



Ocular Surface Analysis & Preparation in Pre-Op Planning of Modern Cataract Surgery

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SPAIN

MGD & Dry Eye Syndrome

- Over **300 million people** worldwide suffer from the **Dry Eye Syndrome**. More frequent in women specially after menopause

Dry evaporative syndrome (MGD)

- 30% of the general population
-
- Reference treatment = Eyelids care
-

After Cataract & Refractive surgery

- Dry eye syndrome in post-op by MGD decompensation
-
- Dry eye syndrome in post-op = Source of non-satisfaction
-



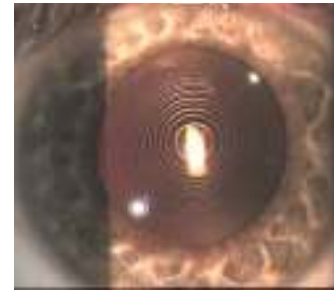
Ocular Surface Analysis & Preparation in Pre-Op Planning of Modern Cataract Surgery

Premium IOL implantation has supposed a big progress in Modern Cataract Surgery towards the excellence.

Patients are more demanding & with very high expectations

Premium IOLs are very sensitive to ocular pathologies & many ocular conditions can affect negatively the postop quality of vision

Pathologies & factores that alter the ocular surface can affect severely the visual outcome

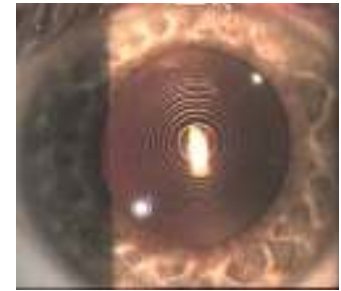


Ocular Surface Analysis & Preparation in Pre-Op Planning of Modern Cataract Surgery

A full corneal preop study has to be performed evaluating corneal aberrations & asphericity to decide for the most adequate IOL to implant

In spite of that in many cases the patient is unsatisfied with the quality of vision

MGD & Dry eye are very common ocular superficial pathologies & frequently get worse after Cataract surgery leading to patient discomfort & poor quality of vision even though satisfactory level of VA is achieved



Ocular Surface Analysis & Preparation in Pre-Op Planning of Modern Cataract Surgery



ATENCIÓN !!!!!

Deficient Tear film quality
makes it impossible to obtain
good quality of vision



KERATOGRAPH-5M

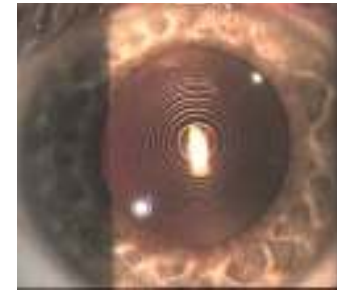
Análisis de la calidad y de la
cantidad de la lágrima

Ocular Surface Analysis & Preparation in Pre-Op Planning of Modern Cataract Surgery

In many cases we can have misleading corneal aberration measurements that can affect our selection of IOL because of MGD or Dry eye

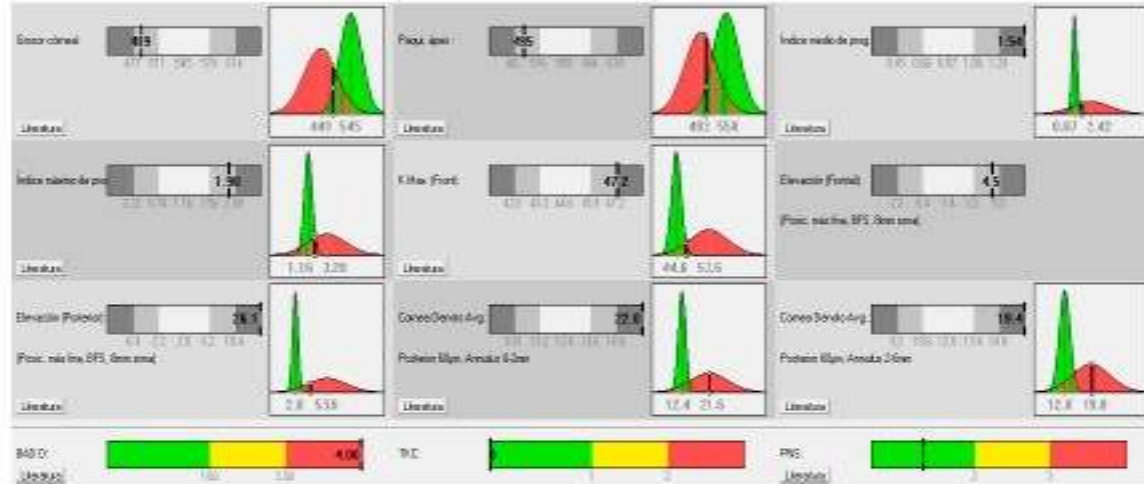
A thorough Analysis of the ocular surface & tear film should be done as part of the preoperative protocol for cataract surgery specially with premium IOLs

Any existing MGD or Dry eye conditions should be treated previously to be able to select the most adequate IOL and for the patient to achieve best quality of vision and comfort postoperatively

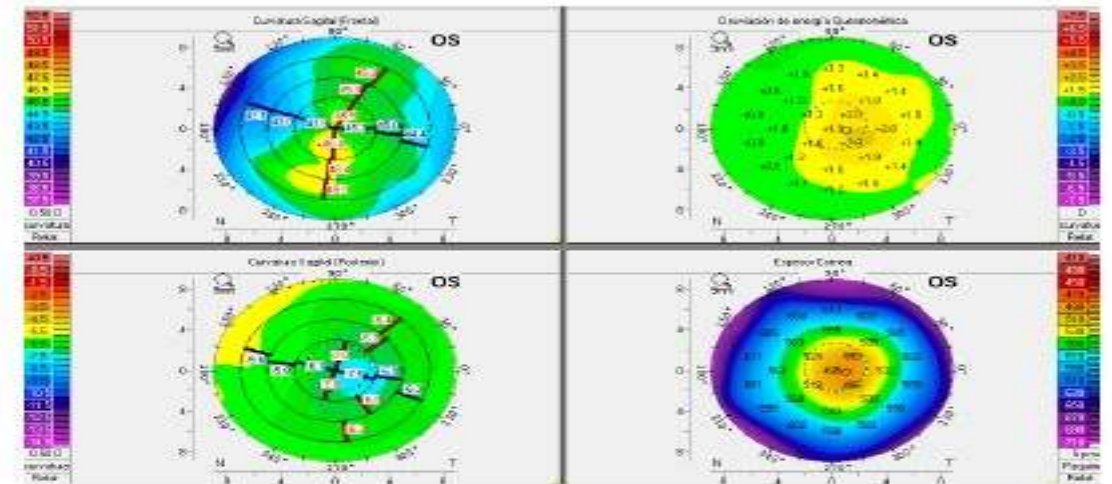


Pentacam Corneal Analysis PreCataract Suite

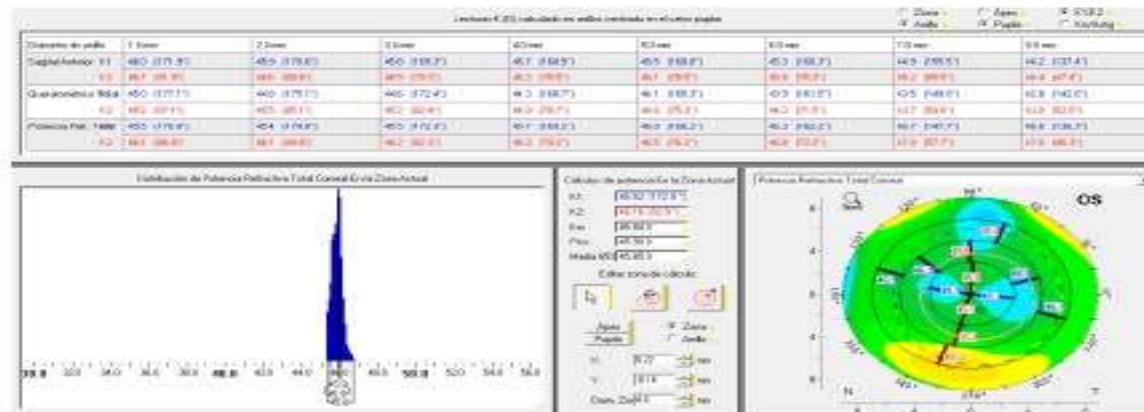
- Reporte de Índices



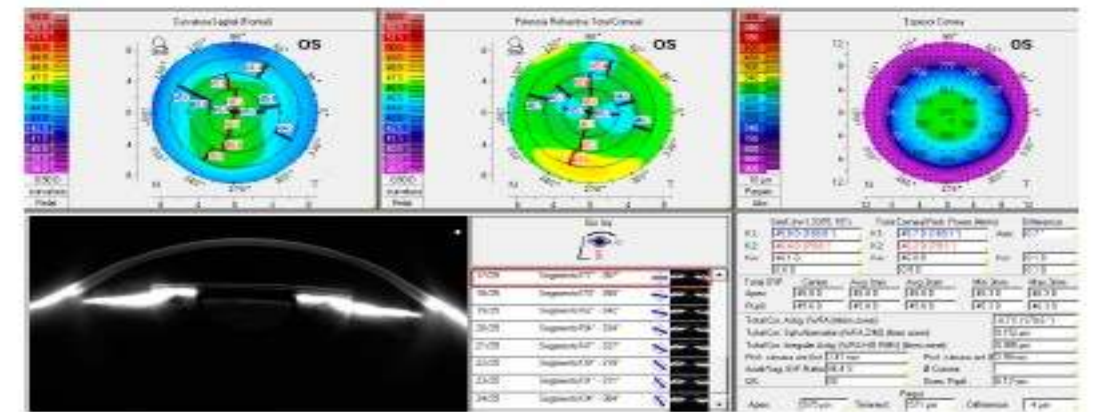
- 4 Mapas Topométricos



- Distribución de Potencias

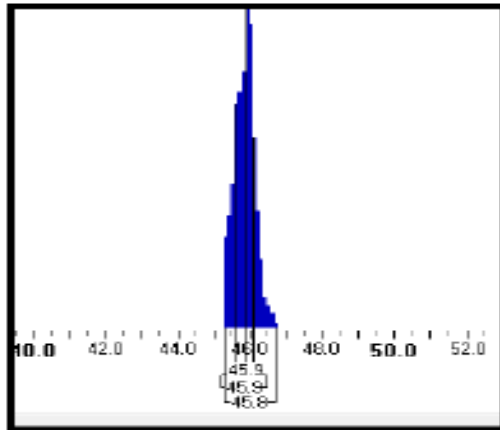


- Pre-op de Cataratas



CORNEAL SURFACE POWER DISTRIBUTION

INDICACIÓN PARA LIO'S MULTIFOCALES



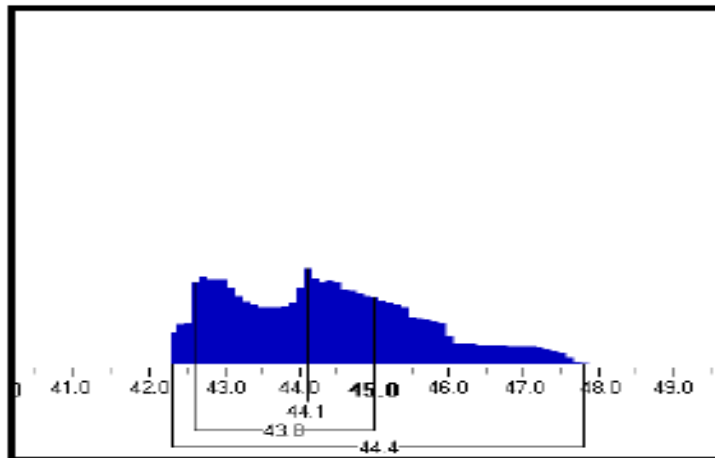
ADECUADO

Total Cor. Sph.Aberration (WFA Z40) (6mm zone):

0.152 μm

Total Cor. Irregular Astig. (WFA HO RMS) (4mm zone):

0.085 μm



**NO
ADECUADO**

Total Cor. Sph.Aberration (WFA Z40) (6mm zone):

