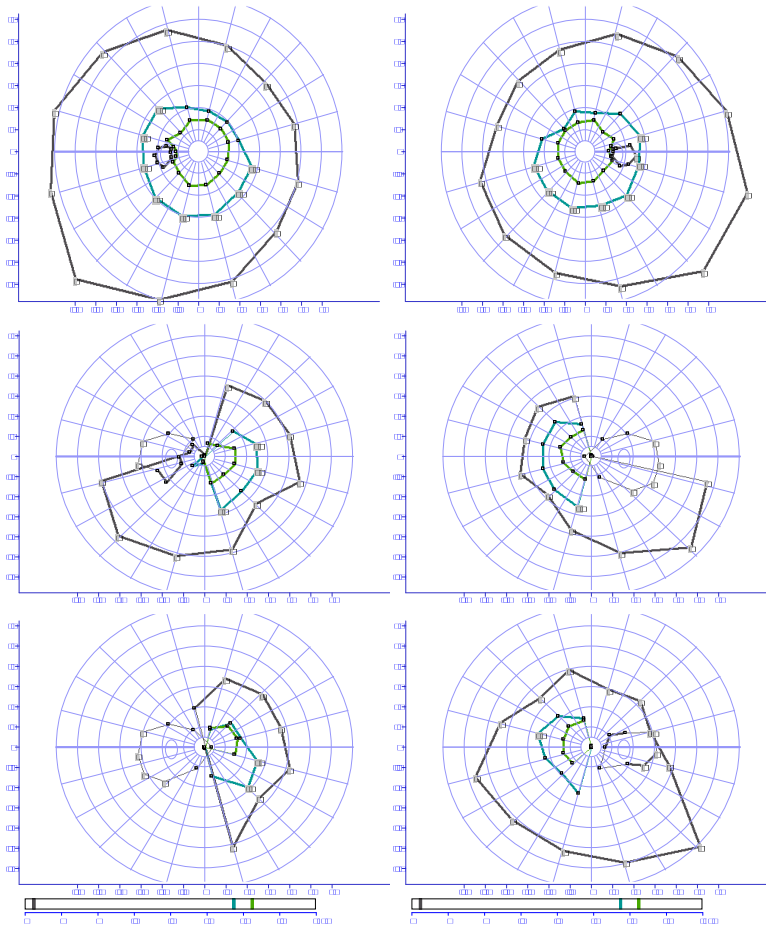
Dégénérescence rétrograde ou *dying back*  
= PERTE AXONALE



