10th Evolving Practice Of Ophthalmology Middle East Conference
EPOMEC
EXPANDING VISION

САМАРСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ УНИВЕРСИТЕТ

New Pattern For Femto-Laser Lens Fragmentation

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2 – Samara Regional T.I.Eroshevsky Ophthalmic Hospital
3 – Ziemer Ophthalmic Systems AG

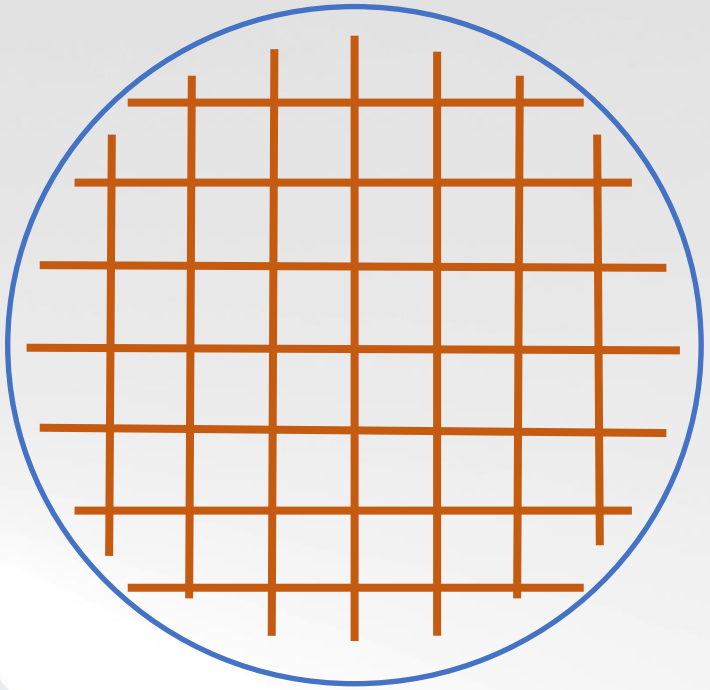
FLACS

- Precision
- Effective nucleus fragmentation
- Less US power

- Weaker capsulotomy
- Gas formation
- Risk of capsule rupture

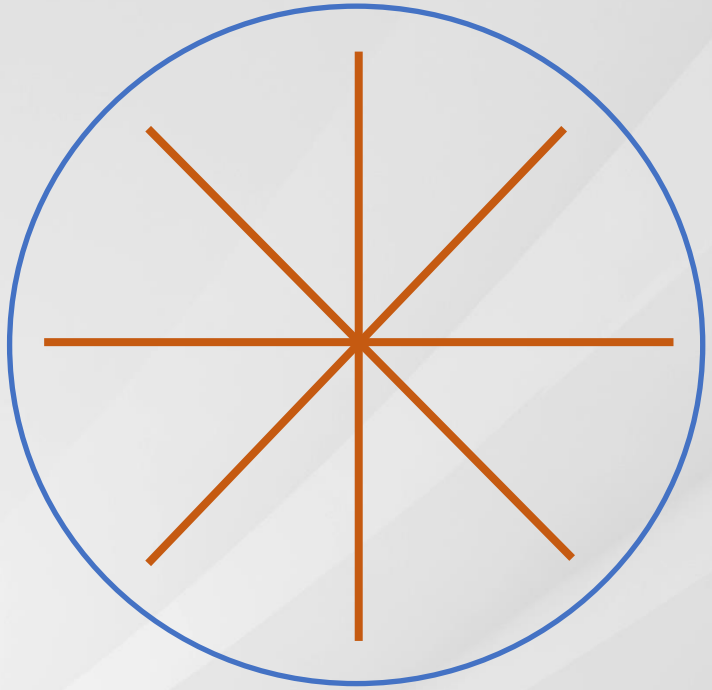
FLACS nucleus fragmentation patterns

- Matrix



More laser energy / gas bubbles

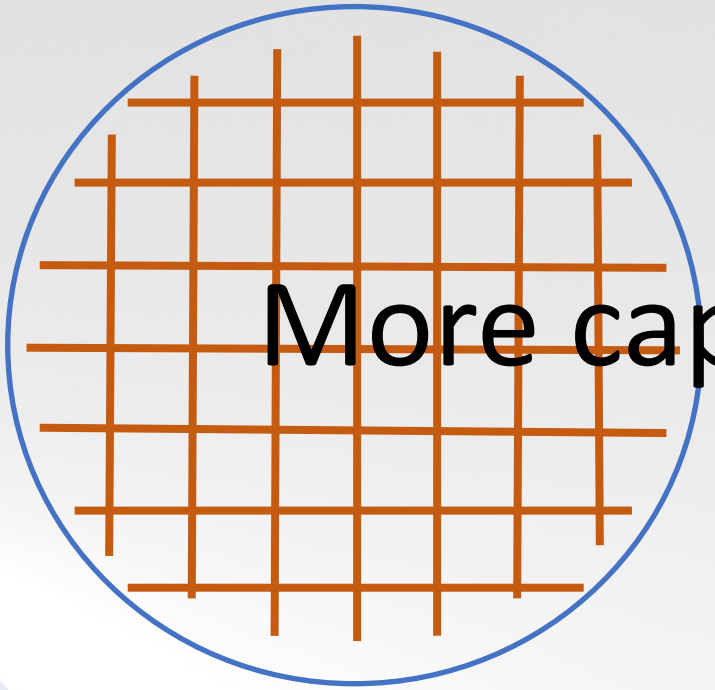
- Chop-like (“PizzaCut”)



