

FLACS: MY INDICATIONS



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- Neodymium: glass 1053 nm (near- infrared)
- Ultrashort pulses (10⁻¹⁵ sec.)
- Light focussed at 3 μ spot size
- Accurate within 5 μ
- Eliminates collateral damage and heat



(Kullman and Pineda,2010 and Donaldson et al, 2013)

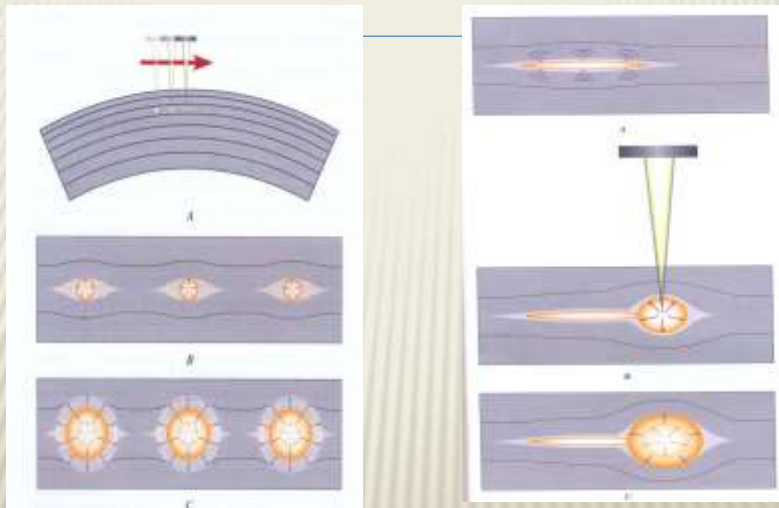
MECHANISM OF ACTION:

Photodisruption:

Conversion of laser energy to mechanical energy

- × Plasma formation
- × Free electrons
- × Cavitation bubbles, expand, coalesce
- × Separation of tissue

(Kullman and Pineda, 2010)



(FACTOROVICH , 2009)

- First FLACS was done by Nagy 2008, Semmelweis University, Budapest, Hungary.

(Nagy et al, 2014)

Available platforms:

1. Catalys (Optimedica), non applanating
2. Lensx (Alcon), contact applanating
3. Lensar (Lensar, Inc.), non applanating
4. Victus (Technolas), contact applanating

(Schultz et al, 2013)

ADVANTAGES:

1. Reduced EPT

(He et al, 2011, Reddy et al, 2013 and Daya et al, 2014)

2. -Reduced US energy,

(Abell et al, 2012 and Hengerer et al, 2012)

- Zero phaco power

(Abell et al, 2013)

3. Less AC flare (related to US power)

(Abell et al, 2013)

ZERO US



ADVANTAGES (CONT.):

4. Better **circular** and more **predictable size** capsulotomy, **reproducible**, hence better IOL centration
(premium IOLs)
(*Mastropasqua et al, 2014*)
5. Astigmatic keratotomy, at any site and at precise depth
(*Nagy et al, 2014*)
6. Faster visual recovery and stable refraction
(*but comparable in experienced hands*)
(*Hengerer et al, 2015*)



LIMITATIONS:

1. **Expensive**
2. Difficult centration and docking in patients with kyphosis or scoliosis
3. Two- step procedure with two machines, longer time

(Donaldson et al, 2013)

4. **Clear** cornea only
5. **Not efficient** in white cataract

(Hengerer et al, 2014 and Daya et al, 2014)

LIMITATIONS (CONT.):

6. Subluxated lens, (incomplete cut)
(Hengerer et al, 2014)
7. Narrow pupil, ≤ 5.5 mm
(3 step dilatation), concern of infection due to ingress of fluid
(Hengerer et al, 2013)
8. Manual corneal incisions, metal blades
(Miyake and Ibaraki, 2012, Dick et al, 2013 , Nagy et, 2014 and Hengerer et al, 2015)
- 9- Post LASIK and RK cataract

COMPLICATIONS:

1. More CME than phaco
(Dick et al, 2013, Vote et al, 2015)
- 1.2% FLACS vs 0.98 % Phaco
(Levitz et al, 2015)
- Same incidence (Lawless et al, 2015)
2. FL capsulotomy has irregular edge vs smooth manual CCC , failure ie. aborted , adhesion, tags, nicks.
(Al Harthi et al, 2014, Kohnen et al, 2014)

COMPLICATIONS (CONT.1):

3. Anterior capsule tears:

(FLACS 1.84 % VS Phaco 0.22%)

(Yeo et al, 2015)

4. Interrupted FL capsulotomy in silicone filled eyes (*oil droplets*)

(Grewal et al, 2014)

COMPLICATIONS (CONT.2):

5.PCR in posterior polar cataract

(Alder and Donaldson, 2014)

6.Full thickness astigmatic keratotomy and AC opening (*earlier versions without OCT*)

(Dick et al, 2014)

7. Suction break

(good interface and good anesthesia)

(Bali et al,2012 and Roberts et al, 2013)

COMPLICATIONS (CONT.3):

8. Higher risk of postoperative corneal staining and dry eye symptoms

(Yu et al, 2015)

9. Conjunctival hge (32%)

10. Endothelial damage

(earlier versions with no OCT)



COMPLICATIONS (CONT.4):

11. Post FL myosis (2.4 %)
Proceed rapidly with phaco
12. Capsular Block Syndrome
(*rock n rock technique and gentle hydrodissection*)
(Nagy et al, 2014)
13. Recurrent late MRSA after FLACS at astigmatic keratotomy site
(Chou et al, 2015)

VIDEO: ROCK N ROLL



VIDEO: FLACS



MY RELATIVE INDICATIONS:

When can FLACS add to me ???

1. Pseudoexfoliation
2. Shallow AC
3. Premium IOL
4. Hard cataract

THANK YOU

