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TREATMENT GUIDELINES



ETHEREA-MX®
IPL-SQ®

VERSION 1.2 - NOVEMBER 2017



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IMPORTANT WARNINGS

- Practical training offered by the company is critical for understanding the device and the technique. However, this does not supercede any other medical qualification required for its correct use.
- Before handling and/or operating the device, reading the relevant Instruction Manual is required.
- The ETHEREA® device and its respective IPL-SQ® handpiece should only be operated by qualified professionals. User qualifications, as well as installation and support requirements to carry out procedures, vary from country to country, so professionals should refer to the relevant local regulating agencies for information.
- This document is not intended to be a complete and absolute guide for using the equipment and is offered as a response to the referenced indications. It is implied that the operator of the device in question has all training and the necessary qualifications to properly perform the procedures proposed herein.
- The parameters suggested here are not absolute in clinical practice. Operators should understand how the treatment interacts with the target tissue and be guided by their own clinical experience and professional judgment.
- It is advisable to have a pre-treatment questionnaire prepared, with instructions for patients, explaining the anticipated effects pre- and post-treatment, medical history, patient consent, and any other documents that may be considered critical and compliant with local laws and regulations. Purely for illustration and exemplification purposes, VYDENCE® provides templates of these forms along with this manual.
- Always proceed with photographic documentation of all treatment stages. Talk to your patient and explain all risks that the procedure involves, as well as the potential results and their limitations.
- Carefully follow the recommendations provided under PRECAUTIONS, CONTRAINDICATIONS and SIDE EFFECTS.
- ETHEREA® IPL-SQ® is an electro-medical device that can pose a safety hazard to the operator and/or the patient under certain circumstances, especially in the event of improper installation, use, operation and maintenance.
- Goggles should be worn by everyone present in the procedure room during its operation. Never wear goggles that do not meet the requirements specified by the manufacturer. Also, even when wearing proper goggles, never look directly at the emitted light beam.

1. USAGE INDICATIONS

IPL-SQ® is a procedure indicated for a population of healthy patients. IPL-SQ® is intended to remove gradually and/or permanently reduce undesirable body hair; epidermal lesions (benign pigmentary lesions), sun melanosis, hyperpigmentation, melasma, ephelides; non-ablative photo rejuvenation with fine lines and wrinkles; treatment of benign skin (including port-wine stain,

hemangioma, face and body telangiectasia, erythematous rosacea, angioma and spider angioma) lesions with vascular component, (including port-wine stain, hemangioma, face and body telangiectasia, erythematous rosacea, angioma and spider angioma), poikiloderma of Civatte, superficial venous malformations; treatment of mild to moderate acne vulgaris.

2. CONTRAINDICATIONS

General contraindications for the IPL-SQ® and/or light procedures are:

pregnancy or breastfeeding;

age group, at the discretion of the medical professional, according to the procedure indication;

systemic and immunodeficiency disorders;

a history of acute infections and/or active infectious processes;

a history of heart problems (pacemaker, arrhythmia, etc.);

a history of intolerance to anesthesia or related conditions;

a history of coagulopathic bleeding;

a history of poor scar formation;

a tendency of keloid formation;

uncontrolled hormonal disorders;

localized disease in the treatment area (malignant lesions);

an area with filling of phagocytosed or non-reabsorbed substances;

tanned skin;

ongoing use of vitamins A and K;

photosensitivity and/or allergic to sunlight;

epilepsy or derived/related disorders;

use of ASPIRIN® or anticoagulants within two weeks prior to the procedure;

use of ibuprofen or alcohol within two weeks prior to the procedure;

use of photosensitizing medications, such as tretinoin and estrogen;

diabetes, except if controlled.

3. SIDE EFFECTS AND ADVERSE EFFECTS

SIDE EFFECTS

Among the side effects and adverse effects reported in literature, pain and ecchymosis are commonly evidenced. Aside from these, others should also be considered, such as:

swelling, edema or erythema;

irritation or hypersensitivity;

hot/burning sensation;

hipe or hypopigmentation;

superficial thrombophlebitis;

purpura;

ulcers or burns;

hypertrophic scars and keloids;

We also stress the risk of eye damage due to accidental therapeutic light exposure. For this reason, both the patient and the operator must wear goggles during the entire treatment.

After treatment, most patients will experience a slight sunburn sensation, which typically disappears without treatment within 2-3 hours. In some patients, hyperpigmentation occurs even where there is sun protection, which usually disappears within a certain period of time (transient effect). In rare cases, however, especially when treating absent or reduced pigmentation (hypopigmentation), the coloration change in the area may be permanent.

Incorrect parameterization and/or improper use of the device and handpieces may lead to burns, ulcerations and scarring, which can be permanent.

ADVERSE EFFECTS

As with most IPL procedures, there is an intrinsic risk of mild to severe adverse effects, especially:

infections;

scars or healing difficulties;

keloid formation;

tissue ulceration and/or burns;

tissue necrosis;

complications related to anesthetic administration;

4. PRECAUTIONS

It is inadvisable to use wax (hot or cold), shaving creams, tweezers, tanning creams, lotions or spray within 2 weeks before the start of treatment or between sessions.

Before every procedure, ALWAYS clean the sapphire coupler with gauze. Traces of impurities on the coupling interface may result in HOTSPOTS, compromising the treatment. This can also lead to unwanted adverse effects for the proposed therapeutic indication (hyper or hypochromia).

The same cleaning care is necessary for the sapphire filter on the handpiece. HOTSPOTS on the handpiece may damage the filter coating.

Analyze the treatment area, checking whether there is any obvious damage to the tissue. Assess the skin type and tanning. If unhealed wounds or recent intense tanning are found, postpone the treatment.

Direct exposure to sunlight should be avoided for at least 4 weeks before the application and throughout the entire treatment. Even with clothing, care and attention should be used before exposure to the sun in order to prevent any resulting complications.