More ultrasound energy / manipulations

Nucleus fragmentation patterns

- Matrix



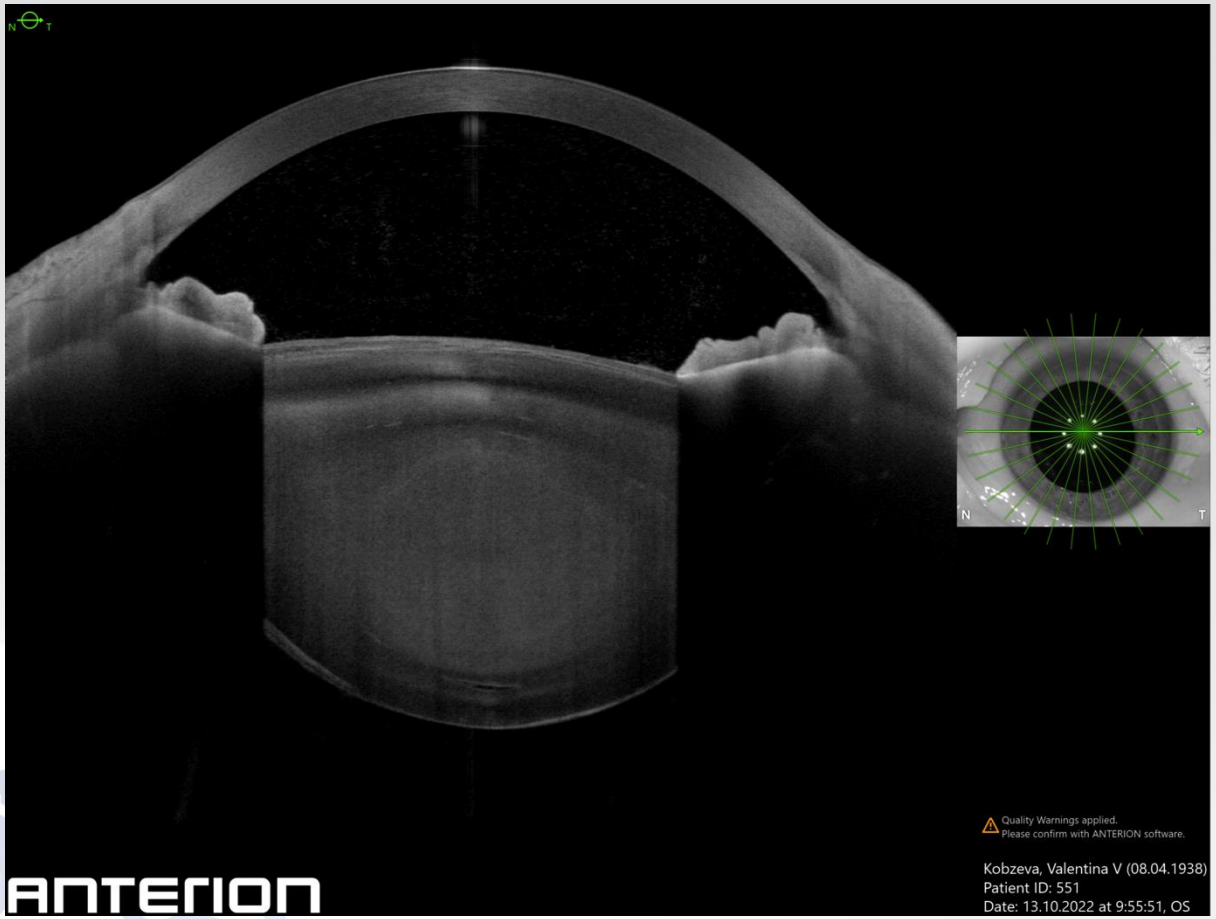
More laser energy / gas bubbles

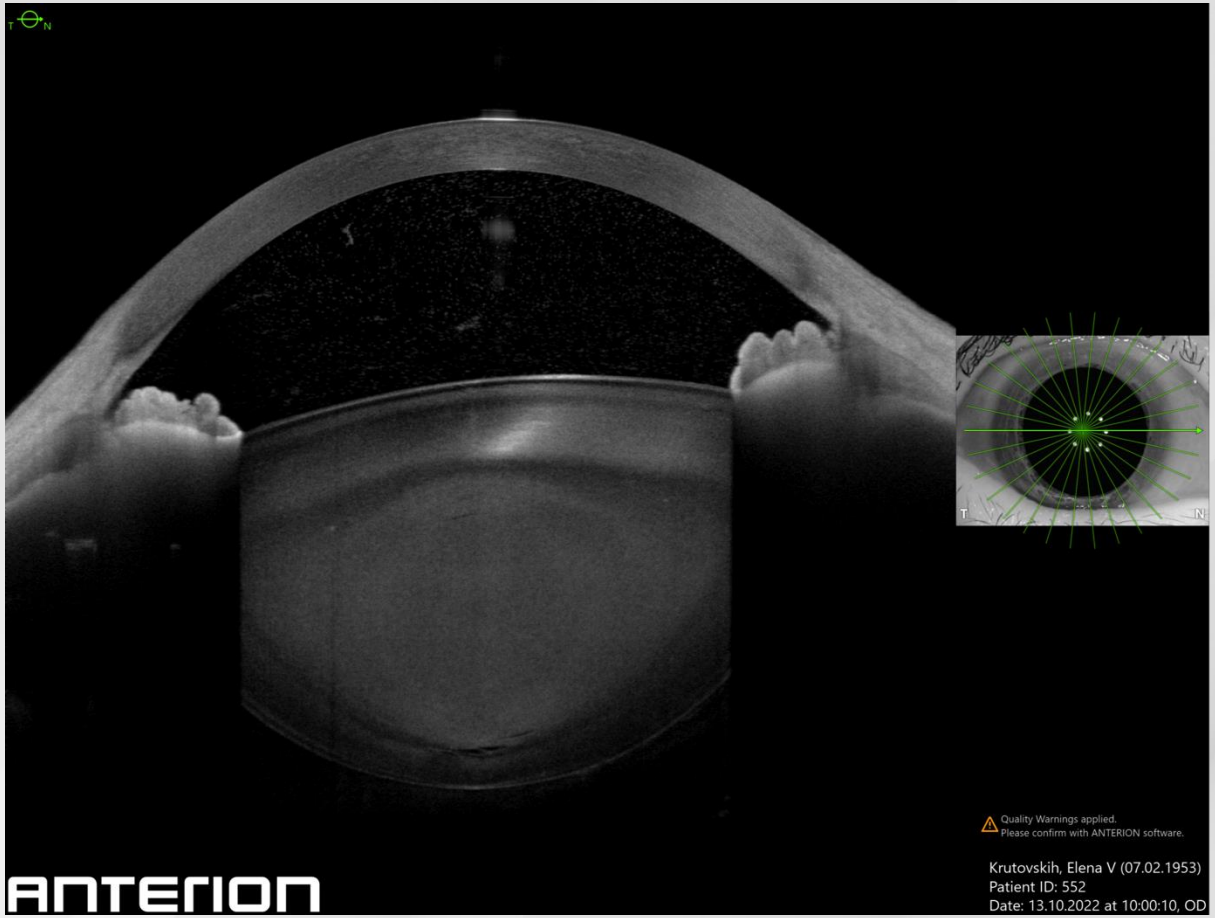
- Chop-like (“PizzaCut”)

