

# SUPER LRI

**Leo.**  
Your skin care

# Background to Hair Removal

**Leo.**  
Your skin care

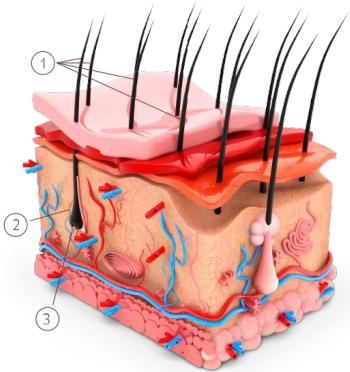
- Excess hair constitutes an aesthetic problem; therefore, its removal is the most sought-after cosmetic treatment worldwide.
- The popular, non-technological methods are not ideal, due to limited effectiveness and short-range effect.
- The common technologies in this field are energy-based, either light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

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 actually permanent and cannot guarantee 100% success.
- Hair reduction is defined as 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.

Photo = light | Thermal = heat | Lysis = destruction

“Selective Photothermolysis” is a focused damage caused to the target organ (hair follicles) without harming the tissue surrounding it



Effective  
Damage  
70-75°C

A beam of light is emitted from the device

The light is absorbed by the melanin and by hemoglobin chromophores

The light is transformed into heat that travels along the hair strand

The follicle heats up to a temperature of 70-75°C

Proteins, stem cells and blood vessels that nourish the follicle are damaged and destroyed

- 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.

- **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 rest 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.



- 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 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 in order to catch the hair follicles in the anagen phase.

- 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                   |

- 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.

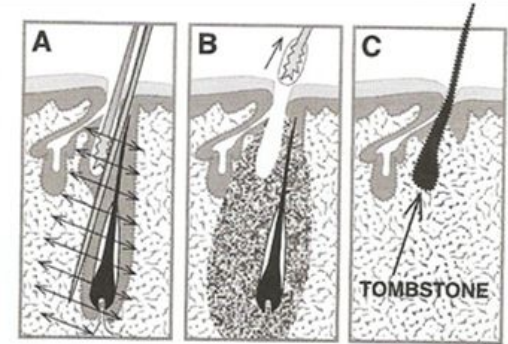


**Figure 9**  
**TOMBSTONE:** A) Telogen hair treated. B) Telogen hair epilates, but early anagen hair remains. C) Finally, tombstone emerges after many months.

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.

## Eumelanin

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



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.

## Pheomelanin

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



- 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 a period of 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 on your next treatment. Your results will be much better.

1. Consulting appointment - Diagnosis of hair condition and completion of medical background questionnaire
  - Invite the patient to arrive without first shaving their hair, and take photos of the initial status
  - Manage expectations and provide pre-treatment instructions (shave the hair two days before treatment, arrive with clean skin)
  - Advise patient not to use any of the following methods to remove hair between treatments: waxing, threading or tweezing
  - If hair was removed by waxing, treatment may not be carried out for 4-6 weeks from the day of waxing
  - Advise patient to avoid drinking alcohol 24 hours before and after the treatment
  
2. On treatment day
  - Use a white pencil to cover macula, darker skin lesions and tattoos
  - Mark the treatment areas with a white pencil
  - Provide protective eye goggles for both the patient and the therapist
  - Apply a sufficient amount of glider/ colourless gel on the treatment-ready area



**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.

## Ionizing radiation:

high energy that can break down molecules and is hazardous to human health, since it may cause changes in the cell's DNA structure.

## Non-ionizing radiation

Visible spectrum/ low energy that cannot break down molecules and is not hazardous to human health.

