



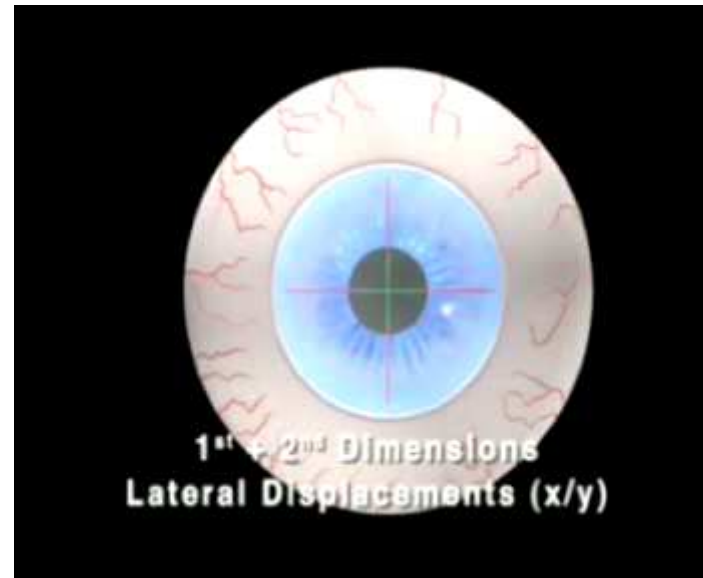
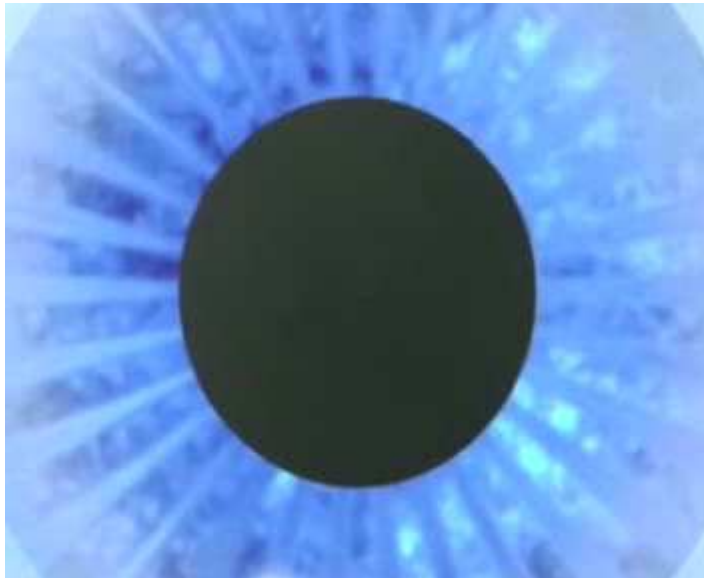
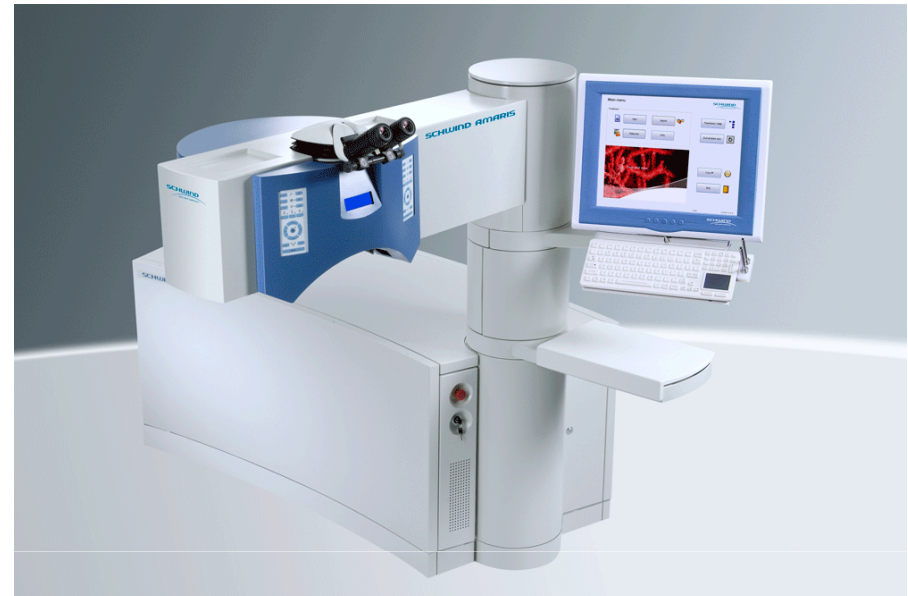
# *Up-Date Chirurgia Refrattiva*

*P. Colosi*

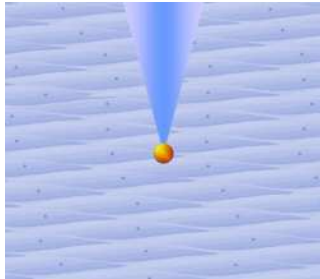


## Up-date dei Laser ad Eccimeri

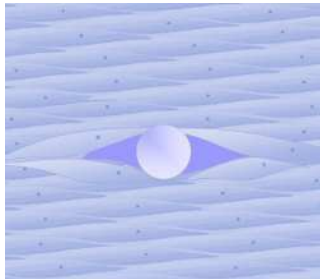
- Riduzione della dimensione dello spot
- Aumento della frequenza



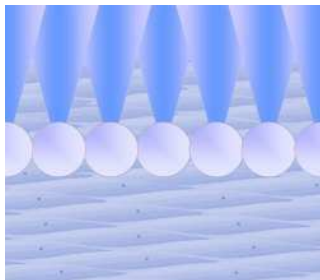
Il laser a femtosecondi utilizza energia laser ad infrarossi (lunghezza d'onda 1053 nanometri) a potenza bassa (1micro J) ed a velocità estremamente elevate ( $10^{-15}$  secondi) che agisce sulle strutture trasparenti dell'occhio mediante il principio della "photodisruption" su porzioni di tessuto infinitamente piccole, senza danneggiare il tessuto circostante.