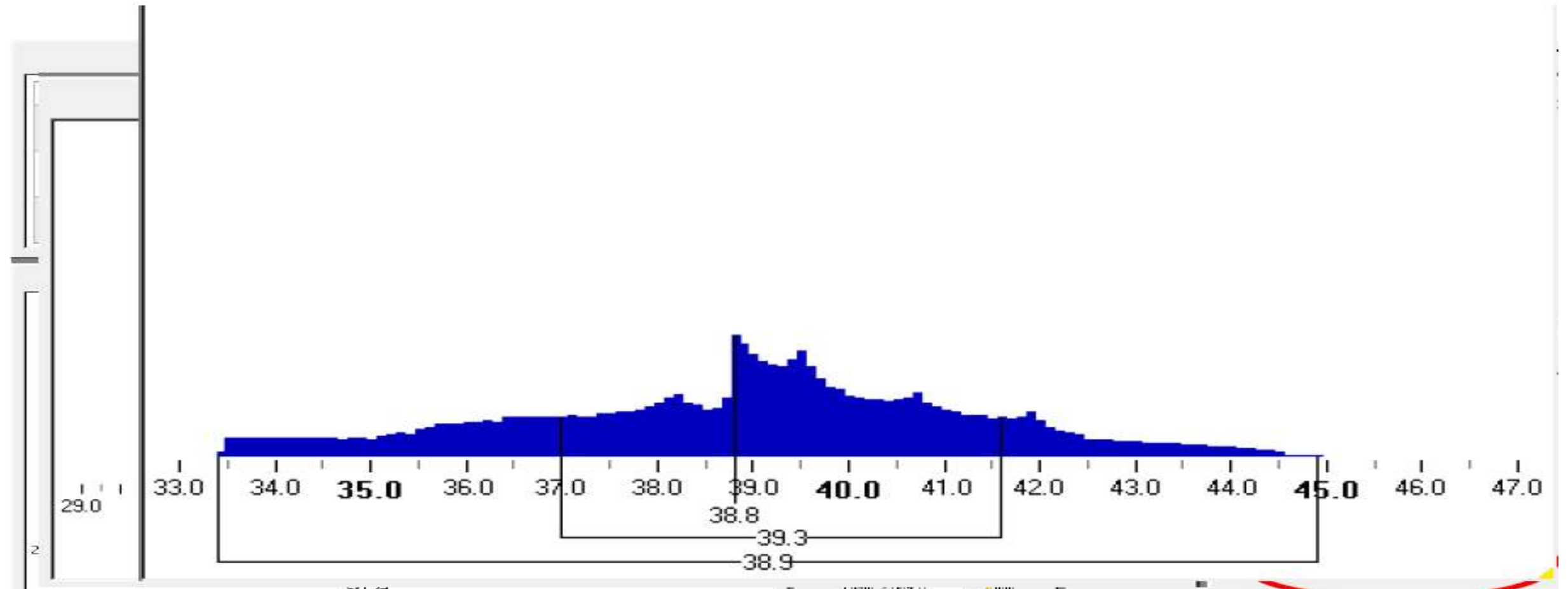
0.452 μm

Total Cor. Irregular Astig. (WFA HO RMS) (4mm zone):

0.458 μm

CORNEAL SURFACE POWER DISTRIBUTION

DISTRIBUCIÓN DE POTENCIAS ANÁLISIS DE LA MULTIFOCALIDAD DE LA CÓRNEA



OCULUS - PENTACAM Distribución de Potencias

Nombre: Ivanescu, GABRIELA DENISA

Fecha Examen: 26/01/2017

QS:  OK

Ojo: Dcha.

Fecha Nacimiento: 10/03/1967

ID Paciente:

Fecha examen: 13:19:59

Info examen:

Lecturas-K (D) calculado en zonas centrado en el centro pupilar

☒ Zona

☐ Apex

☒ K1/K2

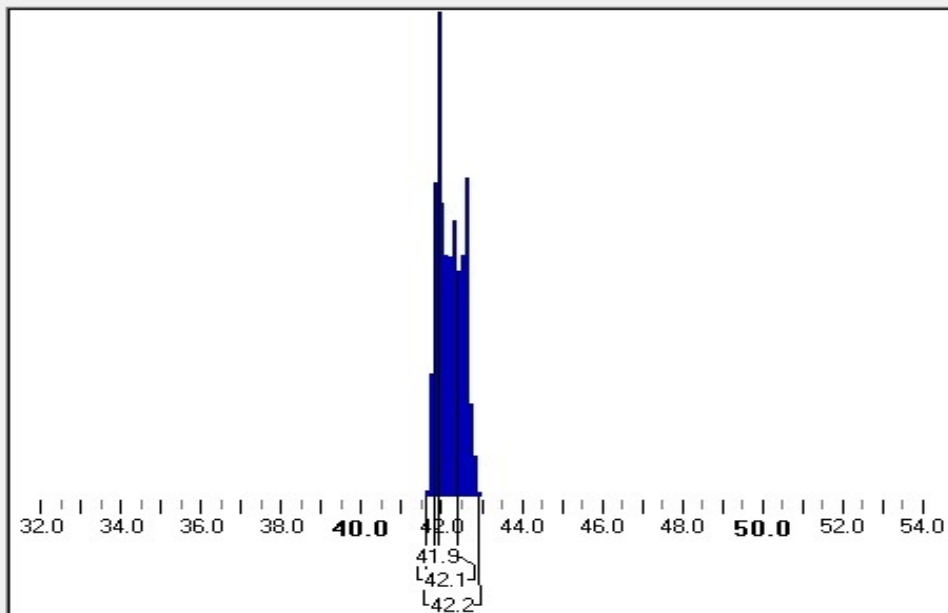
☐ Anillo

☒ Pupila

☐ Km/Astig

Diámetro de Zona	1.0 mm	2.0 mm	3.0 mm	4.0 mm	5.0 mm	6.0 mm	7.0 mm	8.0 mm
Sagital Anterior K1	41.9 (177.8°)	41.8 (7.2°)	41.8 (9.5°)	41.8 (11.3°)	41.8 (12.6°)	41.8 (13.2°)	41.8 (13.3°)	41.7 (13.1°)
K2	42.0 (87.8°)	42.3 (97.2°)	42.4 (99.5°)	42.5 (101.3°)	42.6 (102.6°)	42.6 (103.2°)	42.6 (103.3°)	42.5 (103.1°)
Queratométrico Total K1	40.7 (166.8°)	40.7 (14.8°)	40.7 (16.4°)	40.6 (16.5°)	40.6 (16.5°)	40.6 (16.4°)	40.5 (16.2°)	40.5 (15.4°)
K2	40.8 (76.8°)	41.0 (104.8°)	41.0 (106.4°)	41.1 (106.5°)	41.2 (106.5°)	41.3 (106.4°)	41.2 (106.2°)	41.2 (105.4°)
Potencia Refr. Total K1	41.1 (170.1°)	41.2 (14.3°)	41.2 (16.0°)	41.4 (16.3°)	41.5 (16.2°)	41.7 (16.0°)	42.0 (15.8°)	42.3 (15.3°)
K2	41.2 (80.1°)	41.4 (104.3°)	41.6 (106.0°)	41.9 (106.3°)	42.2 (106.2°)	42.5 (106.0°)	42.8 (105.8°)	43.1 (105.3°)

Distribución de Curvatura Sagital (Frontal) En la Zona Actual



Cálculos de potencia En la Zona Actual

K1: 41.82 (12.3°)

K2: 42.53 (102.3°)

Km: 42.18 D

Pico: 41.90 D

Media 65%: 42.06 D

Editar zona de cálculo:



Ápex

☒ Zona

Pupila

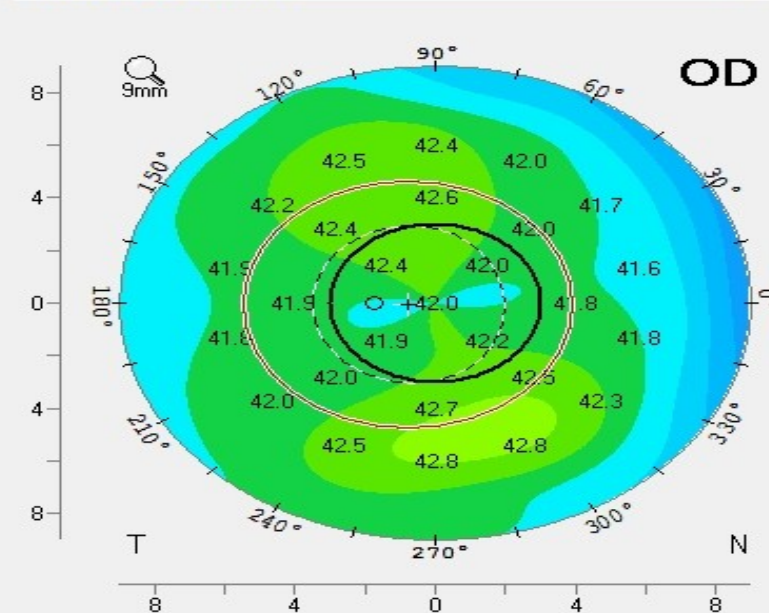
☐ Anillo

X: -0.38 mm

Y: -0.03 mm

Diam. Zona: 4.7 mm

Curvatura Sagital (Frontal)



49.5
49.0
48.5
48.0
47.5
47.0
46.5
46.0
45.5
45.0
44.5
44.0
43.5
43.0
42.5
42.0
41.5
41.0
40.5
40.0
39.5
39.0
38.5
38.0
37.5
37.0
36.5
36.0
35.5
35.0
34.5
0.50 D
curvatura
Relat.

OCULUS - PENTACAM Cataract Pre-OP

Nombre: Ivanescu, GABRIELA DENISA

Fecha Nacimiento: 10/03/1967

ID Paciente:

