LASER FACIAL HAIR REMOVAL TO THE TEST

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Laser and intense pulsed light hair removal started to be used simultaneously in the majority of developed countries back in 1997, after the systems obtained approval for medical use by the FDA in the United States and by the EU (European Union).
At that time and based on data provided by clinical trials conducted in patients in the United States, it was generally accepted that the hair removal system consisted of, approximately, four sessions that achieved satisfactory cosmetic hair removal.

At present, at IML, we are in a position to present to our patients more realistic expectations. It is true that there are certain body regions that can be epilated in just four to five sessions, such as in the groin or bikini area or half legs. However, the facial hair has its own characteristics and because of this, facial and neck epilation follows a different pattern and has different requirements.

To start with, the total density of hair follicles in the chin and peribucal areas and sideburns, is ten times greater than the density of the inguinal and/or armpit region.
In the face, follicles are not all out simultaneously; a large amount of hair is always in the rest phase (telogen phase) and only emerge when they are due to activate. Because of this, even if we rigorously and extensively epilate the area, what we are doing is to remove hair that is at the active phase only (anagen phase) at that precise moment.

Secondly, the complete treatment of hair that is in active phase is not necessarily accompanied by its massive destruction; nearly in all cases, a few hair follicles are resistant to treatment and after 4 to 6 weeks, hairs grow back.

Thus, when the patient comes for the next session after 4 to 6 weeks, he or she presents a hair density per sq centimetre that corresponds, in part, to the hair that was not destroyed in the previous session and, in part, to hair that has activated during this time and has gone from the rest phase into the active phase. Consecutive laser sessions applied to the face and neck progressively achieve a decrease of the total hair density either by direct destruction or by “miniaturisation”. Such miniaturisation process is characterised by two situations; first, very

pigmented hair with a thick shaft and a rapid growth process starts to undergo atrophy which leads to a very fine shaft, less pigmented and slow-growing hair. All the characteristics of the follicle are weakened, causing a very evident aesthetical improvement.

Given that residual hair is present in a lower amount and with less vitality, the patient remains epilated for a longer time after each session, and because of this, waiting time between sessions increase. As time goes by, the skin needs more and more time to grow new hair, which is necessary for the laser session to be effective. This is why at INSTITUTO MEDICO LASER, the laser facial epilation protocol defines a time interval of 8 to 9 weeks after the 5 first sessions and 12 to 14 weeks after the 10^{th} session. During these waiting times, the patient remains completely hair-free.

At IML, treatment is complete when the epilation results obtained are sustained indefinitely in time. Because of this, in cases, where there is an apparent cosmetic epilation, the patient is asked to come back for a possible touch up after six months. It is possible for some residual hair to become activated later on and, in that case, it will be treated as it emerges.

The results in facial epilation are quite limited by the morphological characteristics of the patient's hair and skin as well as his or her age and hormone levels at that precise moment in time. The presence of endocrine dysfunction or the intake of certain medications can also hinder the results.

1.- HAIR AND SKIN MORPHOLOGY

It is a well known fact that dark hair is destroyed more easily. This is because dark hair "captures" light energy more readily, favouring its destruction. Dark hair requires medium to low treatment potencies because it captures all the energy delivered.
On the contrary, light hair does not "capture" light energy as readily and in order for lighter air to absorb all the necessary energy, it is necessary to employ much higher energies, which makes treatment more uncomfortable and risky for the skin and requires the employment of laser systems for very special epilation sessions.

The colour of the skin is also a big limitation. While it is important for hair to capture all the energy, it is also important for the skin surface to be as permeable as possible to the laser energy. It is important that the skin does not retain part of the light so that the light emitted reaches the

target (the furthest down third of the follicle) in its totality, located deep down at depth. The colour of the skin is found inside the keratinocytes of the skin surface and are packed inside these cells in the melanosomes. Dark skin captures light well, a circumstance that is not desirable, as the energy absorbed in the skin surface can irritate the skin, with less energy reaching the follicles. This explains why it is so important for the skin not to be suntanned at the time of treatment. This also explains why modern medical epilation systems have an automatic skin cooling system that counteracts or offsets its possible overheating and avoid irritation. In this same line of thought, fair skin is, by definition, permeable to laser and thus more appropriate to achieve the treatment objective. Fair skin heats less and admits the employment of high energies, which are very effective to treat follicles and ensure maximum safety.

Conclusion: The ideal scenario is non-tanned or slightly tanned skin and dark hair, permeable skin and hair that captures light readily.

2. HORMONE LEVELS AT A GIVEN MOMENT IN TIME (also known as hormonal moment)

In the years following puberty, a female might be still consolidating the amount of follicles capable of producing visible hairs. The total hair density of facial hair can increase in the following years or unwanted hair may appear in facial areas where there used to be just fine hairs before. On the other hand, women approaching menopause stop producing female hormones (estrogens). All women have minimal doses of masculine hormones (androgens) circulating in our blood stream, the effects of which are offset by a predominance of estrogens in childbearing age. In the presence or decrease of estrogens, androgens enter into a relative predominance stage and this is accompanied by an stimulation of follicles at rest that start to produce hair late.

3.- HORMONAL DYSFUNCTION

Hormonal imbalances that manifest with high levels of androgens, either due to increased production (polycystic ovary syndrome) or due to a decrease in its consumption for the production of estrogens (adrenogenital syndrome), manifest in many cases with increased body and facial hair, as the follicles are stimulated constantly. Sensitivity to androgens is maximum in the face and neck, followed by cleavage line, areolas, lumbar region and linea alba. In these cases, close collaboration among specialists (dermatologist, gynaecologist, endocrinologist) and the laser unit is of paramount importance. IML receives patients referred by

specialists that follow these type of patients, with the aim of treating all the existing hair.

In most patients, this hormonal imbalance translates almost exclusively into a cosmetic problem having to do with hair and in order to avoid more aggressive drug therapies, the specialist recommends the patient to undergo laser hair removal.

Knowing these physiological determinants, it is evident that we cannot talk about definitive epilation in the facial region or in other androgen-dependent regions. The treatment protocol for facial epilation at Instituto Médico Láser consists of 10 sessions at increasing time intervals starting at one and a half months. This represents a clinical follow up for over two and a half years. In this time, all existing thick or mid thick hair will have been eliminated but we will have to wait and see whether or not the activation of latent hair follicles occurs throughout the rest of our life. For these instances, we provide the patient with a minimal price estimate per additional session.