In questo processo, gli impulsi di laser focalizzato dividono il materiale a livello molecolare, per un processo di ionizzazione tissutale, senza il trasferimento di calore o di impatto per il tessuto circostante.



Ogni impulso laser infrarosso ultraveloce genera una bolla intrastromale di cavitazione tissutale. L'effetto di "photodisruption" si verifica solo in un punto programmato dello stroma corneale.



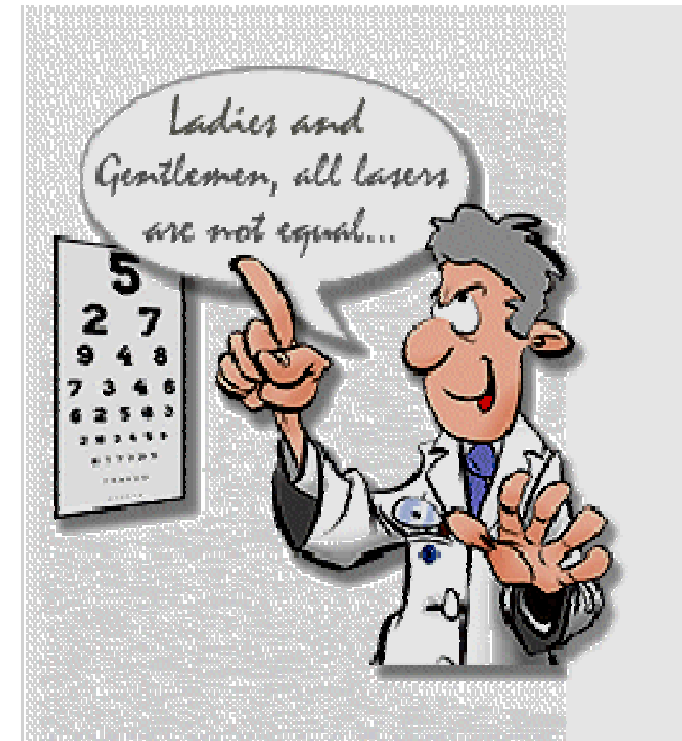
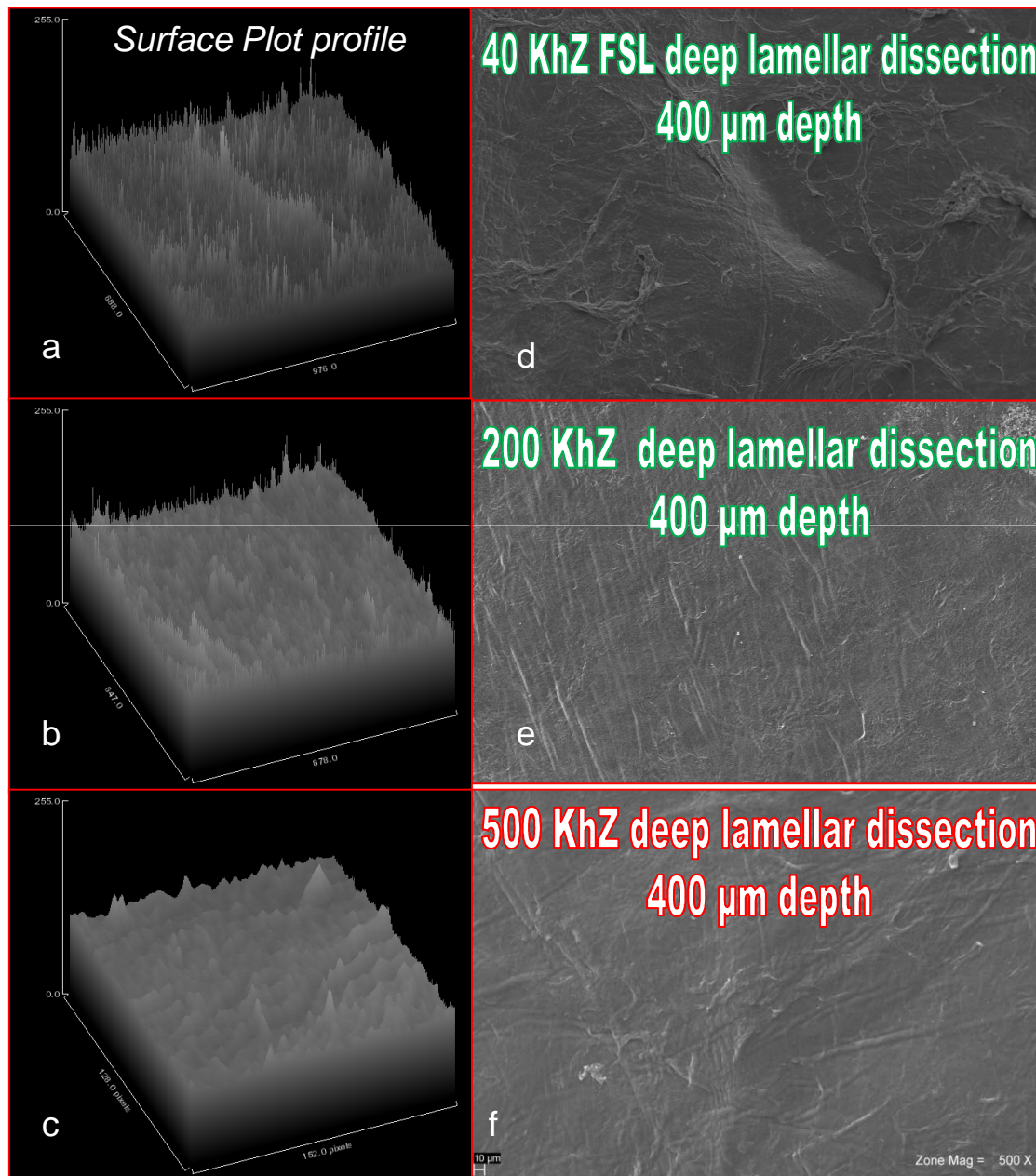
Più bolle di cavitazione tissutale confluiscono creando un piano di clivaggio intrastromale che, in base allo specifico programma impostato dal software del laser, può essere orientato a creare un taglio verticale o lamellare.