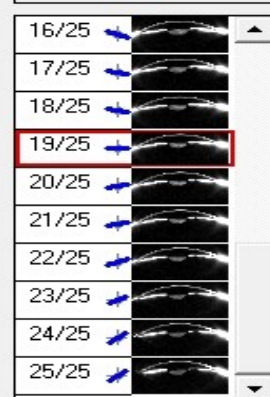
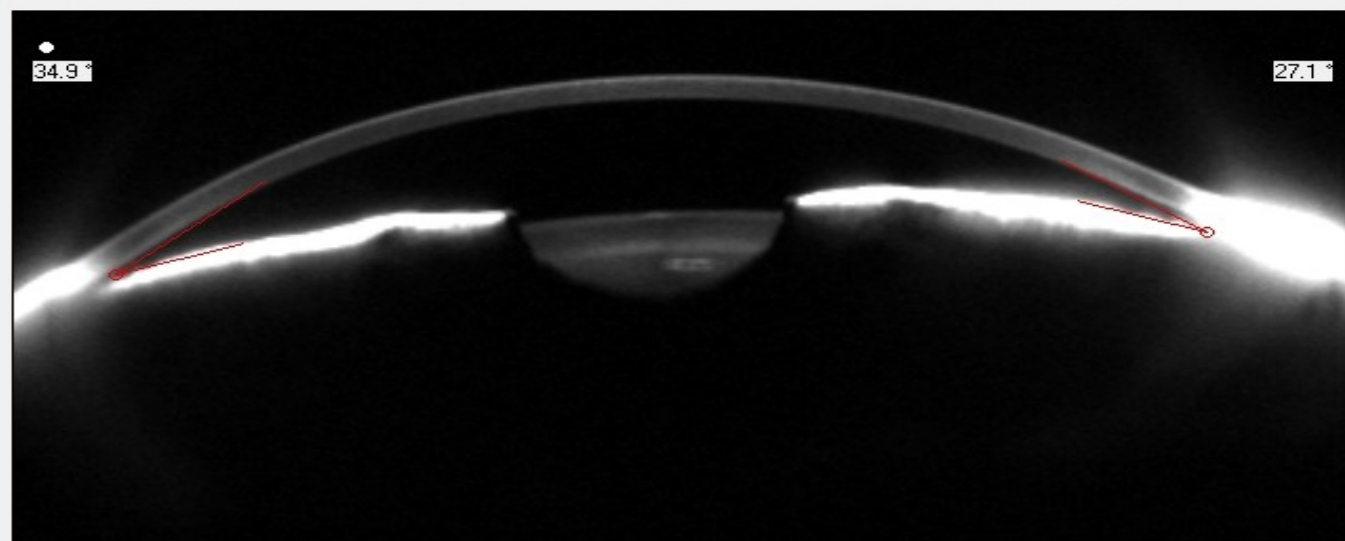
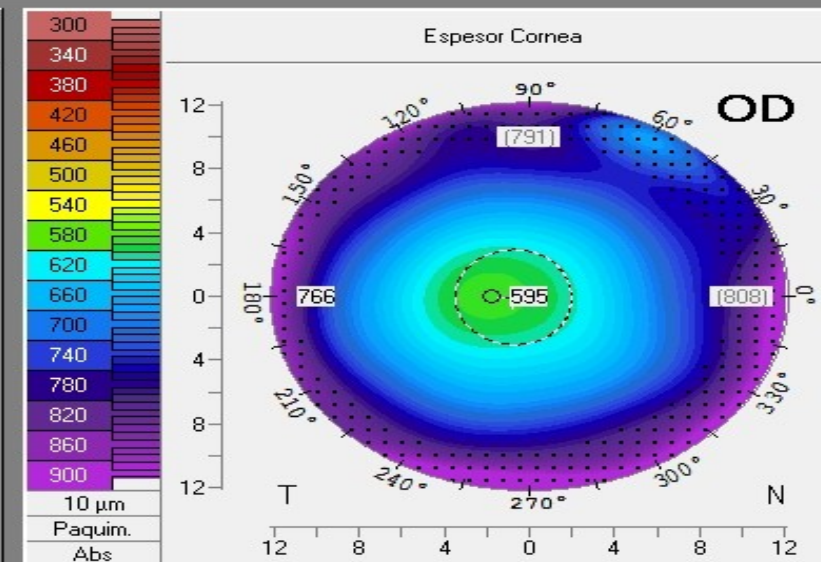
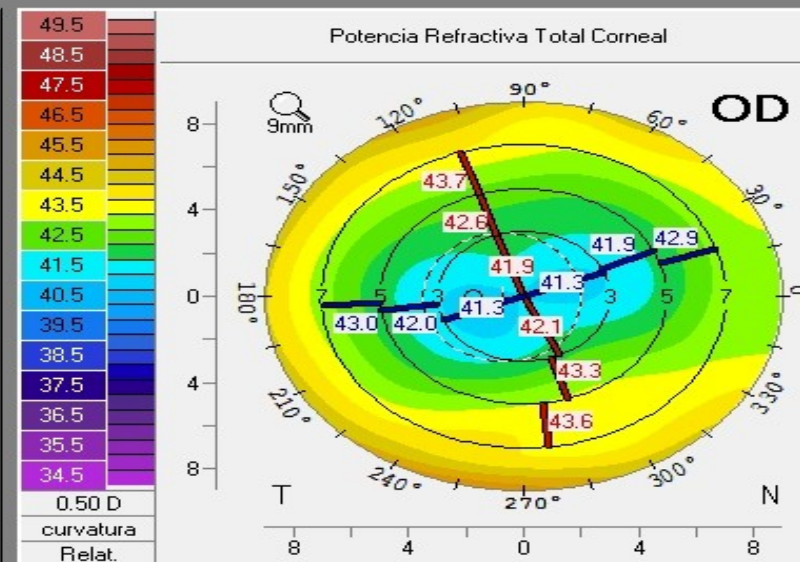
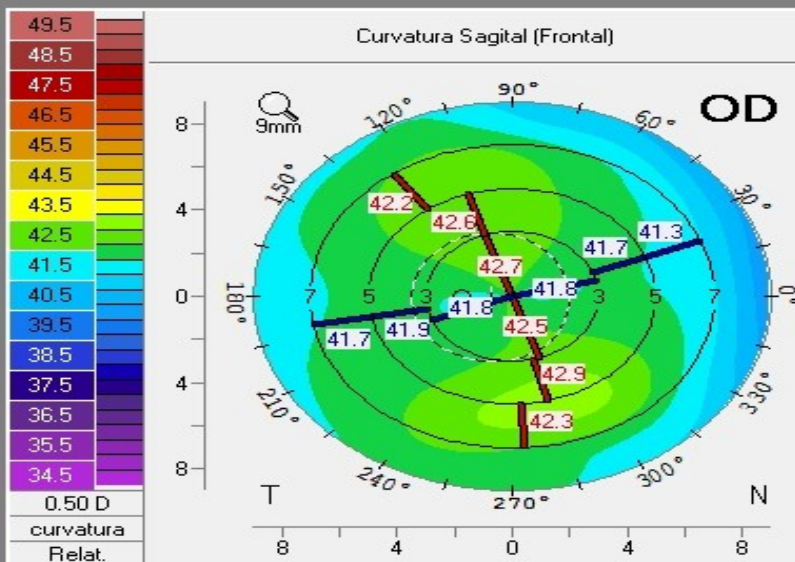
Fecha Examen: 26/01/2017

Fecha examen: 13:19:59

QS:  OK

Ojo: Dcha.

Info examen:



SimK (n=1.3375, 15°)	Total Corneal Refr. Power (4mm)	Difference
K1: 41.8 D (14.2°)	K1: 41.6 D (17.8°)	Axis: -3.6°
K2: 42.6 D (104.2°)	K2: 42.4 D (107.8°)	
Km: 42.2 D	Km: 42.0 D	Km: 0.2 D
0.8 D	0.8 D	0.0 D
Total CRP: Center	Avg 1mm	Avg 3mm
Apex: 41.2 D	41.2 D	41.4 D
Pupil: 41.0 D	41.2 D	41.4 D
	40.9 D	42.1 D
	40.9 D	42.0 D
Total Cor. Astig. (WFA) (4mm zone):		-0.7 D (21.0°)
Total Cor. Sph. Aberration (WFA Z40) (6mm zone):		0.307 µm
Total Cor. Irregular Astig. (WFA HO RMS) (4mm zone):		0.091 µm
Prof. cámara ant [I] 2.42 mm	Prof. cámara ant [I] 3.01 mm	
Axial/Sag. B/F Ra 82.4 %	Ø Cornea: 12.1 mm	
QS:  OK	Diam. Pupil: 2.85 mm	
Paqui:		
Apex: 595 µm	Thinnest: 590 µm	Difference: 5 µm

OCULUS - PENTACAM Distribución de Potencias

Nombre: Merino Gil, Carmen

Fecha Examen: 15/06/2015

QS: OK

Ojo: Dcha.

Fecha Nacimiento: 28/09/1951

ID Paciente:

Fecha examen: 16:49:46

Info examen:

Lecturas-K (D) calculado en anillos centrado en ápex

☐ Zona

☒ Ápex

☐ K1/K2

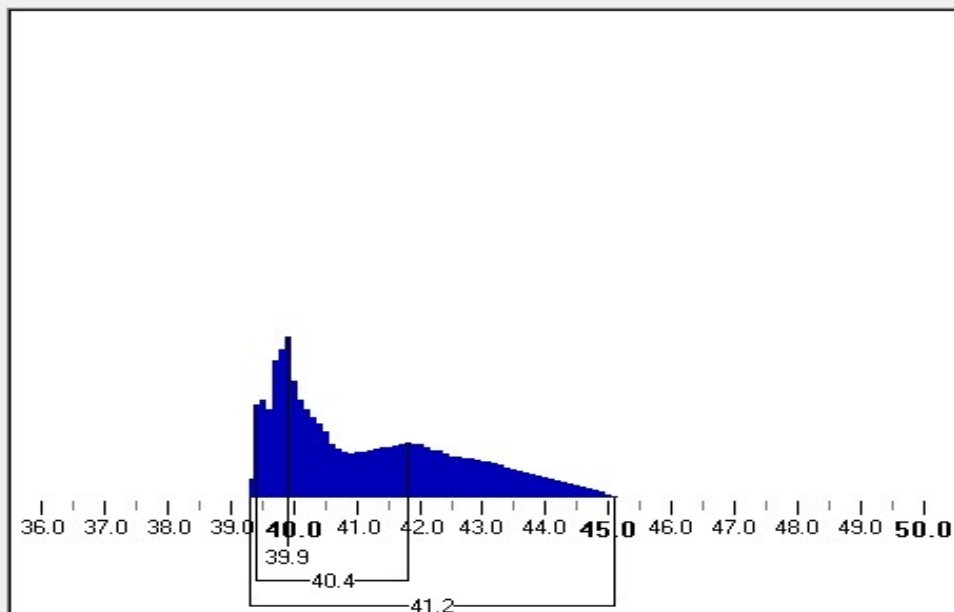
☒ Anillo

☐ Pupila

☒ Km/Astig

Diámetro de anillo	1.0 mm	2.0 mm	3.0 mm	4.0 mm	5.0 mm	6.0 mm	7.0 mm	8.0 mm
Sagital Anterior Km	40.5	40.8	41.3	41.6	42.0	42.1	42.2	42.1
	Astig 1.1 (176.0°)	0.9 (158.3°)	1.1 (151.4°)	1.5 (166.0°)	1.9 (176.3°)	1.0 (10.3°)	0.4 (61.1°)	1.5 (87.6°)
Queratométrico Total Km	38.3	38.8	39.2	39.9	40.3	40.7	41.0	41.0
	Astig 0.8 (164.2°)	0.9 (143.9°)	1.1 (142.8°)	1.5 (163.7°)	1.9 (175.8°)	1.1 (9.9°)	0.5 (66.6°)	1.7 (88.0°)
Potencia Refr. Total Km	38.4	39.0	39.7	40.5	41.4	42.3	43.2	44.3
	Astig 0.8 (163.1°)	0.9 (142.2°)	1.1 (141.5°)	1.6 (163.4°)	2.0 (175.9°)	1.2 (10.7°)	0.7 (68.8°)	2.3 (87.9°)

Distribución de Potencia de refracción (frontal) En la Zona Actual



Cálculos de potencia En la Zona Actual

K1: 40.74 (158.4°)
 K2: 41.74 (68.4°)
 Km: 41.24 D
 Pico: 39.90 D
 Media 65%: 40.36 D

Editar zona de cálculo:



Ápex

☒ Zona

Pupila

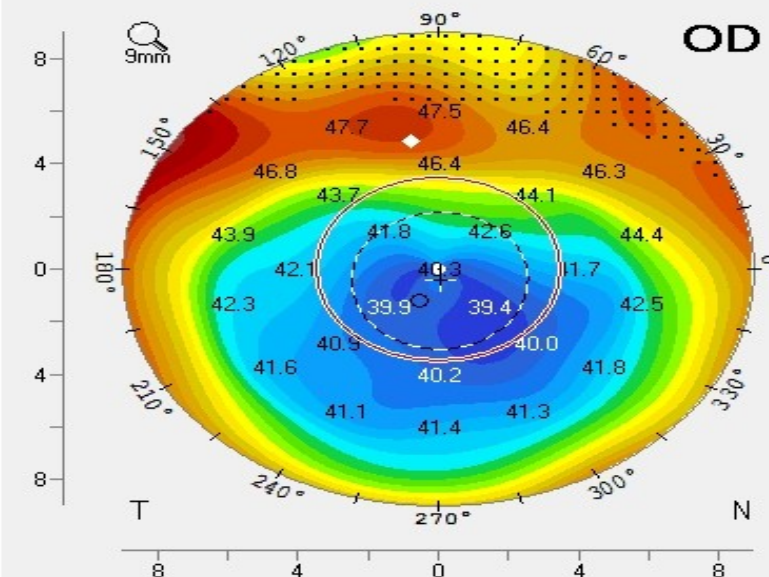
☐ Anillo

X: 0.00 mm

Y: 0.00 mm

Diam. Zona: 3.5 mm

Potencia de refracción (frontal)



50.5

50.0

49.5

49.0

48.5

48.0

47.5

47.0

46.5

46.0

45.5

45.0

44.5

44.0

43.5

43.0

42.5

42.0

41.5

41.0

40.5

40.0

39.5

39.0

38.5

38.0

37.5

37.0

36.5

36.0

35.5

0.50 D

curvatura

Relat.