# Différencier

Atteinte fonctionnelle  
=réversible

Atteinte morphologique  
=irréversible

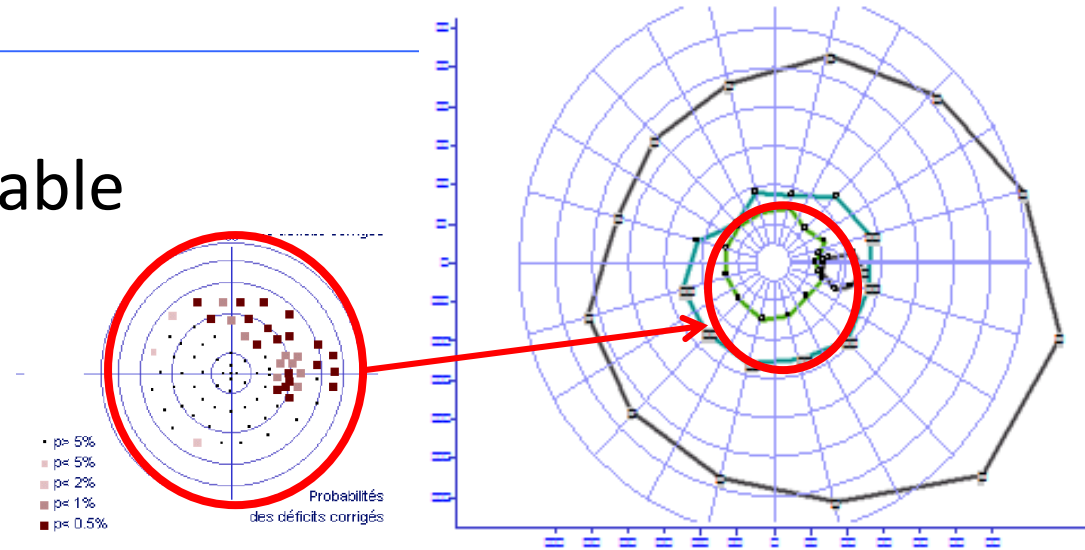


## 3 études

- Méthodologie comparable

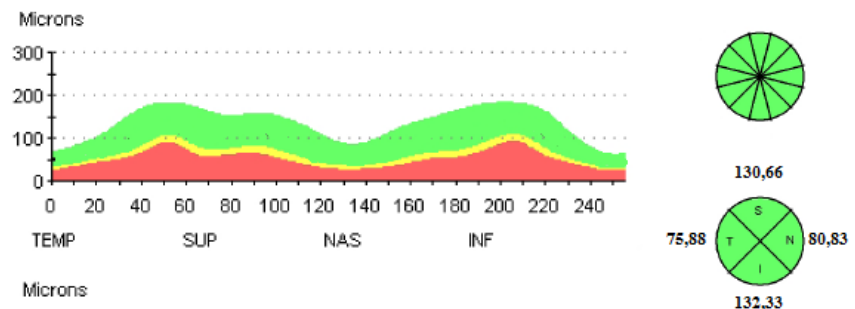
- Pré-opératoires :

- Acuité visuelle
- Champ visuel statique central ou cinétique périphérique
- OCT : mesure de la couche des fibres ganglionnaires péripapillaire

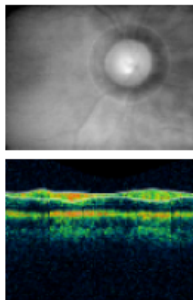


- Post-opératoires :

- Acuité visuelle
- Champ visuel



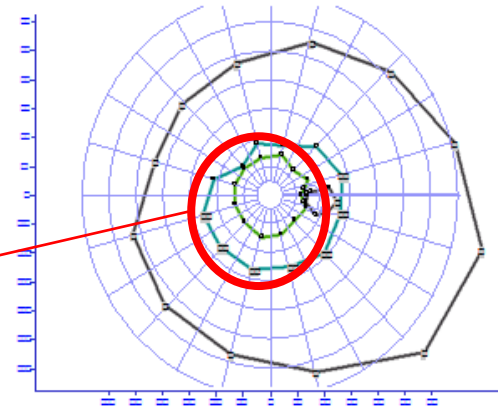
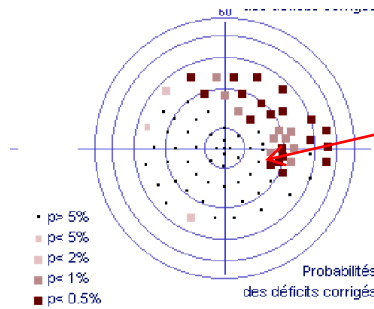
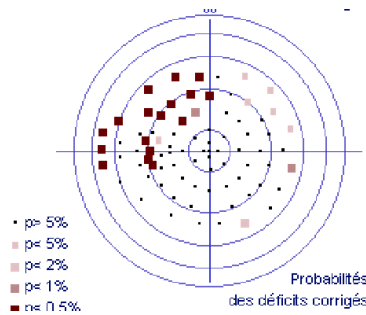
**OCT RNFL MOYENNE**



# Champ visuel central et atteinte axonale

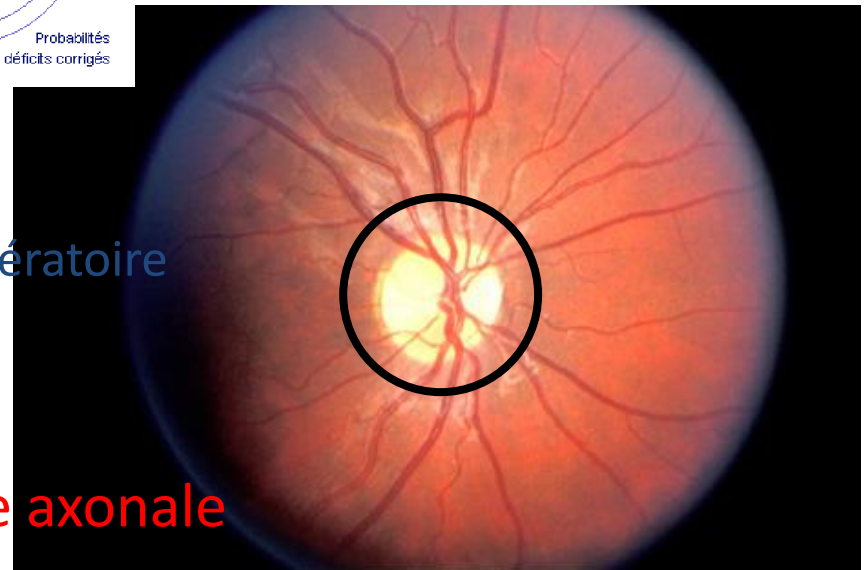
Danesh-Meyer *et al. Invest Ophthalmol Vis Sci. 2008*