Il lembo corneale può quindi essere rimosso con uno strumento di precisione.

# Combinazione Eccimeri-Femto

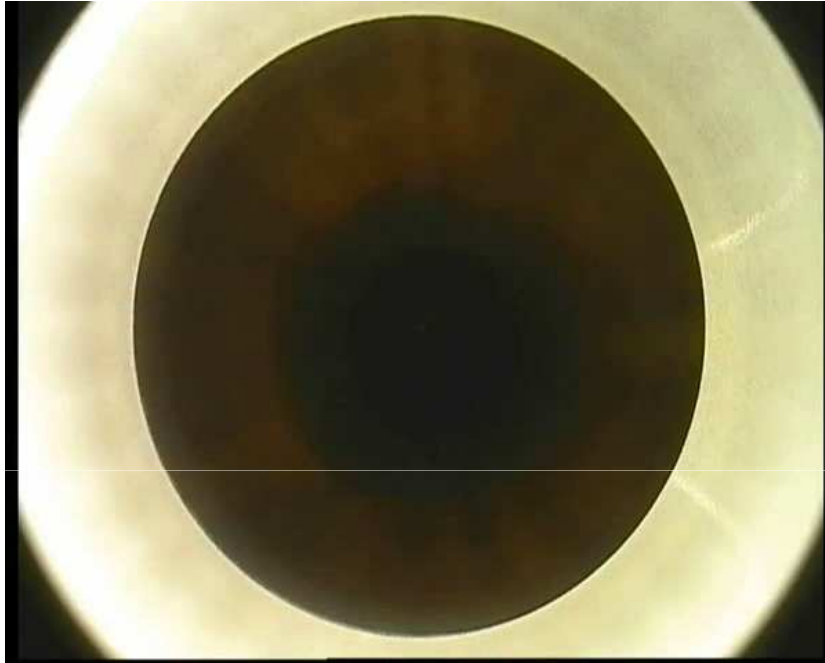


# Surface regularity analysis of SEM images



**Unpublished data: Mastropasqua L,  
Nubile M, Pocobelli A, Tan DT**

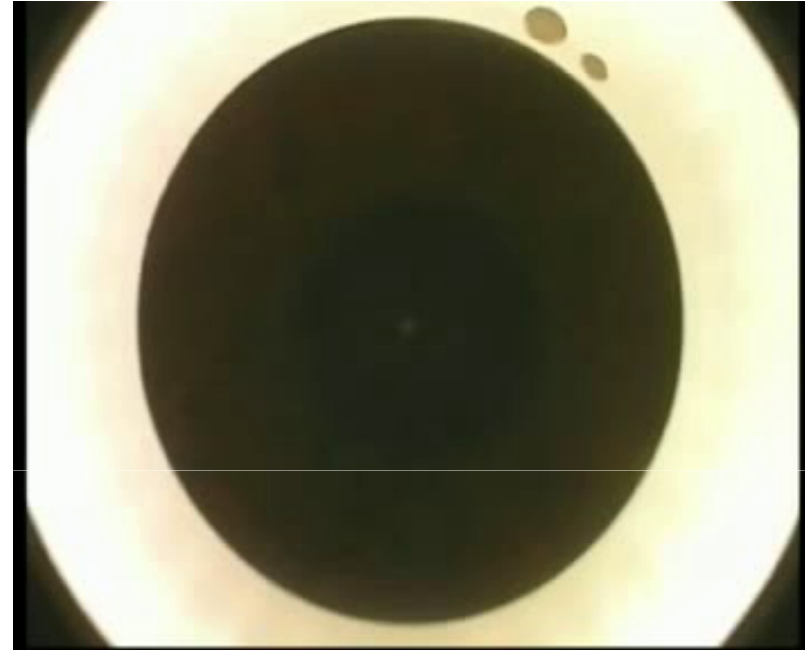