More ultrasound energy / manipulations

More capsular bag stress

Uneven lens material hardness – even laser fragmentation (?)





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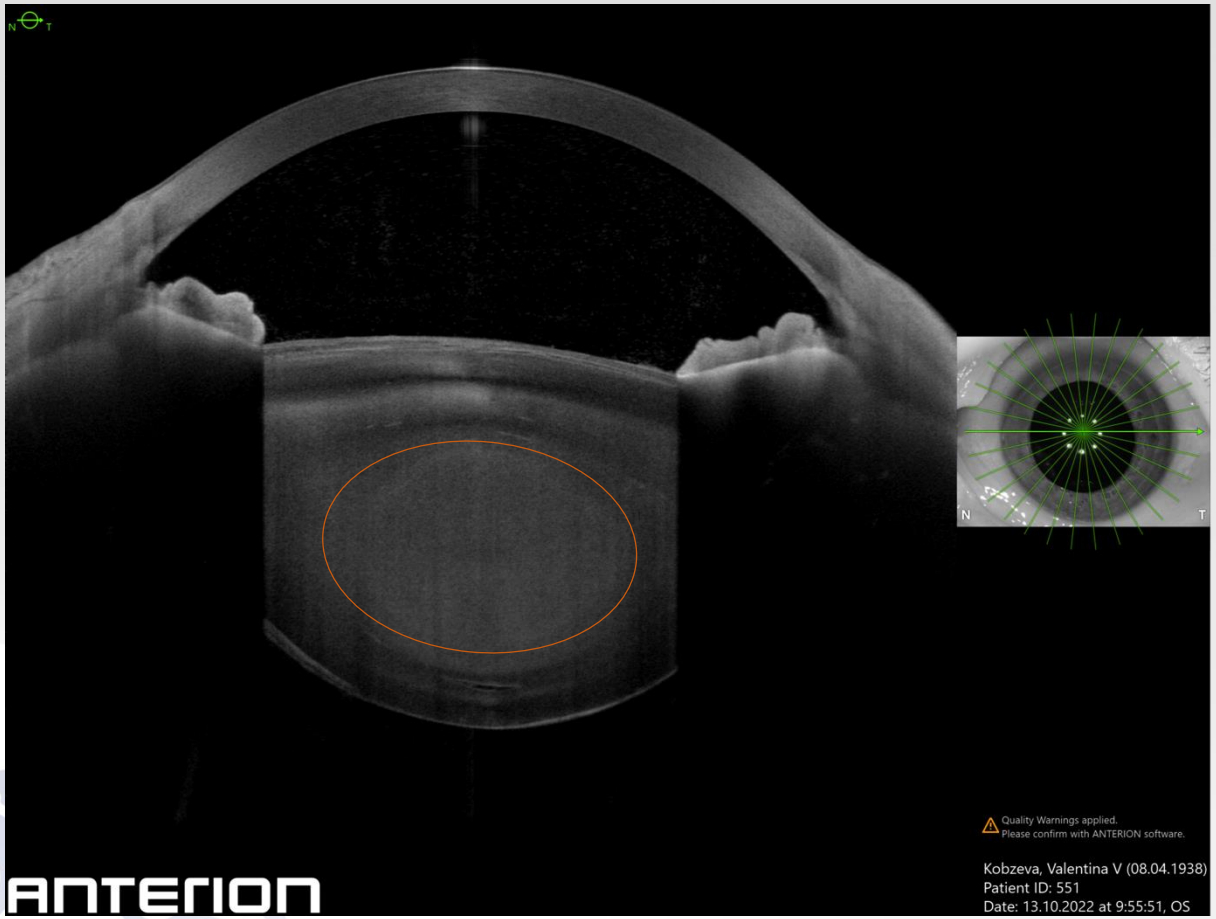