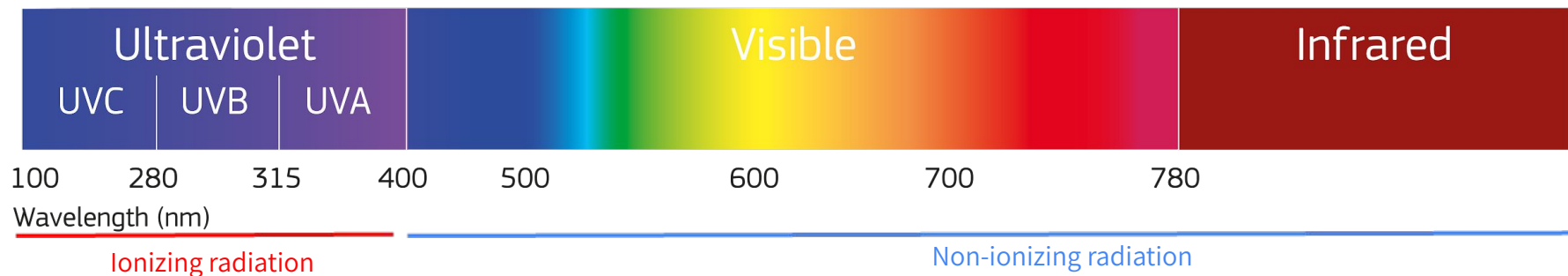
## Non-ionizing radiation (including radiation of the invisible spectrum)

Infrared/ laser and IPL technologies/ radiation emitted from electrical facilities.

Sun rays in the invisible spectrum cause suntan - high penetration

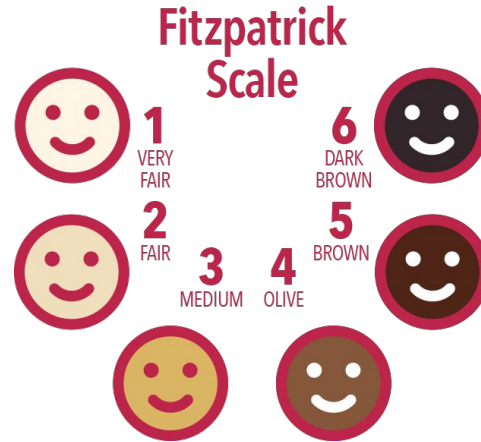
Visible spectrum

The invisible spectrum - warming effect, low frequency



## 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 full Fitzpatrick Skin Tone Scale can be found in the Appendix

## The Fitzpatrick Skin Tone Scale

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

## Tanned skin tone

- With every treatment the skin tone should be newly diagnosed, and parameters adjusted accordingly
- No treatments are allowed on freshly tanned skin
- Older tan can definitely be treated

- A wide spectrum of wavelengths enables flexibility and accuracy. 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)
- 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 tone
- In ALT devices, the filter's role is to screen out various wavelengths for an ideal match with the target chromophore - each filter blocks out wavelengths of light below the filter number selected, allowing 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

- 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 mold to cover the lips to 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

- 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.



## 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 handpiece a distance of 1 cm from the covered area
- Cover moles with a white sticker and keep handpiece a distance of 1 cm from the mole

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 vapor 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



Scabs over fresh skin burns



Hypopigmentation following skin burn



Hyperpigmentation following skin burn

### Main causes:

1. Fresh tanning
2. Error in parameter adjustment
3. Incorrect placement of the handpiece on the patient's skin
4. Body lotion/oil applied to the treatment area before treatment, causing a burn from the light flash contacting the skin
5. Administration of photosensitive preparations

### 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

1. Erythema (redness) - a natural reaction of the skin when exposed to heat
2. 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.

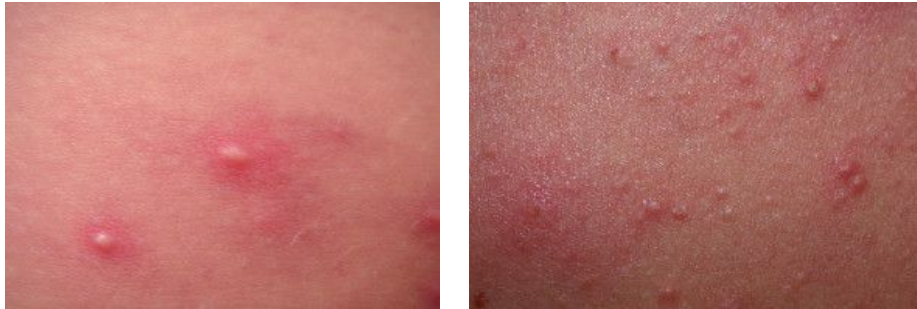


Perifollicular edema

**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, avoid hot tubs, saunas and pools for at least 24 hours after the hair removal treatment

Treatment - topical ointment containing antibiotics, such as Fucidin.



