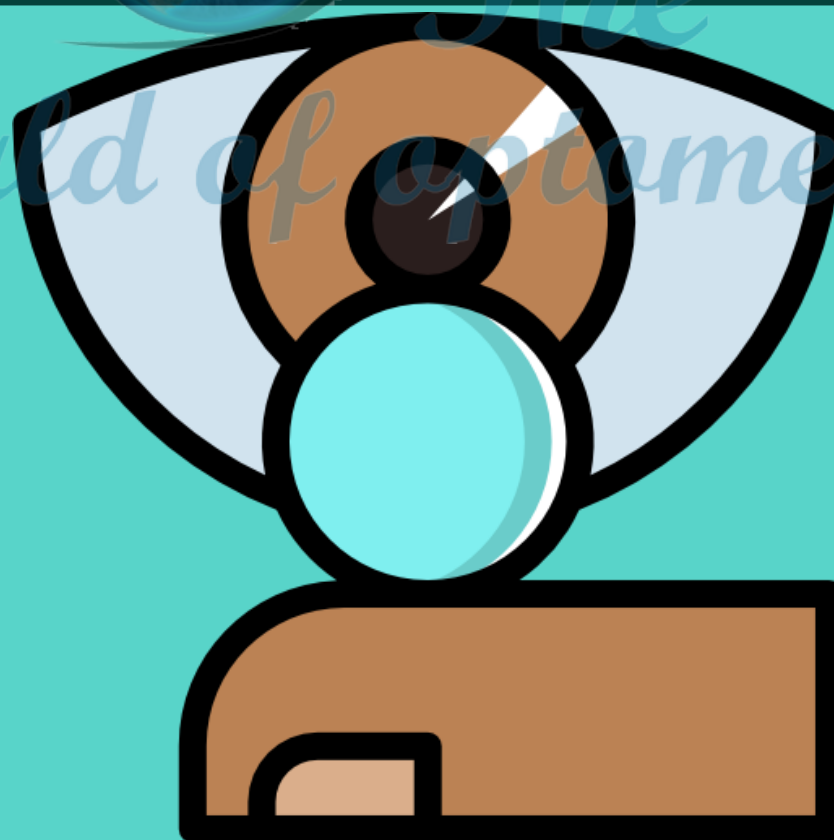




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# Twop Case Study

**Application of soft toric contact  
lenses after hyperopia and  
presbyopia LASIK surgery**



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# Patient History

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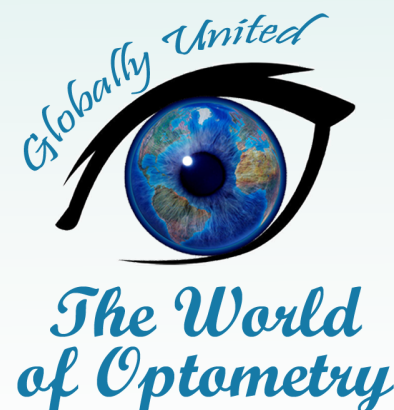


**CHIEF COMPLAINTS:** 50 yrs old, Male. LASIK surgery for the correction of hyperopia and presbyopia.

**OCULAR HISTORY:** Patient was hyperopic and astigmatic before the surgery, he was not visually satisfied with his optical correction.

**PAST MEDICAL HISTORY:** None.

**FAMILY HISTORY:** None.

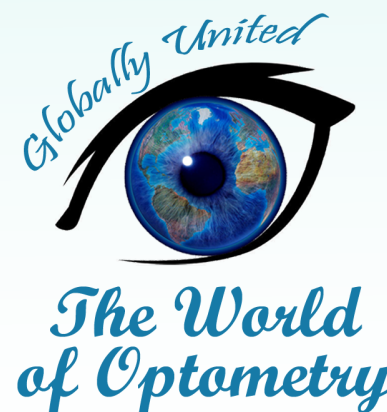


# Clinical Examination

DIAMETER (mm)	POWER (D)	CYLINDER (D)	AX (°)	LSA ant. (D)
2.5	47.33	-1.83	145	/
3.0	47.17	-1.86	142	-0.91
3.5	46.92	-1.91	139	/
4.0	46.66	-2.00	137	/
4.5	46.37	-2.11	135	/
5.0	46.10	-2.14	135	-2.69
6.0	45.34	-2.22	133	-3.63
7.0	44.46	-2.27	130	/

Tables 1 and 2 show the values of power, cylinder with relative axis, and longitudinal spherical aberration "LSA" (of the anterior surface) at different pupillary diameters and Post-LASIK.

