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.

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

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