



Pediatric Ophthalmology Associates, P.A.

Pediatric Ophthalmology ♦ Pediatric and Adult Strabismus ♦ Kidspecs Optical

STRABISMUS SURGERY/MUSCLE SURGERY

Surgery for strabismus (eye misalignment) 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, allowing them to be used together. Though appearance is improved when eyes are straightened, this surgery is not "just cosmetic": it can eliminate double vision, if present, and can improve depth perception and peripheral vision.

PREOPERATIVE EVALUATION

Each eye has six eye muscles that 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 the 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, but whether it is better to operate on one eye or both depends on the details of each particular case.

HOW IS EYE MUSCLE SURGERY PERFORMED?

Eye muscle surgery may be performed using local or general anesthesia. With local anesthesia the patient is awake or mildly sedated and medicine is placed around the eye to "numb" or block sensation. Though eye muscle surgery can in some cases be done with local anesthesia, in most cases (and in all cases involving surgery on both eyes) general anesthesia is used. With general anesthesia there is no pain whatsoever during surgery. 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) to expose the eye muscle. The eye muscle is secured with suture, detached from the eye, and sewn back onto the eye in the predetermined location.

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.

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WHAT TO EXPECT?

Eye muscle surgery is performed at a hospital or outpatient surgical center. They will give you specific instructions regarding when you can last have anything to eat or drink (including when and how to take any medications) before surgery, and you will need to follow those instructions to the letter. Typically you should arrive at the hospital or outpatient surgical center about one hour before the scheduled start time. You will have an opportunity to meet the anesthesiologist. It is extremely important to inform the anesthesiologist about any family history of serious anesthesia complications or previous problems with anesthesia you may have experienced.

In order to administer medication an IV is started. Typically, surgery requires 30-90 minutes. Generally patients may go home an hour or two after surgery. There may be some nausea and vomiting. Pain medications are often given at the end of surgery and Tylenol or anti-nausea medication may be prescribed thereafter. Tylenol or Motrin will be helpful in the first couple of days following surgery, and a prescription for stronger pain medication will be given in case it is needed during the first 24 hours.

Unless an adjustable suture (described below) is used, the eye(s) will not be patched. Eye drops or ointment will be prescribed to be used for a week or more. The eye is often quite red and there may be some blood-tinged tears in the first 24 hours. Light sensitivity is common during the first few days. Bright sunshine will not harm the eyes, but for the first day or two patients are generally more comfortable in shade than in sun. 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.

For selected patients, a special technique known as adjustable suture surgery may increase the likelihood of achieving straight eyes with one operation. With this technique, the eye muscle is secured in a temporary fashion at the end of surgery. The eye alignment may then be adjusted using anesthetic eye drops later the same or next day.

POSTOPERATIVE RECOVERY

Recovery is generally quick. Swimming should be avoided for a week after surgery, but showering and bathing are fine, and there are no other restrictions on activity. Most patients are able to resume their normal lifestyle or return to work within two to three days. The eyes will remain red for about two weeks, but they will not cause any discomfort.

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. While the eyes are adjusting to the new alignment, temporary double vision may occur. This double vision may be treated with patching or prisms if bothersome.



WHAT ARE THE RISKS OF EYE MUSCLE SURGERY?

The major risk of eye muscle surgery is undercorrection or overcorrection of the eye alignment, which may or may not be associated with double vision. 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. These tables are based on averages, however, and not every patient 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 promoting straight eyes and binocular vision. Your vision is our primary concern. We will do everything possible to make certain that you receive 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)

Patient's Signature

Date

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

(Revised January 2009)

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