Always remove any traces of makeup, impurities, cream or perfume in the area to be treated.

Always talk to the patient before the procedure and explain the type of treatment to be performed in detail. Try to find out the reason for seeking this kind of procedure. Make an effort to understand the expectations and communicate the real result possibilities, side effects and adverse

effects, as well as the treatment duration and number of sessions.

When in doubt about the parameter to be used, treat a small test area for subsequent evaluation. Choose the least exposed area. For PHOTOTYPES I-III, wait 30-60 minutes to evaluate. For PHOTOTYPES III-VI, it is advisable to wait at least 24 hours. Always start with the minimum recommended parameters.

Always fire shots perpendicular to the application area. Always fire with the patient's skin touching the delimiters. Never trigger the light with the sapphire away from the skin.

Make sure all items related to the procedure's SAFETY and equipment use are understood and considered, especially those regarding the use of goggles.

BE EXTREMELY CAREFUL when using the light to treat areas around the eyes. Avoid radiation emitted by the light at any of the available wavelengths. Proper eye protection should be worn by the patient being treated. The light beam should always be directed at the skin outside the orbital area (use intraocular protection).

Only use the equipment after reading and fully understanding this APPLICATION PROTOCOL, taking into consideration all warnings indicated previously under IMPORTANT WARNINGS.

5. CLINICAL REFERENCE GUIDE



The parameters proposed here are not an absolute guide for clinical practice. The operator should use his/her own clinical experience and professional judgment to perform any treatment proposed herein.



VASCUTIPS® tips have reduced tissue cooling area. Thus, cooling may not be sustained after a certain sequence of shots. Considering this, always use them for specific indications, in localized lesions, and always at the maximum cooling level. Remember to monitor skin temperature when performing a long sequence of shots.

EPILATION

Permanent hair removal using IPL was performed for the first time around 20 years ago, becoming available for commercial use in the mid-1990s. Using melanin as the treatment's target chromophore, with specific parameters and wavelengths for each type of hair and phototype, epilation became one of the most common medical-aesthetic procedures in clinics and medical centers around the world.

Today the efficacy of epilation is broadly accepted in dermatology, especially with regard to treatment duration, safety and how quickly results are obtained. There are countless published works and studies attesting to the clinical efficacy of the procedure.

Make sure the IPL-SQ® handpiece is properly coupled to the ETHEREA® with the platform already in operation.

It is important to note that all parameters may change according to the type of skin and hair thickness.

For light (PHOTOTYPES I-III) or normal (III-IV) skin and normal or thick hair, use the 640 nm filter. For light and thin body hair, setting the filter to 640 nm may deliver no result.

For PHOTOTYPES IV-V, with black, thick and deep hair, use the 695 nm filter. For PHOTOTYPE V, treat only small areas.

For light and thin hair, use the 580 nm filter to compensate for the lack of melanin. It is important to note that in these cases the treatment is more complex and the results may still be null or insignificant at the end. The recommendation of using the 580 nm filter is only valid for PHOTOTYPES I-III and at moderate fluence. Experience with the device is critical for successful technique in this case. **DO NOT ATTEMPT TO TREAT BODY HAIR WITH COLOR LIGHTER THAN THE SURROUNDING SKIN;**

During preparation, it is advisable for the patient to remove hair using a razor. If possible, choose to perform this preparation right before application;

Clean the treatment area again using a suitable makeup remover or neutral soap to remove any traces of loose hair, perfume, deodorant, sunscreen, etc;

Couple the relevant filters, following the instructions provided on the TABLE below.

After the parameters are properly set, press **START**. The device will proceed with handpiece cooling, showing the "COOLING TIP" message on the screen. As soon as the device and handpiece are ready for use, an audible signal will sound and the message will disappear from the screen.

Place the sapphire tip on the area to be treated, applying light pressure (3-4 mm). Aside from aiding epidermal cooling, it will enable more pilous follicle surfacing.

Make sure the sapphire is perpendicular to the treatment area and press the firing button/pedal.

Wait a few minutes and check the effects on the tissue. For PHOTOTYPES I-III, wait at least 15 minutes. For PHOTOTYPES IV-VI, wait 24 hours. Reactions to the treatment that are considered normal and immediate might be: mild skin erythema, burned hair with typical odor and perifollicular edema. On the other hand, the absence of these effects does not imply inefficacy of the set parameters;

If there is no noticeable change in the appearance of follicles, increase the fluence value by single increments (1 J/cm²). Note the correlation of the resulting adverse effects;

In case of intense edema, apply a soothing lotion and reduce the fluence or increase pulse time. For patients with more pain sensitive skin, topical anesthetic can be used.

Move the handpiece to the area adjacent to the previously treated one and continue treating the entire area. Overlapping shots may happen as a normal occurrence, as long as the patient's skin is not sensitized by the treatment.

The number of treatment sessions ranges from 4-8. Areas with lighter and thinner hair, with hormonal changes, or even areas less accessible to treatment (upper lip/chin) may lead to a relative increase in the number of planned sessions;

The interval between sessions can range from 30 to 60 days. Always re-examine the patient every 30 days. Preferably, reapply the procedure whenever new hair is visible in the area. As of the second session, the interim period between sessions can be increased to wait for new hair to grow in the treatment area. This growth cycle may vary depending on gender, age, hormonal activity and other factors.

The time for elimination of hair from the treated area is 10 to 15 days after the session;

Once the treatment is finished, clean the treated area to remove combustion byproducts from the pilous follicles;

Application of ice bags and/or cold compresses is always beneficial to relieve the burning sensation immediately after treatment. After a few minutes, dry the treated area and apply the soothing lotion and sunscreen.

