

IS THERE A BETTER WAY?

- BUT I BEGAN TO NOTICE IN CERTAIN SURGICAL SITUATIONS, I WOULD STRUGGLE EITHER EXECUTING THE SURGERY SMOOTHLY OR RUNNING INTO COMPLICATIONS
- MAYBE THERE'S A BETTER WAY BUT...
 - RISK: HARM THE PATIENT (LEARNING CURVE)
 - REWARD: BETTER OUTCOMES, LESS COMPLICATIONS
- FACT: EVEN AFTER TRAINING, WE HAVE TO LEARN NEW PROCEDURES. E.G. MIGS, DMEK, DALK, YAMANÉ, ETC.



D. Brian Kley, M.D.

MINDSET

- AUTO PILOT
 - MAINTAINS THE STATUS QUO (IF IT AIN'T BROKE...)
 - CHANGE = MORE RISK
 - SEEKS STANDARDIZATION
 - SEEKS MORE AUTOMATION
 - GOAL: LESS STRESS
 - RISK: CONTINUE TO STRUGGLE WITH CERTAIN SITUATIONS (RISK FOR COMPLICATIONS)
 - RISK: NOT IMPROVING SKILLSET (STAGNANT)



D. Brian Kley, M.D.

MINDSET

- ENGAGED PILOT
 - RESISTS THE STATUS QUO
 - CHANGE = POTENTIAL IMPROVEMENT
 - SEEKS MORE EXPERIENCE
 - SEEKS MORE SKILLS
 - GOAL: IMPROVED SAFETY
 - GOAL: BETTER EQUIPPED TO HANDLE CHALLENGING SITUATIONS
 - RISK: MORE STRESS, LEARNING CURVE, POTENTIAL HARM



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DISCLAIMER

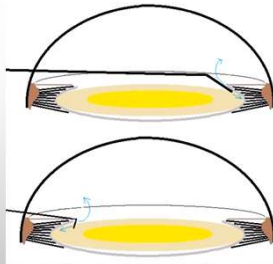
- THIS TALK IS LESS ABOUT WHAT I THINK YOU SHOULD DO AND MORE ABOUT SHARING MY JOURNEY AS A CATARACT SURGEON



D. Brian Kiny, M.D.

#1 HYDRODISSECTION

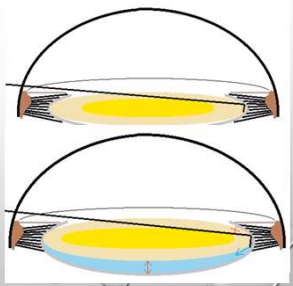
- PROBLEM: WITH TRADITIONAL HD TECHNIQUE, REGARDLESS OF CANNULA DESIGN, I WOULD FAIL TO GET A WAVE = ANTERIOR REFLUX
- FACT: FLUID FOLLOWS THE PATH OF LEAST RESISTANCE.
- THEORY: ANTERIOR REFLUX OCCURS BECAUSE THE CANNULA TIP IS TOO CLOSE TO THE RHESIS EDGE



D. Brian Kiny, M.D.

#1 CAPSULAR FORNIX HYDRODISSECTION

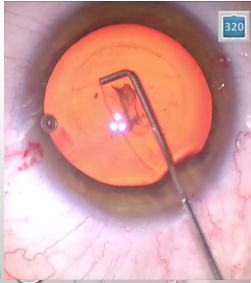
- THEORY: DEEPER PLACEMENT OF THE CANNULA INTO THE CAPSULAR FORNIX SHOULD SEAL THE TIP WITHIN THE LENS MATERIAL & ENCOURAGE POSTERIOR PROPAGATION OF THE WAVE.



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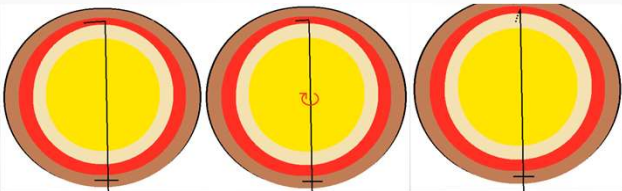
#1 CAPSULAR FORNIX HYDRODISSECTION

- I DEVELOPED THE KIM CAPSULAR FORNIX HYDRODISSECTION CANNULA (K7-5470, KATENA)
- RIGHT-ANGLED & 2.5MM LONG WHICH ENABLES DEEPER PLACEMENT INTO THE CAPSULE FORNIX AND AWAY FROM THE RHEXIS EDGE
- BLUNT AND ROUNDED TIP FOR ENHANCED SAFETY
- WITH THIS TECHNIQUE, I **NEVER** STRUGGLE TO ACHIEVE A HYDRODISSECTION WAVE ANYMORE



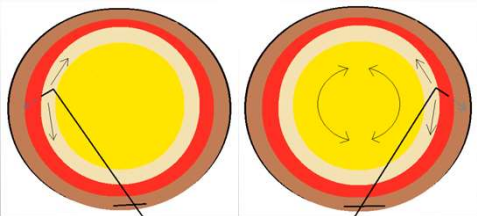
D. Brian Kim, M.D.

