



STRABISMUS SURGERY IN CHILDREN

Surgery for strabismus (eye misalignment) in children is performed on an outpatient basis using general anesthesia. The surgery consists of *tightening* or *loosening* the appropriate eye muscles to restore normal eye alignment. The goal of surgery is to straighten the eyes. This promotes normal visual development, in addition to improving the child's appearance. Eye muscle surgery does not affect the vision of either eye.

PREOPERATIVE EVALUATION

Each eye has six eye muscles which control eye movement. Many of the muscles control more than one aspect of eye movement (i.e., up and down, side to side, torsional). The amount of eye misalignment in each direction is measured in the office using prisms, and based on these measurements a surgical plan is devised. In general, more than one evaluation is necessary to double check the amount and direction of eye misalignment before surgery. The best result is often achieved by balancing the surgery between the two eyes, even if only one eye seems to be misaligned.

HOW IS EYE MUSCLE SURGERY PERFORMED?

Eye muscle surgery is performed while the child is asleep so that there is no discomfort whatsoever during the operation. It is not necessary to make an incision in the skin or pop the eye out of its socket in order to reach the eye muscles. The eye muscles are covered by a thin layer of tissue called the conjunctiva. (When you see the white of the eye, you're seeing it through the conjunctiva.) An incision is made in the conjunctiva (often under the eyelid) and this layer of tissue is moved out of the way to expose the eye muscle. The eye muscle is secured with suture, detached from the eye, and sewn back onto the eye in the proper location for the amount of misalignment.

If the eye muscle needs to be weakened, the muscle is *recessed* or moved backwards which decreases its pull --- like loosening the spring on a screen door. If a muscle is to be strengthened it is *resected*, which involves tightening the muscle by shortening it and moving it forward, increasing its pull.

After the muscles have been moved, the conjunctiva is either sewn closed or allowed to seal by itself. Once the healing is complete, there is seldom a visible scar and it is usually difficult for anyone but an eye doctor to tell that surgery was ever performed.

WHAT SHOULD WE EXPECT?

Eye muscle surgery is performed at a hospital or outpatient surgical center. You will need to follow to the letter their instructions regarding the latest time you can give your child anything to eat or drink before surgery. On the morning of surgery your child will be checked into the surgical facility about one hour before the scheduled start time. You will have an opportunity to meet the anesthesiologist who will be present at the operation. It is extremely important to inform the anesthesiologist about any family history of serious anesthesia complications or previous problems with anesthesia your child has experienced.

Parents are allowed to stay with their child in the preoperative holding area. However, virtually all hospitals and outpatient surgery centers have a policy that parents cannot accompany their child to the operating room itself. As a rule, the anesthesiologist and nursing personnel are keenly aware of the anxiety involved for the child when separated from his parents before being put to sleep. Everything possible is done to make this experience as non-threatening as possible. (Some parents have found the book "Curious George Goes to the Hospital" helpful in preparing for surgery.)

Surgery usually requires thirty to ninety minutes of operating room time. Your child is then taken to the recovery room. Once he is awake (typically 20 minutes or so), he is reunited with you. It is not unusual for children to experience some nausea and vomiting after surgery. Pain medications are often given at the end of surgery and children's Tylenol or Motrin (generic is fine) may be used thereafter. The pain is not as severe as one might expect, and it is unusual for children to require narcotics or other strong pain relievers.

After an hour or two, your child is discharged from the hospital. The eyes will not be patched and eye ointment is generally prescribed to be used for a week. The eye is often quite red and there may be some blood-tinged tears in the first 24 hours. The child may also be sensitive to bright lights during the first few days. It is not harmful for your child to be outside in bright sunshine after surgery, but most children are more comfortable indoors than outdoors for the first day or so. You do not need to darken the house. Fluids may be given as tolerated. If no significant nausea or vomiting is occurring, a light meal may be given the evening of surgery. It is best to stay away from heavy or spicy foods the day of surgery, as vomiting may occur.

POSTOPERATIVE RECOVERY

Children generally recover quite quickly after eye muscle surgery. Within two to three days after surgery, they have returned to their normal energy and activity level. The eyes will feel sore and scratchy for a couple of days, and the whites of the eyes will be red—sometimes dramatically so—for a couple of weeks. Rubbing of the eyes after surgery is unlikely to cause serious problems, though it is to be discouraged. Swimming in a lake or pool is not allowed for one week after surgery. Showers or baths may be taken by simply closing the eyes to avoid getting water in them. All other activities, including running, jumping, reading, and watching TV, are okay. Most children return to school two days after surgery.

A follow-up eye examination is usually performed one to two weeks after surgery. The initial examination is just to insure that healing is occurring normally and that no infection is present. Although the eye alignment is often improved at this point, final eye alignment may not occur for four to six weeks after surgery.



WHAT ARE THE RISKS OF EYE MUSCLE SURGERY?

The major risk of eye muscle surgery is undercorrection or overcorrection of the eye alignment. Based on the combined experiences of eye muscle surgeons, surgical tables exist that predict how much eye straightening effect will come from moving a specific muscle a certain amount. Unfortunately, these tables are based on averages and not every child responds the same. Therefore, about 25% of the time (and sometimes more, in particularly complex cases), a second operation is necessary to achieve proper eye alignment. If a second surgery is necessary, it may be done as soon as six to eight weeks postoperatively, but not until the alignment has stabilized. Eye muscle surgery is completely reversible and no eye damage occurs if more than one operation is required.

As with any surgery, serious complications related to anesthesia, loss of vision, bleeding, or infections are possible. Fortunately, these serious complications are exceedingly rare and generally can be managed with good results.

Overall, strabismus surgery is a safe and effective means of straightening the eyes and promoting normal visual development. Your child's vision is our primary concern. We will do everything possible to make certain that he/she receives the best possible eye care.

I have read and understand the above information regarding strabismus surgery and have had my questions answered.

Patient's Name (please print)

Parent/Guardian Signature Date

Please sign and date and return to our office prior to surgery.

(Revised January 2009)

William O. Young, MD ♦ Paul R. Conahan, CO, COMT

2519 Oakcrest Avenue, Greensboro, North Carolina 27408
Phone: 336.271.2007 ♦ Fax: 336.271.2904