

Super LRI

Hair Removal



Dear Customers

This user manual provides complete guidance for operating the Super LRI device from Leonardo Skin Care Group. Within this manual, we've highlighted the full range of available functions and treatment options offered by the system.

The purpose of this manual is to provide tools and procedures for proper and optimal operation of the system you purchased, to achieve the desired results while maintaining the safety of both patients and practitioners.

It is important to note that this manual is not a substitute for face-to-face training by a company-certified instructor, but the use of the system is subject to the procedures and conditions detailed within it.

The company management places utmost importance on thoroughly reading and studying the detailed material, understanding that maintaining a high professional level requires the use of protocols that are as precise as possible.

However, the protocols detailed in the manual are not meant to replace hands-on experience or self-learning in the field by the practitioner. Whenever common sense conflicts with what is written in the manual - consult with the company's certified training team and do not continue with the treatment.

It is also important to know that this manual does not make any determinations or references to medical or other regulations in any of the countries where the system is marketed. We note that first and foremost, local regulations determine whether the content of what is written in this work is relevant to any particular user.

The Leonardo team wishes you safe and productive work.

Introduction

- Excess hair constitutes an aesthetic problem; therefore, its removal is the most sought-after cosmetic treatment worldwide.
- The popular, non-technological methods are not ideal, due to limited effectiveness and short-range effect.
- The common technologies in this field are energy-based, either light and heat / electromagnetic energy - laser, ALT, IPL, and epilation.
- Working with these technologies requires adequate professional knowledge and a high level of technical skill.

What is considered to be a successful treatment?

The human body has approx. 5 million hair follicles - at any given time, some are in an active growth state while others are in a dormant state. Therefore:

- Permanent hair removal is not permanent and cannot guarantee 100% success.
- Hair reduction is defined as a lack of hair growth for several months, and up to several years when each new growth is:
 - In a lighter shade of hair
 - In a thinner, more delicate texture
 - In a reduced quantity

What is LRI technology?

LRI - is an accumulative light based on two concurrent Light pulses.

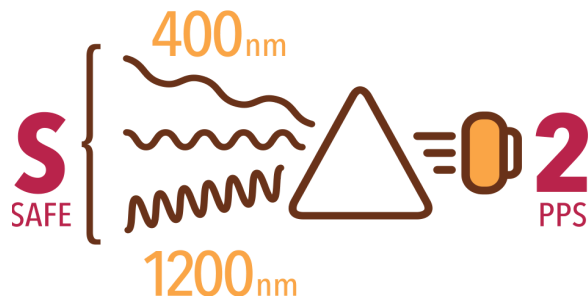
LRI - is a significantly increased light beam technology.

LRI - produces 2 light beam pulses per second.

LRI - is a sequence of polychromatic wavelengths
ranging from 400 to 1200 nanometers.

LRI - allows for the adjustment of the wavelengths for the type of treatment.

LRI - enables safer treatments as a result of its built-in responsiveness.



Selective Photothermolysis

- Photo = light | thermo = heat | lysis = destruction
- “Selective Photothermolysis” is a focused damage caused to the target organ (hair follicles) without harming the tissue surrounding it

Photothermolysis - Target

- The targets for hair removal are the dermal papilla and the bulge area of the hair follicle. The heat-induced destruction of the hair shaft leads to hair “dropout”. The partial injury to the germinative zone leads to a telogen-shock response, prolonged telogen dropout, and the development of dystrophic hairs which are thinner in texture and have variable pigmentation.
- To avoid epidermal damage due to light absorption by the epidermal melanocytes, the interfollicular epidermis needs to be cooled down. The optimal pulse duration for selective photothermolysis should be less than, or approximately equal to, the thermal relaxation time of the target structure, thus minimizing the damage to the surrounding tissue, which has different thermal relaxation times.
- Trauma to the anagen hair follicle that interrupts the hair cycle induces a catagen-like state and eventually leads to loss of the hair.
- Melanin is the target chromophore for hair removal.

About Hair - Growth Stages

- Anagen - the active stage
During this active growth phase, bulbar matrix cells proliferate and differentiate into the companion layer, the inner root sheath, and the hair shaft.
- Catagen - the regression stage
Following the anagen stage, the bulbar part regresses in the catagen phase, due to a process of apoptosis.
- Telogen - the resting stage
The telogen phase, the resting phase, subsequently occurs and the non-growing hair is encased by the permanent portion. The hair grows once again as the anagen phase is re-initiated.