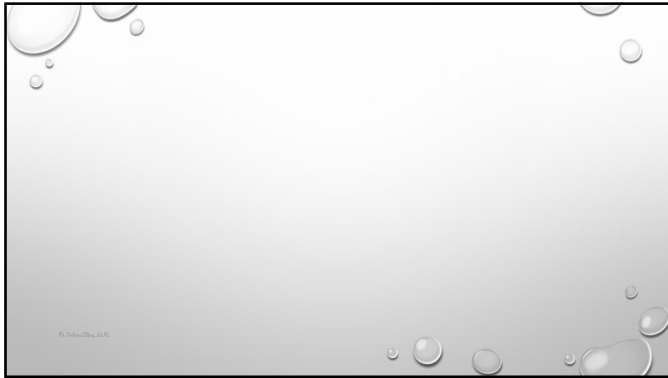
#1 CAPSULAR FORNIX HYDRODISSECTION



D. Brian Kim, M.D.

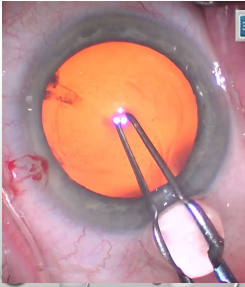
#1 CAPSULAR FORNIX HYDRODISSECTION





#2 CAPSULORHEXIS

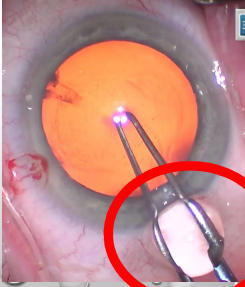
- I WAS TRAINED WITH UTRATA-STYLE FORCEPS
- PROBLEM:
 - I DIDN'T ALWAYS ACHIEVE A CONSISTENTLY WELL CENTERED AND SIZED RHEXIS
- REASON:
 - THE HINGE IS BEHIND THE HAND
 - A THICKER VERTICAL PROFILE



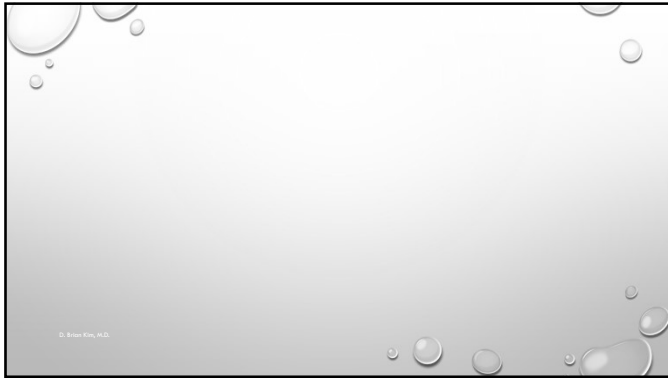
D. Brian Kiser, M.D.

#2 CAPSULORHEXIS

- THE HINGE IS BEHIND THE HAND
 - REQUIRES A WIDER INCISION
 - MORE RESTRICTED MANEUVERING WITHIN THE INCISION
- A THICKER VERTICAL PROFILE:
 - MORE GAPING OF THE WOUND
 - MORE POTENTIAL FOR OVD EGRESS
 - LESS CONTROL OF THE RHEXIS
 - MORE POTENTIAL FOR RHEXIS RUN OUT.