DIAMETER (mm)	POWER (D)	CYLINDER (D)	AX (°)	LSA ant. (D)
2.5	46.20	-1.81	158	/
3.0	46.08	-1.98	157	-1.28
3.5	45.90	-2.08	156	/
4.0	45.71	-2.11	154	/
4.5	45.55	-2.11	154	/
5.0	45.42	-2.05	152	-1.78
6.0	45.05	-1.92	153	-1.96
7.0	45.51	-1.68	150	/



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# Clinical Examination

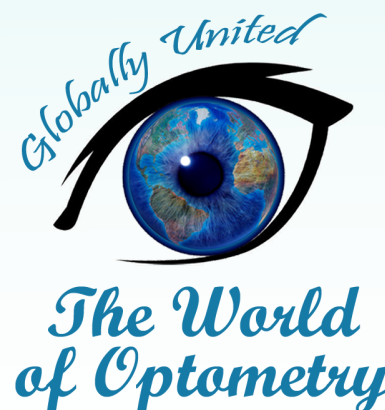
**In Figure 1 (RE) :**

in the center of the cornea there is a greater power for near vision, while going towards the periphery, it gradually decreases for distance vision. At 2.5 mm of pupillary aperture, the power is equal to 47.33 D while at 7 mm it's 44.46 D; so there is about 3 D difference.



**In Figure 2 (LE) :**

the difference in power is equivalent to about 1 D. The higher difference in power occurs on the right cornea. This is a demonstration of the fact that the right eye (being the non-dominant) has been treated to have a power suitable for the next vision.