OCULUS - PENTACAM Cataract Pre-OP

Nombre: Merino Gil, Carmen

Fecha Nacimiento: 28/09/1951

ID Paciente:

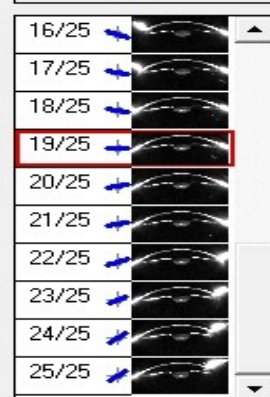
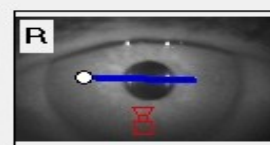
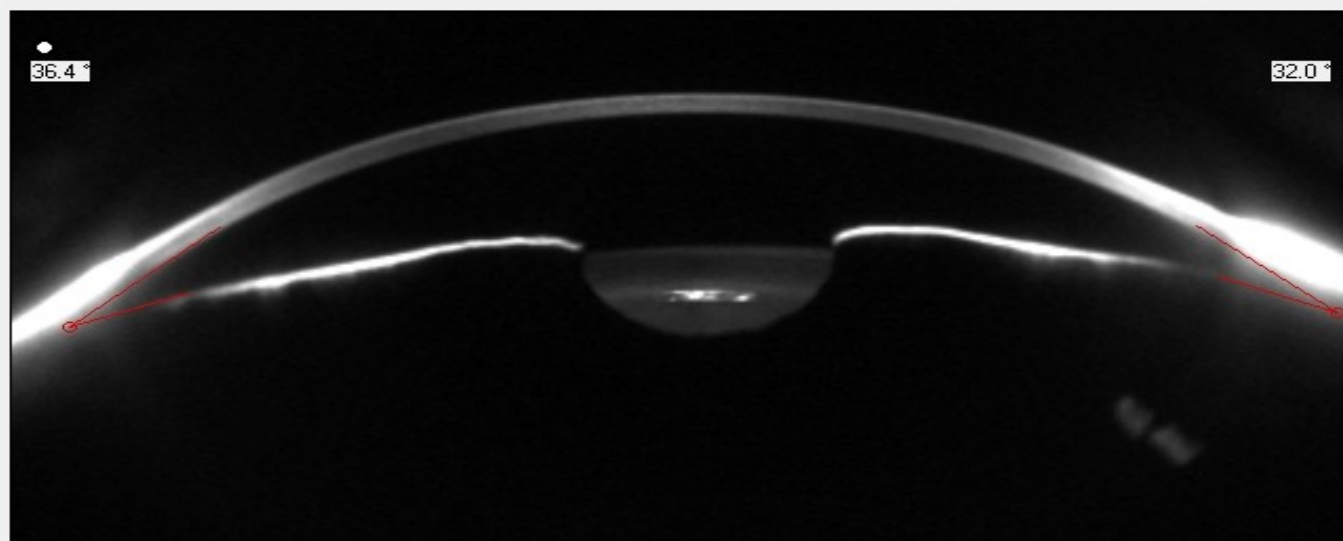
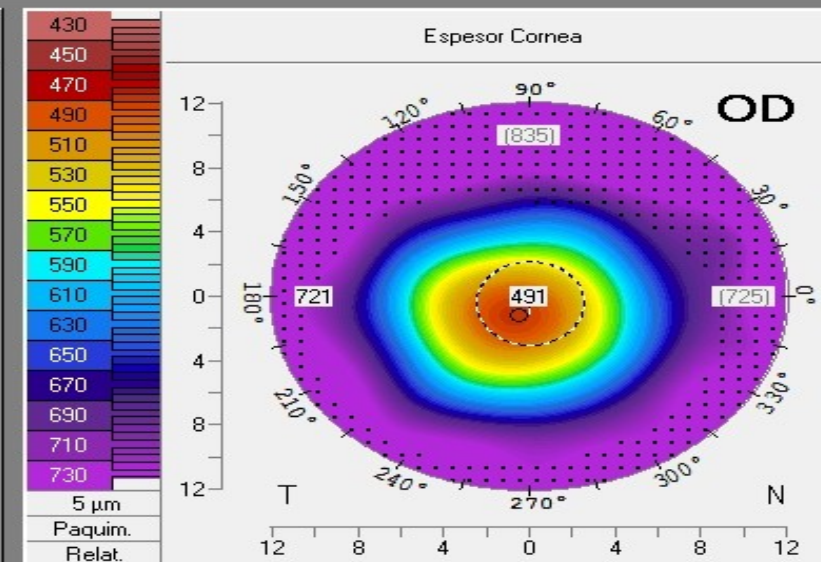
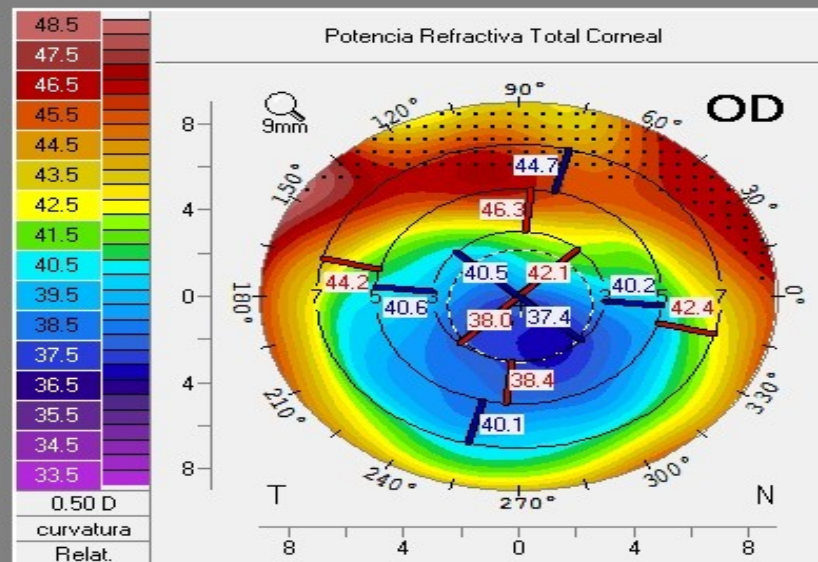
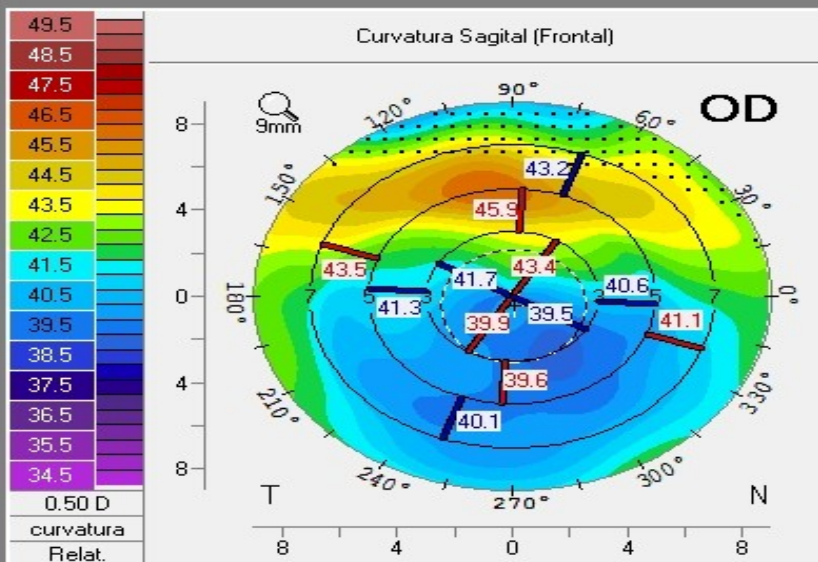
Fecha Examen: 15/06/2015

Fecha examen: 16:49:46

QS: OK

Ojo: Dcha.

Info examen:



SimK (n=1.3375, 15°)		Total Corneal Refr. Power (4mm)		Difference	
K1:	40.6 D (160.6 °)	K1:	39.7 D (163.4 °)	Axis:	-2.8 °
K2:	41.6 D (70.6 °)	K2:	41.3 D (73.4 °)		
Km:	41.1 D	Km:	40.5 D	Km:	0.6 D
	1.1 D		1.6 D		-0.5 D
Total CRP: Center Avg 1mm Avg 3mm Min 3mm Max 3mm					
Apex:	38.2 D	38.3 D	39.0 D	36.9 D	42.5 D
Pupil:	38.1 D	37.8 D	38.6 D	36.9 D	42.0 D
Total Cor. Astig. (WFA) (4mm zone):				-1.0 D (148.5 °)	
Total Cor. Sph.Aberration (WFA Z40) (6mm zone):				0.730 μm	
Total Cor. Irregular Astig. (WFA HO RMS) (4mm zone):				0.557 μm	
Prof. cámara ant (I)		2.97 mm	Prof. cámara ant		3.46 mm
Axial/Sag. B/F Ra		73.0 %	Ø Cornea:		11.9 mm
QS:		OK	Diam. Pupil:		2.55 mm
Paquí:					
Apex:		491 μm	Thinnest:		480 μm
			Difference:		11 μm

Dry Eye Diagnosis Keratograph K5

Keratograph 5M

Sistema de Medición y Evaluación para Topografía Corneal
y **Screening de Ojo Seco**



Sistema de Iluminación

TF-Scan, R-Scan

- Anillo de Placido Blanco
- Anillo de Placido Infrarrojo (IR)



