

Non-ablative fractional lasers

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Why a non-ablative fractional mode for rejuvenation lasers?

Historically, to treat effectively facial aging, ultra-pulsed CO₂ laser used in the traditional mode of resurfacing (cf CO₂ laser sheet) remains the historical reference in terms of efficiency, but it leads to long (15 days) and painful social eviction requiring careful care, and the risk of side effects is significant (including scars and hypo-pigmentations). To avoid the side effects related to an aggressive treatment of the entire facial skin, advanced scanners have been developed to deliver "microspots" of treatment by leaving healthy skin intervals between the points of impact and by increasing the energy by pulse. The aim is to create a dense network of coagulation wells, leading to a scar response ("pro-cicatrizing" technique) and thus a revival of the fibroblasts and collagen around them. The untreated areas retain all their healing and pigmentation capacities. Therefore, the aftermaths are simpler and the risks lessened.

NON-ABLATIVE FRACTIONAL LASERS

These are lasers that do not cause any ablation, so there are no holes, no epidermal involvement but only micro-columns of coagulation beneath the surface of the skin. It is therefore easy to understand that there will be few risks of side effects with this technique belonging to the non-invasive arsenal.

All these lasers emit in the middle infrared and are between 1450 nm and 1550 nm, although fractionated lasers are also available at 1927 nm, but these don't penetrate very far (surface effect).. The maximum energy delivered by micro-columns varies from one device to another and determines the depth of the micro-columns of coagulation. It is estimated that around 60 mJ per microcolumn exceeds 1 mm depth of action. But not all devices are created equal (shot power, spot size).

Indications: We will insist here on aging and scars:

- Aging will be much improved by these devices, especially fine wrinkles, lentigos, complexion and skin texture. Peri-ocular wrinkles respond particularly well to this treatment but, unfortunately, peri-buccal ones are more resistant.

- Dilated pores and hollow, atrophic scars (post-surgery or post-acne) respond very well to these techniques. In this indication, we will need several sessions, usually four, and we will wait at least 3 months after the last session to evaluate the improvement. Some studies on the treatment of white stretch marks with this device have been published, but the results are not enough compared to the hopes of the patients.

- " melasma " (extensive sun spots of the face, often post-pregnancy):

Some publications report an improvement with this technique, which can sometimes be proposed in a second intention and even in 3rd intention. However, a recurrence or even an aggravation are possible, especially if sun protection and application of depigmenting creams are not respected, and maintenance sessions are sometimes necessary. So Beware.

Non-exhaustive contraindications:

- Pregnancy is not an absolute contraindication but a reasonable precaution of use
 - Pathologies with healing disorders should be discussed case by case.
- Likewise, the presence of cancerous or precancerous lesions implies a rigorous dermatological care before this act.
- Besides, the list of your medications must be absolutely supplied to your dermatologist.

Progress of the session:

The skin should be clean and cleansed. The eyes are protected by extra-ocular shields. A topical anesthetic associated with the cooling of the treated area will be used, otherwise the sessions would be a bit painful (such as mini-bites but per thousand). There will be usually 4 sessions, since only maximum 25% of the skin will be treated each time.

Post-operative care consists of a nourishing healing cream and sun protection. In case of melasma or dark phototype, a cortisone cream may be used during the inflammatory phase.

The aftermaths remain simple with a short social eviction. In fact, only erythema can be seen for a few days, a slight edema especially in the eyelids that will be managed by applications of ice, and we will just apply a healing cream. A pseudo-tanned aspect may result then for 2 to 3 days. Cases of allergy to xylocaine present in anesthetic ointment have been reported.

Side effects or undesirable events: They are only about 5%, in descending order: prolonged redness, post-inflammatory pigmentation or aggravation of a melasma (often linked to a lack of photoprotection or discontinuation of depigmenting creams), more rarely a herpes outbreak or an acne-like outbreak, but no long-term side effects are reported. A medical consultation prior to the use of this technology is mandatory in order to determine its appropriate indication, to explain to the patient the precautions that must be taken according to the specificities of each skin, the expected follow-up, the post-operative care, the rhythm of the sessions, as well as the delay before a visible therapeutic effect.

This information sheet recommended by the French Laser Society can be given to you by your dermatologist. Even if it is not sufficient to have an estimate, it helps to give the patient a clear information.

The information consultation provides clear explanations on expected outcomes, side effects and possible complications. There are not any reimbursement from social security or medical leave for these aesthetic treatments. Prices are mainly based on the area to be treated. The total cost is to be evaluated with the patient and is the subject of a signed quote.

A post-operative order and an advice sheet are given to the patient with the doctor's contact information.