EPILATION						
FITZPATRICK	HAIR PHYSIOLOGY		FLUENCE	λ	PULSE WIDTH	COOLING LEVEL
	COLOR	THICKNESS				
I-II	black	normal/thick	16-22 J/cm ²	640 nm	20 ms	IV-V
III	black	normal/thick	14-19 J/cm ²	640 nm	20 ms	IV-V
III-IV	black	normal/thick	16-20 J/cm ²	640 nm	30 ms	IV-V
III-IV	black	thick/deep	15-19 J/cm ²	695 nm	30 ms	V
I-III	light	thin/normal	12-16 J/cm ²	580 nm	30 ms	IV-V
IV-V	black	normal/thick	14-19 J/cm ²	640 nm	40 ms	IV-V
IV-V	black	thick/deep	13-18 J/cm ²	695 nm	40 ms	V
V	black	normal/thick	10-16 J/cm ²	640 nm	50 ms	IV-V
V	black	normal/thick	10-18 J/cm ²	640 nm	100 ms	IV-V
V	black	thick/deep	10-16 J/cm ²	695 nm	50 ms	V
V	black	thick/deep	10-17 J/cm ²	695 nm	100 ms	V

NOTES:

Whenever using the VASCUTIP® (12x12 mm) tip, it may be necessary to increase the target fluence by 1-2 J/cm²; for the VASCUTIP (Ø 8 mm), increase by 2-3 J/cm²;

VASCUTIPS® can be combined with any wavelength. However, the warnings mentioned at the beginning of this chapter should be observed as basic reference principle;

If this is the patient's first treatment session or if there are any questions about using the device, choose to set more conservative

parameters. Observe the patient's reaction to the shots and set the best parameter for the specified treatment. On the other hand, do not use fluence values that are too low, because this may lead to photobiostimulation, causing undesirable side effects in the end result;

For thick/dense beard or areas with intense concentration of body hair, start the treatment with reduced parameters, because areas with high conglomeration of target pigment may concentrate the power, causing increased discomfort to the patient.

PIGMENTARY LESIONS

Pigmentary lesions are caused by excess levels of melanin concentrated in some areas of the skin, resulting from excessive sun exposure, aging or even genetic factors. Pigmentary lesions have different sizes and forms, ranging from tiny black spots to larger patches that may affect almost the whole arm, face and neck. Some types of pigmentary lesions may be carcinogenic, making their removal mandatory.

Pigmentary lesions are a very common problem affecting millions of people around the world. Modern technology, using IPL systems, treats the most common kinds of benign pigmentary lesions in an extremely safe and effective manner with clinically proven results.

Make sure the IPL-SQ® handpiece is properly coupled to the ETHEREA® with the platform already in operation.

The 540 filter is indicated for low phototypes and superficial lesions, while using the 580

nm filter is indicated for high phototypes and deeper lesions;

VASCUTIPS® can be combined with any wavelength. However, the warnings mentioned at the beginning of this chapter remain;

Couple the relevant filters, following the instructions provided on the TABLE below. Usually, a PIGMENTARY LESION treatment provides inherent additional benefits, especially photo-rejuvenation. Thus, parameters related to non-ablative photo-rejuvenation should be simultaneously considered.

After the parameters are properly set, press the START button. The device will proceed with handpiece cooling, showing the "COOLING TIP" message on the screen. As soon as the device and handpiece are ready for use, an audible signal will sound and the message will disappear from the screen.

Only place the sapphire tip on the area to be treated right before the shot, thereby preventing excessive cooling of the lesion.

Make sure the sapphire is perpendicular to the treatment area and press the firing button/pedal.

Wait a few minutes and check the effects on the tissue. For PHOTOTYPES I-III, wait at least 15 minutes. For PHOTOTYPES IV-VI, 24 hours. Reactions considered normal immediately after the treatment are: moderate erythema around the lesion and/or darkening of the lesion with no change to adjacent skin. On the other hand, the absence of these effects does not imply inefficacy of the set parameters;

If there is no noticeable change in the appearance of the lesion, increase the fluence value by single increments (1 J/cm²). In some cases, cautiously and carefully reduce pulse time and use the 540 nm filter. Note the correlation of the resulting adverse effects;

In case of intense edema, apply a soothing lotion. Scab formation on the lesion is a later reaction to the treatment. This is a transient effect and the scab will naturally detach from the tissue during the healing process. Do not use topical anesthetics for this treatment indication – the burning sensation is an important response parameter for the treatment's ENDPOINT.

Move the handpiece to the area adjacent to the previously treated one and continue treating the entire area. The principle of light action on skin is based on selective photothermolysis, and the best results will be achieved on areas where tissue and lesion colors are in sharp contrast (dark lesion, light skin).

The number of treatment sessions ranges from 2-4. For treatment of fully exposed areas, such as hands and face, it is preferable to increase the number of sessions instead of using conservative parameters. This perspective may prevent dyschromia and atrophy.

The interval between sessions can range from 30 to 60 days. Always re-examine the patient every 15-30 days. If there is no noticeable improvement, increase the fluence value by 10% against the previous parameter;

Application of ice bags and/or cold compresses is always beneficial to relieve the burning sensation immediately after treatment. After a few minutes, dry the treated area and apply the soothing lotion and sunscreen.