## Il Femto come unico laser refrattivo



**F**emtosecond

**L**enticule

**EX**traction



**SM**oll

**I**ncision

**L**enticule

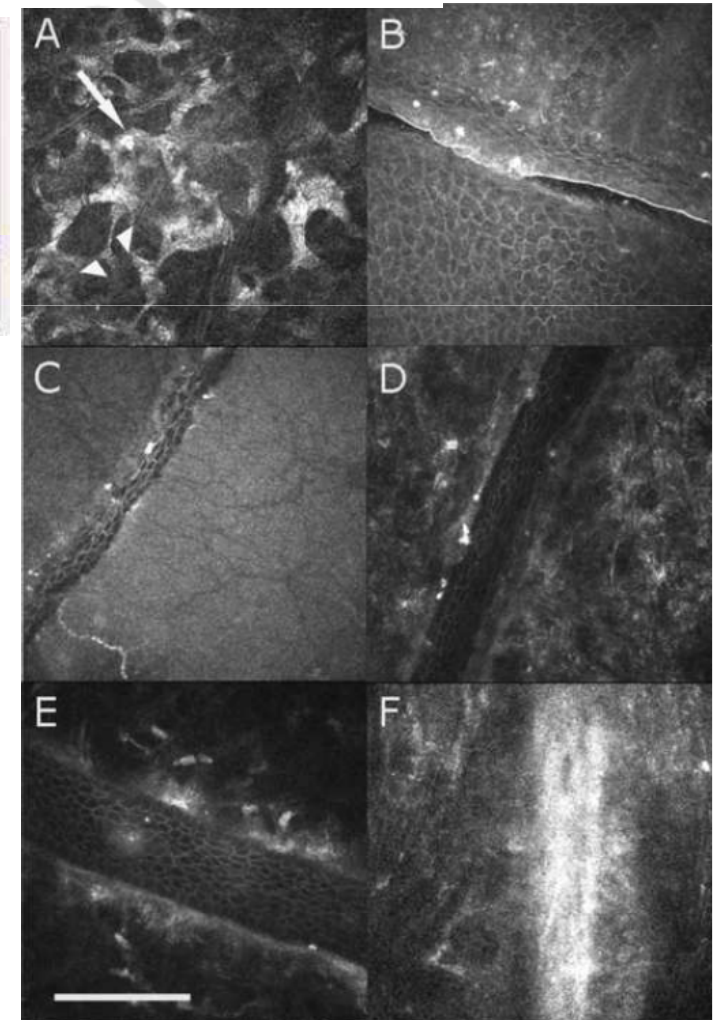
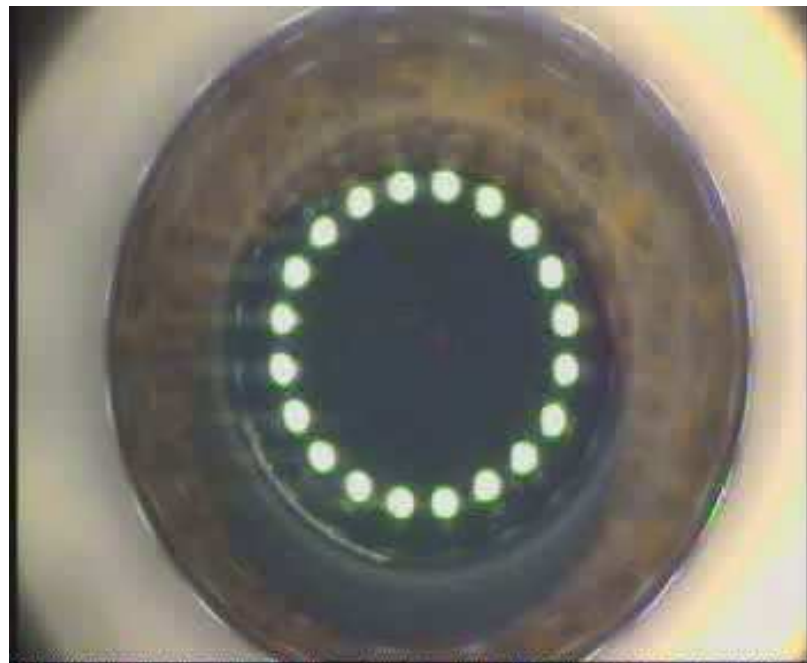
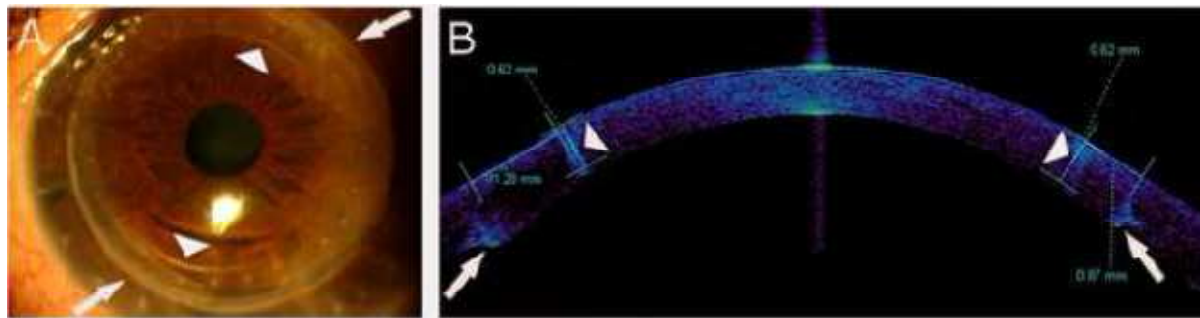
**E**xtraction

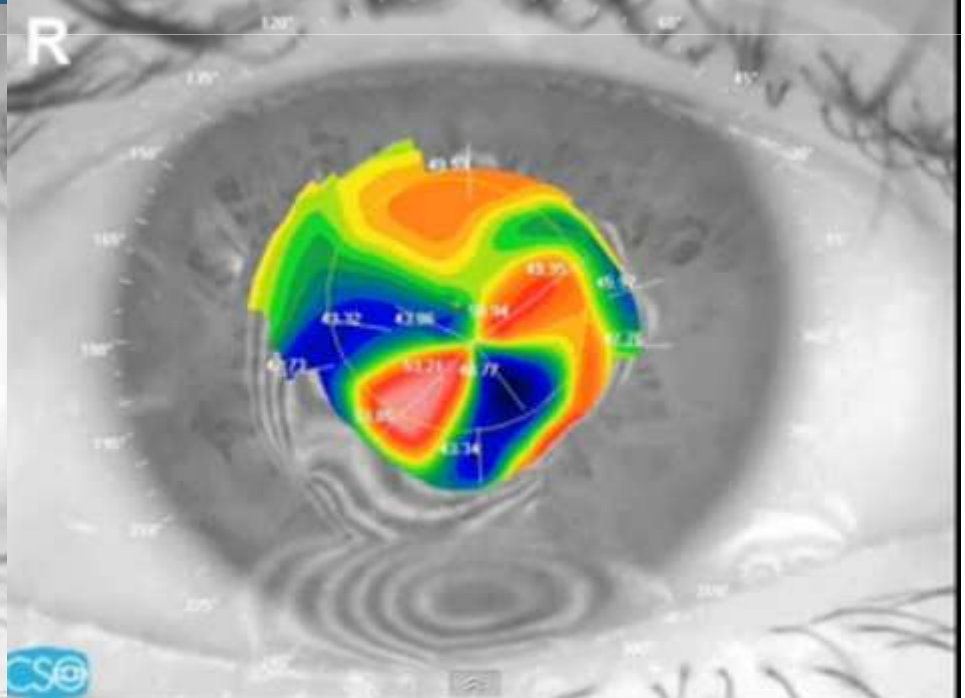
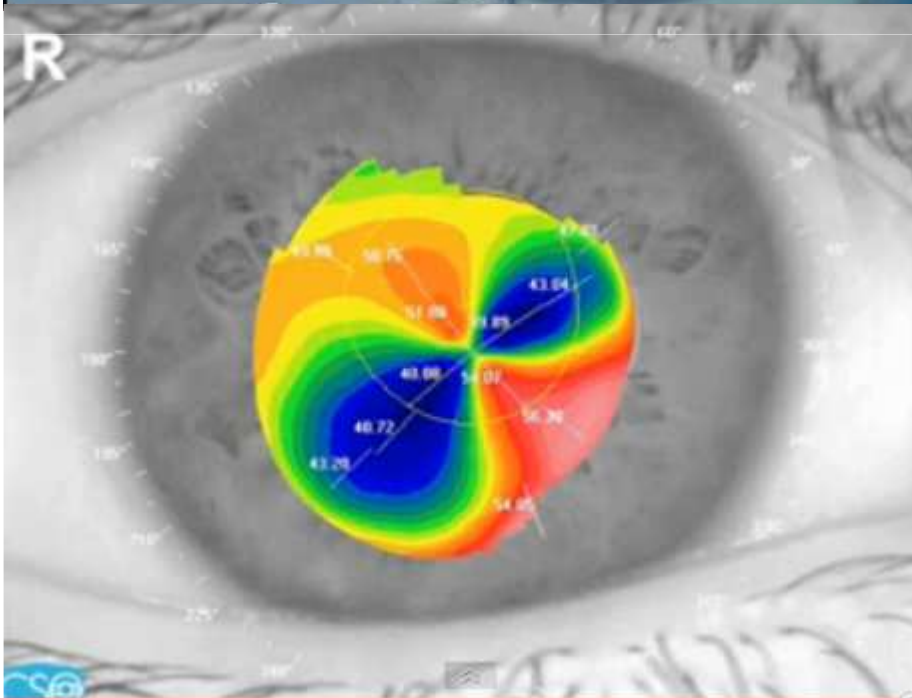