**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

### Hyperpigmentation/Hypopigmentation- PIH

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(in accordance with medical advice).

It is also recommended to use Kelo-Cote UV - 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)

[click for the file >>](#)

- Significantly increased light beam technology
- Unprecedented production of 2 light beam pulses per second
- A sequence of polychromatic wavelengths, running between 400 and 1200 nanometers, this speed action creates a very powerful, fast energy store which is translated into intense heat energy in a complex biological process
- The technology enables matching of wavelengths to the type of treatment

- Wide spectrum of wavelengths (400–1200 nm)
- 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 tone

Filter  
**530**

FITZPATRICK  
SKIN TONE

Nº 1

---

Light hair with  
a little pigment

---

Thin hair

---

Filter  
**590**

FITZPATRICK  
SKIN TONE

Nº 2/3

---

Pigmented hair

---

Dark hair

---

Filter  
**640  
690**

FITZPATRICK  
SKIN TONE

Nº 4/5/6

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Tanned skin  
(older tan)

---

Freckled skin

---

Pigmentation areas  
groins, armpits,  
Inner thighs

- 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.
- Time elapsing 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
- Energy accumulation - how much energy is accumulated - 2 pulses per second

## 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

- 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 number of hair follicles
  2. Habituation
  3. Changes to the skin tone and hair strand thickness

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

- 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 mold to cover the lips to 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 hair with 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 daytime apply sunscreen

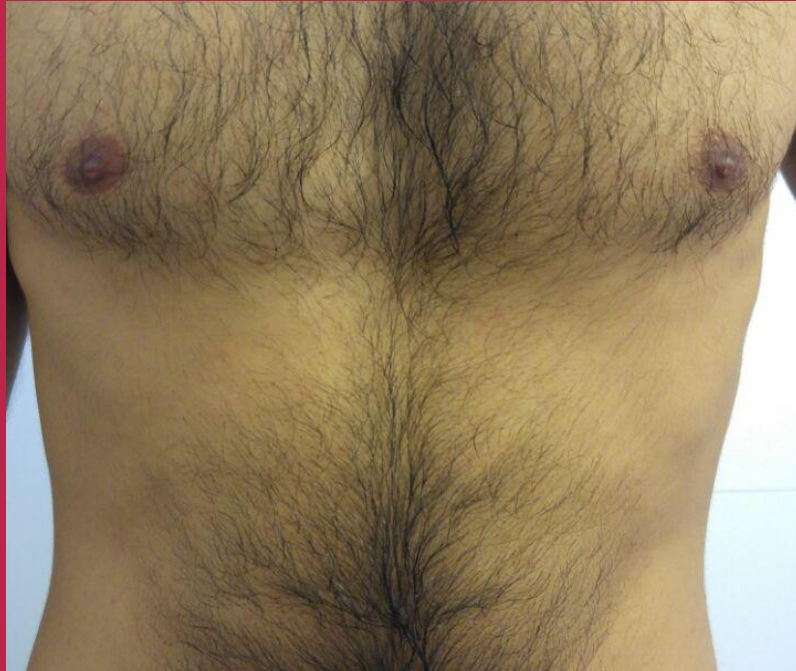
## Hair Removal in the Armpit

- Disinfect the skin (use a mild alcohol-free skin toner)
- Spray 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 glider on to the treatment area and apply the cold treatment handpiece (pay attention that it is not frozen) to the treatment area
- Wait 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 replacement of filter and adjustment of parameters
- Be aware that the mucous membrane area and the testicles cannot be treated

**Before**



**After**



**Before**



**After**



**Before**



**After**



## Before



## After



**Before**



**After**



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, take a pause of 20 to 30 seconds
4. It is recommended that the treatment room is 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, the key position is ON
  - Release the red knob by turning it clockwise

