

## What is Strabismus?

**Strabismus** is a condition in which the eyes don't line up or in which one or both eyes wander. The eyes may turn inward (**esotropia** or "cross-eyed"), outward (**exotropia**), up (**hypertropia**), or down (**hypotropia**).

When the eyes don't line up together, the straight or straighter eye may become **dominant**. The vision strength (acuity) of this eye stays normal because this eye and its connection to the brain are working as they should. The misaligned eye may become "**lazy**" or "**amblyopic**". The vision strength of this eye becomes less than the straight/straighter eye, with the brain eventually ignoring the visual images of the weaker eye.

Sometimes, strabismus is very noticeable and may present a **cosmetic** concern. Other times, it might only be noticed when one is tired or looking at something very closely. Strabismus affects one's **depth perception and binocularity** (seeing in 3D) because the two eyes are not working together. Strabismus may also affect one's **visual field** as well as lead to other problems like **double vision** and **anomalous uncomfortable head postures**.

## How is Strabismus treated?

The first step is to determine the cause of strabismus. Strabismus may be related to refractive error (need for glasses), muscle imbalances, nerve palsies, anatomical problems in the eye (e.g. cataract), systemic conditions like thyroid disease, and some other rarer disorders.

Treatment for strabismus depends on the cause and may include: **Glasses, Patching, Exercises, Prisms, Botox injections, or Surgery**.

# **Strabismus surgery**

## **Before surgery**

Before surgery, a specialized examination will be performed at the ophthalmologist's office to determine which muscles are contributing to the strabismus and which muscles need to be altered (weakened, strengthened, or moved) to improve the alignment of the eyes. Prisms are used to measure the degree of the strabismus. These pre-operative tests help guide the surgeon in determining the surgical plan. Often both eyes require surgery, even if only one appears misaligned. Sometimes, the exact surgical plan is determined based on findings at the time of the surgery, especially in re-operations.

## **Surgery**

Strabismus surgery is usually performed as an outpatient procedure and does not require an overnight hospital stay. Most surgeries are performed under general anesthesia. The eye is never removed to perform the surgery. The eyelids are gently held open with a lid speculum. A small opening is made through the conjunctiva (the mucous membrane surface of the eye) to access the muscle. The muscle is then weakened, strengthened, or moved to change its action with dissolvable sutures. Most strabismus surgeries are less than two hours in duration; however, the patient will be at the surgery center for several hours including pre-operative and post-operative care.

## **After surgery**

Patients need to be monitored for a few hours after surgery and can usually go home the same day. Children can usually return to school after two to four days. Adults should not drive for a few days after and may need up to a week before returning to work.

Patients may have double vision that can last hours to days or a week, rarely longer. Exercise caution with activities like driving, if you have double vision. One eye should be covered with an eye patch in such circumstances.

Pain is minimal and usually over-the-counter medicines, such as Acetaminophen (Tylenol), and cool compresses are adequate.

We prescribe antibiotic-steroid eye drops after surgery and they should be used as directed.

The main restriction after strabismus surgery is not swimming for three weeks. You can read, watch television, and use the eyes as much as you want after surgery.

The eye will be red for up to 6 weeks after surgery, rarely longer, especially if it is a re-operation.

### **Potential risks of strabismus surgery**

The chance of any serious complication from strabismus surgery that could affect the sight or well-being of the eye is exceedingly rare. However, there are risks with any surgery.

Potential risks associated with strabismus surgery include:

- Sore eyes;
- Redness of eyes;
- Residual misalignment (including under-correction and over-correction);
- Double vision;
- Infection;
- Vision loss;
- Scarring;
- Bleeding;
- Corneal abrasion;
- Retinal detachment;
- Anesthesia-related complications.

### **How successful is strabismus surgery?**

Most patients will see a significant improvement in the alignment of their eyes after surgery.

In some cases, you may need additional surgery or prism glasses to optimally align the eyes and avoid double vision. This tends to occur more commonly in patients with more complicated strabismus, including those who have had strabismus operations in the past.

Some patients may need multiple strabismus surgeries during their lifetime. Each case of strabismus is unique, and you should discuss your condition with your ophthalmologist to understand the goals and expectations of surgery.