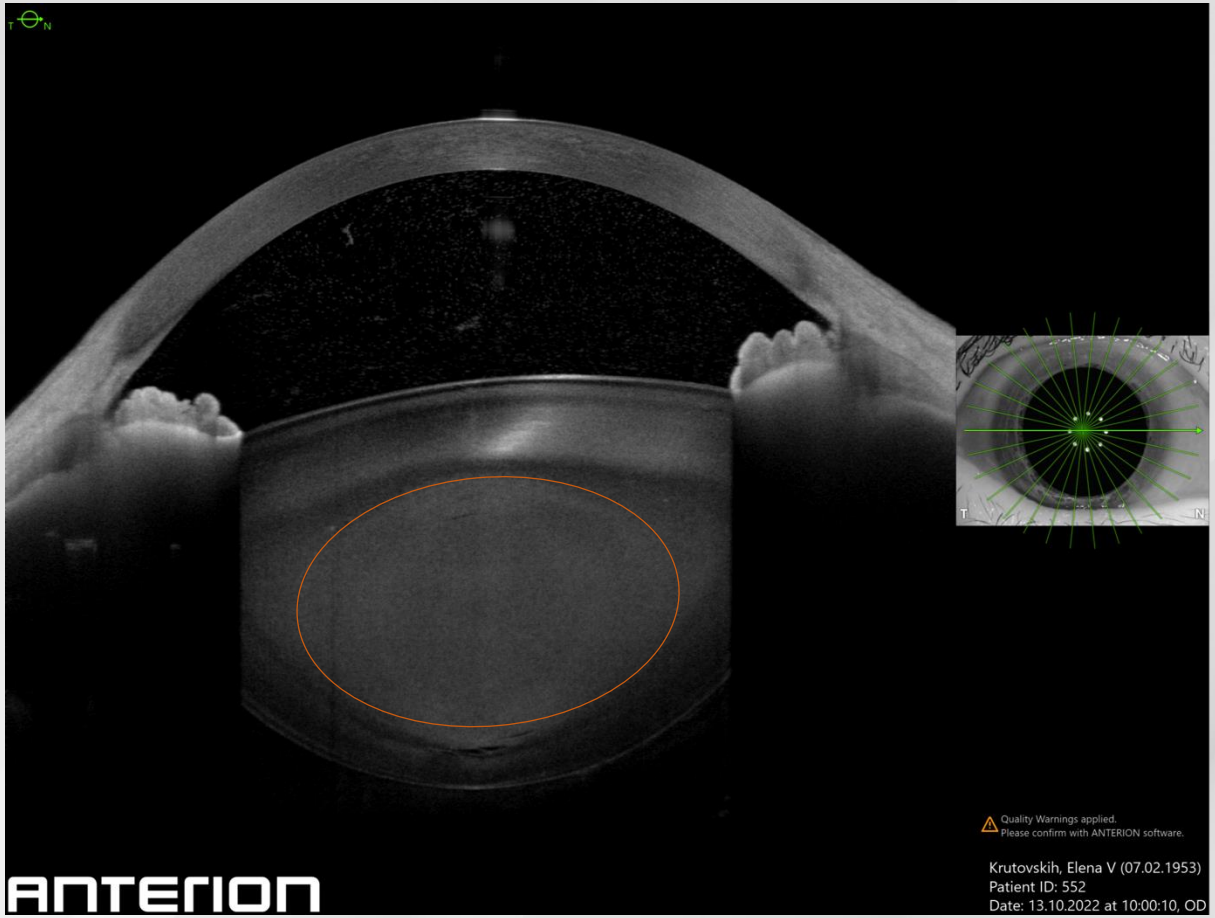

Combined “matrix-chop” pattern

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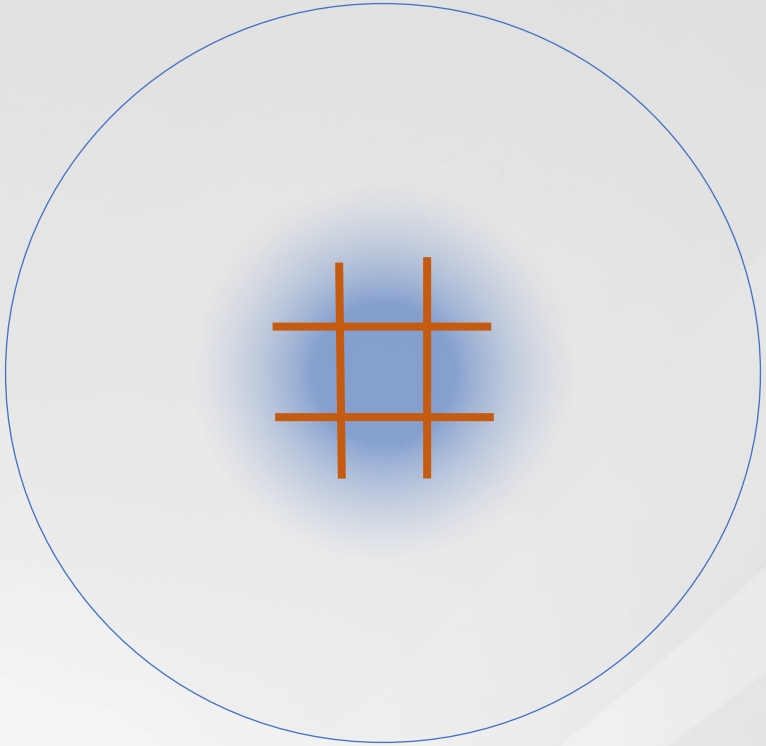

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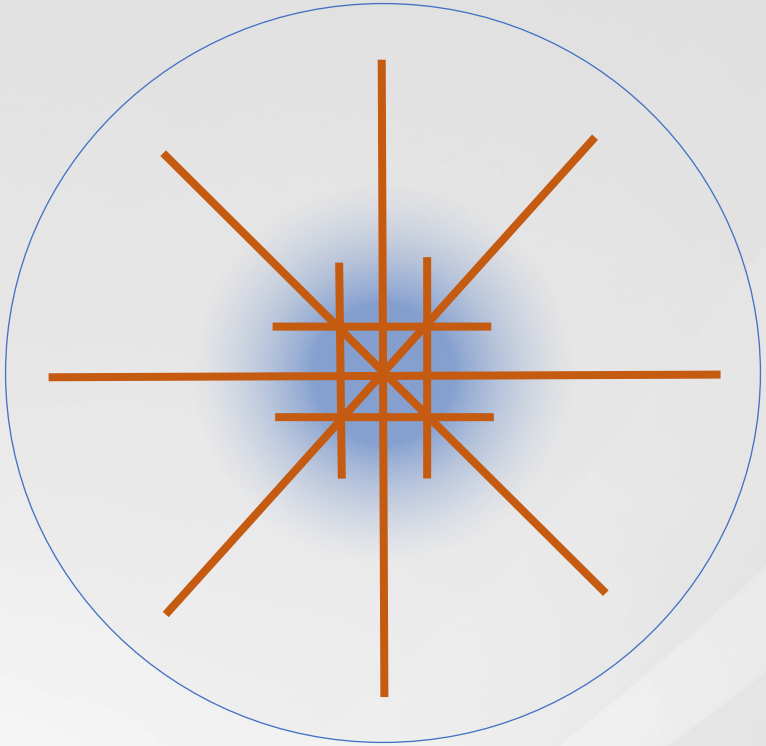

