

PIGGYBACK TO THE FUTURE WITH MINIMALLY INVASIVE SULCUS OPERATIONS (MISO)

"You have to keep your vision clear, cause only a coward lives in fear." –Nas



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A paradigm shift is underway. With the EVO ICL and soon the VIVA presbyopia correcting ICL, STAAR has demonstrated

that the market is ripe for primary sulcus surgeries. In addition to phakic implantation, the Viva and Rayner's trifocal Sulfoflex enable premium refractive options for phakic individuals, too. This is an exciting new market to explore, namely converting standard pseudophakic surgeries from yesteryear into modern day presbyopia correcting refractive outcomes. Alas, before Minimally Invasive Sulcus Operations (MISO) can be widely adopted, we must get over our inherent fear of the ciliary sulcus.

"If I have seen further, it is by standing on the shoulders of giants." – Isaac Newton

Non-glaucoma trained surgeons sniffed around minimally invasive glaucoma surgery for some time before diving in, and MISO may follow a similar trajectory. Currently, the majority of ICL surgeons are refractive surgeons, many of whom have had fellowships in cornea and refractive surgery, similar to the market landscape at the advent of MIGS. I recall Dr. Harry Quigley substituted the I in MIGS for E, calling it Minimally Effective Glaucoma Surgery; MIGS was first adopted by the glaucoma docs. Eventually, the rest of the world followed suit.

Not a single MIGS surgery can meet the sustained IOP lowering from a Quigley bleb. Nevertheless, most surgeons are capable of safely performing canaloplasty or placing a stent in the angle far more effectively than we could perform a tube or trab. The comprehensive ophthalmologist paid attention; now, MIGS is routinely done. In addition, these earlier efforts reduce the drop burden, improve ocular surface disease, and stave off a filtering surgery.

"We can not solve our problems with the same level of thinking that created them."

– Albert Einstein

MISO is primed similarly to explode in adoption by community ophthalmologists once they think of the sulcus space as a safe space. Technology will explode, too, as UBM and various ultrasound approaches are already being researched to better understand changes to the sulcus space that occurs with ICL implantation. The sulcus is a black box to most, approached like 'floor is lava.' Through ultrasonic or direct endoscopic visualization, we must understand how lens design and repeated depot drug delivery impacts the sulcus.

"A hero is no braver than an ordinary man, but he is brave five minutes longer"

– Ralph Waldo Emerson

We must get beyond our fear of sulcus intervention. ICLs are demonstrating that MISO can be safe and highly effective in phakic patients; in pseudophakic patients, the ciliary sulcus is an obvious

delivery site for secondary lenses and depot drug formulations. Corneal endothelial cells are the Achilles heel of anterior segment surgery, which is why anterior segment depot formulations like Durysta are currently indicated for single administration. Alternatively depot formulations in the sulcus space may be safe for serial administration.

It is useless to assess the safety of an intervention when it's used only after complications. Even in Dr. Devgan's expert sulcus IOL videos, my blood pressure goes up when I see the Argentinian Flag radialization video and expertly placed sulcus lens. After my first ICL surgeries, I was worried something went wrong after entering "no-man's land." My experience was like all other surgeons starting MISO; patients thrive with appropriate sulcus interventions.

"I guess you guys aren't ready for that yet. But your kids are gonna love it."

– Marty McFly

The foldable-IOL took ten years to become widely adopted after being introduced. Ophthalmologists are conservative in providing safe and effective care. Whatever we do must first and foremost be safe. Undoubtedly, the EVO ICL has proven that MISO is safe. Much like MIGS, a certain trust fall must occur for the reluctant MISO surgeon. If current market trends are any indication, both you and your patients will be proud you embarked on a journey Piggyback to the Future with MISO.