# Broadband Light Advanced Skin Texture Treatments

**Leo.**  
Your skin care

- 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

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

| Chromophore                     | Treatments                         | Filter (wave length) |
|---------------------------------|------------------------------------|----------------------|
| Porphyrin - melanin, hemoglobin | Acne, vascular, pigmentation, PIE  | 415<br>480           |
| Melanin, hemoglobin             | Acne, vascular, pigmentation, PIE  | 530                  |
| Melanin and hemoglobin          | Pigmentation, vascular             | 590                  |
| Hemoglobin, melanin and water   | Skin rejuvenation, skin tightening | 690                  |
| Water                           | Skin rejuvenation, skin tightening | 850-1400             |

- 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

- 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

- Performance of one or more test spots is indicated to assess the clinical response of the epidermis. Increase the energy level (J) until the required clinical end point is reached
- Non-facial tissue (neck, chest, hands, etc.) tends to be thinner and more sensitive to heat. In these areas, decrease the energy level (J)
- 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 energy level (J) 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

- Carry out accurate skin typing
- Obtain the patient's informed consent
- Take photographs prior to each treatment, to document the progress of the treatment and the efficacy
- Topical anaesthesia is not recommended - patient feedback is needed to evaluate clinical end points
- Eye protection should always be worn by everyone present in the treatment room
- Apply a thin layer of glider/ colourless gel for each treatment

- Patients should be evaluated for any evidence of recent self-tanner, sun or tanning-bed exposure in the area being treated. Treating tanned skin can lead to a high incidence of blistering and pigmentation abnormalities. The patient should have had no direct sun exposure to the area being treated for 3 - 4 weeks and no self-tanner use for 7 - 10 days
- Using sunscreen (SPF) is mandatory
- A mild cleanser should be used to remove any dirt - skin must be cleaned thoroughly before treatment, so light energy does not get absorbed by bits of dirt and risk exposure to overheating
- For Fitzpatrick 3-4 skin tones, preparation with a melanin inhibitor is required 14 days prior to treatment

- Use of cosmetic products containing acids should be stopped 5 days before the treatment
- Use of cosmetic products containing retinol should be stopped 14 days before the treatment
- Use of medical preparations, such as vitamin A, hydroquinone, etc. should be stopped 14 days before the treatment
- Combining inflammation-reducing products and antioxidants increases the tolerance of the skin tissue to the treatment, and leads to fewer side effects after the treatment
- Pigmentation spots must be diagnosed by a dermatologist before starting the treatment
- Deep cleansing treatment is recommended about one week to 10 days before the treatment

- Before treatment, the treatment area should be cleaned with acid-free facial soap
- Diamond peel is the ideal and most suitable method for resurfacing the treatment area - studies have proven this to enhance the results of every treatment. (If the clinic does not offer diamond peeling, enzymatic peeling may be used)
- Cover the patient's eyes with a moist gauze pad and opaque goggles
- If there are spots/ moles/ birthmarks on the face, paint over them with a white pencil and do not pass over them during the treatment
- Apply a thin layer of glider/ colourless gel

- Test settings: settings are based on specific protocol parameters
- If treating the face, begin testing in the preauricular area with handpiece aligned vertically to skin
- Observe test area for 10 - 15 minutes for endpoints
- End points will be specific for each condition treated. If the desired end points are observed with no adverse effects, treatment can be continued until area is completed
- If Endpoints are not noted, increase the intensity of treatment as follows:
  1. Increase energy level by 2 (Joules)
  2. Decrease Fitzpatrick level
  3. Decrease (make warmer) cooling level
- If reaction to test spot is too severe (intense erythema, purpura, immediate white or grey presentation of skin), the settings should be decreased in intensity as follows:
  1. Decrease emitted level energy (Joules)
  2. Increase Fitzpatrick level
  3. Increase cooling level
  4. Use a filter with a longer wavelength