About Hair - Growth Stages

- The hair follicle is the most susceptible to treatment during the anagen phase.
- The transition from one hair follicle phase to another varies according to the anatomical region.
- Factors such as age, gender, anatomical region and hormones affect the duration of the anagen phase.
- During the hair cycle, there are also changes in vascularization. These changes seem to be related to the hair cycle regulation process.
- The hair follicle is well vascularized during the anagen phase, while vascularization is much reduced during the catagen phase.
- The duration of the anagen phase varies from 2 to 6 years in the scalp, 2 months to 1 year in the face, and from 1 month to 6 months in the extremities. Therefore, more treatments are needed for each area to catch the hair follicles in the anagen phase.

About Hair - Hair Types - Melanin

Light is absorbed by the target endogenous chromophore (melanin).

There are three types of melanosomes present in the hair:

- Erythro Melanin granules are present in red hair.
- Eumelanin and pheomelanin granules are found in varying proportions in blond and dark hair.
- In white or grey hair, the melanocytes of the hair matrix are much reduced and show degenerative changes.

About Hair - Hair Shades

Eumelanin

- Hair color - dark brown and black
- Expected treatment success rate - 80-90%

Pheomelanin

- Hair color - blond and red
- Expected treatment success rate - up to 50%



Treatment success depends on the percentage of eumelanin present in the hair (the higher the percentage, the higher the success rate). It is therefore recommended to undergo 3 trial treatments and then decide whether to continue.

About Hair - Hair Types

- Terminal Hair - thick, coarse and pigment-producing.
- Vellus Hair - short, thin, delicate hair, covering most of the body and providing protection. Its structure is identical to terminal hair, but it lacks a medulla, therefore it does not become long and strong.
Some vellus hair becomes terminal hair with a length of up to 1 mm during puberty.
- Tombstone Hair - where treatment is performed during the telogen phase, and at the same time there is an initial growth of anagen hair, soft and thin hair will grow which will finally fall out - a common effect occurring after approx. 6-8 treatments.

About Hair - Summary

- At the base of each hair follicle, there are usually two more inactive follicles.
- After treatment, the hair stays and continues to grow (coming out of the pore) for 15-20 days.
- In hair removal treatments the amount of hair growth in the treated area may be reduced significantly by 80-90%.
- With red/blond/light chestnut hair - the hair reduction may be up to 50%.
- A treated follicle is destroyed. Any other growth is new and not renewed!!!
- Do not be tempted by fast processes - it is preferable to increase the interval periods between treatments,
So, more hair with as much melanin as possible will be treated during your next treatment. Your results will be much better.

The Fitzpatrick Skin Tone Scale

- Diagnosis of skin tone - Fitzpatrick scale is very important in hair removal treatments
- Skin tone directly affects the selection of wavelengths, pulse width, and energy level.
- All skin tones can be treated as long as there is a difference between the skin tone and the hair shade - the hair shade must always be darker than the skin tone.
- The darker the skin is, the more sensitive it is to treatment, increasing the risk of burns and PIH
- When diagnosing skin tone, the following parameters should be considered:
 1. Observation: skin tone | eye color | hair shade
 2. Questioning: skin reaction to direct sunlight exposure | ethnic origin | completion of Fitzpatrick scale questionnaire
 3. Evaluation: season in which the treatment is performed, in the context of tone change caused by exposure to sunlight

The Fitzpatrick Skin Tone Scale

Type	Hair Color	Skin Color and Ethnic Background	Eye Color	Sun Reaction
1	Red, blonde	Very fair Scandinavian, Nordic, and North European	Blue	Always burns, never tans
2	Red, blonde, light brown	Fair North European, Celtic (Scottish, Irish)	Blue, green	Always burns, tans with difficulty and tends to be freckled
3	Sandy blonde, brown	Medium Southern Europe	Hazel, green, blue,	Burns initially, tans fairly well and evenly
4	Brown, black	Moderate brown, olive Mediterranean, Latin (Italian, Hispanic)	Hazel, brown	Burns are rarely evident, tans easily
5	Black	Dark brown (Asian, Middle Eastern, American Indian)	Dark brown, black	Burns are never evident, always tan *some Asian skin always burns and never tans
6	Black	Black	Dark brown, black	Burns are never evident, always looks tanned

Follow-up and Intervals Between Treatments

- After the first treatment, the next one will be scheduled only after significant uniform hair growth is observed in the treated area.
When there is significant hair growth, there is more melanin in the hair and the treatment is more effective.
Therefore, we should try and increase the interval period between treatments as much as we can.
- Hold a follow-up call a few days before the treatment and ask to see a photo of the treated area, to verify there is hair growth and set the appropriate date for the next treatment.
- During the maintenance treatment period (once every 6 months), and when growth is significantly thinner, we only treat the growth areas. These should be marked with a white pencil and shaved before a focused hair removal treatment is carried out.