# Femtosecond Laser Arcuate Keratotomy for the Correction of High Astigmatism after Keratoplasty

*Ophthalmology* 2009,

Mario Nubile, MD, Paolo Carpineto, MD, Manuela Lanzini, MD, Roberta Calienno, MD, Luca Agnifili, MD,  
Marco Ciancaglini, MD, Leonardo Mastropasqua, MD





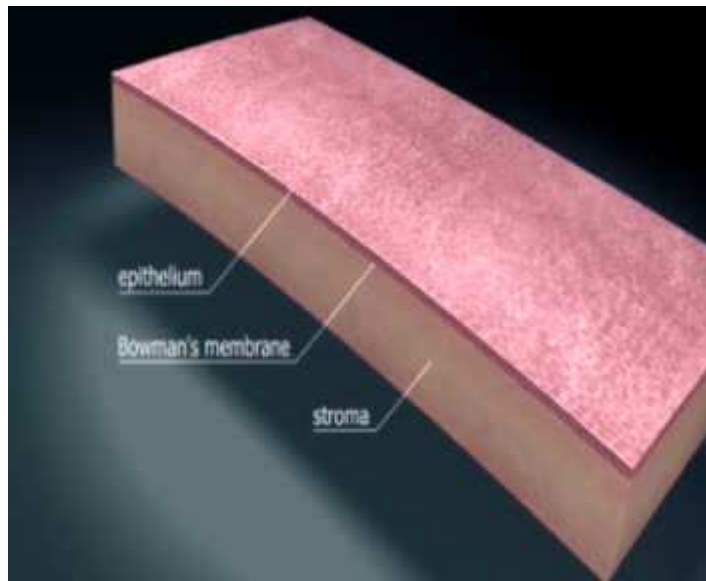


# Il Femto nell'impianto di INTACS



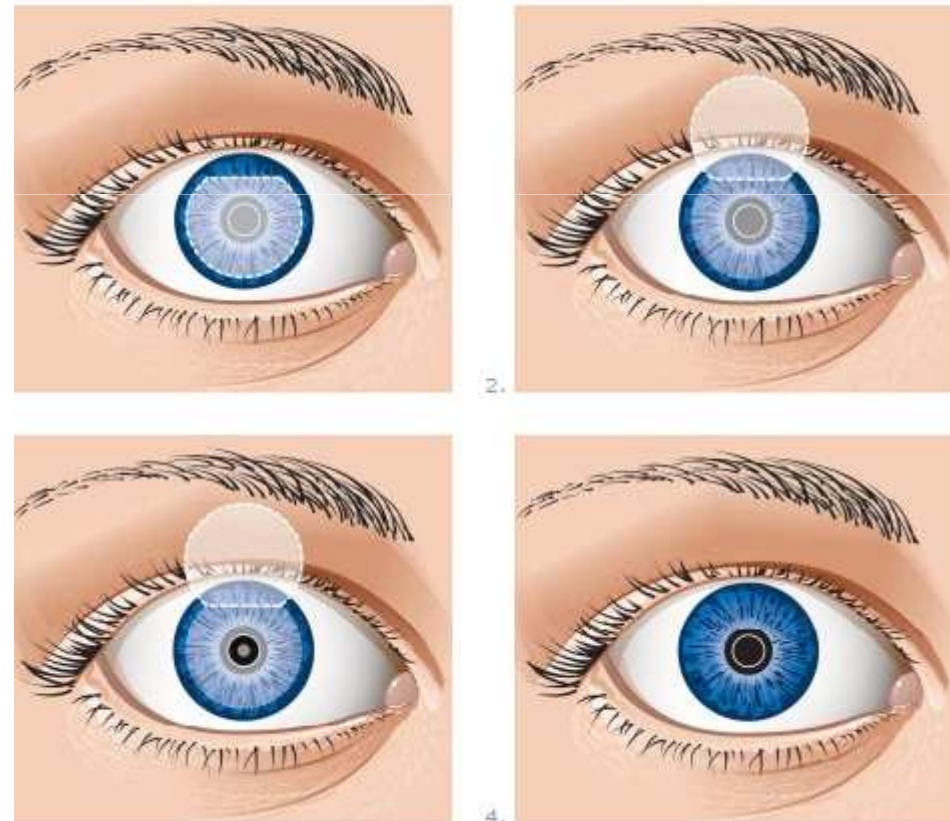
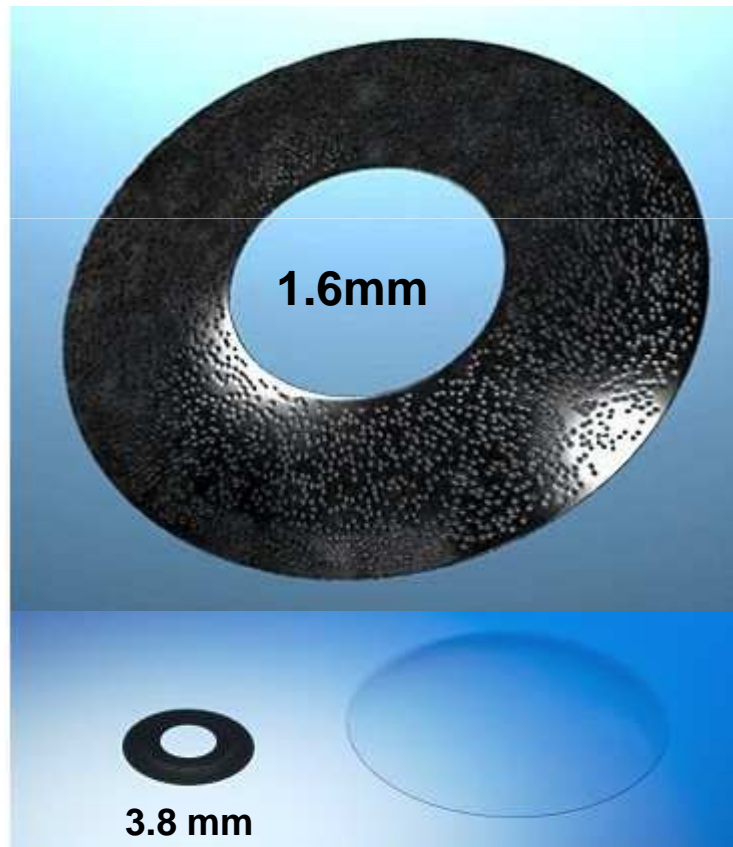
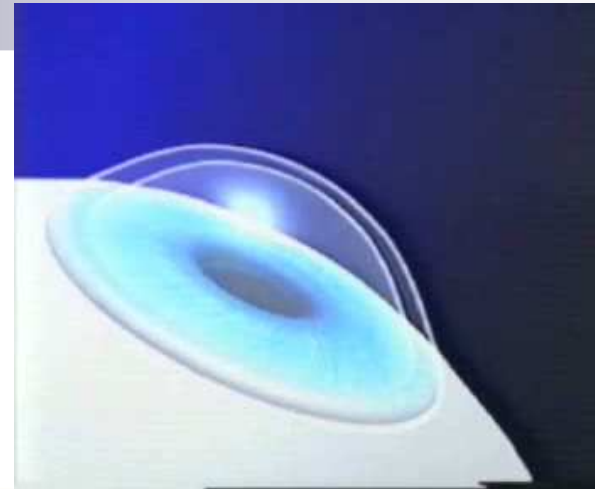
# Correzione della presbiopia

## INTRACORE



# Correzione della presbiopia

## KAMRA INLAY



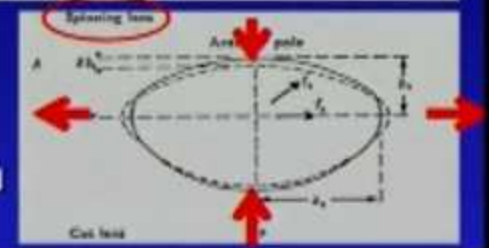