Tumeurs parachiasmales :

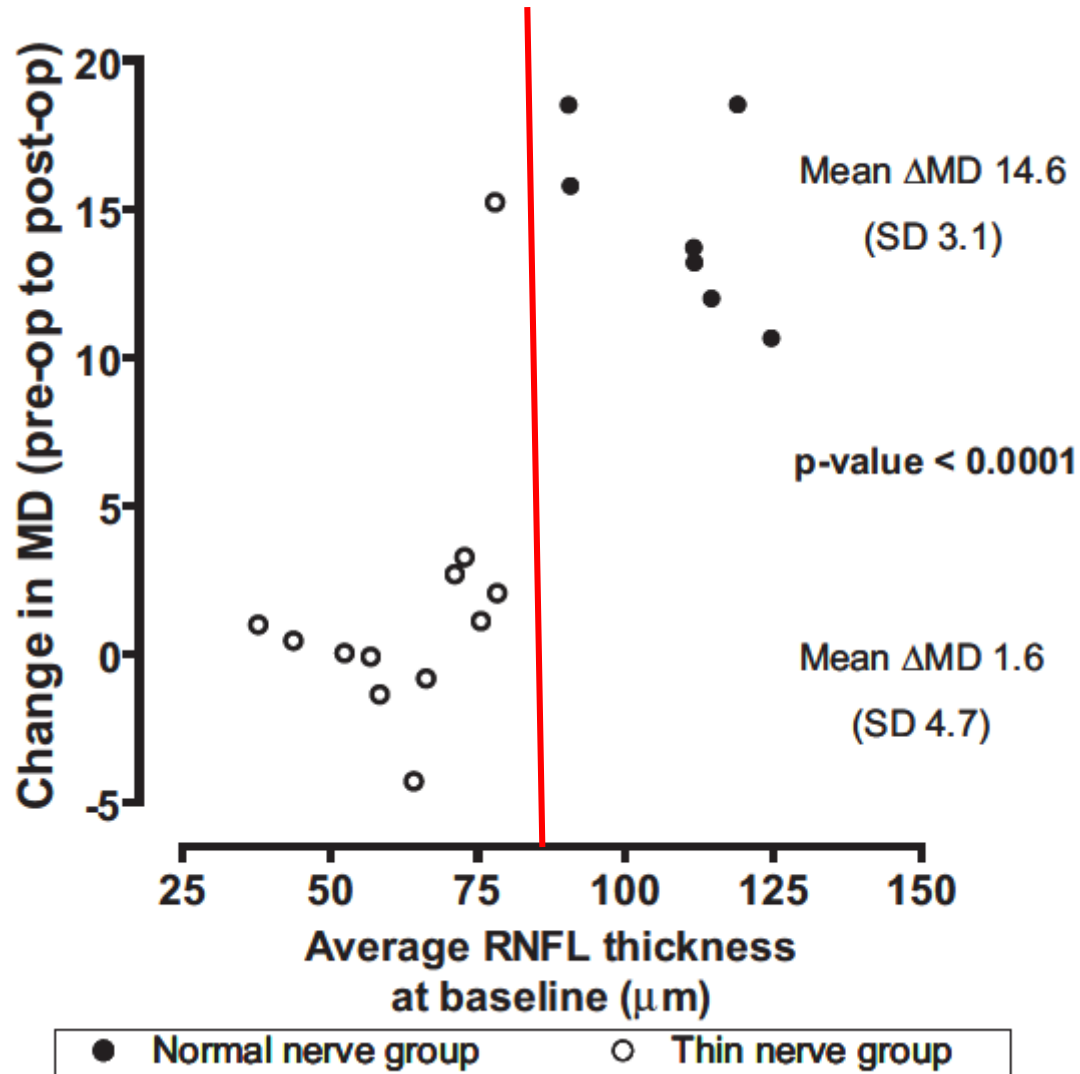


- Champ visuel statique
- Mesure déficit moyen (dB) pré et post-opératoire

Récupération post-opératoire en dB  
du champ visuel central selon la perte axonale