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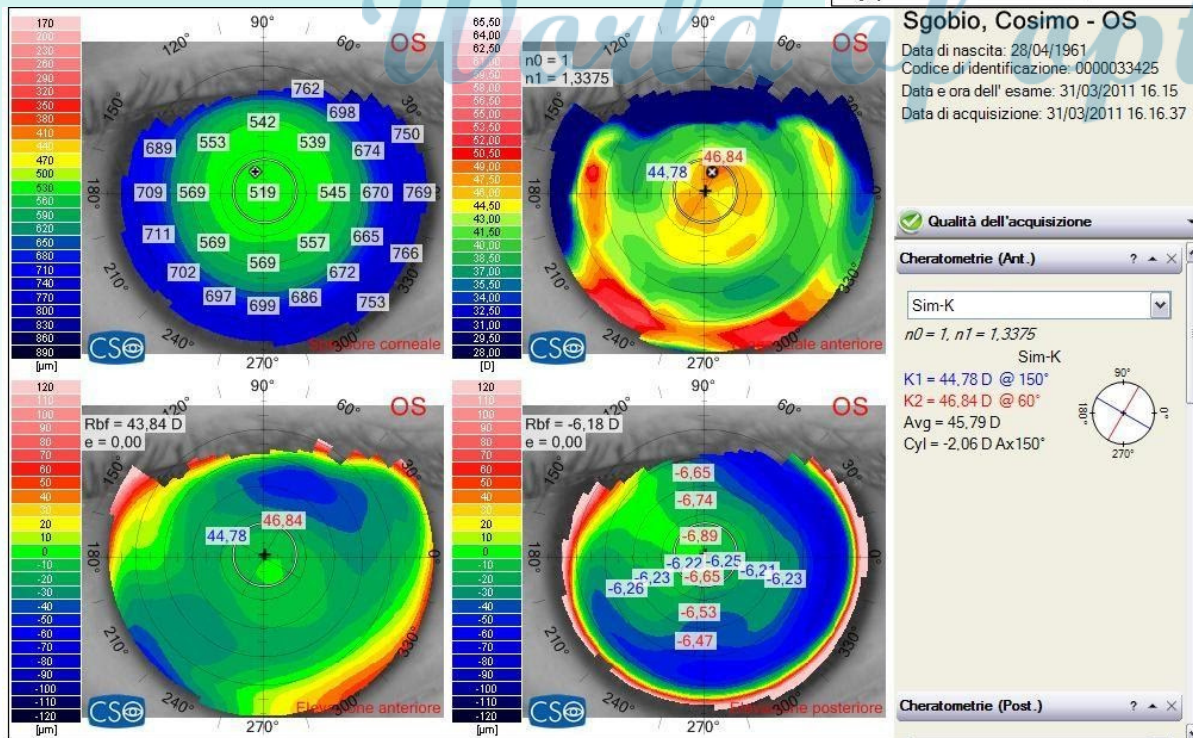
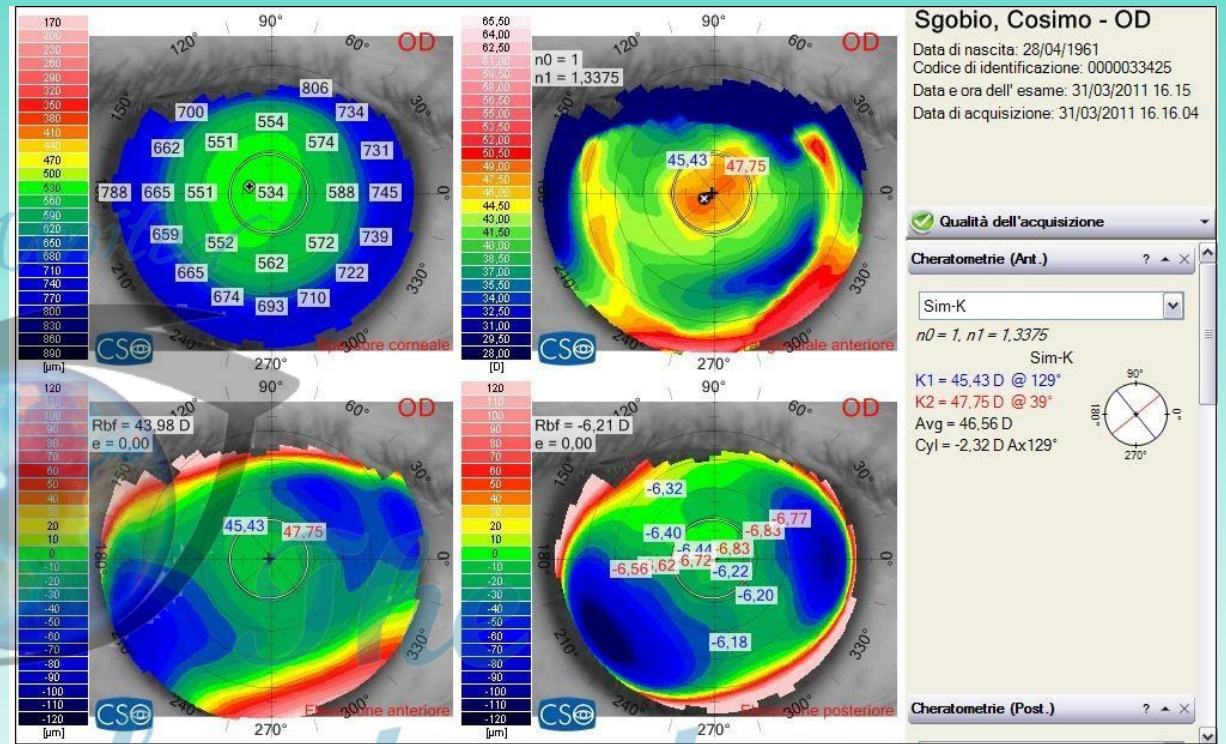


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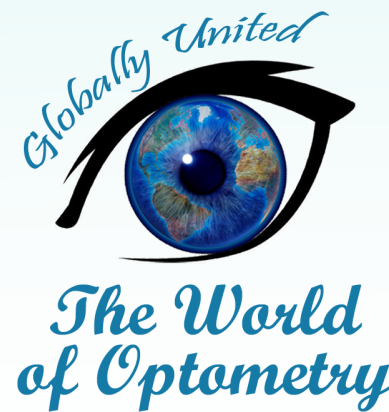