Radial chop: triangular/trapezoidal fragments

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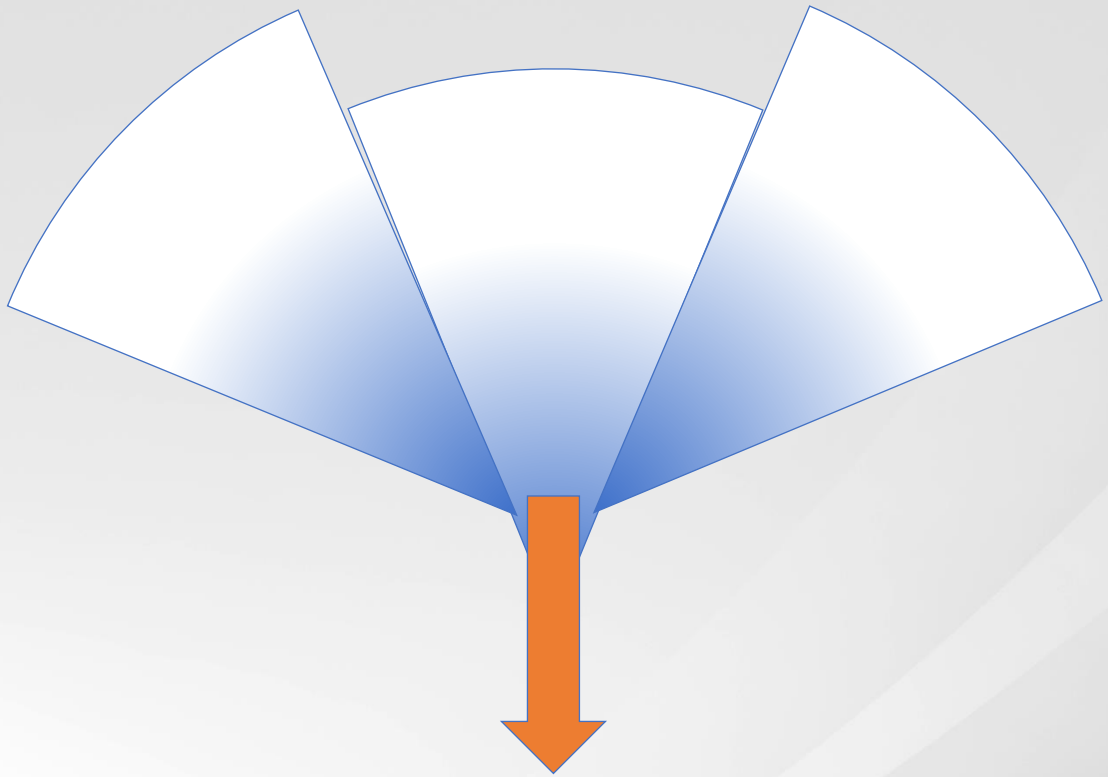
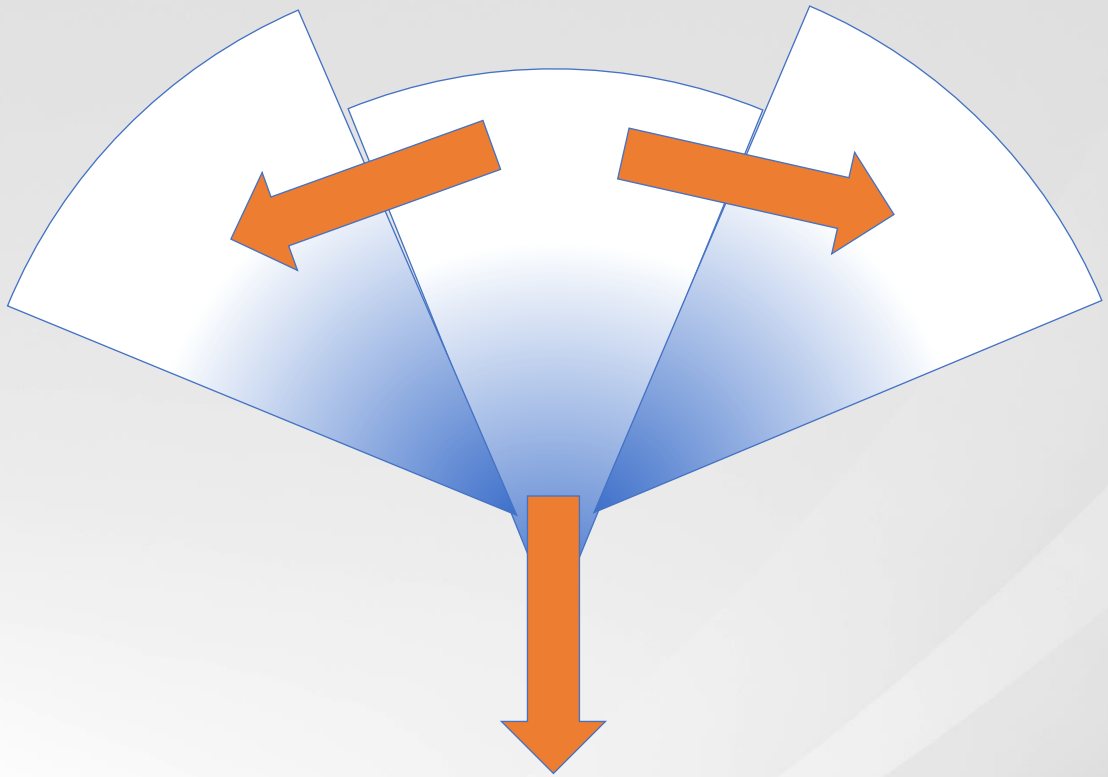


