

## Adjustable Sutures in Strabismus Surgery

Adjustable sutures in strabismus surgery were described as early as in 1907 but it was modified and popularized by Jampolsky in 1975. The original techniques involved utilizing a 'bow-tie' but more commonly used now is the 'sliding noose'. A modification of the sliding noose is known as 'short tag noose'. The advantage of the short tag noose is that all the sutures can be buried under the conjunctiva allowing for suture adjustment for as late as 14 days.

### Efficacy

No prospective large studies have been done to date comparing adjustable to non-adjustable suture but retrospective studies have shown a trend of lower reoperation and higher target angle achievement in patients that underwent adjustable suture. The success rate with adjustable suture is 10-30% higher than non-adjustable suture based on various study reviewed.

### Indications

It can be employed in every strabismus case especially adult strabismus but is of more value in patients where the conventional normograms may not be accurate. Some examples are

- Restrictive strabismus – e.g. thyroid eye disease
- Incomitant strabismus – e.g. paralytic strabismus
- Long standing complex strabismus
- Previous surgery or trauma

### Advantages

- Reduce the rate of reoperation by providing a 'second chance' to refine alignment
- Useful in adults with diplopia to refine the surgery to eliminate diplopia

### Disadvantages

- Longer surgical time
- More suture material left in the eye

### Pediatric Strabismus Surgery

In children adjustable suture is less often used in view of the difficulty with adjustment. With the short tag noose technique if no adjustment is required no further anesthesia is required but if adjustment is required, it can be done under conscious sedation also. The adjustable suture strabismus surgery is employed in children with reoperation, where the original measurements may be inaccurate or

in patients where the postoperative outcome is expected to be variable.

At University of Louisville, we perform adjustable suture technique using the short tag noose technique for all adults and some children. This technique allows for adjustment up to 14 days (ideal 7 days). As all the sutures are buried underneath the conjunctiva if no adjustment is required no additional intervention is required. The adjustment is done in the postoperative care unit (PACU) and in the office 2-3 days after surgery. Most patients are comfortable with the adjustment utilizing only topical anesthesia as the procedure takes only 5-10 minutes. Adjustable suture strabismus surgery is a useful technique to refine the postoperative outcome and minimize reoperation rate.

*By: Aparna Ramasubramanian, MD*

*To schedule an appointment at the Kentucky Lions Eye Center, please call 502-588-0588.*

### Providing the Highest Level of Care for your Patients

Eye Specialists of Louisville/University of Louisville Ophthalmology has been a center of excellence for clinical eye care, treating a broad range of eye disorders from pediatric eye diseases to age-related macular degeneration. As the largest multi-specialty team of ophthalmologists in Louisville, we are at the forefront of leading-edge treatments and research in subspecialties including Retina, Uveitis, Glaucoma, Oculoplastics, Pediatrics, Cornea, Neuro-Ophthalmology and Low Vision.

## Office Locations:

**Kentucky Lions Eye Center**  
University of Louisville  
301 E. Muhammad Ali Blvd.  
Louisville, KY 40202  
Referring Physician Line  
(502) 588-0588

**The Springs Medical Center**  
6400 Dutchmans Parkway, Suite 310  
Louisville, KY 40205  
Referring Physician Line  
(502) 588-0588

**Old Brownsboro Crossing  
Medical Plaza II  
(Pediatric Only)**  
9880 Angies Way, Suite 330  
Louisville, KY 40241  
Referring Physician Line  
(502) 588-0588

## Meet the Doctors



**HOSSIEN ASGHARI, MD**

*Cornea & Refractive  
Surgery*



**CHRISTOPHER  
COMPTON, MD**

*Oculofacial Plastic  
& Orbital Surgery*



**THONG PHAM, MD**

*Neuro-Ophthalmology*



**DOUGLAS SIGFERD,  
MD**

*Retina & Vitreous*



**CHARLES BARR, MD**

*Retina & Vitreous*



**HENRY KAPLAN,  
MD, FACS**

*Retina, Vitreous  
and Uveitis*



**APARNA  
RAMASUBRAMANIAN,  
MD**

*Pediatrics / Ocular  
Oncology*



**ANDREA SMITH, OD**

*Low Vision / Optometry*



**RAHUL BHOLA, MD**

*Pediatric Ophthalmology  
& Adult Strabismus*



**JUDITH MOHAY, MD**

*Glaucoma/Cataract*



**HARPAL SANDHU, MD**

*Retina & Vitreous*



**JOERN SOLTAU, MD**

*Glaucoma/Cataract*



**JEREMY CLARK, MD**

*Oculofacial Plastic  
& Orbital Surgery*



**WILLIAM NUNERY,  
MD, FACS**

*Oculofacial Plastic  
& Orbital Surgery*



**PATRICK SCOTT,  
OD, PhD**

*Optometry*



**HARRY  
STEPHENSON, MD**

*Comprehensive  
Ophthalmology*