Selective Laser Trabeculoplasty (SLT) is an innovative new laser treatment for chronic open angle glaucoma. It is a significant improvement over Argon Laser Trabeculoplasty (ALT) and has largely replaced ALT due to its improved safety profile and better results.

The first generation of glaucoma laser treatment, ALT, was developed in the 1980s under the theory that a laser could be used to punch holes in the trabecular meshwork of eyes with glaucoma to improve the outflow of aqueous humor and lower the intraocular pressure.

ALT was a revolutionary and successful treatment for many cases of chronic glaucoma. However, the intense laser treatment sometimes caused scarring and other problems. Ultimately, the theory of its mechanism of action (punching holes in the trabecular meshwork) did not hold up under scientific scrutiny. Further research disclosed that the pressure lowering effect of ALT was due to a biological and chemical effect on the trabecular meshwork and not the punching of holes. This understanding allowed scientists to develop a much more gentle laser treatment that stimulated the pressure lowering effect without the thermal burning of the original ALT. Thus was the birth of Selective Laser Trabeculoplasty. SLT delivers minimal heat energy to selected pigment cells deep in the trabecular meshwork without damaging other tissue. This stimulation still triggers the biological and chemical changes in the trabecular meshwork but without the scarring and discomfort associated with ALT.

**What are the benefits of SLT?**

SLT can lower eye pressure dramatically and keep it low for many years. It is usually used as a treatment for glaucoma when drops are not lowering the pressure enough or when side effects of glaucoma drops are causing problems. In some cases, SLT may be used as a primary treatment for open angle glaucoma instead of drops. SLT can also be repeated if necessary, without causing the buildup of scar tissue.

**What are the downsides of SLT?**

SLT does not have many downsides. In some cases SLT may not lower pressure much, if at all. However, if there is little or no effect after three months, SLT can be repeated. In some cases, the SLT pressure lowering effect may wear off after several months to years. In these cases SLT is usually repeated, although subsequent treatments may not be as effective. In addition, since a special contact lens is placed against the eye during treatment there is a small risk of scratching the cornea. Further, in rare instances SLT can cause a significant temporary rise in eye pressure.

**How is SLT performed?**

SLT is an office procedure. When you arrive for your appointment we will check your vision and measure your eye pressure. A pressure-lowering drop will be instilled in the operative eye, followed by a topical anesthetic eyedrop. You will then be seated at the laser slit lamp microscope and your surgeon will place a special mirrored contact lens on your eye to help focus the laser beam on your trabecular meshwork. Between 50 and 100 equally spaced laser spots will be applied to your trabecular meshwork in the drainage angle of your eye. There will be a dazzle effect from the laser flashes and some patients may experience a mild ache or heat sensation.

At the end of the procedure the doctor will remove the lens and an assistant will rinse the coupling gel from your eye. A drop of the anti-inflammatory medication prescribed for you will be instilled. Make sure that you bring this medication to the office with you. You will need to return to the office about an hour after the procedure to have your pressure checked. Once home, you will use the anti-inflammatory eyedrop four times daily for two days. You will also need to continue your regular glaucoma drops after the procedure. We will see you back in the office for a follow-up pressure check in about two weeks and again in a couple of months.

Vision is often blurry right after treatment but clears within minutes to hours. Most patients can return to full normal activity later the next day. It can sometimes take as long as three months for the laser treatment to take full effect. If a lower eye pressure is still needed at this point a repeat laser treatment, additional medication or conventional surgery may be indicated.

**Post-SLT instructions**

- Continue all your glaucoma drops as usual in both eyes.
- Use the special steroid drop in the lasered eye four times daily for two days.
- Return for pressure check one hour after your laser.
- Return for pressure check two weeks after your laser.
- Call us immediately if pain, headache or blurred vision in the lasered eye.