- More side resistance
- More vacuum
- More aggressive manipulations

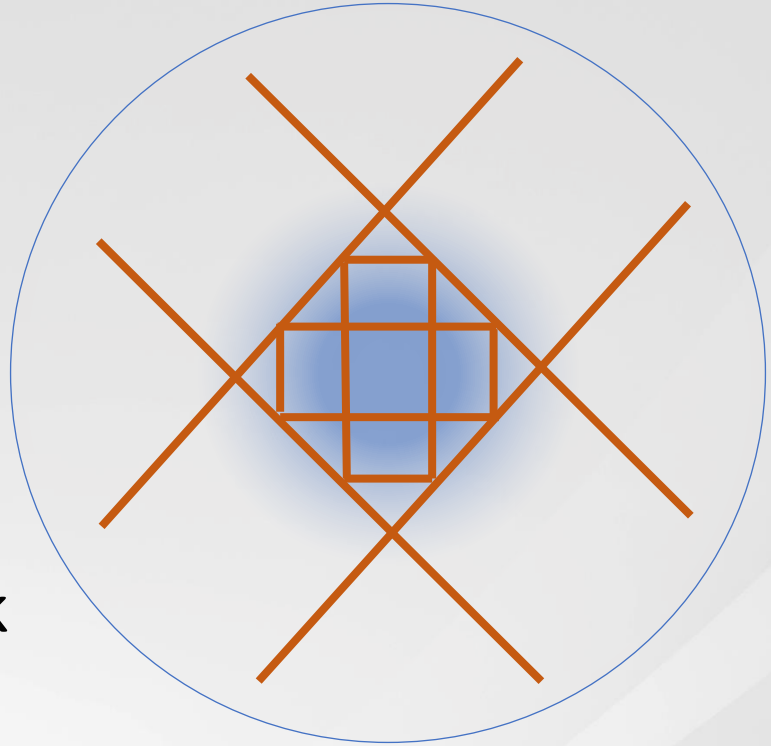
Radial chop: triangular/trapezoidal fragments



- More side resistance
- More vacuum
- More aggressive manipulations
- More capsule stress

Combined “matrix-chop” pattern

- Short & dense cuts in the hard central core
- Long & loose papacentral cuts in the softer nucleus periphery
- Rectangular fragments with no side resistance (“desk drawer” instead of “wedge”)



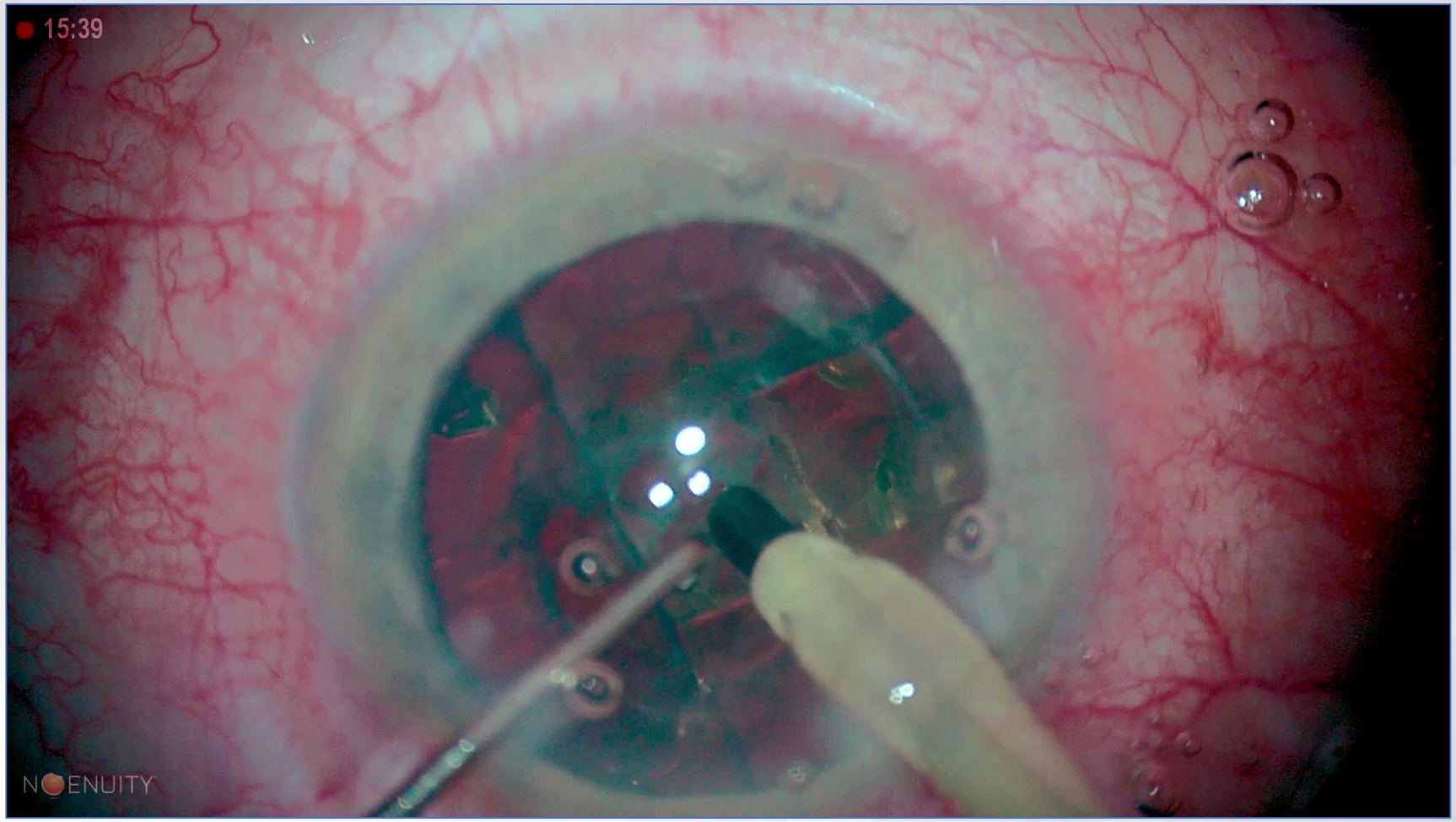
DiamondCut

Patent pending

82 “DiamondCut” FLACSs

- 6 different surgeons in Eroshevsky Ophthalmic Hospital (Samara, RF)
- Ziemer LDV Z8
- Stellaris
- Standard co-axial 2,2mm phaco