Meibo-Scan

- Puntos de LED IR



Imaging

- Puntos de LED azules



TF-Scan

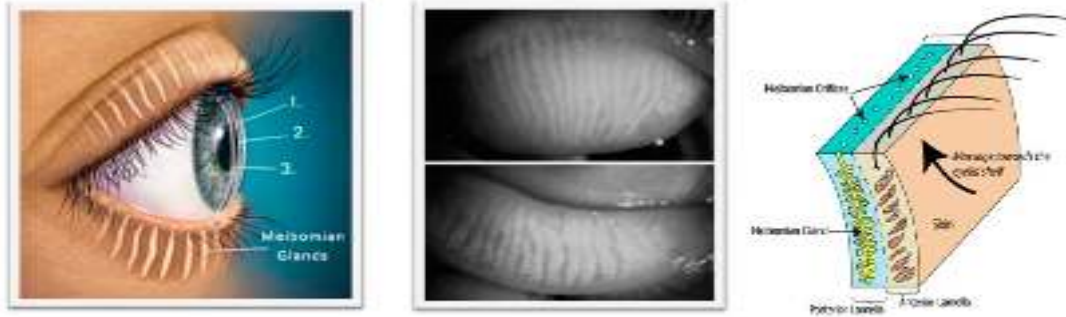
- Puntos de LED blancos



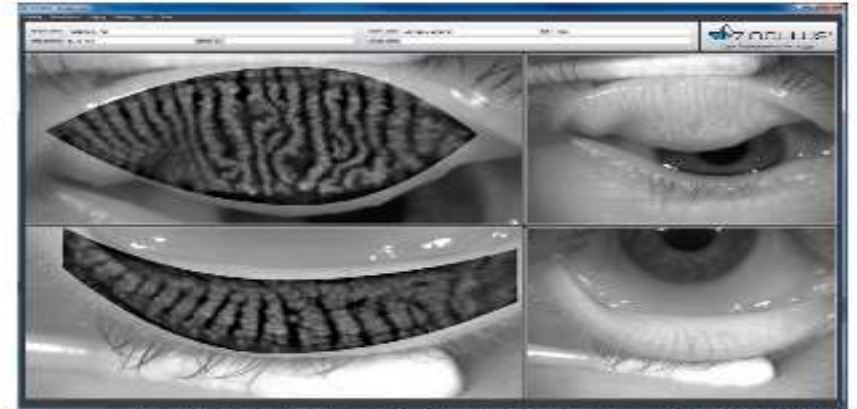
Dry Eye Diagnosis Keratograph K5

Meibo-Scan: Meibografía de los párpados superior e inferior

El párpado normal

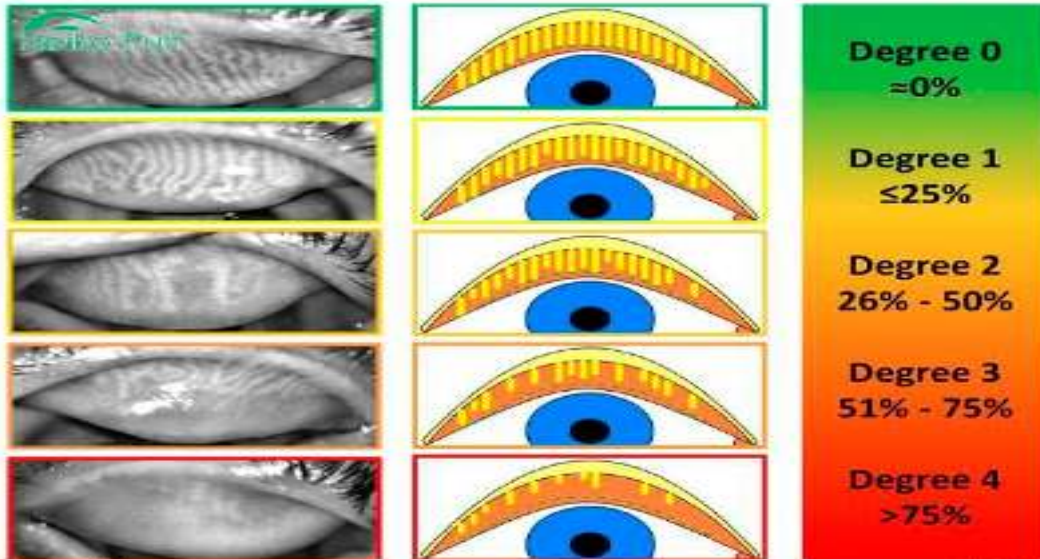


Meibo-Scan: Meibografía de los párpados superior e inferior

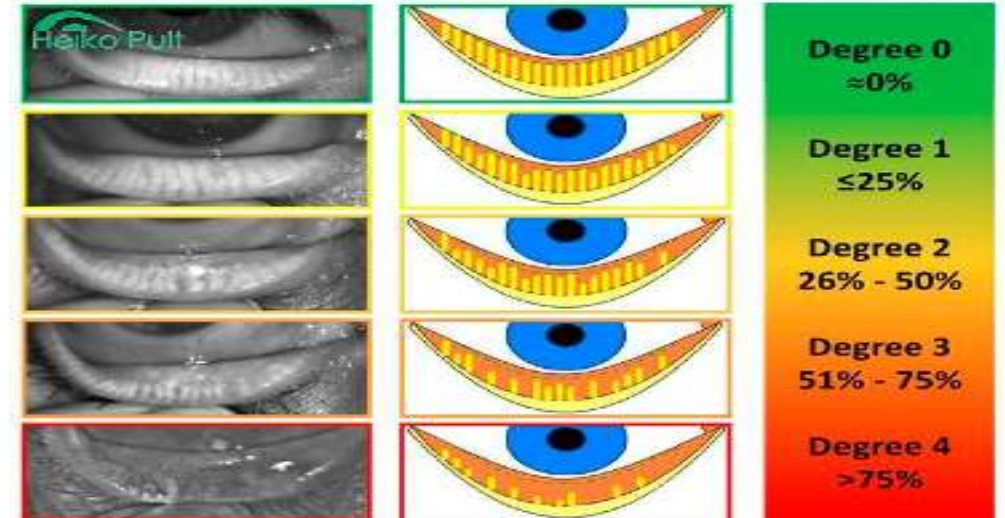


✓ Foto de las GM de los párpados superior e inferior

Meiboscale – Upper Eyelid



Meiboscale – Lower Eyelid

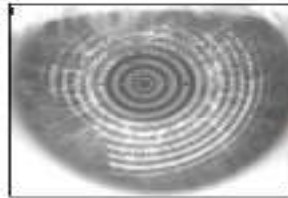


Dry Eye Diagnosis Keratograph K5

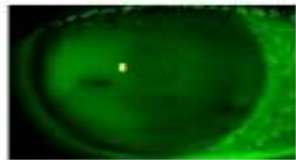
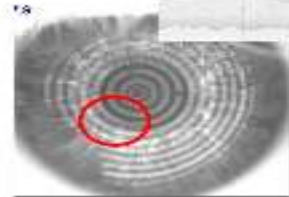
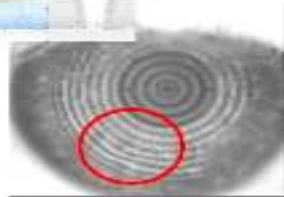
TF-Scan: NIKBUT (Non Invasive Keratograph Break-Up Time)

- Detección automática de las áreas afectadas

Miras regulares



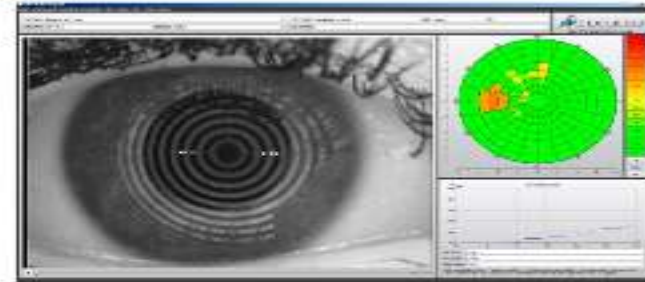
Distorsión de las miras



Toma de imágenes, vídeos, comparación de tinciones...

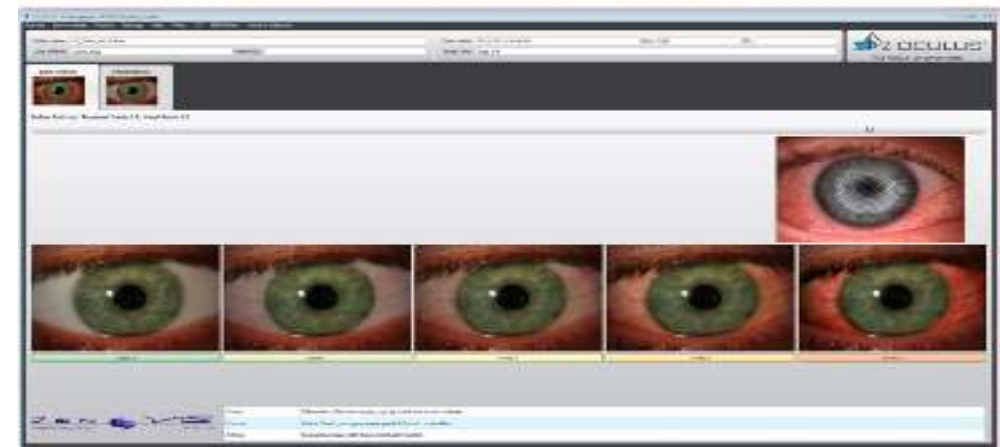


TF-Scan: NIKBUT (Non Invasive Keratograph Break-Up Time)



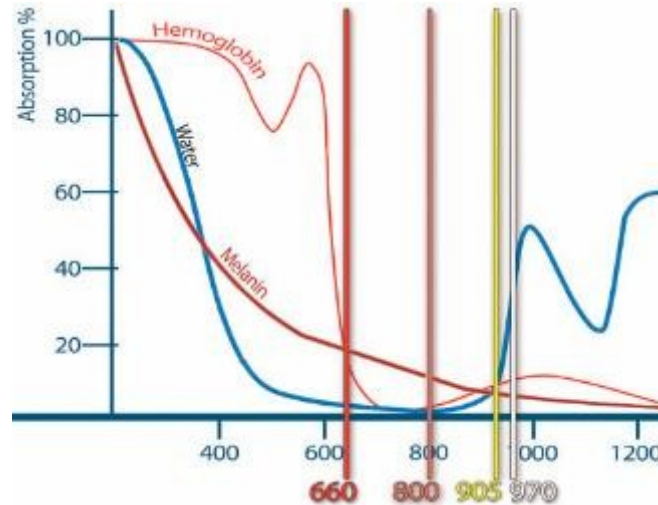
TFBUT	Normal	Leve	Moderado	Severo
5 μ l	> 7 sec	5-6	3-4	<3
1 gota	> 10 sec	8-10	6-8	<6
NIK BUT	>15	12-15	8-11	<7

R-Scan: Detección Automática del Enrojecimiento Bulbar



What is the IPL (Intense Pulsed Light)?

- Pulses of non-coherent light
- High intensity
- Xenon light
- Wave length 400-1200nm
- **Selective Photothermolysis**

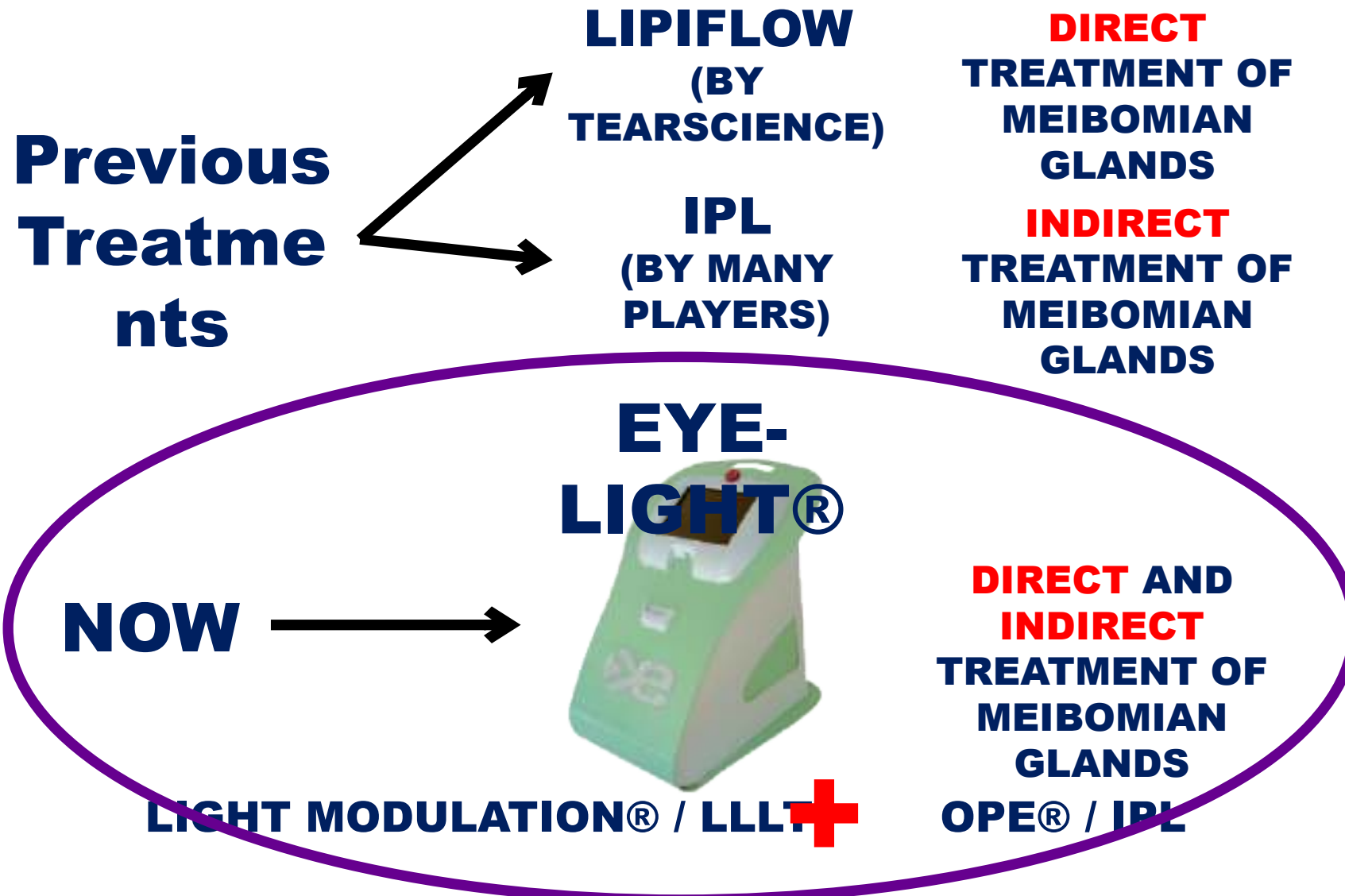


What is LLLT?