# Skin Tightening

**Leo.**  
Your skin care

# Photo Rejuvenation - How Does it Work?

Photo = light | rejuvenation = Tissue regeneration

**LeoAcademy**  
Presents.



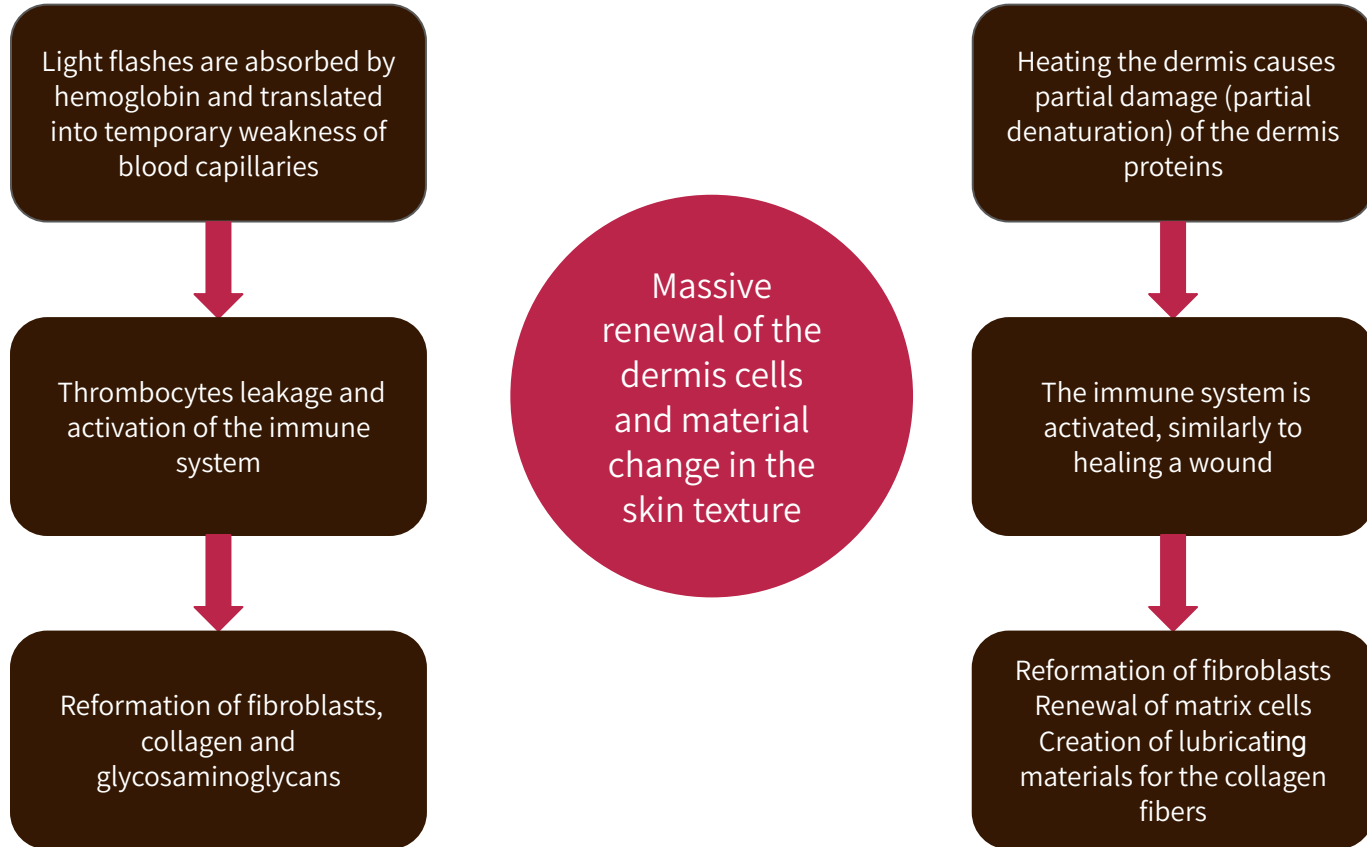
A light beam is absorbed by a chromophore (pigment)  
melanin, hemoglobin, water and porphyrin

Light is converted to heat

Activation of the injury process

Healing and renewal of the tissue





## Type 1 - moderate

- Wrinkle free
- Mild changes in skin tone
- No changes in skin texture
- No age/sunspots
- (Ages 28-35)

## Type 2 - medium

- Expression wrinkles and fine lines (seen in motion)
- Early age/ sunspots
- Mild changes in the skin texture
- (Ages 35-50)