“DiamondCut” FLACS



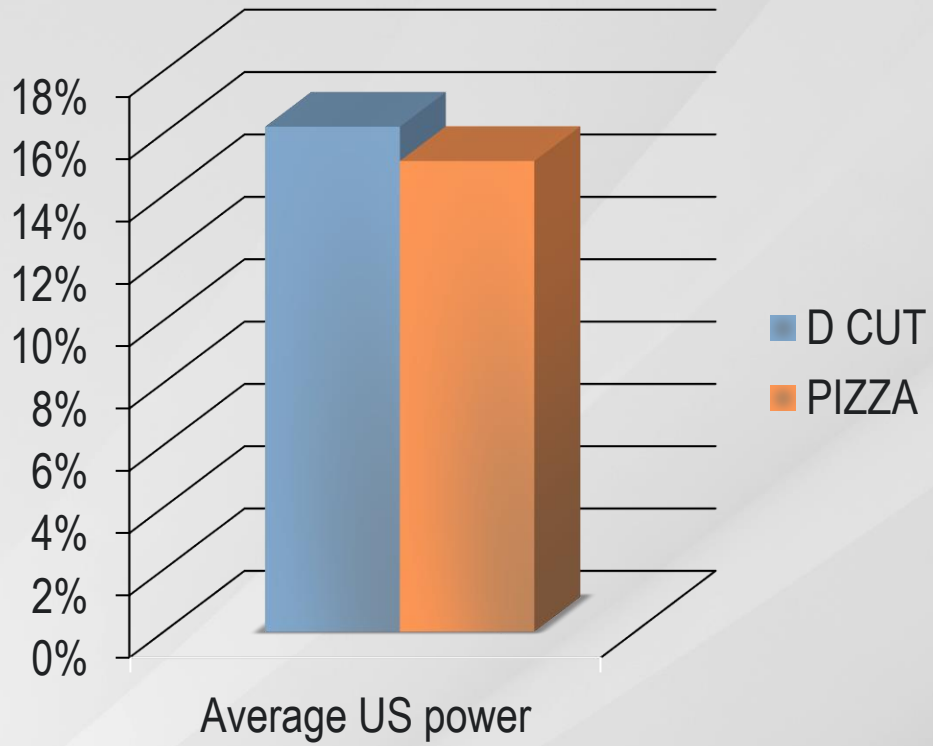
“DiamondCut” FLACS: first impressions

- Low US power (EPT)
- Moderate vacuum
- Easy nucleus disassembly
- Easy manipulations
- Good lens fragmentation
- No evident capsular stress

PHACO PARAMETERS	NUCLEUS DENSITY			
	I	II	III	IV
MEAN US POWER	17,3±2,5%	18,0±7,6%	19,2±2,8%	31,2±1,3%
MEAN PHACO TIME	20:40±0:28	21:00±0:12	21:41±0:10	29:59±0:07
EFFECTIVE PHACO TIME	04:00±00:27	04:52±00:39	05:20±01:18	09:09±00:45
MEAN MAX VACUUM	253±87 mmHg	255±83 mmHg	236±80 mmHg	355±15 mmHg

DiamondCut (n=22) vs. PizzaCut (n=22)

- 44 FLACS cases paired according nucleus density and patient's age
- 3 different surgeons
- Same equipment (Ziemer LDV Z8 + Stellaris)
- Standard co-axial phaco technique (2,2mm tunnel)



