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Laser Trabeculoplasty

ARGON LASER TRABECULOPLASTY (ALT) or SELECTIVE LASER TRABECULOPLASTY (SLT)

Laser trabeculoplasty (ALT or SLT) is an office based procedure performed to lower eye pressure in patients with open angle glaucoma. Patients whose eye pressure is still too high even though they are already on 1 or more eye medications or are intolerant to some of the eye drops due to allergy or other side-effects are good candidates for laser trabeculoplasty. In some patients, laser trabeculoplasty is an acceptable first option for treatment instead of eye drops.

How does laser trabeculoplasty work?

As explained in the definition of glaucoma (see section), the internal drainage system or trabecular meshwork is not functioning well enough to control eye pressure. The purpose of this form of laser is to improve the function of the trabecular meshwork, much like giving it a kick start. Clinical research has shown that laser appears to improve drainage through the trabecular meshwork by several mechanisms.

What is the difference between ALT and SLT?

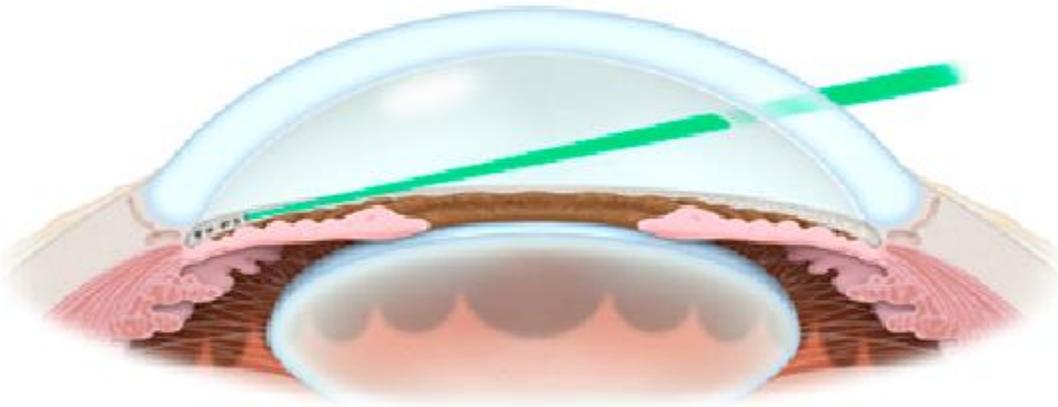
From the patient's perspective there are no differences between the 2 types of laser trabeculoplasty in terms of effectiveness and clinical experience. However, because SLT doesn't cause scarring to the area of treatment, called collateral damage, it has been assumed to be potentially more repeatable than ALT and thus be used more often if necessary. However, at the present time, there are no studies that have proved this assumption to be true and for now neither procedure is superior to the other.

How effective is laser trabeculoplasty?

Both ALT and SLT have been shown to be safe and effective in lowering eye pressure and are equivalent in ability to lower eye pressure in patients with various types of open angle glaucoma. On the average, laser trabeculoplasty is expected to lower eye pressure by about 5-7 points. The higher the eye pressure before treatment the greater the potential eye pressure lowering effect. If the eye pressure however, is too high, laser may not be able to lower eye pressure to a desired target level and more aggressive treatment may be necessary. About half the patients treated with ALT or SLT still have a good effect after 2 years. ALT or SLT may be performed in addition to drops for those in whom eye pressure is still too high despite being on one or more drops. Alternatively, ALT or SLT may be substituted for drops for those with mild disease or those who are intolerant to eye drops due to side-effects or allergy.

How is laser trabeculoplasty performed?

It is performed in the office or an outpatient surgery center. Under topical anesthesia (numbing drops) a lens is placed on the eye in order to focus the laser beam in the drainage angle. The internal drainage apparatus or trabecular meshwork is then directly treated. A total of 50-100 laser applications is usually administered depending upon whether 180 degrees (½ treatment) or 360 degrees (full treatment) of treatment is performed. A glaucoma drop is often administered immediately before and/or after treatment as well as an anti-inflammatory drop. After the laser procedure the eye pressure is checked about 45 minutes to 1 hr later and the patient is discharged on anti-inflammatory drops for 3-7 days.



Laser trabeculoplasty-the laser beam (green) is aimed at the trabecular meshwork to make it function better and lower eye pressure.

What are the risks of laser trabeculoplasty?

Although laser trabeculoplasty is a very low risk procedure, blurred vision, eye pain, and a spike in eye pressure occurring within the first hour or so after the procedure, and chronic inflammation, may occur. The increase in eye pressure is usually brief and self-limited and more commonly occurs in those with higher eye pressure and less controlled disease but may occur in anyone. It usually responds well to medical treatment and resolves after a few hours to a few days. The increase in eye pressure rarely persists and remains elevated necessitating more aggressive treatment or in very rare circumstances require surgery. As above, administration of a glaucoma drop is often useful in preventing such a rise in eye pressure after laser. Having a pressure spike after laser does NOT mean the laser will not work or was unsuccessful. Many who develop a pressure rise immediately after treatment have had a very good response to the treatment.

What should I expect after laser trabeculoplasty?

This is usually a very well tolerated procedure and most patients have no symptoms but some may complain of mild soreness and tenderness of the eye which usually disappears after a few days of anti-inflammatory eye drops. After laser the patient may resume all their usual day to day activities without restrictions.