Recommended follow-up interval periods in weeks

	Treatments 1-3	Treatments 4-6	Treatment 7 and onward
Recommended follow-up times in weeks (Face)	4-6	4-6	8-10
Recommended follow-up times in weeks (Body)	6-8	8-10	8-12

Excessive Hair Disorders

Hirsutism - a dermatological condition in women represented by excessive hair growth, distributed in a male-like pattern.

This condition is often due to endocrine disturbances, characterized by elevated circulating androgen levels or increased androgen receptor sensitivity in hair follicles. It may be related to: Cushing's disease, the adrenal gland (hyperplasia or tumours), the ovaries (polycystic ovary disease, tumours), or exogenous anabolic steroids.

Hypertrichosis - excessive growth of coarser, longer hair.

Although there are described mechanisms of hypertrichosis, the triggers that initiate these mechanisms are unknown.

Congenital hypertrichosis - nevocellular nevus, hamartoma, hemihypertrophy, hypertrichosis cubiti, neurofibroma, hairy cutaneous malformations of palms and soles, spinal hypertrichosis.

Acquired hypertrichosis - Becker's nevus, hypertrichosis of pinna, hypertrichosis associated with local inflammation, pharmacological hypertrichosis, dermatomyositis, hyperthyroidism, hypothyroidism.

Terminology

- TRT - Thermal Relaxation Time - lesion (hair strand/ epidermis tissue) recovery time
- Pulse duration - the length of time spent at a given temperature. The most selective thermal damage occurs when the pulse duration approximates the thermal relaxation time (TRT) of the target chromophore, which is related to the chromophore size, automatically calibrated in the Fitzpatrick scale of the device.
- The time elapsed in each pulse, from the moment the light goes on until it goes off. The wider the pulse, the longer the radiation exposure to the treated organ

Setting the correct parameters for a treatment session

- Pulse duration (Time Duration TD) is very important in the hair removal process. When selected correctly, there is no need to use high energy level (J)
- Use of very high energy in hair removal, without correct calibration of TD, causes the hair strand to evaporate without causing damage to the hair root, resulting in loss of melanin in the hair strand

Parameter Selection

- Treatment parameters are set according to the patient's skin sensation and reaction
- The patient's tolerance to the flashes is indicated by an itching sensation. Important to note - a sensation of heat is insufficient
- Test for treatment parameters of each body part separately, in case there is a difference due to skin tone or location near bones, for example
- The level of sensation and skin reaction may change due to the following reasons:
 1. Decrease in the number of hair follicles
 2. Habituation
 3. Changes to the skin tone and hair strand thickness

Filter - Wavelengths

- The filter's role is to screen out various wavelengths for an ideal match with the target chromophore.
- The wavelength should be adjusted so it is absorbed by the correct chromophore (melanin) in the target organ (hair follicle), without harming its surrounding tissue (epidermis)
- Each filter blocks out wavelengths of light below the filter number selected and allows only those wavelengths of light above the filter number to pass through.
- In hair removal, the filter is set according to the skin tone, hair type and hair color.
- Longer wavelengths are preferred, as the chromophore is situated deep in the skin. The longer the wavelength, the deeper the light penetration into the skin
- Shorter wavelengths are more effective for light and thin brown hairs and light skin tones.

Hair removal Parameters

FILTER	FILTER 530	FILTER 590	FILTER 640/690
Skin tone and hair strand type	Skin tone Fitzpatrick 1 Hair strand type: Thin hair /Light colored hair	Skin tone Fitzpatrick 2,3 Hair strand type: Dark colored hair Skin tone Fitzpatrick 1 Hair strand type Dark and/or thick hair	Skin tone Fitzpatrick 4/5/6 Hair strand type: Hair darker than skin tone Tanned skin (older tan) Freckled skin Hyper Pigmented areas (Groins, armpits, inner thighs)
Initial energy (J)	Body -13 Face -11	Body -10 Face -8	Body - 8 Face -6
energy (J) adjustment for pulse widening- decrease to a lighter skin tone	25 J Max	25 J Max	25 J Max

Filter 530 FITZPATRICK SKIN TONE № 1 Light hair with a little pigment Thin hair	Filter 590 FITZPATRICK SKIN TONE № 2/3 Pigmented hair Dark hair	Filter 640/690 FITZPATRICK SKIN TONE № 4/5/6 Tanned skin (older tan) Freckled skin Pigmentation areas groins, armpits, Inner thighs
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Hair removal Parameters

1. The treatment can be maximized by changing skin tone to a lighter tone (as needed and following energy adjustment to the selected tone) and by this assisting in increasing TD. Example: The patient's skin was established as 4, however, they do not feel an itching sensation during treatment, we can change the tone definition setting to 3.
2. These changes are in situations where the required dose of energy is higher than average.
3. The required average energy level for a skin tone change to lighter is higher than 25J, meaning if the energy required for treatment exceeds this value, consider changing the skin tone.

