

# **Consumer info on lasers cost-effectiveness**

A comparison study of laser  
and electrolysis where is the value?

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## **Consumer info on laser's cost-effectiveness -- a comparison study of laser and electrolysis -- where is the value?**

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### **Preamble:**

I am an electrologist who specializes in male-pattern facial hair removal. I have been on contract with Vancouver General Hospital, since 1995.

In 1997, I attended a theory class on laser hair removal presented by the International Electrology Educators. Based on what I learned, I wrote and published a report: Laser Hair Removal, a Method of Blind Faith . In that report, I talked about the various types of lasers on the market. I summed up my report speculating that lasers may kill off some hair on some people, but they were not very cost effective in treating **male-pattern facial hair**, and that lasers were inferior to good electrolysis. I based my bias on the following facts:

1. Lasers cannot kill white, blonde or red hairs. The hairs must be black (or very dark brown) in order for the laser light to be absorbed and generate enough energy to destroy its target;
2. The density of the male-pattern facial hair (particularly on the chin and upper lip) significantly reduces the effectiveness of the laser -- the dark pigment ( chromophores ) of the hairs that lay closest to the surface of the skin, absorbs the energy and reduces the laser's effectiveness to destroy target hairs that lay in their "shadow";
3. Lower levels of laser-light are used to treat facial hair, than other areas of the body, further reducing the effectiveness.

I have since come to believe (Sept. 2002) that, for those clients with course black hair, there is a role for lasers in treating male-pattern facial hair. The following study will help qualify my position.

### **The Study:**

In the Spring of 2000, I began my study by following three clients -- one had a combination of laser-plus-electrolysis and two had electrolysis-only. It is now September 2002. All the clients I will be referring to were, at the time, pre-op male-to-female transsexuals.

All three clients have now attained "maintenance". For those not familiar with my definition of maintenance, it is the point at which all target hairs can be treated

within one, two-hour, weekly session, the point at which I can equally measure and compare the progress of my clients.

The laser/electrolysis client I followed had a mix of salt and pepper hairs. Most hairs (90% to 95%) were jet-black, with a large patch of white hairs covering her chin. The areas of her chin, upper lip and neck (below the chin) were very dense, with a pre-treatment visual rating of 70 anagen hairs per square centimetre (this measurement is taken 24 hours after shaving).

I was invited to observe my client's first laser treatment. This allowed me to see not only the procedures used by the nurse-technician, but also to observe how the patient responded to the treatment. The entire treatment took only 35 minutes, which included the nurse taking photos of the areas to be treated and prepping the skin with a thick layer of cooling gel. Despite the patient having prepared for the treatment using EMLA cream (a topical anesthetic used to reduce the pain), her body jumped and shook with every zap of the laser -- it was excruciatingly painful. At the end of the treatment, she was shaking, and her face and neck was red, like a bad sunburn. The type of laser used was an Alexandrite, and the cost per treatment was \$300.

Though my laser/electrolysis client may have suffered some immediate discomfort, it appears she has not experienced any prolonged negative effects since her last laser treatment.

Because she combined her electrolysis with her laser treatments, it is impossible to gauge the effectiveness of the laser treatments in isolation. Prior to starting her laser treatments, she had undergone four months of electrolysis. Throughout the six-month period (Sept. through Feb.) she did laser, she also did electrolysis. Since completing the laser she has continued to do electrolysis.

Of particular interest to me was her post-laser treatment: three-month and six-month points. What type of hair growth would she have? Would it be dense? Would it consist of thick coarse hairs?

At the three-month point, I took a photo of her left cheek/sideburn area to capture a visual marker. Though the hair was not very thick/coarse, it still appeared to be significantly dense. At the six-month point, the hair was less dense but treatments were still not close to maintenance.

Though she had originally planned to do only four laser treatments over six months, she decided to do one extra treatment, for a total of five. Despite the nurse-technician recommendation to do as many as six or seven laser treatments, the client stopped because she did not see much of a change or reduction in her hair growth following her fifth treatment.

I present the following markers:

- All 3 clients had an anagen hair count between 70 to 74 per square centimeter.
- All 3 clients started within a month of each other, April/May 2000.
- Two clients had electrolysis only.
- One client had a combination laser and electrolysis.
- Electrolysis client (A) attained maintenance at 107 hours, Sept. 2001.
- Laser/electrolysis client (B) attained maintenance at 113 hours, Nov. 2001.
- Electrolysis client (C) attained maintenance at 162 hours, Aug. 2002.
- Client-A's electrolysis cost-equivalent was \$4,065 (taxes not included).
- Client-B's laser/electrolysis combined cost was \$4,322 (taxes not included).
- Client-C's electrolysis cost-equivalent was \$6,274 (taxes not included).