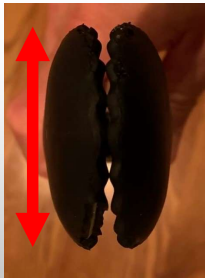


D. Brian Kiser, M.D.



#2 CAPSULORHEXIS

- UTRATA-STYLE FORCEPS (KITCHEN TONGS)
 - HINGE IS BEHIND THE HAND
 - THICK VERTICAL PROFILE
 - MORE GAPING OF THE WOUND
 - MORE POTENTIAL FOR OVD EGRESS

D. Brian Kiny, M.D.

#2 HALDIPURKAR-BAKEWELL FORCEPS

- HALDIPURKAR-BAKEWELL (EPSILON) FORCEPS
 - HINGE IS IN FRONT OF THE HAND
 - DESIGNED TO PERFORM CAPSULORHEXIS THROUGH A 1.2 MM SIDE-PORT INCISION

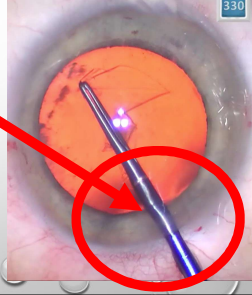




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#2 HALDIPURKAR-BAKEWELL FORCEPS

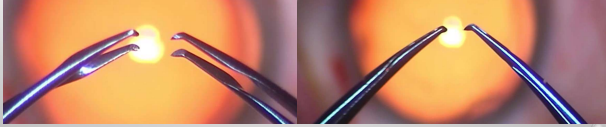
- HALDIPURKAR-BAKEWELL (EPSILON) FORCEPS
- THE PART OF THE FORCEPS WITHIN THE INCISION CLOSES LIKE THE BLADES OF A SCISSOR TO CREATE A THINNER VERTICAL PROFILE
- LESS LIKELY TO OAR-LOCK
- LESS WOUND GAPE
- LESS OVD EGRESS
- BETTER RHEXIS CONTROL



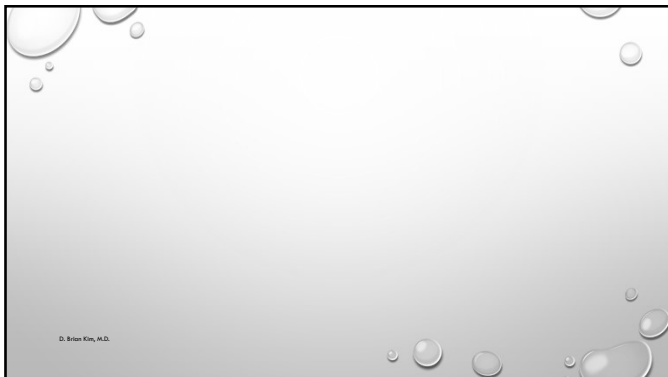
D. Brian Kiny, M.D.

#2 KIM-HALDIPURKAR (**ERF-31S, EPSILON**) FORCEPS

- HALDIPURKAR-BAKEWELL (EPSILON) FORCEPS
- PROBLEM: THEY HAVE A BLUNT TIP AND MORE DIFFICULT TO PUNCTURE THE CAPSULE
- EPSILON MODIFIED THE FORCEPS WITH SHARP TIPS. 2-IN-1 CYSTITOME & FORCEPS



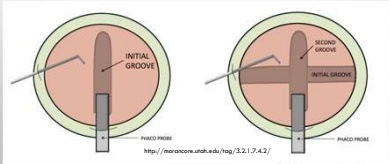
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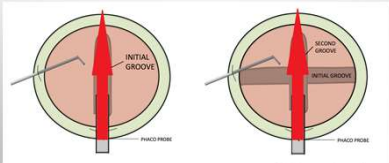
LENS DISASSEMBLY

- FIRST, IF YOUR TECHNIQUE IS WORKING WELL, THERE IS NO NEED TO CHANGE.
- PROBLEM: DESPITE GOOD HYDRODISSECTION SOMETIMES THE LENS DIDN'T SPIN WELL.



LENS DISASSEMBLY

- FIRST, IF YOUR TECHNIQUE IS WORKING WELL, THERE IS NO NEED TO CHANGE.
- PROBLEM: DESPITE GOOD HYDRODISSECTION SOMETIMES THE LENS DIDN'T SPIN WELL.
- DOGMA: THE LENS IS FRACTURED ALONG THE AXIS ALIGNED WITH THE MAIN INCISION.
- QUESTION: IS THERE WAY TO FRACTURE THE LENS IN A DIFFERENT PLANE WITHOUT SPINNING IT?