Hair Removal from Face and Neck

- Paradoxical hair growth may appear in the facial area, in 5% of the population.
- Taking photos of the initial status and documentation of each treatment is a must.
- The treatment must be performed on shaved hair.
- Shaving should be carried out at the clinic by the therapist after the picture has been taken
- If no improvement is observed after 3 treatment sessions, stop the treatments
- Treatment is performed in areas with terminal hair - no treatment is allowed in a downy area with no pigment.
- Once the hair begins to thin in the face and neck area, treatment is performed only on the growth areas

Upper lip:

1. Use a lip mould to cover the lips and avoid burning
 2. If the patient has teeth implants, a pad of gauze should be placed on the gums to create a barrier.
- Never remove hair from nostrils, nasal cavity or ear canal. Protect these areas with a moist cotton ball
 - Clean the facial skin
 - Place the dedicated protective eye goggles securely over the patient's eyes.
 - Mark with a white pencil the perimeter of the hair growth area, and shave the hair with the growth direction

- Apply glider/ colourless gel on the treatment area
- Use a suitable initial energy level for the face, according to the patient's skin tone and hair shade
- Pass over the treated area only once, with a double pulse
- Do not go outside the marked lines, so as not to irritate and stimulate dormant follicles
- Remove the glider/ colourless gel or ultrasound gel layer and sterilize the face with alcohol-free skin toner
- Apply a generous amount of soothing lotion
- After treatment during the daytime apply sunscreen

Hair Removal in the Armpit

- Disinfect the skin (use a mild alcohol-free skin toner)
- Spray the Glider onto the treatment area and apply the cold treatment handpiece (pay attention that it is not frozen) to the treatment area
- Wait for 3 seconds and flash 2-3 pulses, then move to the next spot and repeat until the entire area is covered (reduction of some energy is preferable)

Hair Removal in the Groin

- Disinfect the skin (use a mild alcohol-free skin toner)
- Place a patch of non-woven fabric (as protection)
- Spray the Glider onto the treatment area and apply the cold treatment handpiece (pay attention that it is not frozen) to the treatment area.
- Wait for 3 seconds and flash 2-3 pulses, then move to the next spot and repeat until the entire area is covered (reduction of some energy is preferable)
- Please note that the groin area may be different in tone than the skin tone elsewhere on the body, so consider a replacement of the filter and adjustment of parameters.
- Be aware that the mucous membrane area and the testicles cannot be treated.

Clinical End Point

- Mild-to-moderate itching sensation during the light flash (the pulse)
- Some burning smell during treatment (possible)
- Perifollicular edema reaction, including swelling and mild reddening of the skin surrounding the hair follicle - particularly when treating thick hair
- Mild erythema of the skin as a result of the energy absorbed in the skin tissue.

Precautions for Hair Removal Treatments in Specific Body Areas

Avoid:

- Below the eyebrows or at the lip of the eye orbital
- Moles
- The pink area or borderline of the lips
- Cuts and open wounds
- Abnormal blood vessels, or around a hypertrophic or keloid scar
- Nasal cavities
- Ear canal
- Areola (the pigment tissue around the nipple)
- External genitals (for example men's testicles)
- The mucous membrane of female genitals/ labia - not recommended

Protect:

- Opaque intraocular cornea protectors must be used when treating any part of the face
- Cover tattoos and permanent make-up with a white pencil or band-aid and keep the handpiece a distance of 1 cm from the covered area.
- Cover moles with a white sticker and keep the handpiece a distance of 1 cm from the mole.