- Also known as “Modulated Light”
- Low intensity light
- Monochromatic led light
- Each λ has a different effect & tissue penetration
- Photostimulation & photobiomodulation
- NO selective PhotoThermolysis as with IPL

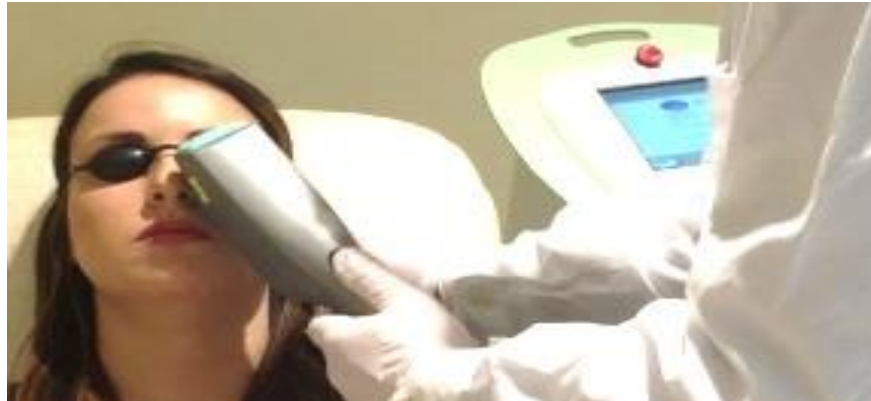


SOLUTIONS FOR MGD & DRY EYE



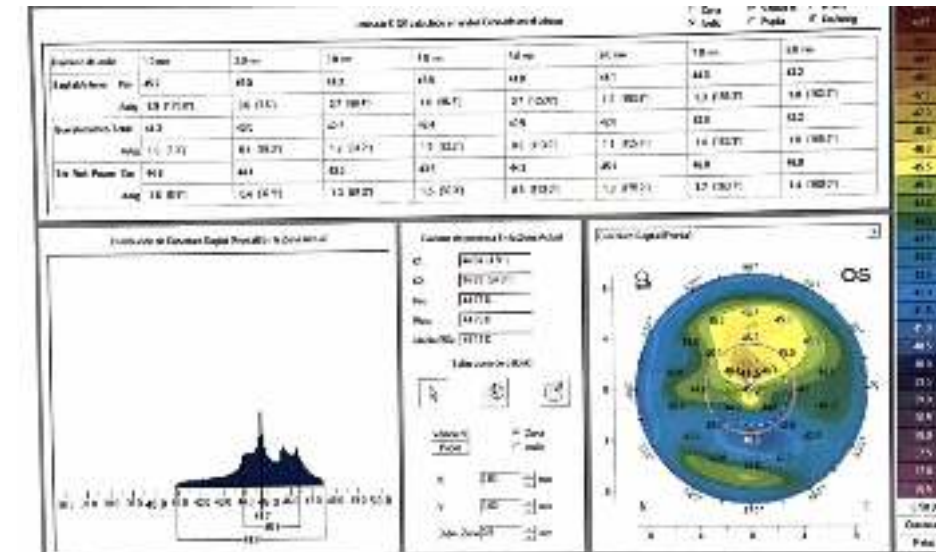
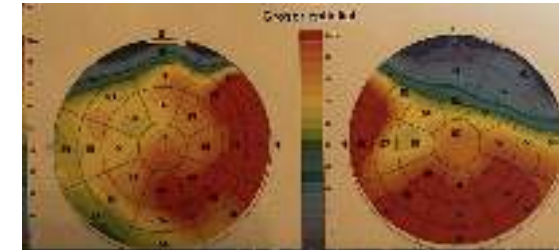
CATARACT & REFRACTIVE SURGERY PROTOCOL

- IPL/LLLT Applications
 - In patients with high corneal aberrations & MGD/Dry eye, we treat this condition with 3 sessions of IPL/LLLT then re evaluate the cornea before IOL selection
 - Application of IPL/LLLT module 1 week before surgery, 1 week & 3 weeks postoperatively.
 - In severe cases we add a 4th session at 1 month



Importance in Pre-Op planning of Premium IOLs

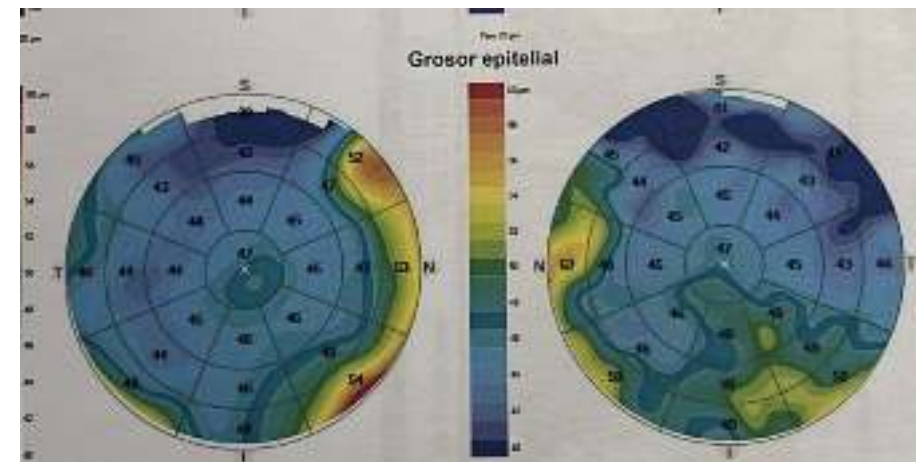
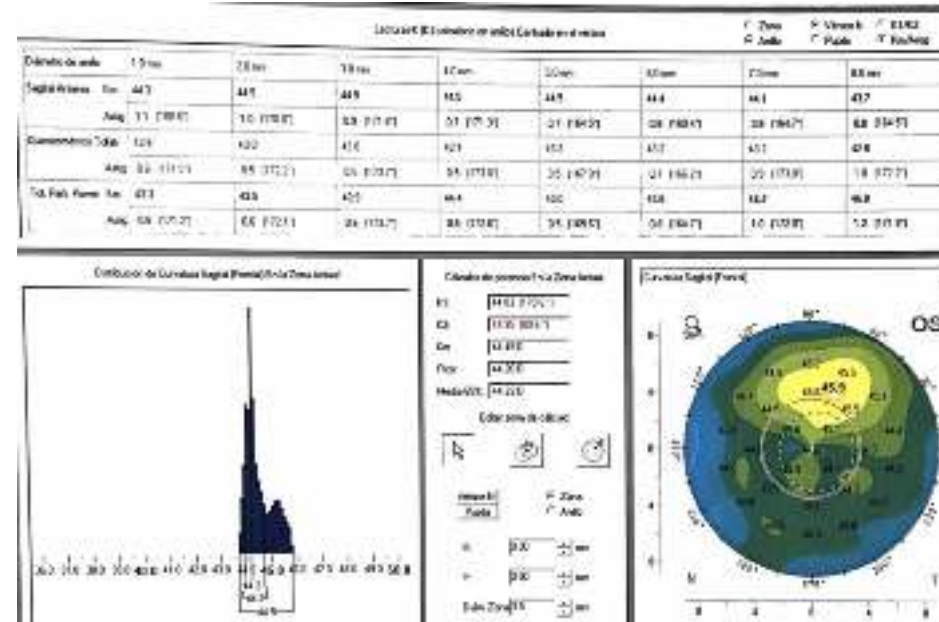
- 60 y Female
- BCDVA OD: +1.25-0.25 X 18° : 0.7
- BCDVA OI: +1 -0.25 X 180° : 0.7
- Add +2 : J1
- RLE ? Trifocal ? Multifocal ?



Ocular Surface Analysis & Preparation

Importance in Pre-Op planning of Premium IOLs

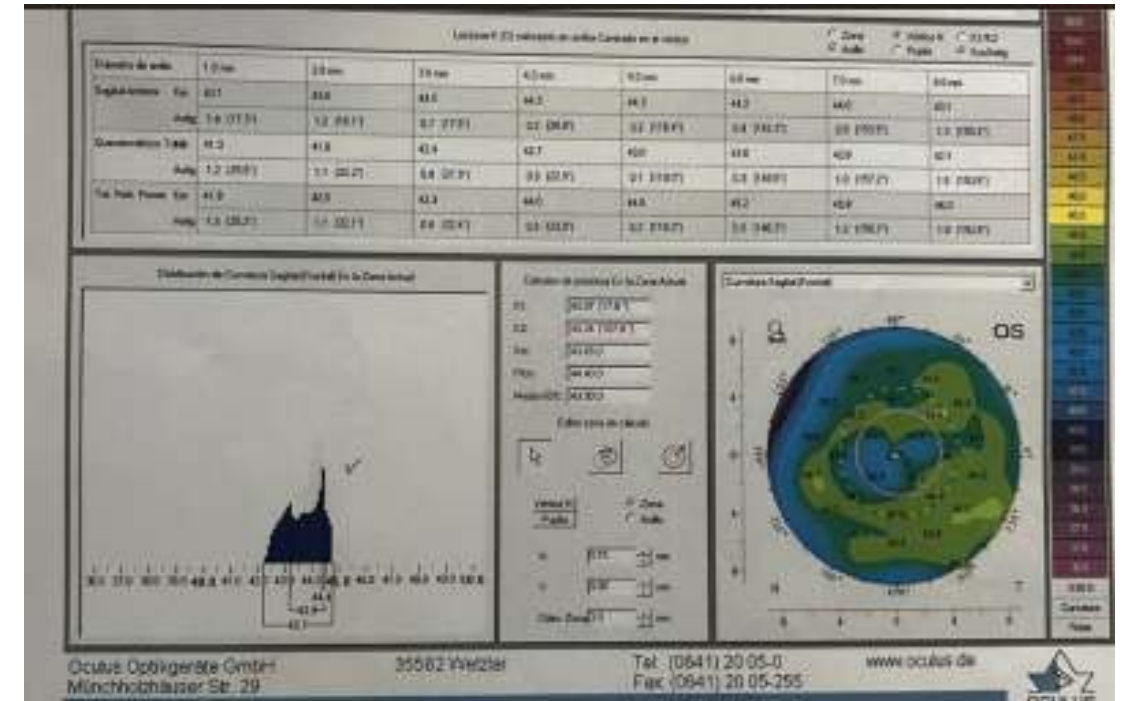
- TTX MGD + Artificial tears + IPL x 3 sesiones
- Trifocal Diffractive design? EDOF?
- Final Decision : TRIFOCAL IOL



Ocular Surface Analysis & Preparation

Importance in Pre-Op planning of Premium IOLs

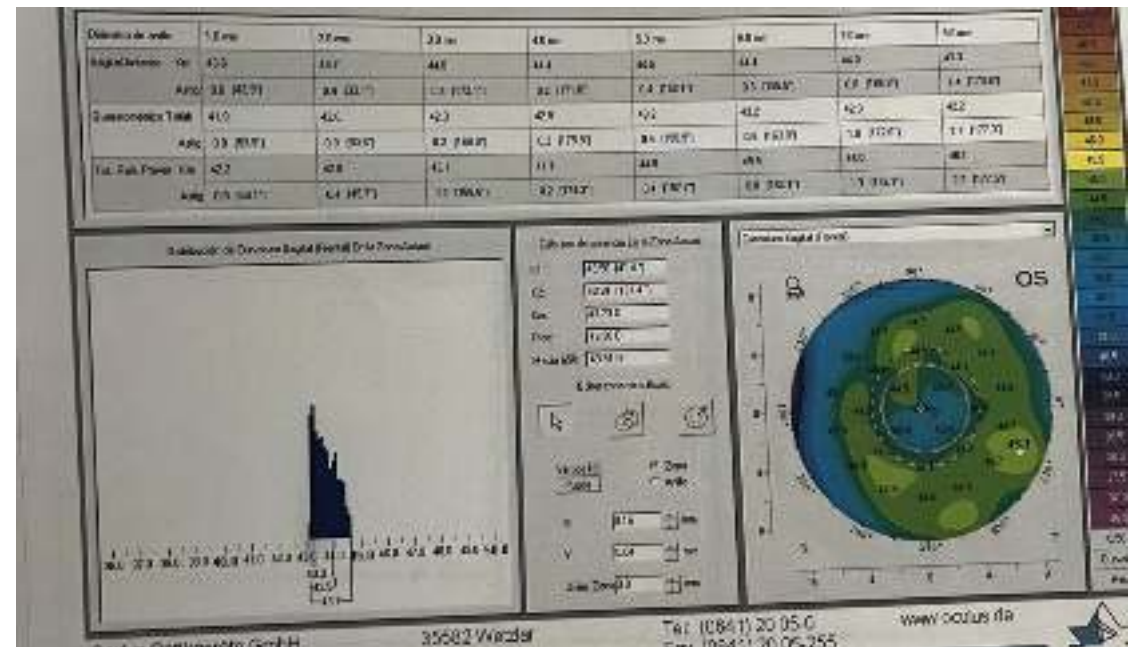
- 65 y Female
- BCDVA OD: +2.25-0.50 X30° : 0.8
- BCDVA OI: +3 -0.25 X 160° : 0.7
- Add +2.25 : J2
- IOL Trifocal ? EDOF ?



