



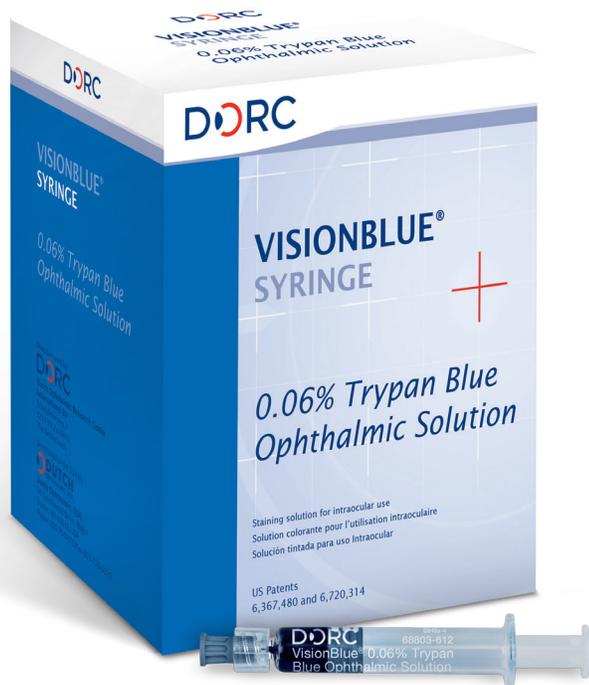
# VisionBlue®

## Reviewing Two Decades of Better Capsulorhexis Outcomes in a Wide Range of Complicated Cases

### Executive Summary

Achieving a regular, intact continuous curvilinear capsulorhexis (CCC) is a critical step in phacoemulsification cataract surgery. It reduces the risk of radial tears in the crystalline lens capsule and helps ensure a stable intraocular lens platform that resists lens dislocation and tilt for decades. <sup>(1, 2, 3), \*</sup>

Yet in eyes with a compromised or missing red reflex, visualizing the anterior capsule sufficiently to guide a continuous tear can be difficult or nearly impossible. Staining the anterior capsule with trypan blue has been shown to be a safe and effective method for improving capsulorhexis outcomes in many challenging cataract cases <sup>(10, 11, 12, 13)</sup>. These include: →



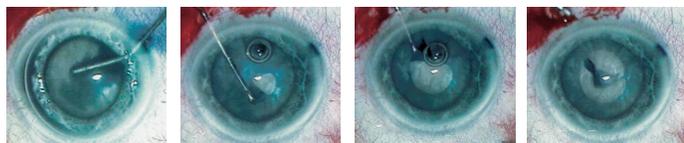
### Mature and white cataracts

The first reported use of trypan blue as an anterior capsule stain was in mature cataracts two decades ago by Melles, who reported successfully using the technique as an aid in capsulorhexis in 30 patients<sup>(10)</sup>. Many subsequent reports confirm high capsulorhexis success rates with trypan blue in white cataracts including cases with milky discharge<sup>(22, 23, 24, 25, 26, 35)</sup>.

### Pediatric cataracts

Trypan blue has been shown in randomized clinical trials to increase success rates for anterior capsulorhexis in pediatric patients<sup>(27, 29)</sup> and bench studies<sup>(28)</sup>. Staining improves visualization and may also reduce the elasticity of the pediatric capsule.

\* (1-37) references available in the full version



### Optimized visualization for cortical cataracts

Trypan blue has been shown in bench studies and clinically to help visualize cortical tissue attached to the capsular bag in cases of cortical cataract and for cortical clean-up, particularly when corneal haze is present<sup>(11, 31, 36)</sup>.

### Traumatic cataracts

Trypan blue helps visualize the anterior capsule for capsulorhexis and helps reveal existing tears or other defects in eyes with traumatic cataracts<sup>(30)</sup>.

### Corneal opacities

Trypan blue has been shown to aid visualization of the anterior capsule during capsulorhexis and the edge of the capsule to guide phacoemulsification in eyes with corneal opacities<sup>(31, 32)</sup>.

### Recovering "lost" capsulorhexis

Trypan blue has been shown in a prospective interventional trial to aid in visualizing and recovering dropped capsule tears in routine surgery<sup>(33)</sup>.

### Small pupil cataract surgery

Trypan blue has been reported to aid in visualizing the anterior capsule in cases where small irises or intraoperative floppy iris syndrome partially obscure the view<sup>(4, 33, 37)</sup>.

### Training novice surgeons

Trypan blue staining has been shown in a randomized clinical trial to improve capsulorhexis completion among ophthalmic surgeons in training<sup>(34)</sup> and demonstrated as a wet lab training aid<sup>(11)</sup>.

Reduced risk of radial tears – Trypan blue has been found in several randomized studies to aid in completion of a continuous curvilinear capsulorhexis in cases of obscured visibility, which has been shown to reduce the risk of radial capsule tears<sup>(27, 29, 34)</sup>.

As the only agent approved by the FDA to aid ophthalmic surgery by staining the anterior capsule<sup>(12)</sup>, trypan blue 0.06% (VisionBlue®, Dutch Ophthalmic, USA, Kingston, NH) is a valuable addition to the cataract surgeon's armamentarium.

### Important Safety Information

VisionBlue® is indicated for use as an aid in ophthalmic surgery by staining the anterior capsule of the lens. Following the procedure, excess dye should be removed by thorough irrigation of the anterior chamber. Adverse reactions reported following use of trypan blue include discoloration of high water content hydrogen intraocular lenses and inadvertent staining of the posterior lens capsule and vitreous face. Staining of the posterior lens capsule or staining of the vitreous face is generally self limited, lasting up to one week.