Post-treatment Recommendations

1. Apply soothing cream lotion to relax the skin
2. Avoid exposure to the sun and avoid tanning for one week after treatment
3. Avoid vigorous activity that might cause sweating for approx. 24 hours after treatment
4. Avoid applying brightening cream or any perfumed products for approx. 48 hours after treatment
5. Avoid touching or rubbing the treated areas for approx. 48 hours after treatment
6. Avoid hot baths, saunas and exposure to steam and vapour for approx. 24 hours after treatment
7. Avoid swimming in chlorinated water for approx. 24 hours after treatment
8. The treated area may be rinsed with lukewarm water
9. The treated area may be rinsed with warm/hot water only after 8 hours have passed
10. It is recommended not to wear tight or synthetic clothing on the treated area for approx. 24 hours after treatment

Possible Adverse Side Effects

1. Perifollicular edema - edema/ swelling of hair follicles is the natural result of hair removal treatment using technology. More common when there are dense, strong and active follicles. In most cases, this reaction appears a few minutes after the treatment and can last 5 days to one week. This reaction can cause itching and discomfort, in which case it is recommended to apply a calming lotion, such as 1% hydrocortisone, to the treatment area. As the treatment progresses, this effect occurs less. Although a sign that the treatment is working, consider reducing the energy level and pulse duration for the following treatment.
2. Superficial and mild burn of the outer layer of the skin (epidermis), manifested in skin edema, redness and a burning sensation. The pain in such a burn goes away after a few days, and typically no scar or mark of the burn remains. Treatment - When a burn occurs, treatment should be stopped immediately. Cool the burn area with cold water compresses for approx. 15 minutes. Apply soothing cream and follow up with another application every 2 hours, until the area is relieved. Do not wash the area with hot water or expose it to sunlight for 72 hours.

Main causes:

- Fresh tanning
 - Error in parameter adjustment
 - Incorrect placement of the handpiece on the patient's skin
 - Body lotion/oil applied to the treatment area before treatment, causing a burn from the light flash contacting the skin
 - Administration of photosensitive preparations
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3. Post-inflammatory pigmentation (traumatic) -Mostly results from a skin trauma burn (according to the skin tone and other factors). In such a case, treat the burn immediately with products containing antibiotics and topical steroids, to try and prevent a scar/ PIH spot. Using the Glickman formula is also an option depending on the severity of the hyperpigmentation(following medical advice). It is also recommended to use a silicone gel that helps prevent and treat scars in exposed areas. Recommendation for use: apply a thin layer twice a day for a period of 2-3 months (depending on the severity of the hyperpigmentation)
 4. Paradoxical hair growth - may appear in approx. 5% of the population: women in the neck and face area, men in the shoulder area
 5. Allergic reaction (urticaria, dermatitis, itch) - such an allergic reaction may occur if one uses pain medication (Nurofen, Advil), antibiotics and other drugs known to be photosensitizing. If it does, refer the patient to a physician for medical attention.
 6. Folliculitis - Inflammation of the Hair Follicle: accumulation of pus/ inflammation in the hair follicle, mainly in areas where shaving was carried out. Characterized by a mild local redness, it is sometimes accompanied by discharge, itching and discomfort. The origin of this inflammation/infection is staphylococcus 6 bacteria.

Prevention - it is recommended to shave with the direction of hair growth, replace the razor frequently, and avoid hot tubs, saunas and pools for at least 24 hours after the hair removal treatment Treatment - topical ointment containing antibiotics, such as Fucidin.

Important to know !

Most of the undesirable reactions appear in Fitzpatrick skin tones 4-6. Starting with Fitzpatrick 3 and higher there is a delayed reaction effect - meaning the skin burn will not appear immediately at the end of the treatment, but may manifest several hours later. Therefore, it's important to stop treatment immediately if the patient complains about pain or a burning sensation.

Operation

1. The filter should be fully inserted into the handpiece, with the arrows pointing upwards. (You should hear a click indicating that the filter is inserted correctly)
2. Turn on the device a few minutes before starting a treatment session, to allow the handpiece to cool down.
3. Every 100-200 pulses, pause for 20 to 30 seconds (it is not necessary to exit operational mode - only to stop emitting pulses for 20-30 seconds)
4. It is recommended that the treatment room be air-conditioned to 22 to 25 degrees.