# Champ visuel central et atteinte axonale

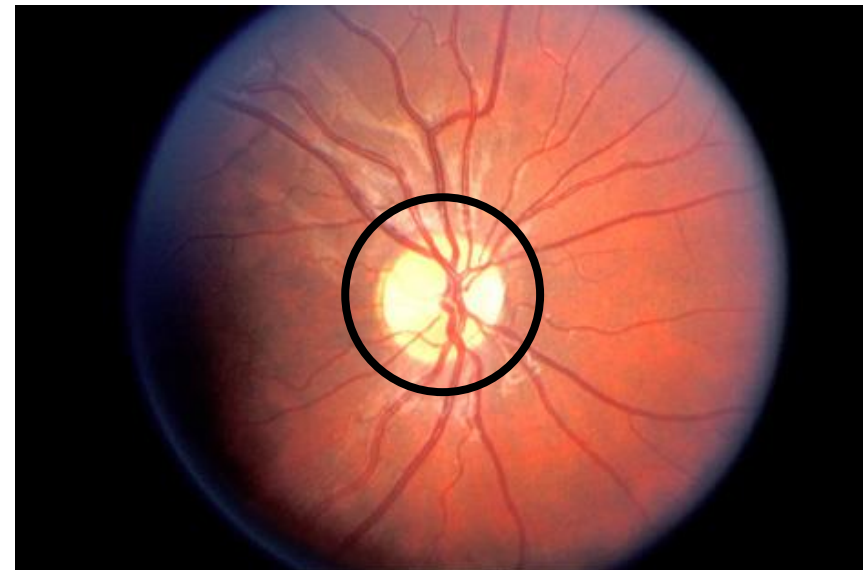
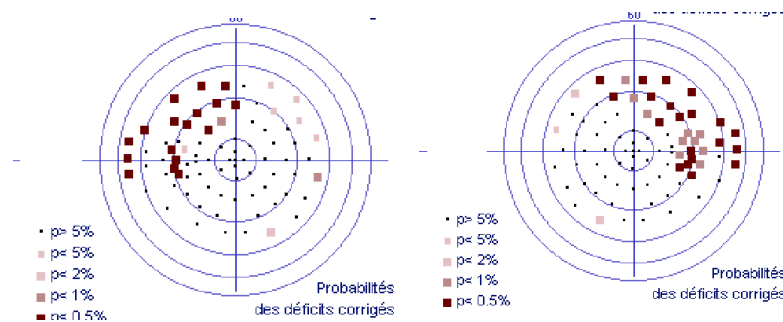


# Champ visuel central et atteinte axonale

Danesh-Meyer *et al. Invest Ophthalmol Vis Sci. 2008*



- Pas de récupération du champ visuel central
- Si épaisseur moyenne  $< 85\mu\text{m}$

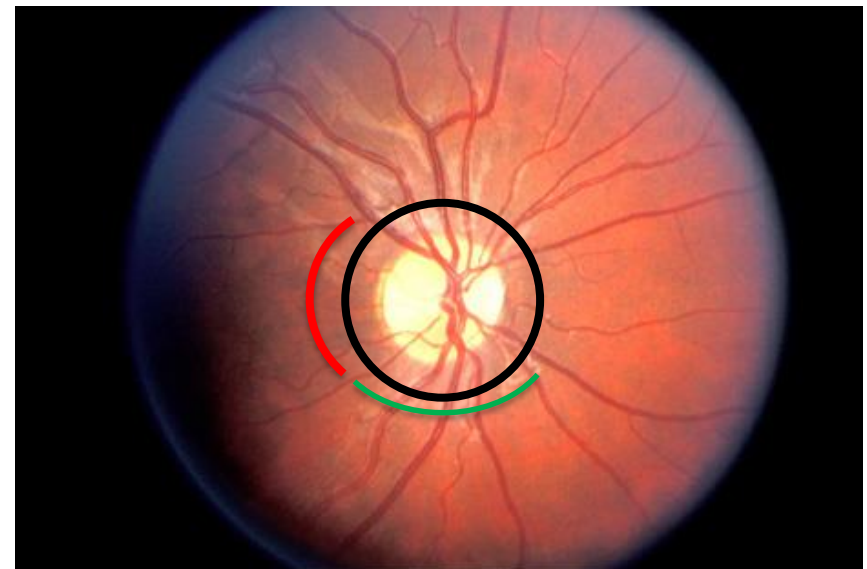
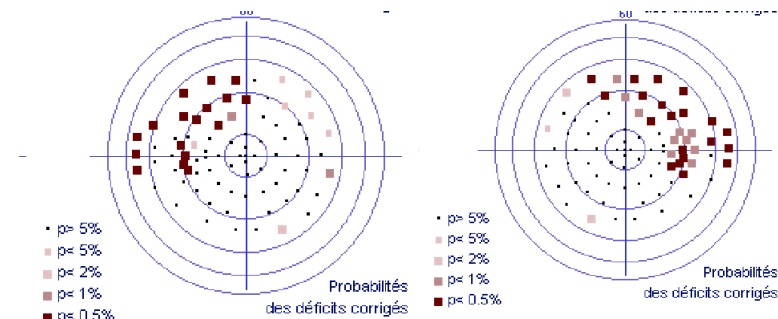