IPL / RF

## Type 3 - advanced

- Expression wrinkles and static wrinkles
- Non uniform skin tone
- Prominent capillaries
- Changes in skin texture
- Prominent age/sunspots
- (Ages 50-65)

Treatment effectiveness  
cannot be assured

## Type 4 - severe

- SOLAR ELASTOSIS
- Yellowish gray skin
- Pre-cancerous lesions or past lesions
- Multiple wrinkles
- (Ages 60-75)

IPL / RF  
in combination with other  
technologies

Treatment selection is made according to the clinical condition of the skin, and not necessarily according to the patient's age



- Ideal patients are in their fourth and fifth decade of life, or younger, leading a healthy lifestyle
- They have visible facial contour and no excess fat in the face (cheeks, chin)
- In situations where there is excess fat, and the contour lines are hidden or receding - treatment results will not be as good
- Wrinkles will be at moderate/ mild stage
- In situations where there is advanced photoaging (Glogau index of 3-4), the client suffers from chronic diseases and/ or smokes, treatment results will be significantly less good
- As age increases, the ability to regenerate collagen decreases. Obtaining good results in an older-aged patient depends on the condition of the underlying skin

- 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 (end point) for the stimulation of collagen production is 40-42°C
- An accumulative heating technique is applied through the motion mode
- The end point 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

- Select type of treatment - skin tightening
- Select skin type
- Adjust cooling level according to 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 skin at all times throughout the entire pulse
- Heat the treatment zone to 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 system level by 2 Joules, or increase the cooling level, and continue to maintain the target temperature for 2-3 minutes
- Treated area should be warm to the touch for 1-3 minutes after treatment

1. Erythema and a palpable change may be felt in the treated area for several hours after treatment. Patients may report a feeling of tightness in the area treated
2. Clean the face with an appropriate acid-free product
3. It is recommended to apply a high hydration mask
4. It is recommended to perform this procedure in conjunction of other procedures, such as bio-stimulating injections, which can be performed an hour after procedure

### Recommendations for continued treatment at home

- If blistering occurs, aggressive wound healing measures should be implemented
- Avoid any treatment that may irritate the skin for at least one week, including: acids, peeling and use of granular soap
- Normal skincare routine 7 days after the treatment
- Avoid direct exposure to the sun and use sunscreen

# Non-Ablative Pigmentation Treatments

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**LeoAcademy**  
Presents.



A light beam is absorbed by a chromophore (pigment)

Light is converted to heat

Opto mechanical breakdown of the pigment

Activation of the tissue healing and renewal mechanism

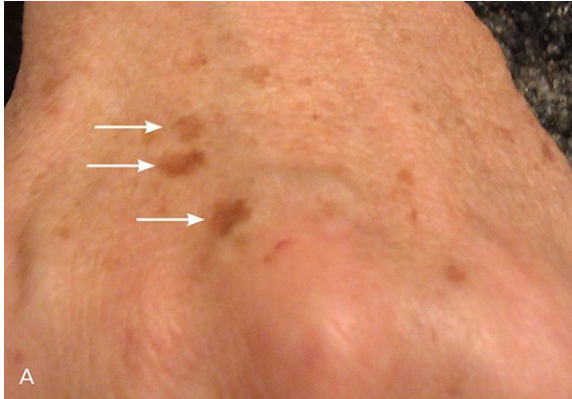
The Non-Ablative Pigmented Lesion/ Skin Treatment Protocol is effective for treating hyperpigmentation, sun damage, brown spots, age spots, liver spots, brown pigmented scars, and freckles