PIGMENTARY LESIONS

FITZPATRICK	TIP	LESION	FLUENCE	λ	PULSEWIDTH	COOLING LEVEL
I-II	40x12 mm	superficial	13-17 J/cm ²	540 nm	10 ms	II-III
I-II	40x12 mm	superficial	13-19 J/cm ²	540 nm	15 ms	II-III
I-II	40x12 mm	deep	13-19 J/cm ²	580 nm	15 ms	II-III
I-II	12x12 mm	superficial	16-16 J/cm ²	540 nm	10 ms	V
I-II	12x12 mm	superficial	14-19 J/cm ²	540 nm	15 ms	V
I-II	8 mm	superficial	14-18 J/cm ²	540 nm	10 ms	V
I-II	8 mm	superficial	14-19 J/cm ²	540 nm	15 ms	V
III	40x12 mm	superficial	12-17 J/cm ²	540 nm	15 ms	II-III
III	40x12 mm	deep	13-18 J/cm ²	580 nm	15 ms	II-III
III	12x12 mm	superficial	13-17 J/cm ²	540 nm	15 ms	V
III	8 mm	superficial	13-18 J/cm ²	540 nm	15 ms	V
IV	40x12 mm	superficial	10-16 J/cm ²	540 nm	15-20 ms	II-III
IV	40x12 mm	deep	1-16 J/cm ²	580 nm	20 ms	II-III
IV	12x12 mm	superficial	13-18 J/cm ²	540 nm	15-20 ms	V
IV	8 mm	superficial	13-17 J/cm ²	540 nm	15-20 ms	IV-V
V	40x12 mm	deep	10-15 J/cm ²	580 nm	20 ms	II-III
I-II	12x12 mm	dark circles	14-16 J/cm ²	540 nm	15-20 ms	V
III-IV	12x12 mm	dark circles	14-16 J/cm ²	580 nm	15-20 ms	V
I-II	40x12 mm	ocher dermatitis	14-16 J/cm ²	580nm	15-20 ms	V
III-IV	40x12 mm	ocher dermatitis	14-16 J/cm ²	640 nm, 580 nm	15-20 ms	V

NOTES

Note that cooling levels are less intense. The treatment target is on the epidermis (superficial), so intense cooling may negatively impact the final treatment result (underheating).

For darker lesions, use even more moderate parameters than those shown here.

VASCULAR LESIONS

Benign vascular lesions are much more common than one might imagine, afflicting adult men and women, usually showing up as birth marks or developing later in life, during the natural aging process. There are many kinds of benign vascular lesions and most of them can be easily treated using modern technologies, including different types of LASERS and IPL devices, which provide a safe, effective and non-invasive alternative for this kind of procedure.

Using IPL technology is always the most recommended option for treating areas where vascular lesions tend to be smaller and more superficial.

Make sure the IPL-SQ® handpiece is properly coupled to the ETHEREA® with the platform already in operation.

The 540 nm filter is indicated for low phototypes and superficial lesions, while the 580 nm filter is indicated for high phototypes and deeper lesions;

VASCUTIPS® can be combined with any wavelength. However, the warnings mentioned at the beginning of this chapter remain;

Using external cooling before the treatment session starts, including ice bags or topical anesthetics that promote local vasoconstriction, is discouraged due to the risk of ineffective results.

Couple the relevant filters, following the instructions provided on the TABLE below.

After the parameters are properly set, press the START button. The device will proceed with handpiece cooling, showing the "COOLING TIP" message on the screen. As soon as the device and handpiece are ready for use, an audible signal will sound and the message will disappear from the screen.

Place the sapphire tip on the area to be treated.

Make sure the sapphire is perpendicular to the treatment area and press the firing button/pedal.

Wait a few minutes and check the effects on the tissue. For PHOTOTYPES I-III, wait at least 15 minutes. For PHOTOTYPES IV-VI, 24 hours. Reactions considered normal immediately after telangiectasia treatment include: reduced vessel vascularization with signs of coagulation effect. For poikiloderma and hemangioma, severe erythema with light edema may be observed.

If there is no noticeable change in the appearance of the lesion, increase the fluence value by single increments (1 J/cm²). In some cases, cautiously and carefully reduce pulse time and use the 540 nm filter. Note the correlation of the resulting adverse effects;

In case of intense edema, apply a soothing lotion.

Move the handpiece to the area adjacent to the previously treated one and continue treating the entire area.

The number of treatment sessions ranges from 4-6 for poikiloderma, 2-5 for rosacea, and 2-3 for telangiectasia. For hemangioma, this varies – in more severe cases, combined treatments are necessary.

The interval between sessions can range from 30 to 40 days. Always re-examine the patient every 15-30 days. If there is no noticeable improvement, increase the fluence value by 10% against the previous parameter;

Application of ice bags and/or cold compresses is always beneficial to relieve the burning sensation immediately after

treatment. After a few minutes, dry the treated area and apply the soothing lotion and sunscreen.

VASCULAR LESIONS						
FITZPATRICK	TIP	VESSEL THICKNESS	FLUENCE	λ	PULSE WIDTH	COOLING LEVEL
I-II	40x12 mm	< 0.3 mm	13-18 J/cm ²	540 nm	10 ms	V
I-II	40x12 mm	> 0.3 mm	14-19 J/cm ²	540 nm	15 ms	V
I-II	40x12 mm	> 0.3 mm	13-18 J/cm ²	580 nm	15 ms	V
I-II	12x12 mm	< 0.3 mm	16-19 J/cm ²	540 nm	10 ms	V
I-II	12x12 mm	> 0.3 mm	17-19 J/cm ²	540 nm	15 ms	V
I-II	8 mm	< 0.3 mm	16-20 J/cm ²	540 nm	10 ms	V
I-II	8 mm	> 0.3 mm	19-22 J/cm ²	540 nm	15 ms	V
III	40x12 mm	< 0.3 mm	13-16 J/cm ²	540 nm	10 ms	V
III	40x12 mm	> 0.3 mm	13-17 J/cm ²	540 nm	15 ms	V
III	40x12 mm	> 0.3 mm	14-19 J/cm ²	580 nm	20 ms	V
III	12x12 mm	< 0.3 mm	14-17 J/cm ²	540 nm	10 ms	V
III	12x12 mm	> 0.3 mm	15-19 J/cm ²	540 nm	15 ms	V
III	8 mm	< 0.3 mm	15-18 J/cm ²	540 nm	10 ms	V
III	8 mm	> 0.3 mm	15-21 J/cm ²	540 nm	15 ms	V
IV*	40x12 mm	< 0.3 mm	13-17 J/cm ²	580 nm	15 ms	V
IV*	40x12 mm	> 0.3 mm	14-18 J/cm ²	580 nm	20 ms	V
IV*	12x12 mm	< 0.3 mm	14-18 J/cm ²	540 nm	20 ms	V
IV*	8 mm	< 0.3 mm	15-19 J/cm ²	540 nm	20 ms	V