# Champ visuel central et atteinte axonale

• Jacob *et al.* *Am J Ophthalmol.* 2009

Adénomes hypophysaires  
mauvais pronostic de récupération  
du CV central (MD) :

- amincissement global
- amincissement inférieur
- amincissement temporal



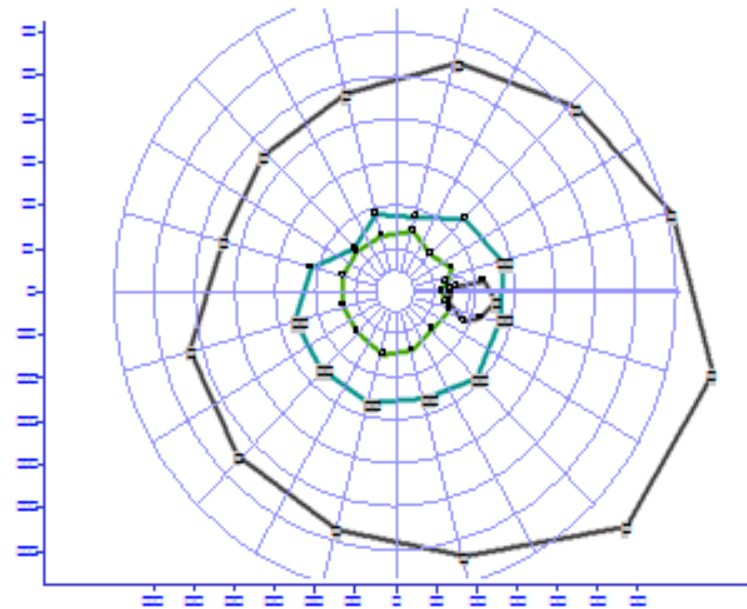
# OCT préopératoire : facteur pronostique de récupération post-opératoire

du champ visuel central

après chirurgie des lésions compressives du  
chiasma

champ visuel périphérique ?

Garcia et al. 2014







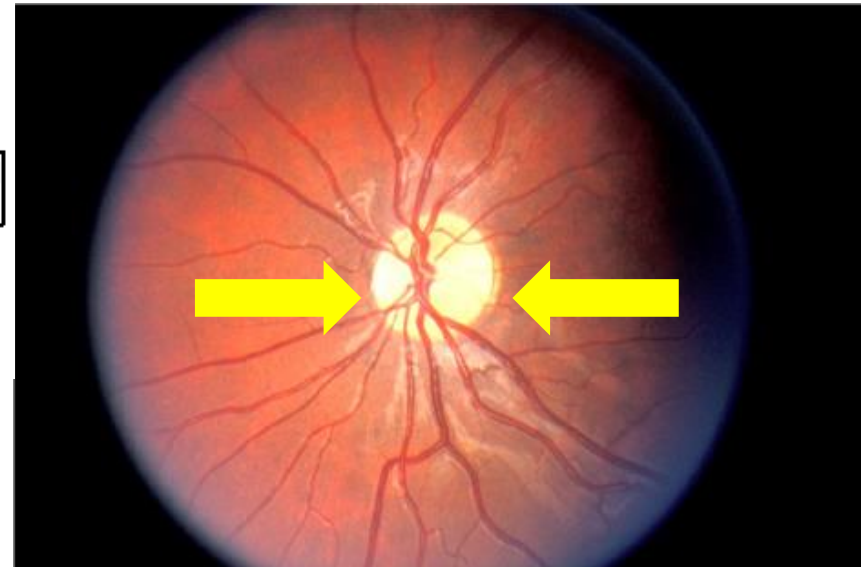
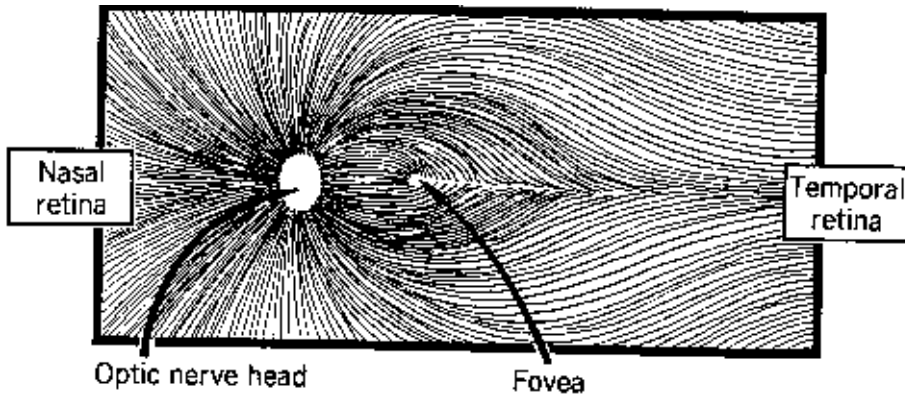
## Analyse multivariée

