

Eye Muscle Evaluation

What to Expect During Your Examination?

First, we inquire if the patient, friends, or family members have noticed any misalignment of the patient's eyes. We ask if the patient has noticed diplopia. We ask for characterization of the diplopia or eye deviation and/or diplopia:

- What percentage of the day does it occur?
- Is it worse when viewing in a particular direction?
- Is it more pronounced when looking far or near?
- Is it improving or worsening?
- Are images displaced horizontally, vertically, or diagonally?
- Do glasses affect the eye misalignment?

You may describe any other observations such as an anomalous head position, squinting, or abnormal eye movements. We review the family history, current health history, medications, and medication allergies. One of our specially-trained technicians checks the vision (be sure to bring glasses and/or contact lenses), confrontation visual fields (in adults), pupils, and depth perception. For adults, a refraction is performed to determine the best corrected vision before the intraocular pressure is checked.

Dr. Shin then measures the patient's ocular alignment using special ophthalmic prisms. Dilating drops are instilled. In general, it takes 20 minutes for an adult's eyes to dilate, and they will remain dilated for approximately 4-6 hours. For children, it generally takes 20-30 minutes for light eyes and up to one hour for dark eyes to dilate. Light-eyed children remain dilated for up to three days while brown-eyed children remain dilated for up to 24 hours. Dilating drops temporarily increase sensitivity to bright lights and diminish near vision.

Dr. Shin refracts a child's eyes by analyzing the light reflected through the dilated pupils from the back of the eyes and thereafter determines if a baby or child needs glasses. Several specialized microscopes are used to examine the eyelids, the surface, and inside of the eyes. She discusses the alignment of your or your child's eyes and the treatment options/plans (glasses with or without prisms, Botox, eye exercises, or surgery). Any questions you have will be answered. A glasses prescription, including recommendations for special lenses, tint, or coatings, may be written.

Eye Muscle Surgery = Strabismus Surgery

There are six extraocular muscles that attach to each eye and synergistically or antagonistically control eye movement, alignment, and rotation. Misalignment of the eyes can occur congenitally, after trauma, with systemic diseases, brain tumors, cranial

nerve palsies, and compensation for other vision problems such as farsightedness. After carefully assessing head position, measuring ocular alignment in all gazes at distance and near, and assessing a person's ability to use his/her eyes together (binocularly), Dr. Shin ascertains whether exercises, prisms (mounted on or ground into glasses), a Botox injection, or strabismus surgery is the best option for the patient. If strabismus surgery is the recommended treatment, she devises the best plan to align the patient's eyes, foremost for looking straight ahead at distance and near, but also for gazing in other directions (so the patient can regain optimal function of his/her eyes).

The surgery is performed on an outpatient basis at an ambulatory surgery center. An anesthesiologist administers a general anesthetic and monitors the patient's vital signs. During the surgery, the eye is never removed. The globe is rotated so Dr. Shin can approach and operate on the appropriate eye muscle(s). Then, small incisions are made on the clear membrane covering the white part of the eye. Through the incisions, the appropriate eye muscle(s) is/are isolated on the surface of the eye and the tension of it/them is increased or decreased to eliminate the strabismus. The inside of the eyeball is not entered during this type of surgery. Dr. Shin's eye muscle surgery techniques include the best combination of eye muscle weakening, strengthening, and other specialized treatments.

The earlier in a child's life strabismus surgery is performed, the greater likelihood that child will achieve binocular vision.

Adjustable Suture Surgery for Adults

Adjustable sutures may be placed at the time of an adult patient's surgery. These sutures allow Dr. Shin to fine tune eye muscle position in the office on the first post-operative day, after the surface of the eye is anesthetized with eye drops. The adjustable suture is permanently tied down once the desired alignment is achieved. These sutures are particularly helpful when there is scarring from old surgery, inflammation from eye muscle diseases, or neurological weakness. This technique can greatly enhance the surgical outcome.

Despite having the appropriate surgery, some patients may require further eye muscle surgery in the months, years, or decades following their initial operation to realign their eyes.

What to Tell a Child About Surgery

It is important to prepare a child for surgery, generally a day or two before the procedure. For example, consider telling a 2-3 year old child that he/she will be going to a hospital/surgery center and that Dr. Shin will be fixing his/her eyes. The child will be

asleep while the eye(s) is/are being fixed. Parents may be with them after they wake up. Let the child know that he/she will not be able to eat or drink the morning of the procedure. Usually this and reassurance is all a young child needs to know.

Recovery from Strabismus Surgery

Some sleepiness may persist after awakening from the general anesthetic. The adult or juvenile patient may drink and eat as tolerated although temporary nausea or vomiting is possible. Crusting of the eyelids and blood-tinged tears are normal following strabismus surgery. Discomfort, including from the dissolvable sutures, is usually controlled with artificial tear drops, lubricating gel or ointment, Tylenol or extra-strength Tylenol. Some patients experience light sensitivity postoperatively. Adults sometimes complain of headaches or eye soreness. Patients approximately three and older may see two images even with excellent alignment as their brain adjusts to the new position of their eyes. Diplopia, if it occurs, may last for seconds up to weeks. School age children are usually able to return to school four days after surgery. Most working adults are able to return to work four days after surgery.

Combination antibiotic-steroid eye drops are used four times a day for 2 weeks after surgery. Dr. Shin checks your or the child's eye alignment and healing in the office the day after surgery, one week later, and six weeks post operatively.