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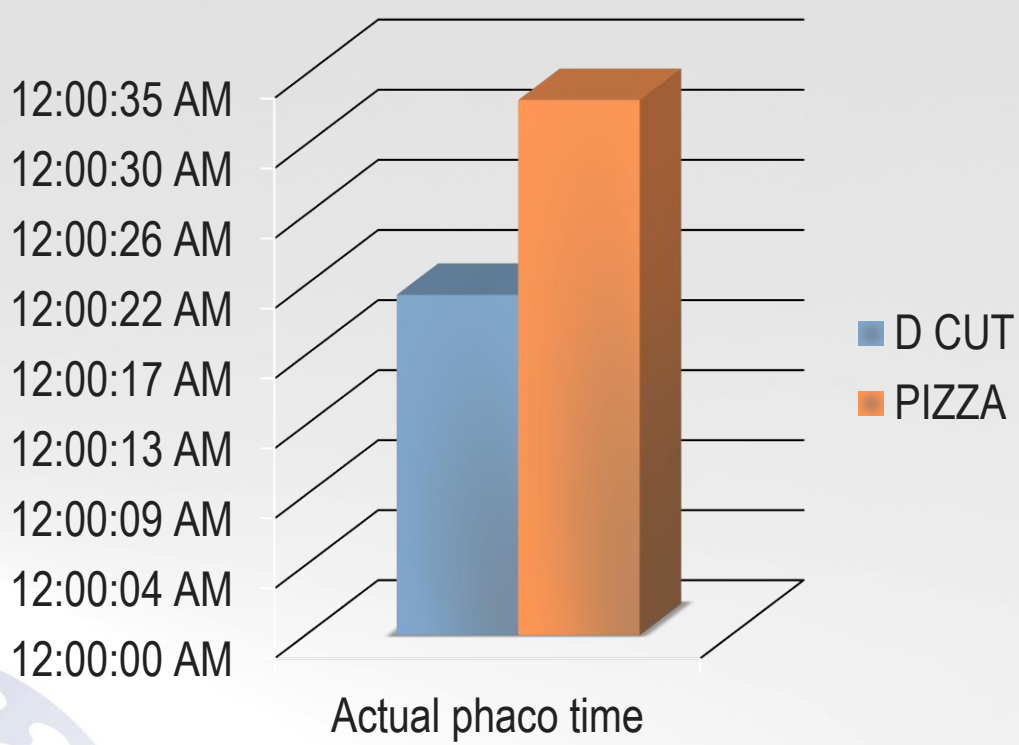
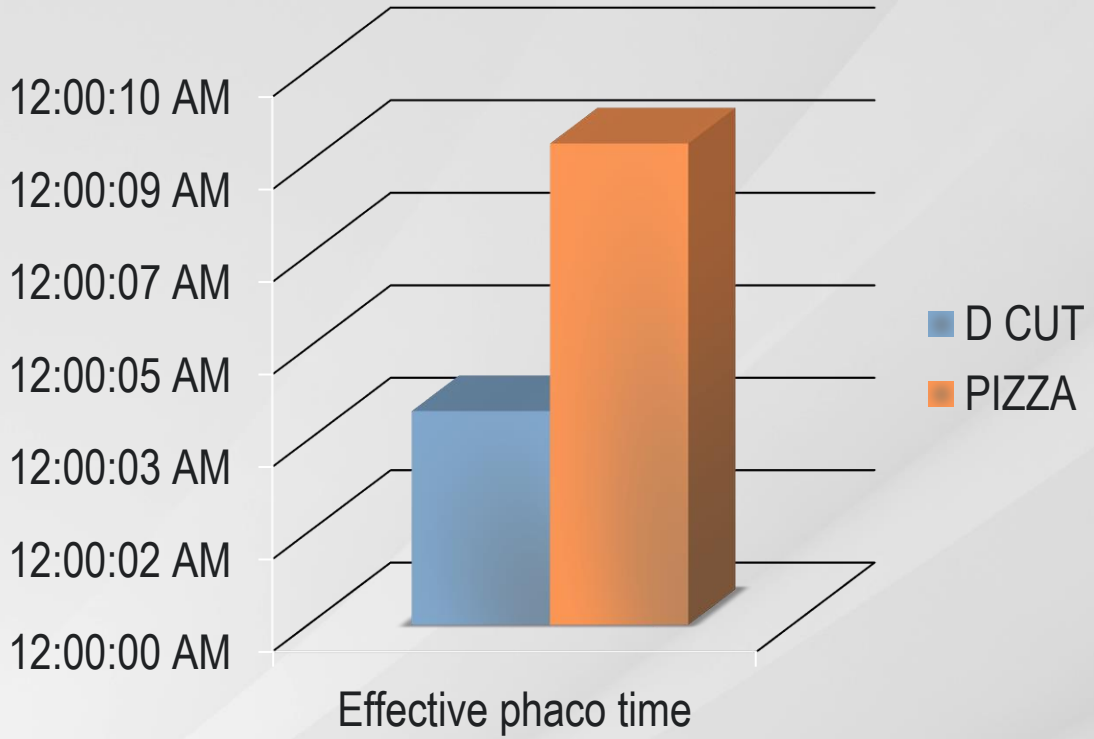
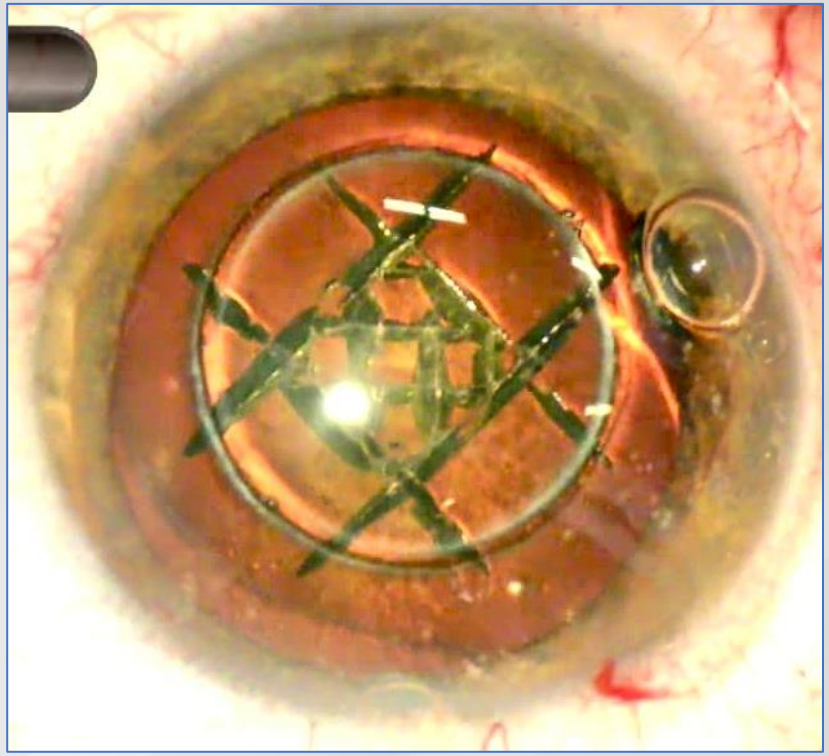




Conclusions

- Significantly less US time
- Convenient nucleus disassembly
- No “fragment-wedge”effect
- Low capsular bag stress
- Fewer manipulations
- Higher safety&efficacy



DiamondCut

Patent pending

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САМАРСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ УНИВЕРСИТЕТ

- Criticism/opinions
- Comments
- Advices
- Collaborative research query

Thank you for your attention!