I-III	angioma	17-24 J/cm ²	540 nm	20 ms	V
I-III	spider hemangioma	16-24 J/cm ²	580 nm	20 ms	V
		17-24 J/cm ²	540 nm	10 ms	
I-III	poikiloderma	14-20 J/cm ²	540 nm	15 ms	V
		14-19 J/cm ²	540 nm	20 ms	
I-III	hemangioma	16-20 J/cm ²	540 nm	10-20 ms	V
		18-22 J/cm ²	580 nm	10-20 ms	
I-III	cherry hemangioma	19-26 J/cm ²	540 nm	40 ms	V
I-III	rosacea	15-19 J/cm ²	540 nm	10-15 ms	V

NOTES

ALWAYS start the treatment with the longer and thicker vessels. Only when feeding vessels are constricted and closed should the treatment of smaller vessels begin. This will prevent treatment relapse. Proceed with the treatment following the irrigation flow from larger vessels toward the smaller ones;

It is important for vessels not to be pressed before and during the shot. Just place the handpiece against them. This prevents blood (hemoglobin) dispersion, which can lead to total or partial reduction of the light's clinical efficacy.

Do not treat vascular lesions with overlapping pigmentary lesions and/or hair. Hair and lesions need to be treated before starting the vascular lesion protocol.

Vascular lesion indications refer only to those on upper parts of the body (face, torso). On lower limbs (legs), this method is only recommended for treating hemangioma;

ANGIOMA: Usually, a certain number of sessions are required to effectively reach the desired results;

SPIDER ANGIOMAS: treat deeper vessels first, then superficial ones. First, use the 580 nm

filter, then the 540 nm filter, as indicated on the table. Just place the handpiece against the skin. If the current skin condition does not allow this, perform the sessions in alternating stages;

POIKILODERMA: Be careful when applying the treatment to the chest, especially for higher phototypes. Diffuse erythema and vasoconstriction of small vessels or pigment darkening are indications of good response. Use more conservative parameters in the first session.

HEMANGIOMAS: ideally, test the filters shown on the table, each one with its respective wavelength. If the treatment evolution stops, alternate between the filters. For the remaining fine vessels, set pulse time to 10 ms. The full treatment requires several sessions and, depending on the lesion's extension and depth, vessels may not completely disappear. Symptom relief, however, leads to overall satisfaction with the results;

CHERRY HEMANGIOMA: use 8 mm VASCUTIP®.

ROSACEA: assess phototype for proper fluence parameterization. For purpura, reduce fluence or increase pulse time to 15 ms to promote treatment continuity.

REJUVENATION

Skin rejuvenation has always been a great concern for doctors and patients around the world, especially regarding lightening and removal of spots, wrinkles, expression lines and scars. Traditional rejuvenation is a medical-aesthetic procedure intended to minimize tissue irregularities and stimulate skin cell renewal.

Rejuvenation using and integrating IPL light sources treats specific skin conditions, such as wrinkles and photoaging resulting from chronic exposure to UVA and UVB rays (pigmentary lesions or sun melanosis, for instance). The main rejuvenation mechanism of action in these cases consists of creating thermal damage in the tissue,

which induces the generation of new, healthy cells and stimulates regeneration of collagen and elastin fibers. Nowadays, with new technologies being constantly developed and integrated, rejuvenation also encompasses fractional resurfacing and fractional photo-rejuvenation procedures.

Make sure the IPL-SQ® handpiece is properly coupled to the ETHEREA® with the platform already in operation.

Using the 540 filter is recommended for low phototypes and superficial lesions, while the 580 nm filter is recommended for high phototypes and medium depth lesions and the 695 nm filter is recommended for deeper wrinkles, which is the key filter for rejuvenation;

VASCUTIPS® can be combined with any wavelength. However, the warnings mentioned at the beginning of this chapter remain;

Couple the relevant filters, following the instructions provided on the TABLE below.

After the parameters are properly set, press the START button. The device will proceed with handpiece cooling, showing the "COOLING TIP" message on the screen. As soon as the device and handpiece are ready for use, an audible signal will sound and the message will disappear from the screen.

Place the sapphire tip on the area to be treated.

Make sure the sapphire is perpendicular to the treatment area and press the firing button/pedal.

Wait a few minutes and check the effects on the tissue. For PHOTOTYPES I-III, wait at least 15 minutes. For PHOTOTYPES IV-VI, wait 24 hours. Reactions considered normal, immediately after the treatment, may be noted as mild erythema and edema.

If there is no noticeable change in the appearance of the lesion, increase the fluence value by single increments (1 J/cm²). Note the correlation of the resulting adverse effects;

In case of intense edema, apply a soothing lotion.

Move the handpiece to the area adjacent to the previously treated one and continue treating the entire area.

The number of treatment sessions ranges from 4-6.

The interval between sessions can range from 20 to 30 days. Always re-examine the patient every 15-30 days. If there is no noticeable improvement, increase the fluence value by 10% against the previous parameter;

Application of ice bags and/or cold compresses is always beneficial to relieve the burning sensation immediately after treatment. After a few minutes, dry the treated area and apply the soothing lotion and sunscreen.