# Correzione della presbiopia

## Do Ultrashort Pulse Laser alter Accommodation?

- In 2001, we went on to answer the question of lens elasticity...does the laser increase the flexibility of the aging lens?

*Ophthalmology* 2001  
Experimental Increase in Accommodative Potential after Neodymium: Yttrium-Aluminum-Garnet Laser Photodisruption of Paired Cadaver Lenses  
Ravi S. Prasad MD, MS, PhD, David E. Rhee MD, PhD, John S. Lee MD, PhD, Ronald J. Stroh MD

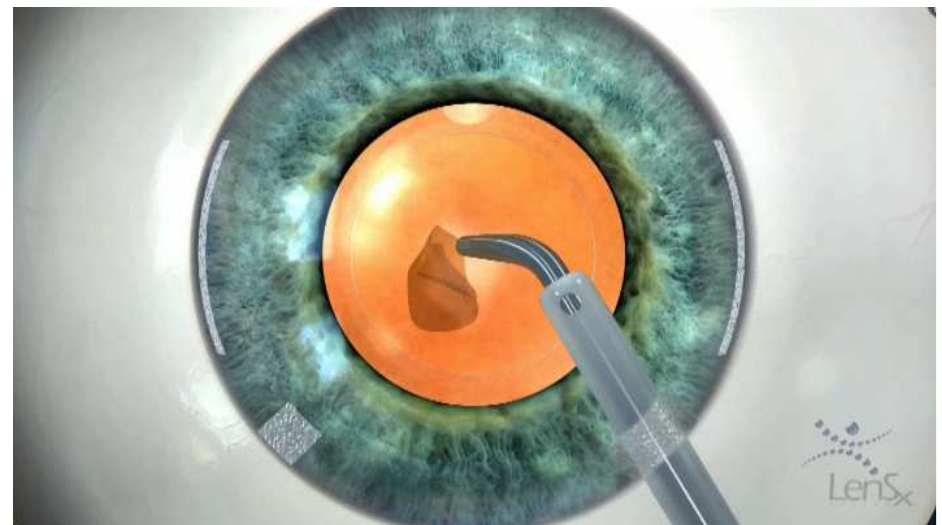
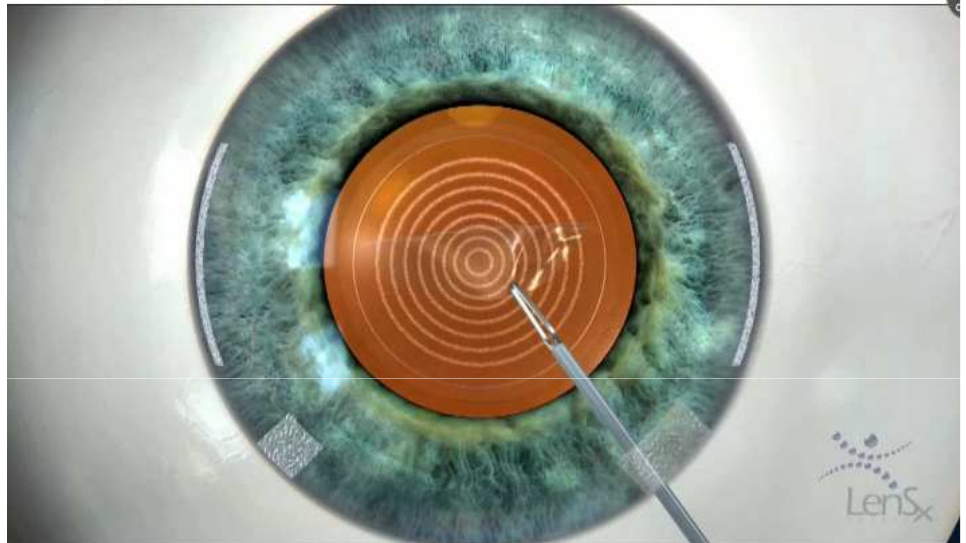
Fisher (1971) showed an age-dependent decline in rotational deformation (polar strain)