Ocular Surface Analysis & Preparation

Importance in Pre-Op planning of Premium IOLs

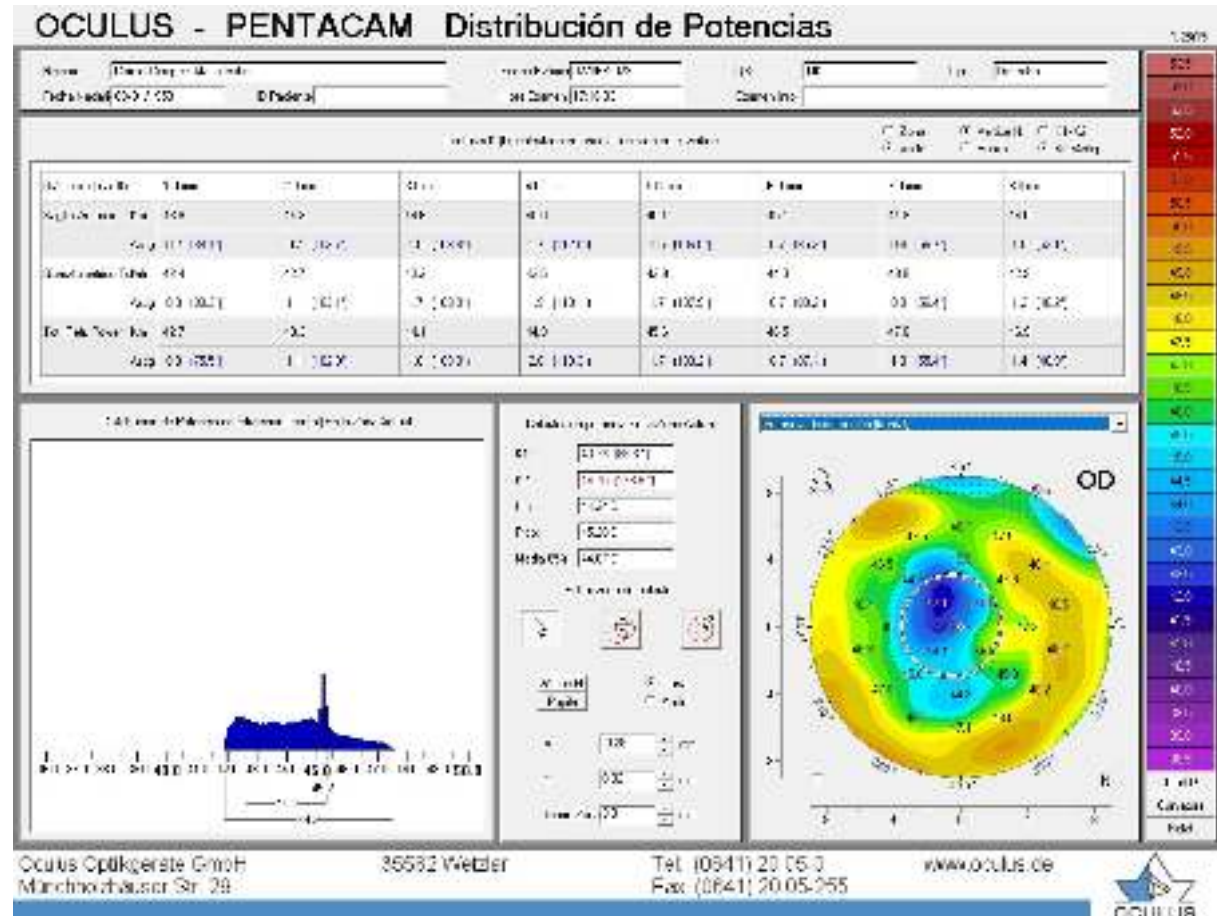
- TTX MGD + Artificial tears + IPL x 3 sesiones
- Trifocal Diffractive design? EDOF?
- Final Decision : Trifocal refractive design



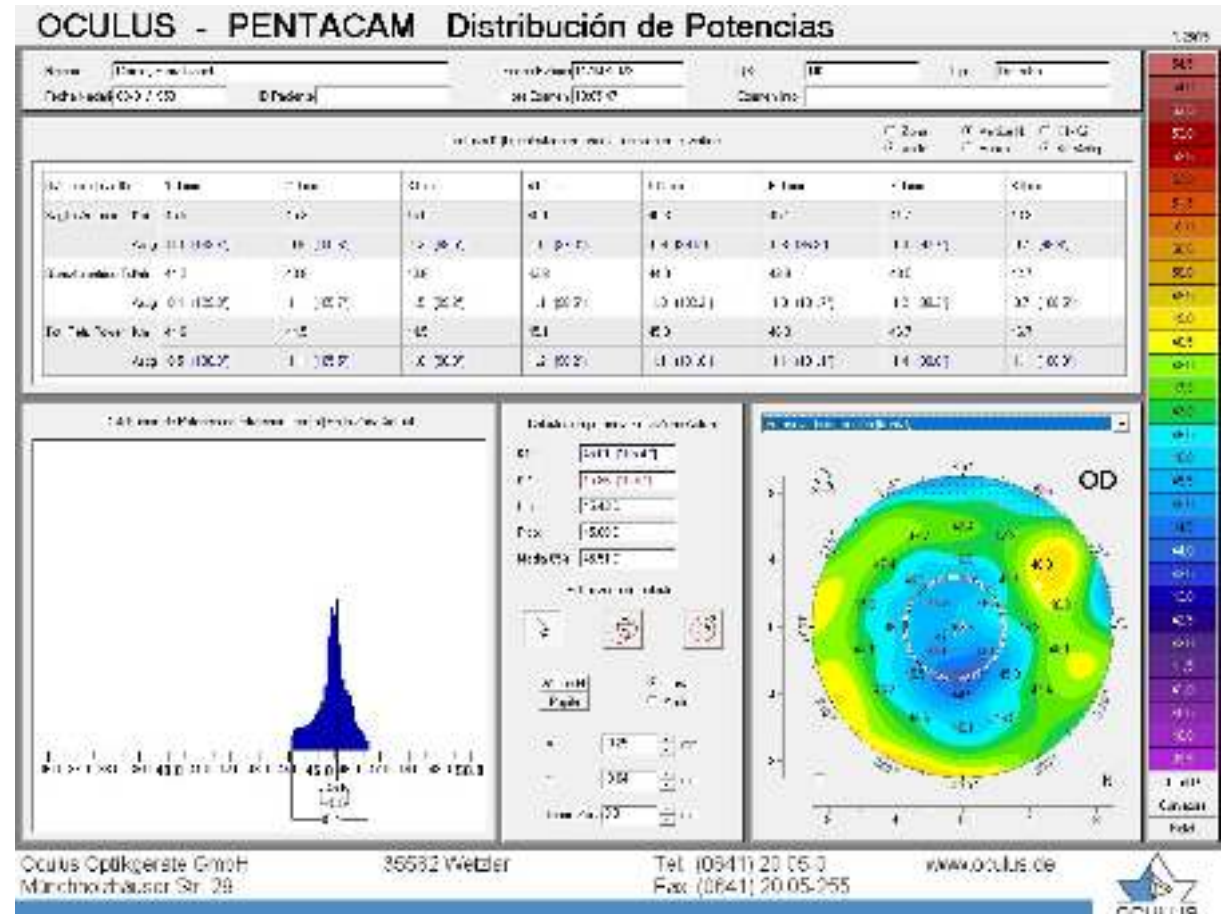
Ocular Surface Analysis & Preparation

Importance in Pre-Op planning of Premium IOLs

- Female Patient 65 years old
- IOL Trifocal? EDOF?



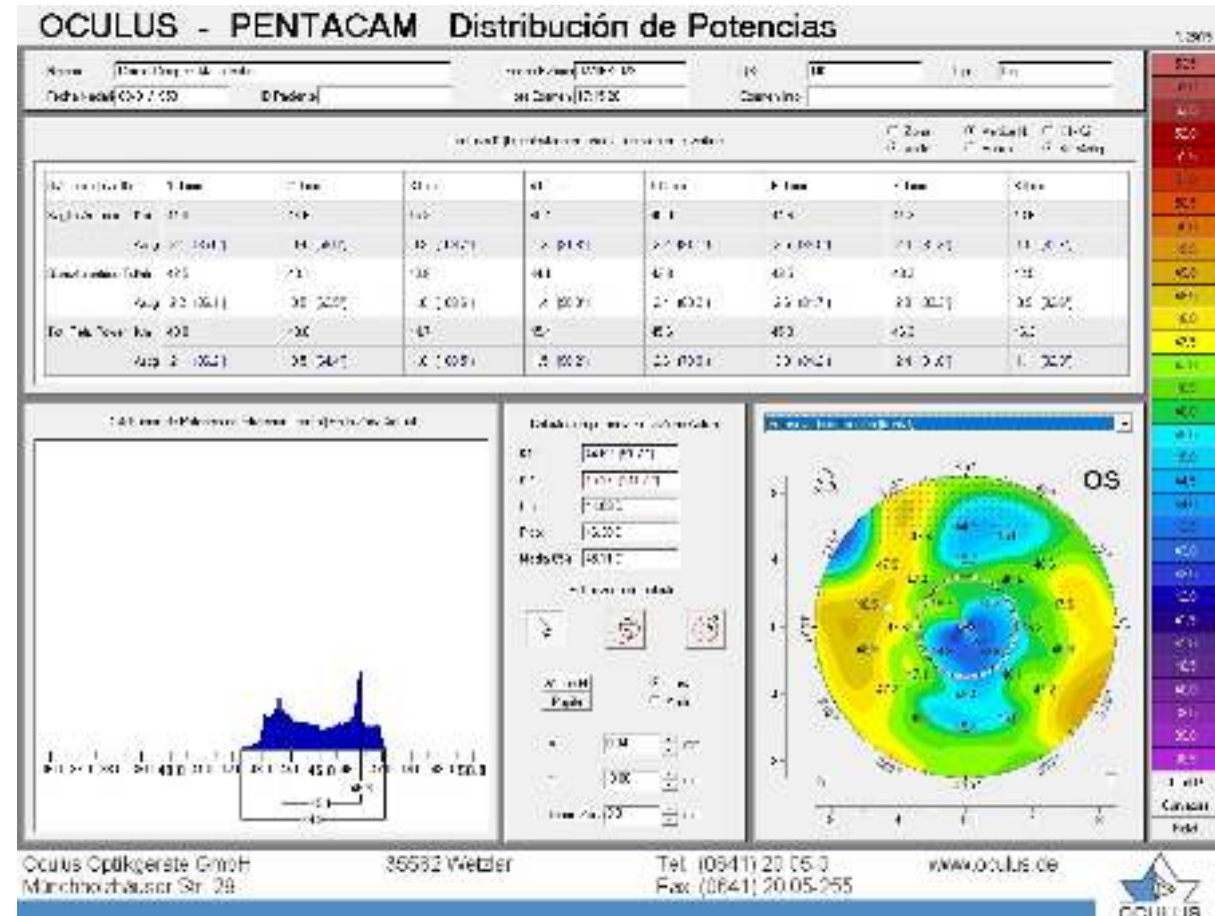
Final Decision : TRIFOCAL IOL



Ocular Surface Analysis & Preparation

Importance in Pre-Op planning of Premium IOLs

- Female Patient 65 years old
 - IOL Trifocal? EDOF?



