

# New Instruments for Cataract Surgery

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This installment of “Inside Eyetube.net” features videos that introduce new surgical devices to enhance cataract surgery. Three surgical devices featured on Eyetube.net that stand out are a hydrodissection cannula, a pupillary dilation device for small pupils, and a second-hand instrument to improve surgical technique during laser cataract surgery. Each of the videos provides clear, concise directions for how to use the instruments.

## MACKOOL HYDRODISSECTION CANNULA

The Mackool Hydrodissection Cannula features a 23-gauge, flattened design (Sterimedix Ltd.). Slight depression of the syringe’s plunger creates a wide fluid wave, which promotes efficient hydrodissection with reduced hydraulic pressure and thus increases safety. Localized areas of greatly elevated intracapsular pressure are thus avoided, which otherwise could increase the risk of posterior capsular rupture.

After completing the capsulorhexis, Richard Mackool, MD, inserts the cannula beneath the anterior capsule, then slightly elevates the instrument against the capsule (Figure 1). Next, he gently applies pressure to the plunger of the syringe to which the cannula is attached. As the video shows, an immediate, broad fluid wave becomes visible beneath the nucleus. If the nucleus moves forward, it is gently depressed with the cannula. Dr. Mackool then performs the identical procedure at a location directly opposite the site of the first injection. He performs viscodissection by injecting Viscoat (Alcon Laboratories, Inc.) beneath the anterior capsule for 180° opposite the phaco incision.

## OASIS IRIS EXPANDER

In his video, D. Michael Colvard, MD, demonstrates how to use the Oasis Iris Expander (Oasis Medical, Inc.). The molded, single-piece polypropylene device expands to a 7-mm rectangular shape after insertion and maintains access and visibility throughout the cataract surgical procedure. The disposable device is indicated in cases in which miosis and/or



Figure 1. Dr. Mackool inserts the 23-gauge Mackool Hydrodissection Cannula beneath the anterior capsule.



Figure 2. Dr. Colvard uses a Sinsky hook to place the four corner pockets of the Oasis Iris Expander.

intraoperative floppy iris syndrome are factors. The major difference between the Oasis Iris Expander and other expanding devices is that the former has pockets at each corner that support the iris at two contact points.

Dr. Colvard inserts the expander into the anterior chamber with an injector. Next, he uses a Sinsky hook or similarly styled instrument to engage the iris with the four corner pockets (Figure 2). After cataract surgery, the iris expander can easily be removed with a Lester hook.





Figure 3. Dr. Cornell uses the cortex club to create a cleavage plane between the anterior capsule and the anterior cortex after laser cataract surgery.

### CORTEX CLUB FOR LASER CATARACT SURGERY

After a surgeon uses a femtosecond laser to make the capsulotomy and fragment the lens, the anterior cortex may be so well cleaved that purchasing cortex with the I/A tip is challenging later in the case. To facilitate this step of the surgery, Peter J. Cornell, MD, demonstrates the use of a new cortex club by Epsilon USA. He uses the instrument to scrub the cortex after the laser portion of the procedure and to create a cleavage plane between the anterior capsule and the anterior cortex (Figure 3). The



cleavage plane facilitates hydrodissection and the removal of cortical material at the end of the case with I/A by creating leaflets in the anterior cortex that otherwise would have been sharply cut. Dr. Cornell passes the cortex club through the eye three times, twice through the primary incision and once through the secondary incision, to get a 360° cleavage plane. This step, Dr. Cornell says, makes the rest of the case easier and faster.

### CONCLUSION

These three videos highlight new technologies that enhance cataract surgery. All three devices are worth surgeons' review on Eyetube.net and incorporation into their current techniques for the cataract procedure. ■

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