REJUVENATION				
FITZPATRICK	FLUENCE	λ	PULSE WIDTH	COOLING LEVEL
I-II	12-18 J/cm ²	640-695 nm	30-40 ms	IV-V
III	10-16 J/cm ²	640-695 nm	30-40 ms	IV-V
IV	10-16 J/cm ²	640-695 nm	50-100 ms	IV-V
V	10-18 J/cm ²	695 nm	100 ms	V
VI	8-16 J/cm ²	695 nm	100 ms	V

NOTES

PHOTOAGING ASSOCIATED WITH PIGMENTARY LESIONS: for pigmentary lesions, initially (1-2 sessions) use the parameters shown in the PIGMENTARY LESIONS section. Proceed with the treatment as indicated on the table above. If the skin is not highly sensitive, use the 640 nm filter in conjunction with the treatment, even when using more conservative parameters.

PHOTOAGING ASSOCIATED WITH VASCULAR LESIONS: For vascular lesions, initially (1-2 sessions) use the parameters shown in the VASCULAR LESIONS section. Proceed with the treatment as indicated on the table above. If the skin is not highly sensitive, use the 640 nm filter in conjunction with the treatment, even when using more conservative parameters.

PHOTOAGING ASSOCIATED WITH PIGMENTARY AND VASCULAR LESIONS:

for pigmentary and vascular lesions, initially (1-2 sessions) use parameters shown in the PIGMENTARY AND VASCULAR LESIONS sections. In session 3, continue focusing treatment on more visible vessels (remaining from previous sessions). Proceed with the treatment as indicated on the table above. If the skin is not highly sensitive, use the 640 nm filter in conjunction with the treatment, even when using more conservative parameters.

The 640 nm and 695 nm filters may be combined with every other treatment indication. However, it is important to remember that these specific cases always require the use of lower power doses to achieve the photobiostimulation effect for improvement of the treatment target area right from the beginning of the treatment;

ACTIVE ACNE

Acne is characterized by increased oil secretion by sebaceous glands; this oil, combined with an accumulation of dead cells within the pilosebaceous follicle, obstructs the pores, causing sebum to accumulate in the afflicted areas. Accumulated sebum releases some substances that irritate the skin, causing inflammation and serving as a favorable medium for bacterial growth, such as *propionibacterium acnes*. If not treated correctly, acne can lead to scars.

Acne affects thousands of men and women around the world. Although more common during adolescence, acne may also affect other age groups, causing great discomfort and inconvenience while affecting self-esteem.

In addition to the administration of topical and oral antibiotics, modern technologies provide new treatment options, such as IPL, which has gained in popularity in recent years, becoming synonymous with safe and effective results.

Make sure the IPL-SQ® handpiece is properly coupled to the ETHEREA® with the platform already in operation.

The 400 nm filter is recommended for direct antibacterial action, while the 640 nm and 695 nm filters are recommended to minimize inflammatory reactions;

VASCUTIPS® can be combined with any wavelength. However, the warnings mentioned at the beginning of this chapter remain;

Couple the relevant filters, following the instructions provided on the TABLE below. After the parameters are properly set, press the START button. The device will proceed with handpiece cooling, showing the "COOLING TIP" message on the screen. As soon as the device and handpiece are ready

for use, an audible signal will sound and the message will disappear from the screen.

Place the sapphire tip on the area to be treated.

Make sure the sapphire is perpendicular to the treatment area and press the firing button/pedal.

Wait a few minutes and check the effects on the tissue. For PHOTOTYPES I-III, wait at least 15 minutes. For PHOTOTYPES IV-VI, wait 24 hours. Reactions considered normal, immediately after the treatment, may be noted as mild erythema and edema.

If there is no noticeable change in the appearance of tissue, increase the fluence value at single increments (1 J/cm²). Note the correlation of the resulting adverse effects;

In case of intense edema, apply a soothing lotion. Do not use substances that might further harm acne-afflicted skin and worsen the inflammatory condition;

Move the handpiece to the area adjacent to the previously treated one and continue treating the entire area.

The number of treatment sessions ranges from 1 (for immediate response, "pre-event") to 10 (for complete mitigation of visible symptoms). However, the treatment needs to be maintained. IPL-SQ® is mainly indicated to continuously improve pustules. The process begins immediately after treatment and, although it does not cure the condition, it mitigates the symptoms (sores) for 7-14 days. It can and should be recommended whenever fast symptom reversal is desired. **HOWEVER, IT SHOULD NOT BE MARKETED AS A HEALING OPTION FOR ACNE.**

The interval between sessions can range from 7 to 14 days.

Application of ice bags and/or cold compresses is always beneficial to relieve the burning sensation immediately after

treatment. Apply specific products for each case, instructing the patient regarding the use of medications for ongoing treatment of the condition.

ACTIVE ACNE						
FITZPATRICK		PASS	FLUENCE	λ	PULSE WIDTH	COOLING LEVEL
I-II	PUSTULAR	1 PASS	13-16 J/cm ²	400 nm	100 ms	IV-V
I-II	PUSTULAR	2 PASSES	12-19 J/cm ²	400 nm	30 ms	IV-V
I-II	INFLAMMATION	1 PASS	10-18 J/cm ²	640-695 nm	100 ms	IV-V
I-II	INFLAMMATION	2 PASSES	9-12 J/cm ²	400 nm	30-40 ms	IV-V
III-IV	PUSTULAR	1 PASS	10-14 J/cm ²	400 nm	100 ms	IV-V
III-IV	PUSTULAR	2 PASSES	8-10 J/cm ²	400 nm	40 ms	IV-V
III-IV	INFLAMMATION	1 PASS	9-17 J/cm ²	640-695 nm	100 ms	IV-V
III-IV	INFLAMMATION	2 PASSES	8-10 J/cm ²	400 nm	40-50 ms	IV-V
V-VI	PUSTULAR	1 PASS	9-12 J/cm ²	400 nm	100 ms	V
V-VI	PUSTULAR	2 PASSES	6-10 J/cm ²	400 nm	50 ms	V
V-VI	INFLAMMATION	1 PASS	8-16 J/cm ²	695 nm	100 ms	V
V-VI	INFLAMMATION	2 PASSES	6-10 J/cm ²	400 nm	50 ms	V

NOTES

Combination with topical retinoid drugs is critical for a completely successful treatment. IPL-SQ®, when used as monotherapy, minimizes the symptoms and the condition itself, but does not permanently eliminate it;

Do not allow sessions to exceed the 2-week limits.