**Additional information:**

I have had a number of other clients who have combined laser treatments with their electrolysis.

One client underwent 6, 15-minute, laser treatments to remove her beard, at a cost of \$1,282. She described her pre-laser treated hair as very little to begin with .

A second client (with red hair) had her upper lip treated three times with laser. Initially she stopped after her first treatment, but then two years later followed up with two more treatments.

A third client had over \$4,000 worth of laser treatments to her back, chest, and abdomen.

Of the three, the client who had her full beard treated may have benefited from the laser as she only required an additional 35.5 hours of electrolysis to reach maintenance, at a cost of \$1,242.

The second client, the one who had her upper lip treated by laser, is still requiring electrolysis. She believes the laser may have actually increased the density of her hair. This would be difficult to prove because no base hair count was done prior to beginning her laser treatments. However, whereas the electrolysis

treatments to the other areas of her face fall within "normal" limits, her upper lip area has required 27+ hours of treatments – the average time to attain maintenance on an upper lip with electrolysis is 14 hours. Two years later, she attended two more laser treatments because she was curious to learn if laser techniques had improved. She was assured by the laser technician that indeed things had changed and that she was optimistic her red hair could be eliminated using laser. Despite her optimism, my client learned: "It had not improved and I saw no benefit".

As for the third client, who had body hair removal using laser, she said, It was useless and a waste of money as she has not seen any noticeable reduction.

### **Conclusion:**

1. If target hairs are black and coarse (thick), it appears that combining laser with electrolysis can be beneficial. If the hair is too dense (grows closely together) laser is less effective. And, if the hair is too fine (thin) laser is less effective. If the hair is white, red, or blonde laser is not effective.
2. Cost-effective electrolysis is dependent on the client doing everything they can to ensure their skin is moist -- the best, quickest, less painful treatments are dependent on moisture in the skin.
3. Both electrolysis and laser can be extremely painful. Putting the skill of the clinician/technician aside, the client must take appropriate steps to address the pain issue. The ability to relax is the first line of defense. Next comes a two prong approach: oral medication (sometime prescription drugs), and topical medication (EMLA).
4. If the goal is to stop shaving, laser treatments alone is insufficient. Only electrolysis will result in not having to shave ever again.
5. If the goal is to begin cross-living full-time sooner than later, then combining laser with electrolysis appears to be the answer.
6. If the goal is finding the least expensive means of eliminating your problem hair, then combining laser and electrolysis appears to be a reasonable option. However, the cost depends upon how much each service costs and how long each one takes. In this study, the laser treatments cost \$300 per session and the client had 5 sessions, and the electrolysis treatments averaged \$38 and took 113 hours to maintenance.
7. Laser treatments should be carried out on a 6 to 8 week rotation. As for how many treatments sessions are required, some say 5 or 6, whereas others will recommend 7 or 8 sessions. Assuming the hairs are black, the two most

significant factors in judging whether to do more than 5 laser treatments are:  
1. How fine are the hairs? 2. How dense are the hairs?

8. Wherever possible, electrolysis treatments should be carried out on a 2-hour per week schedule.

**Post script:**

I would like to acknowledge the three clients who allowed me to monitor their treatments for this study. This has been a great opportunity that should benefit others.

Ultimately, we need laser technicians to publish their research. The fact that they have not been publishing is disconcerting. Laser hair removal has been around for the past five to seven years, compared to electrolysis which has been around since the late 18<sup>th</sup> Century. Though it may be too early to expect to see the outcomes of long-term laser studies, the potential health risks to the skin and vital organs cannot be ignored.

Remember, if you have white, red, or blonde hair laser treatments will be a waste of both your time and money. Laser's effectiveness is greatly reduced if your hair is fine in texture or extremely dense.

Finally, if you are a person of colour or your skin is tanned laser may be extremely harmful. As a precaution in compensating for the dark skin tones, some laser-technicians will turn down the laser's power. Regrettably such a strategy further reduces laser's effectiveness.

If you, or someone you know, is thinking about laser hair removal and you would like to contribute to this on-going study, please get in touch with me. I am keen to gather more data.

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