## New Algorithm with Center Sparing

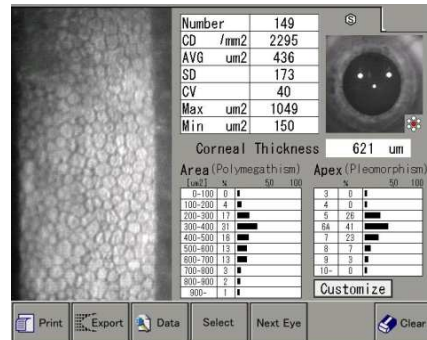
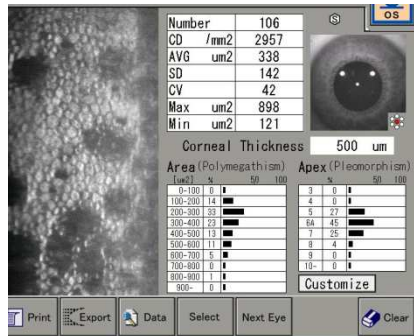


# REfractive Lens EXtraction



# Non solo ....

## Conta endoteliale

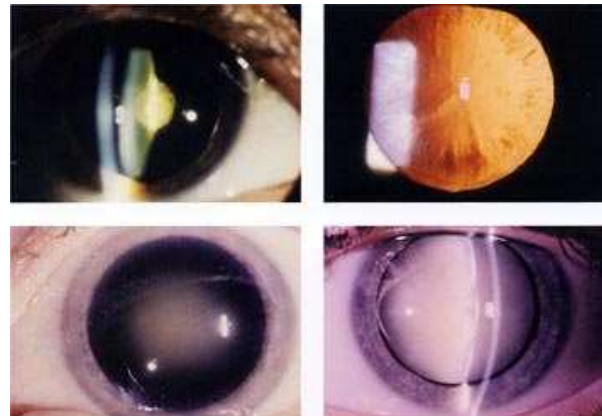


## Pupilla stretta



## Floppy Iris

## Densità della cataratta

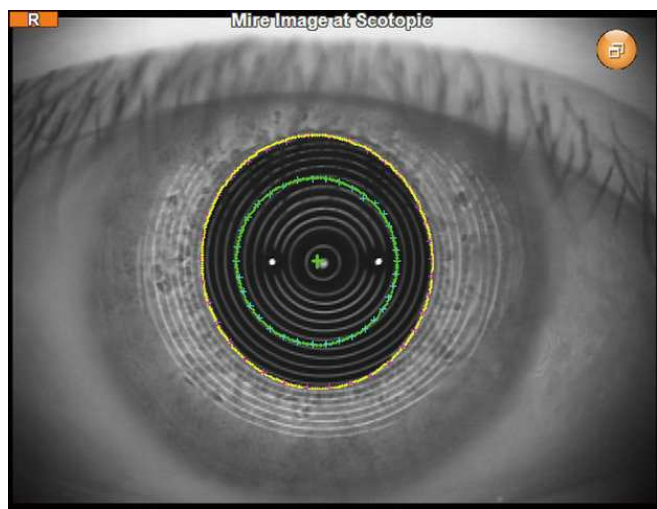


## PEX

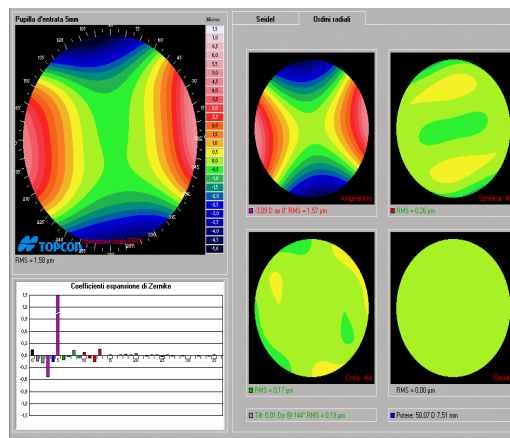