Malfunctions

The system is self-monitoring and can warn of faults

1. If the device warns of a water leak, make sure the handpieces are connected
2. If the device does not switch on, check:
 - The system is connected to the mains
 - There is electricity in the mains socket
 - The switch on the back of the device is ON
 - The device switch is in "ON" position, and the key position is ON
 - Release the red knob by turning it clockwise

 **For Contraindications please press [Here](#)**

Broadband Light Skin Texture Treatment

- Broadband light allows for greater versatility in treating a variety of skin types and conditions, such as photo ageing, pigmentation, facial veins (telangiectasias), rosacea, and acne. The wavelength of light can be adjusted by applying filters.
- Patented technology
- Non-surgical, non-ablative system
- Fast and safe treatment

Indications for Use

- Skin tightening - Facial contouring and skin rejuvenation
- Skin renewal - pigmentation treatments
- Acne
- Vascular conditions - blood capillaries/ nail fungus/ PIE

Contraindications

- Patients who have a history of abnormal response to sunlight
- Patients who use photosensitizing medications or drugs
- Patients who have used isotretinoin (Accutane) within the last 6-12 months
- Patients who are pregnant
- Patients who have medical conditions that may affect wound healing
- Patients using anticoagulant medication or heavy aspirin use
- Patients with active infections and/or compromised immune systems
- Patients with tanned skin
- Patients with a history of skin cancer, especially malignant melanoma
- Patients who have a history of keloid scar formation
- Patients who have skin type 5-6

Precautions

- Skin treatments are only allowed on skin tones 1-4, therefore accuracy in selecting the skin tone is particularly important.
- Dark skin is sensitive to burns and may develop PIH and worsen existing pigmentations.

Please note - treatment of Fitzpatrick 4 skin tone should be carried out very cautiously. It is recommended to perform a patch test in a hidden area.

- The performance of one or more test spots is indicated to assess the clinical response of the epidermis. Increase the system level (HPC) until the required clinical endpoint is reached.
- Non-facial tissue (neck, chest, hands, etc.) tends to be thinner and more sensitive to heat. In these areas, decrease the system level HPC.
- Settings may need to be altered depending on the epidermal temperature and moisture content, the room temperature, physiology, chronological age, degree of photoaging, skin type, background etc.
- Do not overlap or stack pulses, as this could result in burns or blisters
- Ensure that the entire handpiece is in complete contact with the treated area throughout the entire pulse
- Some epidermal cooling is necessary to protect the skin. The amount of cooling required will vary depending upon the patient's skin type, and the system level HPC and pulse width selected. The lighter the skin type, the less cooling is required, while the darker the skin type, the more cooling is required. Higher system levels may also require more epidermal cooling.
- A medical history must be taken before beginning any subsequent treatment, by reviewing clinical information such as any new medications, skin care, sun exposure, pregnancy etc.
- Tattooed areas, and the area of the skin 4-5 mm outside of the tattoo in all directions, should not be treated.
- Darkened moles should not be treated.
- Use caution when treating areas where permanent hair loss is not desired, such as a man's beard/or over eyebrows

Skin Tightening

- Recommended no. of treatment sessions: 4-6, at 3-4 week intervals
- Maintenance treatments once every six months (as needed)
- Filter 690 -1200 nm

Determination of End Point:

- The intensity of the treatment should be adjusted incrementally until appropriate endpoints are met
- The target temperature (endpoint) for the stimulation of collagen production is 40-42°C
- An accumulative heating technique is applied through the motion mode
- The endpoint is monitored using an external digital thermometer
- The treated area should be warm to the touch for 1-3 minutes after the treatment.
- At the end of the treatment, patients should report moderate deep tissue heat and show a slight to moderate temporary erythema

Treatment Basics:

- Select type of treatment - skin tightening
- Select skin type
- Adjust the cooling level according to the need
- Adjust minimum energy level (J) according to skin tone (parameter table)
- Insert the appropriate filter into the handpiece
- Apply a thin layer of glider/ colourless gel to the treatment area
- Using an external digital thermometer, take 2-3 temperature readings of the area to be treated to establish a baseline
- The handpiece should be held parallel to the surface of the skin at all times. All edges of the handpiece should be in complete contact with the skin at all times throughout the entire pulse.
- Heat the treatment zone to a target temperature of 38-42°C by moving the handpiece back and forth.
- Perform one pass to test the patient's response to the heat
- If the heat is tolerable, then continue to perform 2-3 passes over the treatment area.

Then take an external temperature to gauge heat buildup

- Continue passes until a temperature of 38-42°C is reached
- Once the target temperature is reached, to maintain patient comfort and avoid overheating, lower the system level by 2 J, or increase the cooling level, and continue to maintain the target temperature for 2-3 minutes
- The treated area should be warm to the touch for 1-3 minutes after treatment

Pigmented Lesion/ Skin Treatment

The Non-Ablative Pigmented Lesion/ Skin Treatment Protocol is effective for treating hyperpigmentation, sun damage, brown spots, age spots, liver spots, brown pigmented scars, and freckles. Using the theory of selective photothermolysis, benign pigmented lesions can be treated. The absorption converts light into heat energy, which raises the temperature of the pigmented lesion.

