

## **Laser Hair Reduction/Removal** (Unwanted Hair Removal)

### **How does Laser treatment differ from electrolysis?**

The main difference between Laser technology and electrolysis, the traditional method, is that Lasers can treat multiple hair follicles at one time. There is no longer a need to identify and probe each individual hair follicle, as is done with electrolysis. As with any new technology, advances are continually being made. Laser hair removal is a relatively new technology and has not been totally perfected. The FDA, however, has recently approved several Lasers that can achieve a permanent reduction in hair growth based on clinical tests with patients who have hair reduction two years after treatment completion. Most people need an average of 3-5 Laser sessions for an initial treatment series. Hair grows in cycles and subsequent treatments are necessary to treat the follicles that are lying dormant below the surface of the skin. Dormant follicles contain little pigment and are often not affected by initial treatment, therefore best results are obtained with multiple treatments. People who undergo electrolysis usually require many treatments over many months or years to achieve desired results.

### **What is the advantage of using a Laser?**

Lasers are precise instruments that can be adjusted to the exact parameters that will specifically disable the hair follicle. Unlike precision "hair-by-hair" treatments like electrolysis, the Laser uses a wide beam, which treats many hairs at once. Therefore large areas such as a man's full back, full legs or arms can be treated efficiently and effectively within a few hours. You will see immediate results that will last far longer than shaving, tweezing, waxing, chemical depilation, or other temporary treatments.

### **How does the Laser actually work to remove hair?**

FDA clearance for the safety and effectiveness of laser hair reduction was achieved in 1997. Most Lasers or light sources emit light that is absorbed by the pigment located in the hair follicle. The Laser is pulsed, or "turned on", for only a fraction of a second. The wavelength of light, duration of the pulses, and the amount of energy delivered has been carefully determined so that the energy will be absorbed by the hair follicle and disable it, but not long enough that excess heat is transferred to the surrounding skin. The result is safe and effective hair reduction and removal.

### **What types of Lasers and light sources are available?**

There are many types of Laser and light sources used for hair removal. One of the earliest devices was an infrared Laser called the "Softlight". This device was used in conjunction with a black carbon solution to better target hair follicles. The results with this device were disappointing largely because the pulse duration was

too short to completely and permanently damage the follicle. The Ruby Laser ("Epilaser") was one of the first FDA approved devices for permanent hair reduction. This system comes equipped with a contact-cooling device to protect the epidermis from injury. This Laser works best for dark hair in fair skinned individuals, and is not recommended for patients with tanned or darker skin. The Alexandrite Lasers (ie. "GentleLase", "Apogee") penetrate the skin slightly more deeply than the Ruby Laser and are therefore somewhat safer for dark skinned patients. The "GentleLase" also has a dynamic cooling device to protect the skin surface. The "Apogee" has a longer pulse width theoretically better for larger, coarser hairs and somewhat safer for darker skin types. The Diode Laser ("Lightsheer") penetrates more deeply than the Ruby or Alexandrite systems and also is equipped with a patented contact cooling system. The Diode "Lightsheer" is also FDA approved and has the best combination of selective absorption and deeper penetration for a dark hair target. The "Lightsheer" also has the capability of delivering a variety of longer pulse durations, which provides enhanced safety when treating tanned skin or darker skin types. There are a host of relatively new Infrared Lasers designed for use in dark skin types. Lasers such as the "Coolglide", "Lyra", "Sciton" and "Gentle:YAG" are examples of this Laser type. They can be the safest Laser for some dark skinned or tanned patients. Finally there are many intense pulsed light (IPL) sources (ie. "Epilight"), and Radiofrequency devices (ie. "Syneron"), while not being Lasers, have flexibility to select from a wide range of available wavelengths, multiple pulse durations or pulsing sequences depending on patient skin type and hair color. These devices have not consistently shown results better than most of the available Laser systems. Some devices have been touted and "hyped" to effectively treat white, blond or grey hairs but to date have inconsistent efficacy at best.

At Pima Dermatology we currently have three distinct Lasers for Laser Hair removal- the "Lightsheer", the "Gentle:YAG", and the "Sciton" devices. At the time of your consultation we will discuss the best Laser for your hair and skin type to achieve optimal results for you.

### **Which is the best Laser or light source for hair removal?**

Experience with these devices is slowly accumulating. We feel that the "Lightsheer" offers the best Laser system combining efficacy and safety for the broadest range of hair colors and skin types. The infrared devices (ie "Gentle:YAG", "Sciton") are the safest and most effective for dark skin types or tanned skin. There is currently no clear answer as to the best system to use for an individual patient. While all the Laser systems work, long term follow-up and comparative treatment trials are desperately needed to ascertain which is the best system. In the meantime, hair removal research with new Laser devices and modifications of current devices is ongoing and results should continue to improve in the future.