	p	OR		
<b>Age</b>	0,387	1,015	0,981	1,051
<b>Sexe</b>	0,884	0,920		
<b>OCT nasal*</b>	0,041	<b>1,557*</b>	1,015	2,363
<b>OCT temporal</b>	0,086	0,624		

L'augmentation de l'épaisseur de l'OCT nasal d'1 $\mu$  améliore de 1,03 fois la probabilité de récupération du CV  
(pour 15  $\mu$ m – 1,56)

## OCT RNFL temporal et nasal

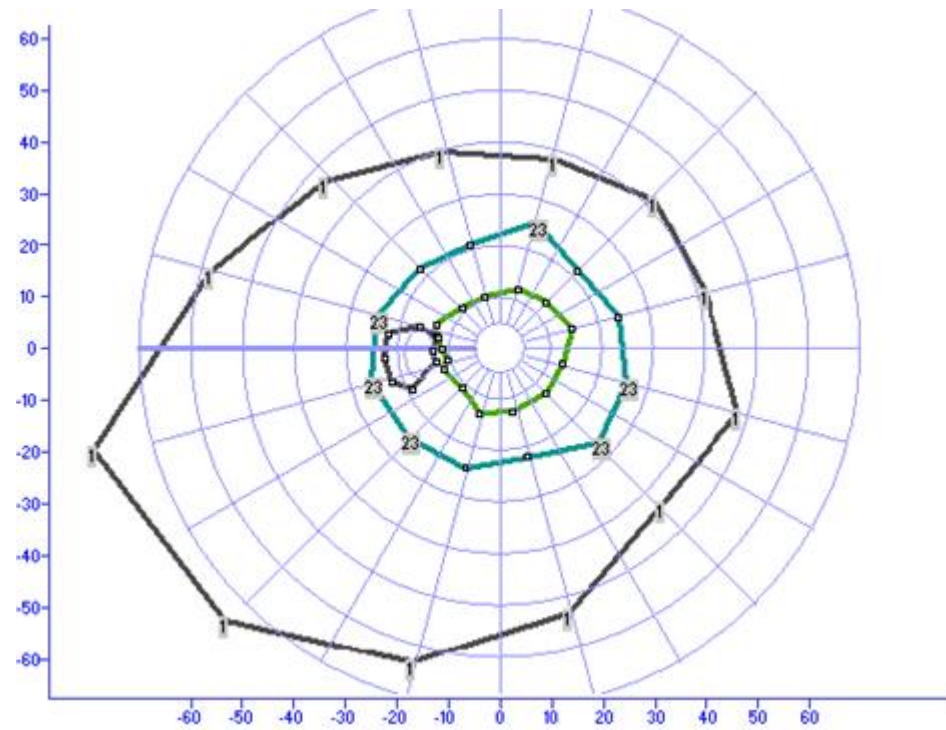
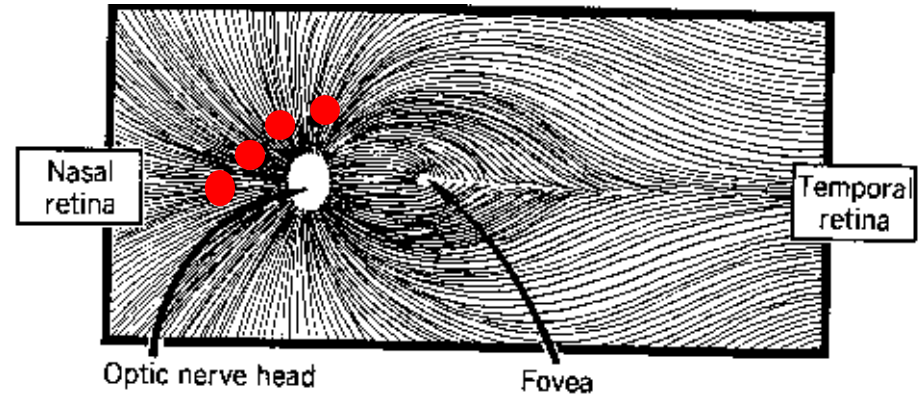
- **Atrophie en bandes – *band atrophy***