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 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

| Condition                                    | Description                                                                                                                                                            | Location                                                   | Etiology                                    | Treatment type                                                                                                                                                   |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Solar Lentigo<br>Sunsspots                   | Spots with a defined border<br>Measuring 1-3 cm, in shades of light yellow to dark brown<br>Appear in 90% of the population over 40 years of age                       | Face, hands, chest, back, calves                           | Long or chronic sun exposure (UV)           | Cryotherapy, hydroquinone, retinoids, chemical peeling, IPL/ALT                                                                                                  |
| Freckles Ephelides<br>Scattered pigmentation | Small spots measuring 1-2 mm with a defined border<br>Appear in shades of red, brown to light brown                                                                    | Face, neck, chest, hands, legs                             | Sun exposure at a young age                 | At times, the spots fade away during the winter months, so treatment may not be necessary.<br>Cryotherapy, hydroquinone, azelaic acid, chemical peeling, IPL/ALT |
| Epidermal PIH                                | Brown colored spots that may become darker upon exposure to the sun, not necessarily symmetrical, appearing following inflammation/injury. Common in darker skin tones | Located in the place of the original injury, after healing | Inflammation/ injury of the upper epidermis | Hydroquinone, retinoids, azelaic acid, chemical peeling, IPL/ALT                                                                                                 |



## Freckles - Ephelides (scattered pigmentation)



- 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, 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 energy level (J) 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

- 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)

<https://me-gr.com/xfhUDDZ>

- Select type of treatment -pigmentation treatment
- Select skin type
- Adjust cooling level according to need
- Adjust minimum energy level (J) according to skin tone (parameter table)
- Insert the appropriate filter into the handpiece - 590/530/480 nm according to the skin tone and the shade of the spot
- Apply a thin layer of glider/ colourless gel to the treatment area
- Perform one double-pulse pass over the selected spot/area
- Wait 10 minutes after the first pass until skin reaction is achieved - slight darkening and redness around the stain
- In single spots: work with a template, perform between 6-9 double pulses, wait about 5 minutes between pulses and check if there was a darkening of the spot's shade
- Scattered pigmentation: continuous work in double pulses in the selected area, with a 10% overlap between the pulses.
- If there is no sufficient skin reaction, gradually increase the system level in increments of 2 Joules and check again
- Do not make 2 consecutive passes over the same spot, without a 10-minute stop between these passes

- Erythema may be felt in the treated area for several hours after treatment - the treated pigmentation spots should appear darker
- If blistering occurs, aggressive wound healing measures should be implemented
- Clean the face with an appropriate acid-free product
- It is recommended to apply a high hydration mask
- If the treatment is carried out during daylight hours, apply a 50 SPF sunscreen
- Maintenance treatment is recommended once every six months (only if necessary)

If the spot has not completely disappeared after 4 weeks, repeat the treatment (maximum 2-3 treatments).  
If, after the treatment, an unreasonable darkening has occurred, immediately refer to medical practitioner for a topical medical preparation to prevent the appearance of PIH

- The process of the spot darkening and forming a scab is natural
- This process may take 10-14 days, depending on the patient's skin tissue recovery rate and what area is being treated
- It is absolutely prohibited to peel off the scab, as this may cause scarring
- Follow normal skincare routine only after the scab has completely fallen off
- Using sunscreen with a high protection factor is mandatory from the moment the treatment is finished, in order to avoid exposure to the sun and prevent pigmentation in the future
- Makeup should not be applied for 24 hours after the treatment





# Acne Treatment

**Leo.**  
Your skin care

## What is acne vulgaris?

Cutibacterium acnes is a naturally-occurring bacterium that is present on the skin, as well as within pores and sebaceous glands, at all times. When dead skin and sebum become trapped and block the pores, the bacteria rapidly multiply, causing follicle damage and inflammation. Once inflammation develops, the degree of acne evolves, forming papules, pustules, nodules, and cysts.

Acne vulgaris usually affects the areas of the skin where there is a higher concentration of sebaceous glands:

1. Face - about 99% of cases
  2. Upper chest - about 15% of cases
  3. Back - about 60% of cases
- Local symptoms of acne vulgaris may include - pain, tenderness, or erythema
  - Acne can manifest itself in a wide variety of skin symptoms. Some unusual cases may leave scars

|             |   | GRADE        | DESCRIPTION                                                                                                                           |
|-------------|---|--------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Treatable   | { | Clear        | 0<br>Zero to barely-noticeable lesions; very few scattered comedones and papules                                                      |
|             |   | Almost clear | 1<br>Hardly visible from 2.5 meters away; a few scattered comedones and a few small papules; very few pustules, comedones and papules |
|             |   | Mild         | 2<br>Easily recognizable; less than half of the affected area is involved; many comedones, papules and pustules                       |
|             |   | Moderate     | 3<br>More than half of the affected area is involved; numerous comedones, papules and pustules                                        |
| Untreatable | { | Severe       | 4<br>Entire area is involved; covered with comedones, numerous pustules and papules; a few nodules and cysts                          |
|             |   | Very severe  | 5<br>Highly-inflammatory acne covering the affected area; nodules and cysts present                                                   |