Specifically, it is crucial for the patient to be tan-free for a specific active acne treatment. Using the 400 nm filter, despite providing proper UV protection, leads to a higher probability of hyperchromia. In case of hyperchromia, reduce the power levels to an acceptable minimum or suspend treatment. Be even more careful with higher phototypes.

RED STRETCH MARKS

Stretch marks are an easily recognizable skin condition. They are cutaneous scars left by small dermal fissures caused by distension and/or hormonal phenomena that weaken local collagen fibers. These

ruptures are usually irreversible lesions that form dermal scars. More recent stretch marks have reddish color due to highly vascularized scar tissue.



This clinical guide is considered off-label and there is not enough clinical data at the moment to corroborate broad clinical efficacy of the parameters referenced herein. This clinical guide is based almost exclusively and entirely on the practical experience of physicians who use ETHEREA®. Results may also vary considerably from one patient to another.

Treatment is recommended only for red stretch marks in order to improve their appearance.

Extra care should be used regarding the patient's phototype, in addition to the extent of tanning on the region to be treated.

The 640 nm and 695 nm filters are recommended to minimize the characteristic inflammatory reactions of stretch marks during this phase. While the 540 nm or 580 nm filters are recommended for vascular action.

Wait a few minutes and check the effects on the tissue. For PHOTOTYPES I-III, wait at least 15 minutes. For PHOTOTYPES IV-VI, wait 24 hours. Reactions considered normal, immediately after the treatment, may be noted as mild erythema and edema.

If there is no noticeable change in the appearance of tissue, increase the fluence value at single increments (1 J/cm²). Note

the correlation of the resulting adverse effects;

In case of intense edema, apply a soothing lotion;

Move the handpiece to the area adjacent to the previously treated one and continue treating the entire area.

The number of treatment sessions ranges from 3 to 7. HOWEVER, IT SHOULD NOT BE OFFERED AS A PERMANENT CURE FOR STRETCH MARKS.

Sessions should be scheduled at monthly intervals.

Application of ice bags and/or cold compresses is always beneficial to relieve the burning sensation immediately after treatment. Apply specific products for each case, instructing the patient regarding the use of medications for ongoing treatment of the condition.

RED STRETCH MARKS

FITZPATRICK	PASS	FLUENCE	λ	PULSE WIDTH	COOLING LEVEL
I-II	1 PASS	10-16 J/cm ²	640 nm	100 ms	V
I-II	2 PASSES	14-18 J/cm ²	540 nm	15-20 ms	V
III-IV	1 PASS	9-17 J/cm ²	640-695 nm	100 ms	V
III-IV	2 PASSES	14-18 J/cm ²	580 nm	15-20 ms	V

RECENT SCARS

Scars are formed when the skin recovers from wounds caused by accidents, illness or surgery. They are part of the healing process. The more the skin is damaged, the longer it will take to heal, increasing the chances of forming a large scar.

A scar may look redder and thicker at the beginning, gradually fading over time. Many scars have an unpleasant appearance when the treatment begins, but this improves with time. Scar formation changes according to the patient's age and the location of the wound on the body.



This clinical guide is considered off-label and there is not enough clinical data at the moment to corroborate broad clinical efficacy of the parameters referenced herein. This clinical guide is based almost exclusively and entirely on the practical experience of physicians who use ETHEREA®. Results may also vary considerably from one patient to another.

Treatment is recommended only for recent hypertrophic or burn scars in order to improve their appearance.

Extra care should be used regarding the patient's phototype, as well as tanning on the region to be treated.

The 540 nm or 580 nm filter are recommended to mitigate erythema and improve the clinical appearance of the scar, but not for complete removal.

Wait a few minutes and check the effects on the tissue. For PHOTOTYPES I-III, wait at least 15 minutes. For PHOTOTYPES IV-VI, wait 24 hours. Reactions considered normal,

immediately after the treatment, may be noted as mild erythema and edema.

If there is no noticeable change in the appearance of tissue, increase the fluence value at single increments (1 J/cm²). Note the correlation of the resulting adverse effects;

In case of intense edema, apply a soothing lotion;

Move the handpiece to the area adjacent to the previously treated one and continue treating the entire area.

The number of treatment sessions ranges from 3 to 5.

Sessions should be scheduled at monthly or 20-day intervals.

Application of ice bags and/or cold compresses is always beneficial to relieve the burning sensation immediately after treatment. Apply specific products for each case, instructing the patient regarding the use of medications for ongoing treatment of the condition.

RECENT SCARS				
FITZPATRICK	FLUENCE	λ	PULSE WIDTH	COOLING LEVEL
I-II	14-16 J/cm ²	540 nm	15-20 ms	V
I-II	14-18 J/cm ²	580 nm	15-20 ms	V
III-IV	14-16 J/cm ²	540 nm	20 ms	V
III-IV	14-18 J/cm ²	580 nm	15-20 ms	V

POST-TREATMENT

Using an SPF 60 sunscreen is recommended throughout the treatment and for at least 30 days before the first session. The patient should always use sunscreen on treated areas before and after the treatment.

Using waxes or shaving creams, tweezers or tanning creams is not recommended during the 2 weeks before and after the treatment.