Nasal = périphérie

- OCT pré-opératoire

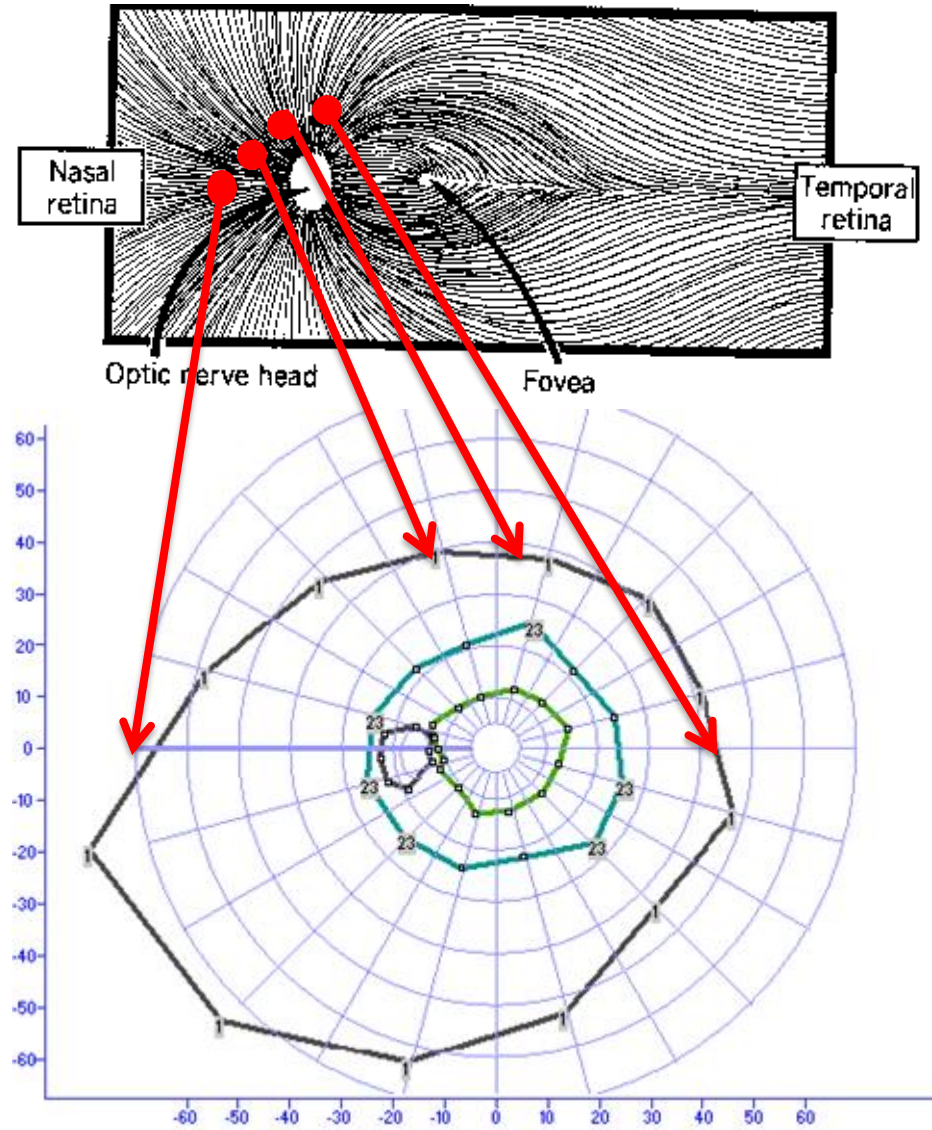
- Epaisseur axonale nasale
- Récupération du CV périphérique