# Clinical Examination

In Figure 1 (RE) :



In Figure 2 (LE) :



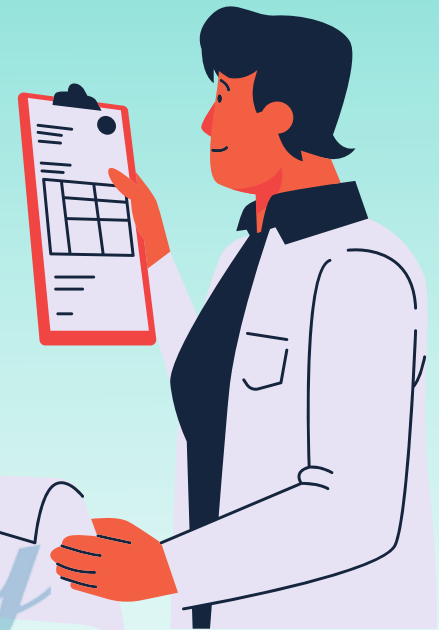
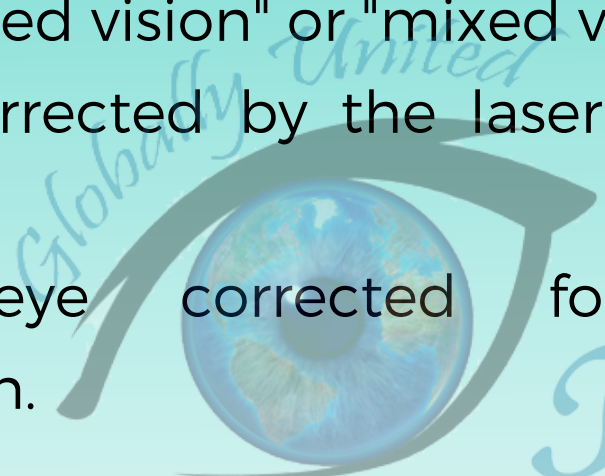
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# Clinical Examination

The modified monovision technique exploits the principle of "blended vision" or "mixed vision":

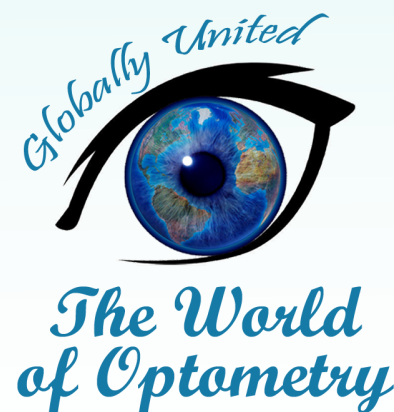
Dominant eye corrected by the laser for a distant-intermediate view

Non-dominant eye corrected for proximate-intermediate vision.



The intermediate vision is common to both eyes; this means that the two images coming from both eyes merge together creating a good perception at that distance.

This technique, unlike the classic monovision, creates a continuous transition between near and distant vision, making the subjects experience greater benefits.





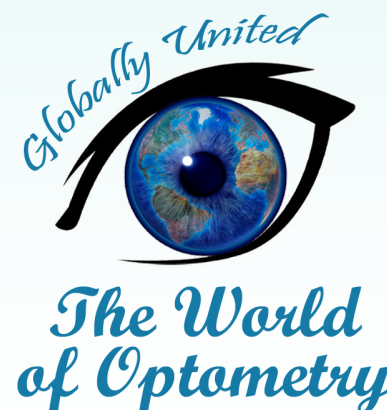
# Clinical Examination

Result of the modified monovision can be analyzed by observing the power values in table 1:

- For the RE (non-dominant): the value goes from 47.33 D to 44.46 D with the pupil in mydriasis

- For the LE: the power goes from 46.20 D to 45.51D  
The "intermediate" power of about 46.20 D is therefore common to BE.