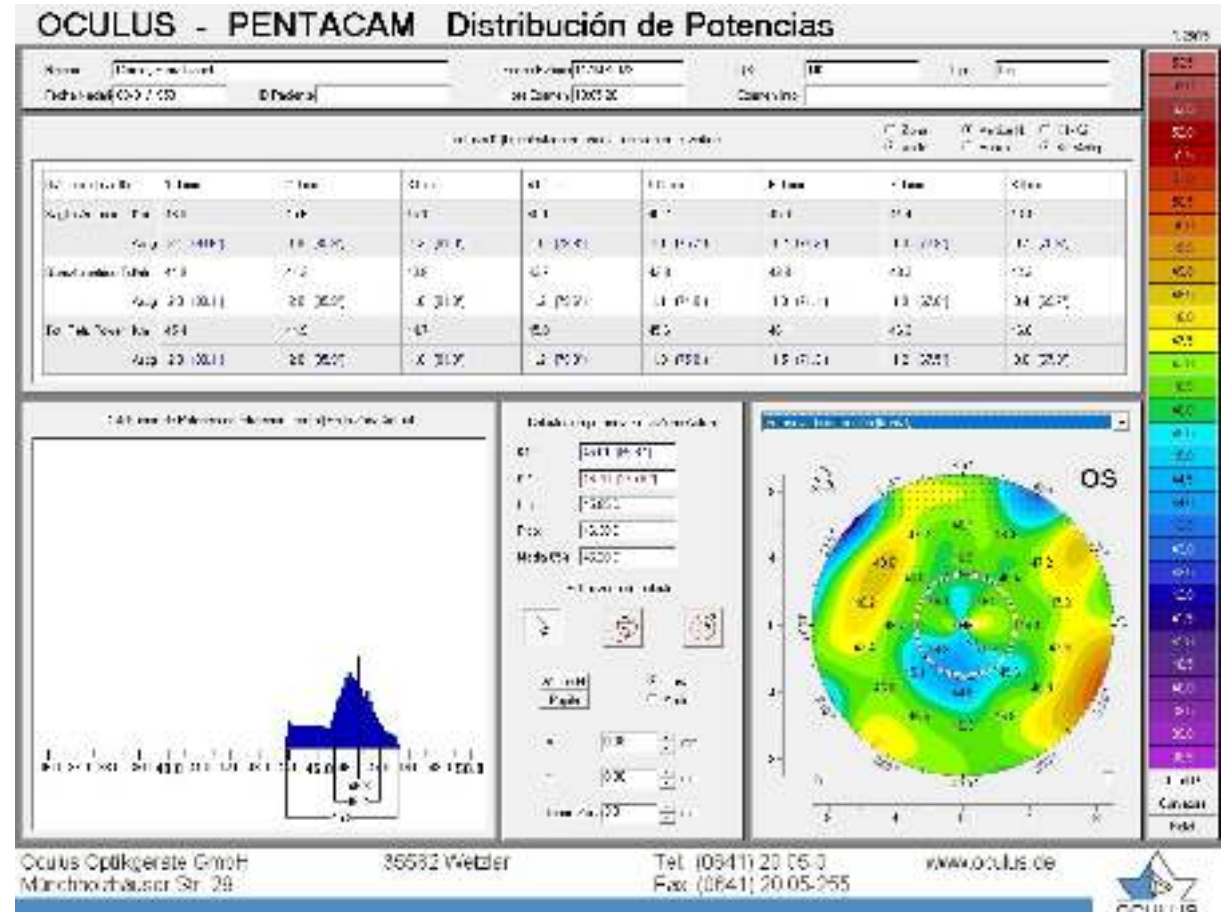
Ocular Surface Analysis & Preparation

Importance in Pre-Op planning of Premium IOLs

TTX MGD + Artificial tears + IPL x 3 sesiones

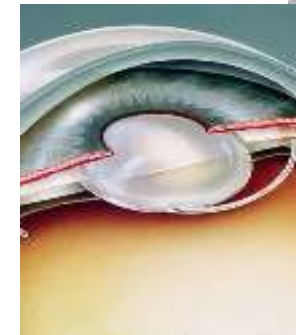
Trifocal Diffractive design? EDOF?

Final Decision : TRIFOCAL IOL



OPE/IPL + LLLT (LOW LEVEL LIGHT THERAPY)

- Could be a useful, safe and easy method to improve quality of vision and decrease or eliminate annoying symptoms of dryness & MGD after cataract and refractive surgery procedures, helping us to achieve more patient satisfaction and comfort.
- At present we are realizing a clinical study to evaluate outcomes of this application post cataract and refractive surgery
- Preliminary results are very promising



Clinical Evidence of Efficiency of LLLT in Cataract surgery.

- The aim of this study was to evaluate **the efficacy and safety** of Optimal Pulsed Technology applied in patients with **age-related cataract and Meibomian gland dysfunction (MGD) in perioperative period.**
- 60 patients (30 in the OPT treatment group and 30 in the conventional surgery group) with age-related cataract and MGD** who underwent phacoemulsification and evaluated the efficacy of the treatment **before and 1 month and 3 months after surgery.**
- Ocular Surface Disease Index (**OSDI**) questionnaire, biomicroscopic examination of lid margins, **Meibomian gland yielding secretion score (MGYSS)**, corneal fluorescein staining scores (**CFS**), tear film break-up time (**TBUT**), tear meniscus height (**TMH**) and the morphology of the **MG (meibography)** followed by **Keratograph 5 M (K5M)** were used to assess the patients' conditions.
- There were significant differences in the scores of **OSDI, MGYSS, TBUT, and CFS** between the preoperative and postoperative outcomes ($p < 0.05$).
- In the **LLL**T treatment group, the postoperative ocular surface condition was obviously better and the **patient satisfaction rate was higher than those before surgery.**

Evaluation of the efficacy of optimal pulsed technology treatment in patients with cataract and Meibomian gland dysfunction in the perioperative period

Jining Gu,¹ Na Liu,¹ Xisong Wang,¹ Ying Dai,¹ Chaoqiang Wang,¹ Zhong Li,¹ Jing Li,¹ and Linus Wang^{2*}

* Author information * Article notes * Copyright and license information * Disclaimer

Table 1

Comparison of the eye symptoms and ocular surface parameters in the OPT treatment group before and after surgery in patients

parameters	baseline	1 month	3 month	p value	baseline vs 1 month	baseline vs 3 month
OSDI ^a	11.19 ± 8.37	28.00 ± 5.68	21.35 ± 4.92	0.017*	0.000*	0.000*
MGYSS ^a	1.00 (1.00, 2.00)	1.50 (0.00, 1.25)	1.00 (0.00, 1.00)	0.020*	0.005*	0.739
MGYSS ^b	1.00 (1.00, 1.00)	1.50 (1.00, 1.00)	1.00 (0.00, 1.00)	0.414	0.000*	0.467
CFS ^a	0.00 (0.00, 1.00)	0.50 (0.00, 1.00)	0.00 (0.00, 1.00)	0.507	0.588	1.000
TMH/mm ^a	0.18 ± 0.21	0.19 ± 0.20	0.19 ± 0.02	0.210	0.147	0.611
NTTBUT/s ^a	4.95 ± 1.84	5.67 ± 1.50	5.87 ± 1.17	0.051	0.006*	0.550
MCIS ^b	1.00 (1.00, 1.00)	1.50 (1.00, 1.00)	1.00 (1.00, 1.00)	0.005	0.000*	0.000*

Clinical Evidence of IPL in Dry eye Post Lasik

- **Objective:** Optimal pulse technology-intense pulse light (OPT-IPL) treatment on patients with **post-LASIK refractory dry eye.**
- A prospective study was conducted on **72 eyes of 36 patients (treatment group, n = 42 eyes; control group, n = 30 eyes)** who had previously undergone myopic LASIK correction with subsequent **refractory dry eye.**
- ocular surface disease index (OSDI), noninvasive breakup time (NITBUT), tear film lipid layer (TFL) quality, corneal fluorescein staining, meibum gland (MG)
- Treatment group had clinically and statistically significant improvement in NITBUT and was observed at 14 days ($p < 0.001$) and 28 days ($p < 0.001$). **OSDI, TFL score, and MG quality and expressibility improved significantly** ($p < 0.05$) at 28 days,

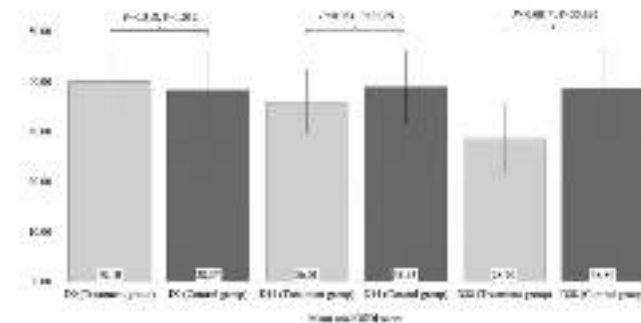
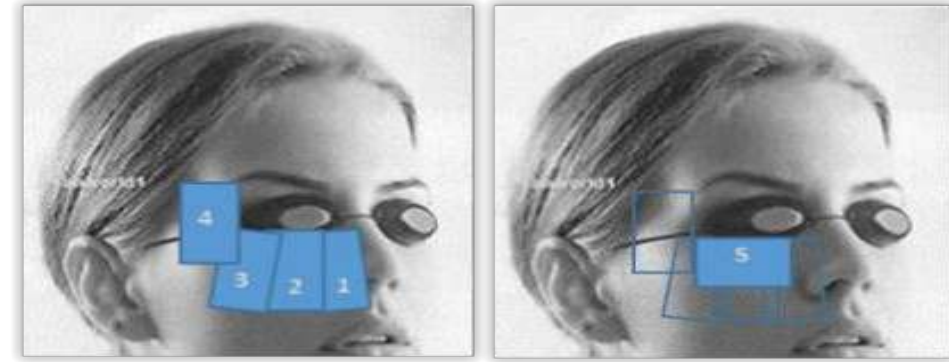


FIG. 3. Mean and SD of OSDI scores at baseline and control group patients with refractory dry eye post-LASIK surgery. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Ocular Surface Analysis & Preparation

Importance in Pre-Op planning of Premium IOLs



Uday Devgan, MD, FACS, Sun Valley, Calif.

PUBLISHED BY KARGER

Dry-Eye Syndrome after Cataract Surgery

Corneal refractive surgery patients are treated postop for dry eye for at least a few months. Should the same apply to cataract patients?

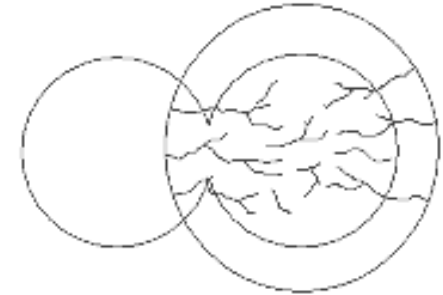


Michelle Stephenson, Contributing Editor

PUBLISHED BY KARGER

The Relationship Between Dry Eye and Cataract Surgery

Pre-existing dry eye can affect IOL calculations, and dry-eye induced by cataract surgery can affect visual outcomes.



This Article | Aims and Scope | Instructions to Authors | E-submission

Korean Journal of Ophthalmology

<http://kjo.org>

Korean J Ophthalmol 2009; June 23(2): 66-73

Published online 2009 Jun 9, doi: [10.3341/kjo.2009.23.2.66](https://doi.org/10.3341/kjo.2009.23.2.66)

PMCID: PMC2694266

Dry Eye After Cataract Surgery and Associated Intraoperative Risk Factors

Yong Kyeung Cho, MD, PhD¹ and Man Soo Kim, MD, PhD²



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TOPICS

Allergy

Complications

The Cataract Patient is a Dry Eye Patient

Both conditions require attention and intervention.

By Seth Johnson, OD, MAO

11/15/2015

Ocular Surface Analysis & Preparation

Importance in Pre-Op planning of Premium IOLs

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Tratamiento Combinado Con Luz Pulsada y Fotobiomodulación Previo a Cirugía Refractiva Láser (TEBELID)

Artículo de 2023 actualizado por University Hospital, 2023

La ametropía es la primera causa de problemas visuales reversibles. Recientemente, la cirugía refractiva con láser ha ganado popularidad. Desafortunadamente, el ojo seco es un efecto secundario común, que representa aproximadamente el 25 % de los pacientes después de LASIK y el 20 % después de SMILE. Aunque los síntomas suelen ser liberados por lágrimas artificiales, pueden ser muy incómodos para los pacientes, disminuir la productividad y la calidad de vida y ser fuente de insatisfacción después de la cirugía.

El objetivo de nuestro estudio es estudiar la eficacia de un tratamiento preventivo asociado mediante terapia de luz pulsada intensa y luz de bajo nivel con el dispositivo EYE-LIGHT® antes de la cirugía refractiva láser. Un estudio reciente confirmó la eficacia de este tratamiento en la disfunción del glándula de Meibomio, el mecanismo predominante del ojo seco.



1

DETERMINAR LA EFICIENCIA DE LOS TRATAMIENTOS PREVIOS CON MEIBOMASK® (TECNOLOGÍA LLLT) EN PACIENTES EN PRE Y POST CIRUGIA DE CATARATAS.

Ocular Surface Analysis & Preparation Importance in Pre-Op planning of Premium IOLs

- 1ª SESIÓN EL MISMO DÍA DEL ESTUDIO PRE-Qx
- 2ª SESIÓN. EN EL CONTROL POST 7d

Clinical science

Outcomes of low-level light therapy before and after cataract surgery for the prophylaxis of postoperative dry eye: a prospective randomised double-masked controlled clinical trial

Giuseppe Giannaccare ^{1,2}, Costanza Rossi,¹ Massimiliano Borselli,¹
Giovanna Carnovale Scalzo,¹ Giovanni Scalia ¹, Rocco Pietropaolo,¹
Benedetta Fratto,¹ Marco Pellegrini ^{3,4}, Angeli Christy Yu ^{3,4}, Vincenzo Scordia¹
 $p=0.007$.

Conclusion Two sessions of LLLT performed before and after cataract surgery were effective in ameliorating tear film stability and ocular discomfort symptoms.

Trial registration number NCT05754437.

Br J Ophthalmol: first published as 10.113

Muchas Gracias