#3 CROSS CHOP

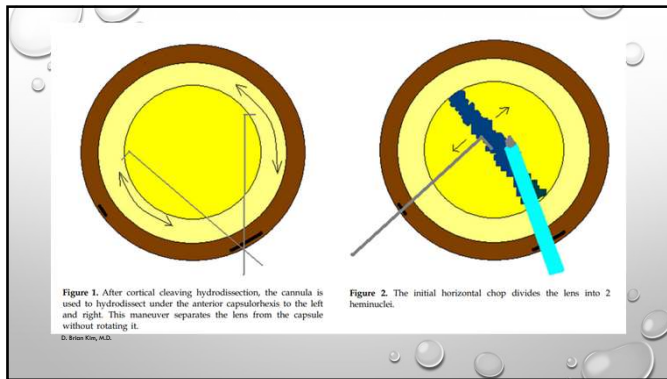
- IN 2009, I DEVELOPED CROSS CHOP WHICH CAN FRACTURE THE LENS ALONG A DIFFERENT AXIS OTHER THAN THE MAIN INCISION.
- USEFUL IN WEAK ZONULES BECAUSE YOU CAN FRACTURE THE LENS WITHOUT NEEDING TO SPIN IT

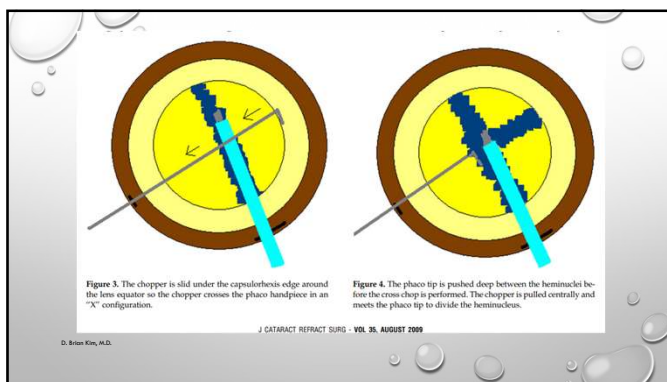
TECHNIQUE

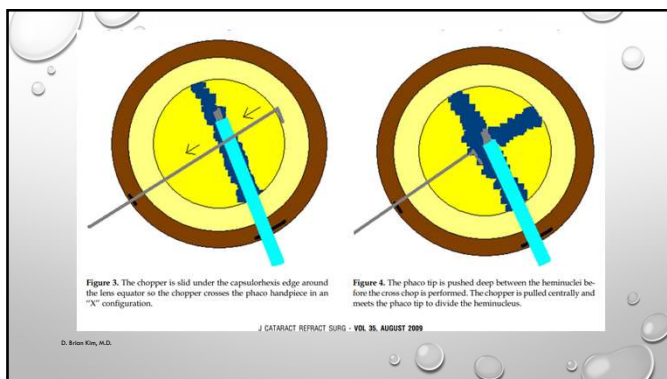
Cross chop: Modified rotationless chop technique for weak zonules

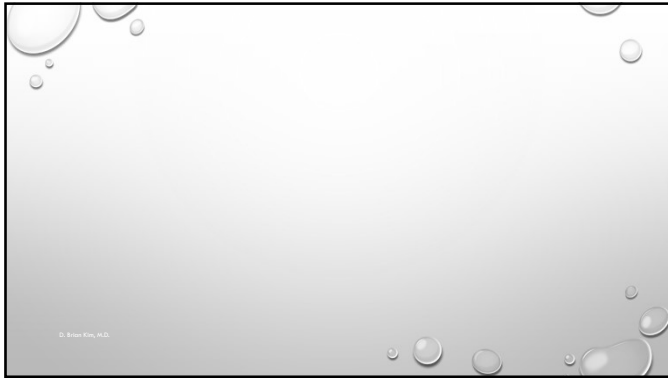
Docho Brian Kim, MD

Cross chop is a modified horizontal chop technique that enables safe and efficient lens disassembly without forcing the lens within the capsular bag.
J Cataract Refract Surg 2009; 35:1335-1337 © 2009 ASCRS and ESCRS
Online Video



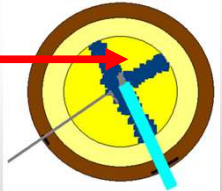






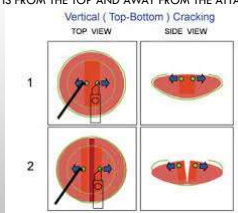
#3 CROSS CHOP

- I SOON REALIZED THAT CROSS CHOP ALLOWS QUICK AND EASY CREATION OF THE FIRST QUADRANT TO PULL OUT OF THE BAG
- SO I USE CROSS-CHOP ROUTINELY FOR ALL MY CASES.
- GAME CHANGER:
 - I NEVER STRUGGLE TO DISASSEMBLE THE LENS EVEN IF THE LENS DOESN'T SPIN
 - IT GIVES ME THE VERSATILITY NOT TO SPIN THE LENS INTENTIONALLY IN CASES OF WEAK ZONULES.