Cylindrical value increases as the pupil diameter increases, unlike that of the left cornea which decreases; the axis orientation remains almost constant in both eyes. The longitudinal spherical aberration value tends to increase, becoming more and more negative, passing from - 0.91 D to 3 mm of pupillary aperture to - 3.63 D to 6 mm (table 1); this makes it possible to near vision with small pupil diameters and a more remote vision with larger diameters.



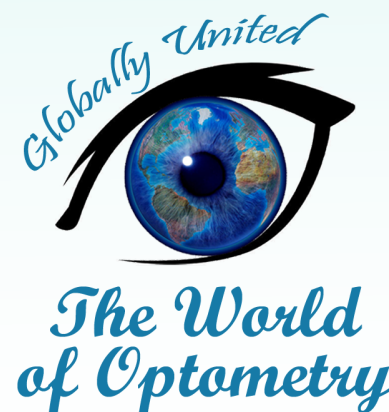
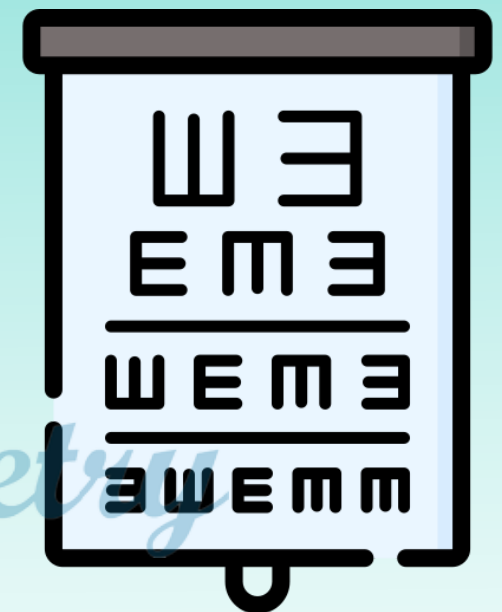
# Clinical Examination

After the surgery (before contacts application), the situation was:

- RE: +1.50 cyl +2.00 axis 45 ° Visual Acuity: 20/30
- LE: +3.25 cyl +1.25 axis 40 ° Visual Acuity: 20/40

After contacts application, the situation was:

- RE: +1.50 cyl +3.50 axis 40 ° Visual Acuity: 20/25
- LE: +4.00 cyl +1.50 axis 60 ° Visual Acuity: 20/20





DRAG TO THE SIDE  
DRAG TO THE SIDE

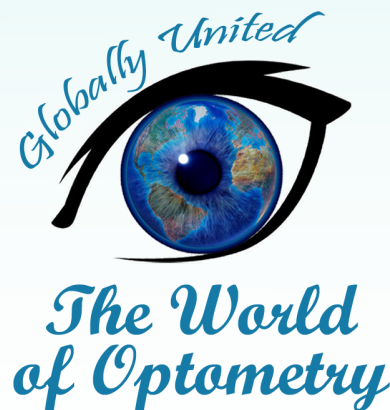
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# Diagnosis

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# Treatment

- The soft lens was chosen since he would not have used them all the time, but only while driving and hunting, so this type was more comfortable and equally performing compared to that of the RGP lenses, which was however tested.
- With contact lenses it was possible to compensate for refractive defects and most of the aberrations, consequently also the effect of corneal multifocality was "eliminated".
- Patient was prescribed a pair of near glasses to be used with the contacts on.

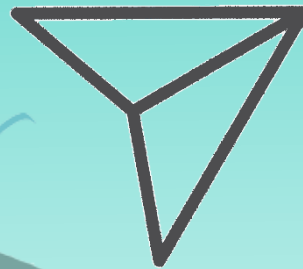




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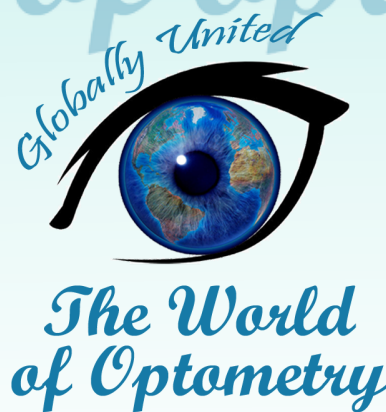


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