This heat is used to destroy the parts of the cells in which the melanin is stored, resulting in the slow elimination of the pigmented lesion by the macrophages of the immune system. All of this should happen selectively and without damage to the epidermis or surrounding tissue.

- Recommended no. of treatment sessions: 2-3, at 4-week intervals
- Maintenance treatments - as needed
- For pigmented lesions that reside deeper in the tissue, and for lesions that are more densely populated in an area, a deeper penetrating filter should be selected
- Melanin in the skin competes with the target lesions for absorption of the light. Therefore, a deeper penetrating filter should be chosen for patients with darker skin types
- 3 types of filters: 590, 530, and 480 - select according to skin tone and the shade of the pigmentation
- Darker targets absorb more energy/ heat and will reach higher temperatures. Therefore, darker, more-concentrated pigmented lesions require a lower system level (HPC) than lighter-colored, less-concentrated pigmented lesions to reach the same therapeutic level
- Some epidermal cooling is essential to protect the skin. The level of cooling required will vary with skin type, extent of indication present, and what area is being treated.

Determination of End Point

- Darkening and scattering of the pigmented lesion
- Erythema of surrounding skin
- Possible edema of the pigmented lesion
- Slight tingling sensation in the treated area
- For skin tones 3-4, there is a tendency for a delayed reaction, therefore it is necessary to wait longer between pulses - during the waiting time you may treat another lesion/ area.
- At times, the delayed reaction may appear after several hours, so do not exceed the pulse number limit.
listed in the protocol
- At times, the pigment is "caught" only after several treatments. The outcome will be a temporary increase of the pigment until peeling and obtaining the desired result (about 10-14 days)

Acne Treatments

The visible light of the SUPER LRI system takes advantage of the photosensitivity of porphyrins that are produced by Cutibacterium acnes. The blue light - 415 nm - will cause photoexcitation of porphyrins. This will form singlet oxygen within the microorganism itself, leading to the selective destruction of the bacteria.

Longer wavelengths - 530/ 590/640/690 nm - produce deeper penetration into the skin, targeting inflammation/ redness and collagen remodelling.

- The recommended number of treatments is 10-15 - total
- Frequency - 8 treatments, 1-2 per week
- From treatment 9 - one treatment session every two/ three weeks depending on the situation
- The treatment is performed using a fully active cooling system
- The effects of the treatment will be maintained until bacterial populations rebuild to their initial concentration. Some patients may require a maintenance treatment within 3-6 months of the initial series of treatments

- Perform deep face cleaning once every 4 weeks
- Allow for an interval of 5 days between the technological treatment and deep cleaning.
- Please note, that the treatment must be combined with preparations for home use.

Treatment Protocol

- Select type of treatment - acne treatment
- Select skin type
- Adjust cooling level - max cooling level
- Adjust minimum energy level (J) according to skin tone (parameter table)
- Insert the appropriate filter into the handpiece - 415/ 480/530/590/640 nm
- Apply a thin layer of glider/ colourless gel to the treatment area
- The treatment is composed of two steps:
 1. Perform 2 double-pulse passes/ or in-motion mode over the entire treatment area then:
 2. Perform a spot pass of 4 single pulses on each lesion
- Filter 690nm for collagen remodeling - helps complement the results of the first two steps, and facilitates fast treatment of large areas.

Erythematous/PIE - Treatment

This treatment is carried out in the vascular area without cooling, in order to prevent the contraction of the blood vessels which may harm the efficiency of light absorption by the oxy and deoxy hemoglobin chromophore that is present in the blood vessels.

- During the treatment, we generate selective thermal damage that causes coagulation and thrombosis of the blood vessel walls
- Do not treat using this method when the inflammation is still active
- Treatment frequency: once every 3-4 weeks, for 3-6 treatments
- Filters:
 - 530/ 480 - a relatively new spot is treated with a 480 filter and an "older" spot is treated with a 530 filter, or by alternating between the two, depending on the response between the treatments
 - Filter 590 is suitable for older/fibrotic scars (those that cannot be stretched easily)

Treatment Protocol

- Select type of treatment - skin redness
- Select skin type
- Set the cooling level: treatment is mostly done without cooling, in skin tone 4 it is possible to combine a minimum cooling level.
- Adjust minimum energy level (J) according to skin tone (parameter table)
- Insert the appropriate filter into the handpiece - 530/480 nm where a relatively new spot is treated with a 480 nm filter and an "older" spot is treated with a 530 nm filter or alternating between the two, depending on the response between the treatments
- Apply a thin layer of glider/ colourless gel.
- Desirable skin reaction and the endpoint: 4-6 pointed flashes (on the lesions) until a slight change is noticed in the color of the spot (until it looks more erythematous) accompanied by a tolerable burning sensation
- Energies for SUPER LRI -20-30 J