CRACKING

- DOGMA:
 - SCULPT A DEEP TROUGH (RELIES ON A RED REFLEX). RISKY TO APPLY U/S NEAR THE PC
 - THE CRACKING FORCE IS FROM THE TOP AND AWAY FROM THE ATTACHMENT POINT



<http://www.oxipet.org/images/uploads/07%20Oxipet%2006.pdf>

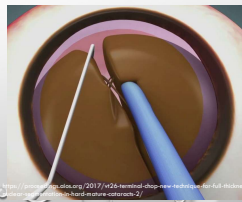
CRACKING THE HYPERMATURE CATARACT

- PROBLEM: HYPERMATURE CATARACT
 - PACMAN EFFECT. THE DEEP ADHESION DOES NOT SEPARATE. DANGEROUS TO APPLY U/S NEAR THE PC
 - AKA: POSTERIOR PLATE



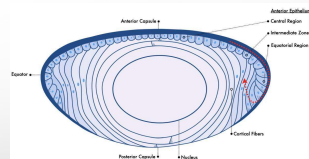
#4 TERMINAL CHOP FOR HYPERMATURE CATARACT

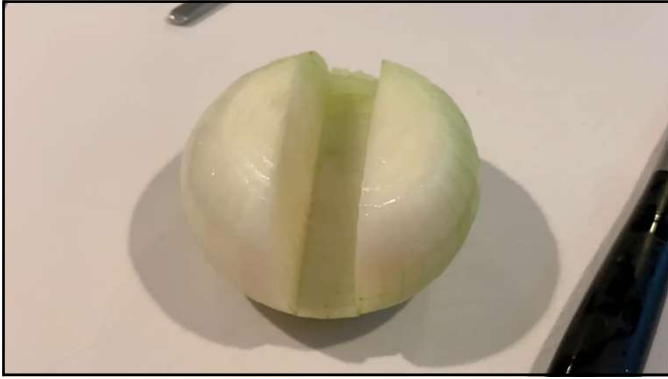
- TERMINAL CHOP: DR. RAJENDRA PRASAD PRESENTED THIS AT THE 2016 ASCRS FILM FESTIVAL.
- TECHNIQUE: AFTER SCULPTING A CENTRAL TROUGH SIMILAR TO STOP-AND-CHOP BUT NOT AS DEEP, THE CHOPPER IS PLACED AT THE EQUATORIAL SIDE (TERMINAL) AND THE POSTERIOR PLATE IS FRACTURED DIRECTLY.
- WHY DOES THIS WORK MORE EFFICIENTLY?



#4 TERMINAL CHOP: WHY IT WORKS

- THE EXTERIOR LENS FIBERS ARE COMPOSED OF CONCENTRIC LAMELLAR SHEETS WHICH WILL NOT SEPARATE WITH CRACKING FORCES.
- WHY? CONSIDER AN ONION...





#4 TERMINAL CHOP

- PROBLEM: IT'S BOTH DANGEROUS AND LESS EFFECTIVE TO SCULPT DEEPLY IN HYPERMATURE LENSES DUE TO THE DENSITY, CLOSE PROXIMITY TO THE PC, AND ZONULAR LAXITY
- BY FRACTURING FROM THE EQUATORIAL SIDE, THIS CUTS THE POSTERIOR PLATE DIRECTLY
- AND SINCE THE LENS IS DENSE, THE FRACTURE POINT CAN BE PROPAGATED ALONG THE ENTIRE LENGTH OF THE LENS TO SEPARATE IT COMPLETELY
- THIS ESSENTIALLY OVERCOMES THE POSTERIOR PLATE EFFECT.

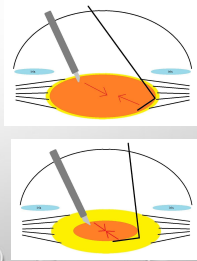
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#5 DOUBLE-CHOP

• DOUBLE-CHOP TECHNIQUE:

- PLACE THE CHOPPER AROUND THE LENS EQUATOR
- ROTATE THE PHACO TIP VERTICALLY SUBINCISIONALLY
- PULL THE INSTRUMENTS TOGETHER TO CRUSH THE LENS IN HALF.
- NO U/S OR VACUUM IS USED
- CRUSHING FORCES ARE DIRECTED TOWARD THE CENTER
- VERY CONTROLLED AND SAFE MANEUVERS WITHIN THE CAPSULAR BAG SPACE.
- ZONULE FRIENDLY
- ANY LENS DENSITY: SOFT, MEDIUM, HARD