Using a soothing lotion, applied in circular movements, as well as cool compresses, may help to minimize the burning feeling post-treatment. After the application and the procedure, the treated area should be washed gently for up to 3 days, avoiding intense rubbing.

Using LED and topical and/or oral corticosteroids is always recommended to soothe the skin immediately after each session.

Pre-/post-treatment clinical action is key to the therapy's success, as well as for preventing unwanted and adverse effects.

Patients should also be instructed to immediately contact the puss doctor if any signs of infection (such as puss, pruritus, draining or fever), significant pain or complications and side effects emerge.

Patients should be advised to immediately seek a medical professional for urgent care in the event of severe or abnormal side effects after the treatment.

Patients should return for medical follow-up as prescribed. The time to return is usually of 24-72 hours after the procedure.

6. BIBLIOGRAPHY

Arindam Sarkar, Yatindra Kumar Dewangan, Jayanta Bain, Pritha Rakshit, Krishnanand Dhruw, Sandip Kanti Basu, Jayanta Kumar Saha, and Bijay Kumar Majumdar. EFFECT OF INTENSE PULSED LIGHT ON IMMATURE BURN SCARS: A CLINICAL STUDY. *Indian J Plast Surg.* 2014 Sep-Dec; 47(3): 381-385.

Monteiro, E. O. TRATAMENTO DO COLO COM O ETHEREA: COMPROVAÇÃO FOTOGRÁFICA DE EFICÁCIA COM O REVEAL. *RBM - REV. BRAS. MED.* VOL.69 - EDIÇÃO ESPECIAL - MARÇO/2012

Costa MLM, Azevedo LCM, Stock FS, Grohs LMH, Wanczinski MI, Cunha PR, Campos VB. ESTUDO COMPARATIVO DA EFICÁCIA DO USO DE LASER 2940-NM, 1340-NM E LIP NO REJUVENESCIMENTO GLOBAL DAS MÃOS. Trabalho apresentado no V Simpósio de Cosmiatria e LASER da SBD, São Paulo, SP. 2013

Klein A, Steinert S, Baeumler W, Landthaler M, Babilas P. PHOTOEPILATION WITH A DIODE LASER VS. INTENSE PULSED LIGHT: A RANDOMIZED, INPATIENT LEFT-TO-RIGHT TRIAL. *J Dermatol.* 2013 Jun;168(6):1287-93.

HaakCS, NymannP, PedersenAT, Clausen HV, Feldt Rasmussen U, Rasmussen AK, Main K, Haedersdal M. HAIR REMOVAL IN HIRSUTE WOMEN WITH NORMAL TESTOSTERONE LEVELS: A RANDOMIZED CONTROLLED TRIAL OF LONG-PULSED DIODE LASER VS.

INTENSE PULSED LIGHT. *Br J Dermatol.* 2010 Nov;163(5):1007-13.

Amin SP, Goldberg DJ. CLINICAL COMPARISON OF FOUR HAIR REMOVAL LASERS AND LIGHT SOURCES. *J Cosmet Laser Ther.* 2006 Jun;8(2):65-8.

Wu DC, Friedmann DP, Fabi SG, Goldman MP, Fitzpatrick RE. COMPARISON OF INTENSE PULSED LIGHT WITH 1,927-NM FRACTIONATED THULIUM FIBER LASER FOR THE REJUVENATION OF THE CHEST. *Dermatol Surg.* 2014 Feb;40(2):129-33.

Chan CS, Saedi N, Mickle C, Dover JS. COMBINED TREATMENT FOR FACIAL REJUVENATION USING AN OPTIMIZED PULSED LIGHT SOURCE FOLLOWED BY A FRACTIONAL NON-ABLATIVE LASER. *LASERS Surg Med.* 2013 Sep;45(7):405-9.

Ooe M, Seki T, Miura T, Takada A. COMPARATIVE EVALUATION OF WRINKLE TREATMENTS. *Aesthetic Plast Surg.* 2013 Apr;37(2):424-33.

Thaysen-Petersen D1, Lin JY, Nash J, Beerwerth F, Wulf HC, Philipsen PA, Haedersdal M. THE ROLE OF NATURAL AND UV-INDUCED SKIN PIGMENTATION ON LOW-FLUENCE IPL-INDUCED SIDE EFFECTS: A RANDOMIZED CONTROLLED TRIAL. *LASERS Surg Med.* 2014 Feb;46(2):104-11.

Srinivas CR, Kumaresan M. LASERS FOR VASCULAR LESIONS: STANDARD GUIDELINES OF CARE. *Indian J*

Dermatol Venereol Leprol. 2011 May-Jun;77(3):349-68.

Goldberg DJ. LASER REMOVAL OF PIGMENTED AND VASCULAR LESIONS. J Cosmet Dermatol. 2006 Sep;5(3):204-9.

Liu LH, Fan X, An YX, Zhang J, Wang CM, Yang RY. RANDOMIZED TRIAL OF THREE PHOTOTHERAPY METHODS FOR THE TREATMENT OF ACNE VULGARIS IN CHINESE PATIENTS. Photodermatol Photoimmunol Photomed. 2013 Dec 9.

Taylor M, Porter R, Gonzalez M. INTENSE PULSED LIGHT MAY IMPROVE INFLAMMATORY ACNE THROUGH TNF- DOWN-REGULATION. J Cosmet Laser Ther. 2014 Apr;16(2):96-103.

Raulin C, Greve B, Grema H. IPL TECHNOLOGY: A REVIEW. LASERs Surg Med. 2003;32(2):78-87.

Wat H1, Wu DC, Rao J, Goldman MP. APPLICATION OF INTENSE PULSED LIGHT IN THE TREATMENT OF DERMATOLOGIC DISEASE: A SYSTEMATIC REVIEW. Dermatol Surg. 2014 Apr;40(4):359-77.



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