Setting the End Point

- A slight change is noticed in the color of the spot (until it looks more erythematous) accompanied by a tolerable burning sensation
- 4-6 double pulses on the lesions

Vascular/Skin Treatment

Vascular/Skin Treatment Protocol is effective for treating redness, flushing, blushing, rosacea, red scars and broken capillaries. Using the theory of selective photothermolysis, benign vascular lesions can be treated with the appropriate filter and settings that will cause selective absorption of light in the blood that is flowing through the targeted vessel

The absorption converts light into heat energy, which raises the temperature of the blood. Heat is conducted to the lining of the vessel wall leading to its injury. This results in the slow elimination of the vascular lesion by the macrophages of the immune system. All of this should happen selectively and without damage being done to the epidermis or surrounding area.

- The treatment is limited to skin tones 1-3
- Recommended number of treatments 5-7, at intervals of 4 weeks
- The area of treatment is limited to face and décolletés only

For vascular lesions, flushing, blushing and/or rosacea that resides deeper in tissue and for areas where these conditions are more densely populated, a deeper penetrating filter should be chosen. Melanin in the skin competes with the targeted vascular lesions. Therefore, a deeper penetrating filter should be chosen for patients with darker skin types.

Recommended filters: 480/530 according to the skin tone

Treatment Protocol

- Apply a thin layer of glider/ colourless gel
- Select appropriate settings - vascular/ redness treatment
- Insert the appropriate filter into the handpiece - 480/530
- Treat test area to establish safe treatment parameters and desired endpoint
- Once appropriate settings are selected, the complete area to be treated
- Be careful not to apply pressure to the skin with the handpiece to prevent possible blanching of the vessels in the treated area. If vessels are blanched, there is no longer a target for the light
- Marking the area of the capillary with a white pencil in such a way that the borders of the capillary are blurred, to avoid damaging healthy skin, or work with a template
- Setting the cooling level: treatment is mostly carried out without cooling; in skin tone 3 it is possible to combine a minimum cooling level
- Setting the energy level (J), according to the parameter table
- Perform 6-9 flashes in the treatment area. Every 2 pulses stop for 15-40 seconds and observe the reaction of the blood vessel (endpoint)

Nail Fungus (Onychomycosis)

Treatment Protocol

- 10 treatment sessions
- One week interval between treatments
- Cover the cuticle with a moist gauze pad.
- Select treatment type in the device - vascular treatment
- Filter 530 nm
- Select skin tone in the device
- The system level should be increased gradually
- 6-9 pulses on the treated area with a 10-second interval between pulses

Product Specification Chart

Technical topic	Value	Remarks
Light technology	LRI (IPL Enhanced technology) / ALT	
Light wavelength	400 nm-1400 nm	Defined by the user, by installing the desired optical filter
Output power	Up to 40 Joules	
Circuit breaker	16 A	
Voltage	240VAC +/-10%	Factory setting is required
Current	16 A	
Frequency	50 Hz-60 Hz	
Energy level	1(Joule) - 40 (Joules)	Defined by the user
Power control	PWM	
Exposure Mode	Pulsed	
Pulse spot size	7.5 cm ²	Optional – 3.5cm ²
Pulse per second	2 HZ (2 PPS)	Defined by the user
Pulse width	1.0-8.5ms (device can reach up to 60ms)	Defined by the user
Max. pulse number: 7.5 cm² applicator	200,000	
Max. pulse number: 3.5 cm² applicator	200,000	Optional handpiece
System Control	Fully computerized, microprocessor - based	
Operation	Footswitch and/or trigger on the applicator	

Dimensions	55 cm x 55 cm x 135 cm	
Weight	80~ kg	
GUI	LCD touchscreen	
Cooling	Semiconductor cooling system + heat exchanger	
Cooling water	Distilled water	
Tip Cooling	Thermoelectric cooling (TEC) Cooling temperature: 4°C (39°F)	
Water replacement cycle	Every 200,000 pulses	Whenever an applicator is replaced or every 12 months
Room temperature for operation	5-25° C	
Classification: Mode of Protection against Electric Shock	Class A Equipment	
Classification: Degree of Protection against Electric Shock	Type A Equipment	

Results

Hair removal



Hair removal



Hair removal



Acne



Hair removal



Hair removal