## Ma anche.....

## Pupillometria e decentramento

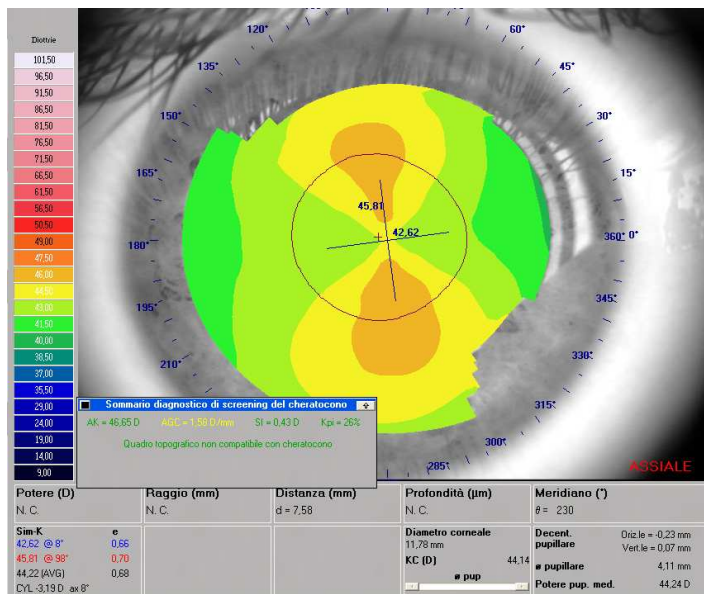


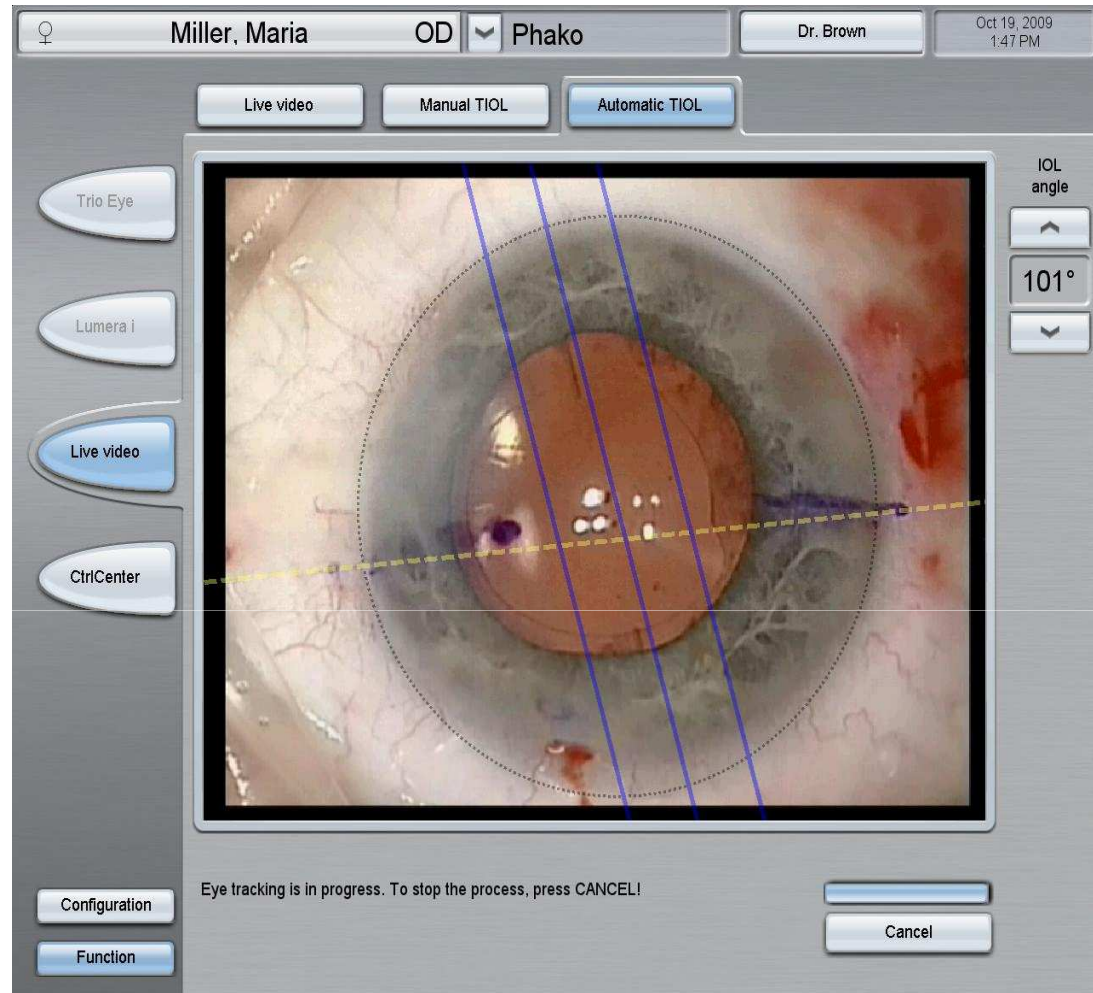
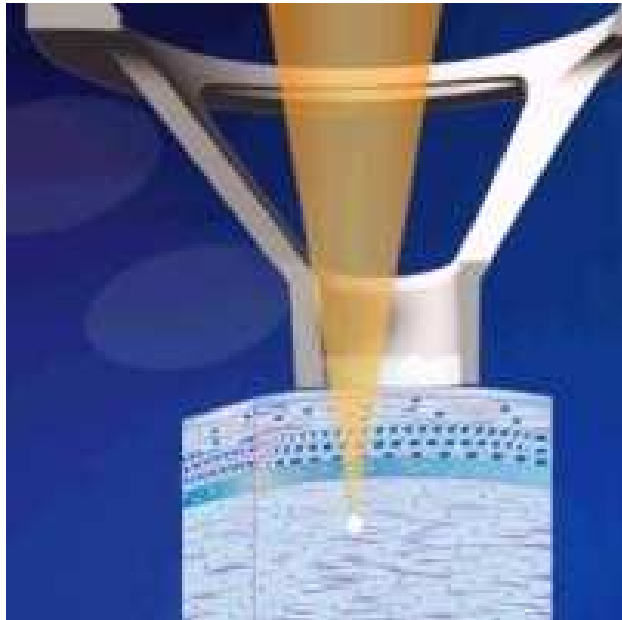
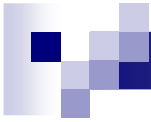
## Aberrometria



Sistema Callisto

## Topografia corneale





**Chi non accetta nuovi rimedi si prepara ad affrontare nuovi mali.**

*grazie*