Nasal = périphérie

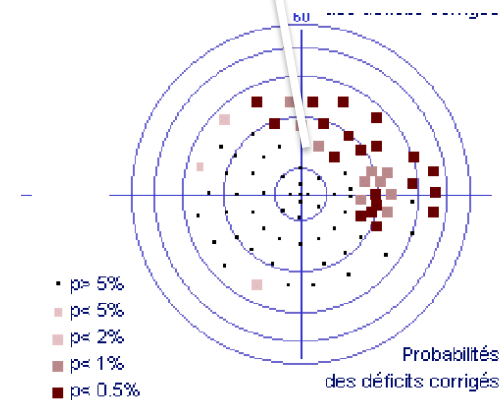
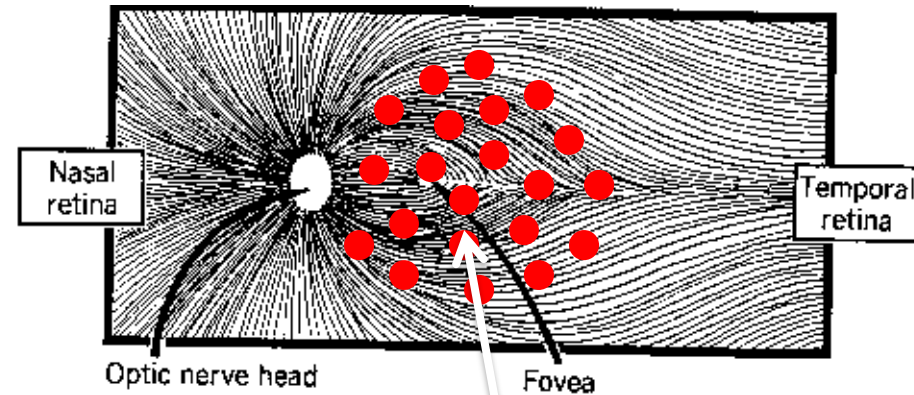
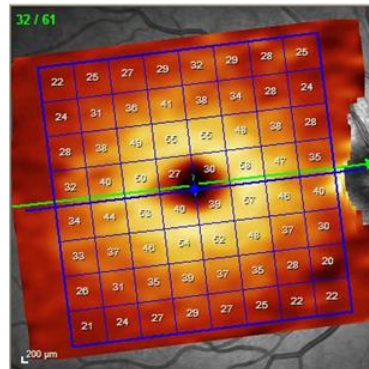
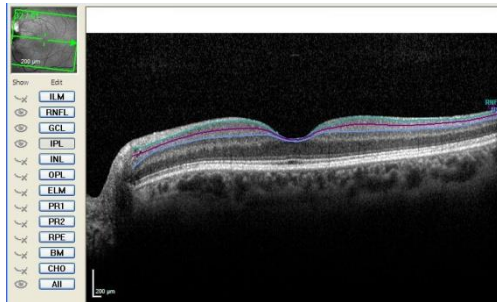
- OCT pré-opératoire

- Epaisseur axonale nasale
- Récupération du CV périphérique



# Epaisseur temporelle = centrale

- OCT préopératoire
  - Epaisseur axonale temporelle
  - Récupération du CV central



- OCT RNFL
- **FUTUR: OCT Macula CG:** corrélation entre perte localisée et atteinte du champ visuel central



# Conclusion

- Champ visuel: atteinte fonctionnelle des axones
- OCT: perte axonale morphologique
- 2 situations
  1. Atteinte fonctionnelle ne s'accompagne pas encore d'une atteinte morphologique axonale:  
POTENTIEL DE RÉCUPÉRATION
  2. Corrélation entre atteinte fonctionnelle (champ visuel) et morphologique (perte axonale) :  
PERTE DÉFINITIVE



- Non l'OCT ne peut pas remplacer le Champ Visuel dans le diagnostic des compressions chiasmatique, c'est un outil pronostic
- Non David n'était peut être pas l'héro que l'on pensait.....

# Conclusion

- Bonne corrélation entre structure et fonction dans les NO « prélaminaires »
  - Bonne corrélation entre l'aspect de la papille/ RNFL/CGR à l'OCT et l'atteinte fonctionnelle sauf au stade tout à fait initial
- La fonction précède l'atteinte morphologique dans les atteintes rétrolaminaires
  - Séquelle en de NO inflammatoire,
  - Pronostic dans les compressions chiasmatiques