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THE RIGHT CHOPPER IS REQUIRED

• KIM DOUBLE CHOPPER

- K3-2335 (KATENA)
- RIGHT-ANGLE TIP
- 2.5MM LONG TIP
- ROUNDED TIP



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#5 DOUBLE-CHOP

• PROBLEM

- DESPITE EXECUTING FLAWLESS CATARACT SURGERY (HORIZONTAL CHOP), I WOULD OCCASIONALLY SEE PATIENTS WITH SIGNIFICANT CORNEAL EDEMA POD1
- I WOULD RACK MY BRAIN AND REVIEW MY CASES TO SEE WHY THERE WAS SO MUCH EDEMA
- AND FOR SOME OF THESE CASES, THE CDE WASN'T ALWAYS HIGH

• BENEFIT

- REDUCED CDE
- CLEARER CORNEAS POD1
- MORE "WOW" EXPERIENCE FOR THE PATIENT
- PRACTICE BUILDER



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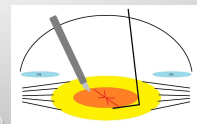
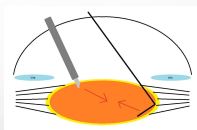


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MECHANICAL FRACTURING PRINCIPLES

- NOT JUST DOUBLE CHOP BUT ALSO CROSS CHOP
- MECHANICAL FRACTURING PRINCIPLES: CRUSHING THE LENS INTO SMALL PIECES BEFORE EMULSIFYING
- USING THE INSTRUMENTS LIKE CHOP STICKS TO CRUSH THE LENS PIECES
 - LOWER CDE
 - MORE CONTROL
 - DON'T NEED SPIN THE LENS
 - DON'T NEED TO RELY ON VACUUM TO HOLD PIECES
 - CRUSH THE LENS FROM A VARIETY OF ANGLES
 - HOOK PIECES OUT OF THE BAG WITH THE CHOPPER




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SO WHAT?

- REDUCED COMPLICATIONS
 - REDUCED CDE
 - CORNEAL WOUND BURN: RARE WITH MECHANICAL FRACTURING
 - LOWER PC RUPTURE RATE: SELECTIVE AND SPARING U/S USE
- MORE VERSATILE
 - DON'T STRUGGLE TO DISASSEMBLE THE LENS
 - MOST CATARACT SCENARIOS HAVE BECOME ROUTINE, E.G. SMALL PUPILS, SOFT & DENSE LENSES, WEAK ZONULES, FLOPPY IRIS, DEEP OR SHALLOW CHAMBERS, POOR VISIBILITY, ETC.
- MORE CONSISTENT CLEARER CORNEAS POD1
 - MORE "WOW" EXPERIENCE FOR THE PATIENT
 - PRACTICE BUILDER

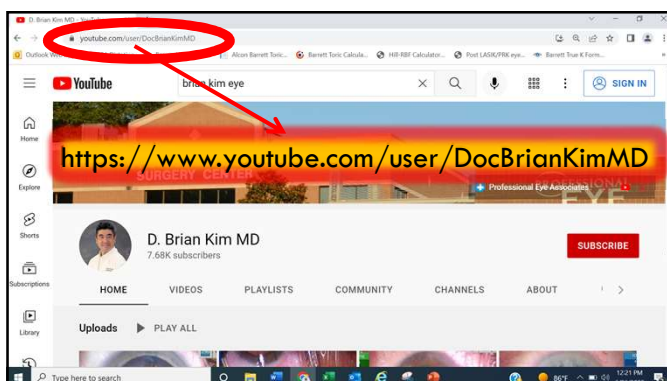
D. Brian Kim, M.D.



IN SUMMARY

- SURGERY FOR ME HAS BEEN A JOURNEY OF CONTINUAL LEARNING AND IMPROVING
- THIS REQUIRES THOUGHTFUL SCRUTINY OF CURRENT TECHNIQUES
- NO ONE WANTS TO BE ON THE LEARNING CURVE, BUT IN MY EXPERIENCE THE REWARD IS WORTH THE RISK BECAUSE THE EXTRA SKILLS LEARNED HAS MADE ME A MORE VERSATILE SURGEON
- THE SINGULAR DRIVING FORCE IS TO ALLOW ME TO PROVIDE THE VERY BEST PATIENT CARE

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