### **Who are the best candidates for Laser hair removal?**

Since light energy is absorbed by the pigment melanin, which then is transformed into heat energy to disable the follicle, those individuals with coarse dark hair, and light skin color respond most optimally. In those people with darker skin color (more melanin in the skin), the skin tends to compete with the hair for the light energy resulting in the potential for damage to the skin, not the follicle. The competition for the light energy between skin and hair melanin is why tanning should be avoided before and after Laser treatments. The "Lightsheer" Laser can be used in people with fine hairs and fair skin types whereas our infrared device such as the "Gentle:YAG and "Sciton" Lasers can effectively treat darker or tanned skin. skin colors. Lasers are effective at disabling hairs that are actively growing, and at any given time not all hairs are in an active growth phase. It therefore is necessary to treat an area again at a later time to disable those hairs that were in a resting phase during initial treatment.

### **Which areas can be treated?**

Nearly any body or facial hair can be treated including large areas such as backs and chests, thighs and legs, bikini areas, face, and underarms.

### **What preparation is needed before laser treatment?**

Tanning should be avoided. Waxing, plucking, and bleaching should be avoided for at least a few weeks prior to treatment. A patient is advised to trim or shave the hairs in the area to be treated the day before the treatment. In fact, it is best to freshly shave or clip the hairs in the area being treated just prior to treatment. A topical anesthetic (ie. ELA-MAX) is usually recommended to be applied under occlusion prior to treatment.

### **How long will a treatment session take?**

Different Lasers treat hairs at different speeds. Since Lasers treat many hairs at a time, facial areas (chin, lip, cheeks, etc.) can usually be treated in less than 10-15 minutes. Small body areas (underarms, bikini line, etc.) take less than a half-hour. Larger body areas (full back, full legs, both arms, etc.) usually take an hour or more, depending upon the size of the area, the density of the hair and the speed of the Laser.

### **Is treatment painful?**

Most Laser patients describe the treatment as mildly uncomfortable, but not painful. Most patients liken the sensation to a pricking sensation or a "rubber band snap". For sensitive or extensive facial and body areas some people do ask for an anesthetic or mild tranquilizer. We can dispense a topical anesthetic (ie. ELA-MAX) which can be applied to the skin 1-2 hours prior to treatment under tape or saran wrap occlusion.

### **What will I look like after the treatment?**

Within several minutes of the treatment, the treated area will usually become slightly red and puffy. This reaction soon subsides, and within a few hours the area returns to normal. Since the Laser does not burn or cut the skin in any way, no bandages are necessary. You can return to your normal activities immediately.

If redness persists, it usually fades within 24-48 hours. At the time of treatment many of the hairs are removed, and other hairs are shed 1-2 weeks following Laser treatment. In most instances, if you desire, you will be able to apply makeup immediately following treatment.

### **What should I avoid after treatment?**

Sun exposure or tanning should be avoided. This can be accomplished by the use of a broad-spectrum sunscreen. The treated areas should be handled gently, avoiding the use of abrasive cleansers or topical acne preparations. Ice compresses can be used to minimize swelling, and if blistering occurs, a topical antibiotic such as Bactroban (a prescription antibiotic available as a cream or an ointment) can be applied. Most patients experience no noticeable after-effects following Laser therapy.

### **How many treatments are needed?**

Initially several treatments are recommended to effectively treat hairs as they cycle through their active growth phase. Usually hairs will enter a growth spurt after about two months, but the time interval may vary with the area treated. Subsequent retreatments may be needed to keep up with any new finer hairs that have regrown. It is important to note that the following factors can influence regrowth and responsiveness to Laser therapy: hair location or hair type, hair color, hair density, skin color, hormonal influences, medications, and genetic background.

### **What are the adverse effects of Laser treatment?**

There is mild pain associated with the treatments, which has been likened to the light snap of a rubber band. Some degree of redness or swelling may occur, but usually does not persist much beyond a few hours to a few days. Occasionally blisters can develop and, extremely rarely, scarring or infection can occur. The darker one's skin color, the more one is at risk for changes in skin color, hypo or hyperpigmentation. Usually any changes in skin color will fade over time, but permanent discoloration is a very remote possibility. It is important to point out that some of these adverse events can be seen with electrolysis, or for that matter, waxing or shaving.

### **Are there any patients that cannot be treated?**

Laser treatments are most effective in patients who are not tanned. Therefore, tanned individuals should wait until their tan has faded before seeking treatment, although the newer infrared devices can safely treat dark and tanned skin. Also, patients with extremely dark skin color, for example, a very dark Afro-American, may find treatment less effective, and run the risk of greater pigmentation changes. Hairs that are non-pigmented, grey, white or very fine and wispy, may not respond well to treatment. An area with an active infection, (ie. a cold sore), should not be treated until the infection has healed. For best treatment results and to minimize bruising, it is important to avoid aspirin, ibuprofen (and other so-called NSAID's), as well as tanning both immediately before and following Laser treatments