The visible light of the ALT system takes advantage of the photosensitivity of porphyrins that are produced by the *Cutibacterium acnes*. The blue light - 415 nm - will cause photo excitation 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 remodeling.



- 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, the treatment must be combined with preparations for home use

- 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
  2. Then, perform a spot pass of 4 single-pulses on each lesion
- Filter 690 nm for collagen remodeling - helps complement the results of the first two steps, and facilitates fast treatment of large areas

- The goal of the treatment is to pack the skin with light
- During the treatment, patients may feel a significant stinging sensation in the treatment area, but without pain or a warm sensation
- skin reaction is slight redness around the inflammation lesions

- Slight erythema may be felt for several hours after treatment
- If blistering occurs, aggressive wound healing measures should be implemented
- The face must be cleaned with a suitable acid-free preparation
- Apply a suitable moisturizer for problematic, oily skin
- If treatment is carried out during the day, apply a non-comedogenic sun protection cream
- Instruct patient to continue treatment with the preparation at home

### General guidelines - maintaining balance

1. For correction of keratinization (scabbing) processes:
  - Retinoids, lactic acid, sulfur
  - Alpha hydroxy acids (8%) are hydrophilic
  - Salicylic acid (1-2%) - is lipophilic and therefore is capable penetrating the fatty phase in the sebaceous gland
2. For reduction in follicle blockage - salicylic acid, a combination of alpha and beta hydroxy acids
3. For reduction in the inflammatory reaction - propolis, zinc, salicylic acid, lactic acid, glycolic acid, niacin - vitamin B3, licorice - bald licorice plant, bisabolol - a derivative of chamomile oil, acant - derived from the lilac flower, steroids
4. For sebum reduction - retinoids, azelaic acid, sulfur, zinc, azolectin sublingate, niacin, retinol, birth control pills (Yaz, Jasmine)
5. For eradication/ reduction of P Acne bacteria - tea tree oil, sulfur, propolis, resorcinol, oligopeptide 10, azelaic acid, niacin, antibiotics, benzoyl dioxide



# Red/ Brown Spots

Vascular Treatment /Skin Tone

**Leo.**  
Your skin care

| <p>PIE - Post Inflammatory Erythema<br/>Red spots</p>                                                                                                                                                                                                                                                                                  | <p>PIH - Post Inflammatory Hyperpigmentation<br/>Brown spots</p>                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>◀ Red spots - Erythematous</li> <li>◀ Formed as a result of inflammatory conditions which cause dilation of local blood vessels. They are either located at the original injury site after recovery, or appear diffusely</li> <li>◀ Common in light skin tones (but not necessarily)</li> </ul> | <ul style="list-style-type: none"> <li>◀ Melanin-related brown spots that appear after inflammation/injury</li> <li>◀ Located at the original site of injury after recovery</li> <li>◀ Common in dark skin tones</li> </ul>                                                                          |
| <p>In most cases, but not always, these disappear over time, depending on the degree of erythema spread</p>                                                                                                                                                                                                                            | <p>In most cases, but not always, these disappear over time<br/>Deep injury means inflammation or injury in the epidermis basal layer, which triggers the ingestion of melanin by macrophages in the papillary dermis<br/>Superficial injury means inflammation or injury of the upper epidermis</p> |
| <p><b>Conditions to be treated:</b><br/>Point erythema - the spot disappears when the skin is stretched<br/>Treatment method: vascular treatment - ALT<br/>Preparations containing niacinamide, retinol and regenerating agents</p>                                                                                                    | <p><b>Conditions to be treated:</b><br/>Superficial spots which disappear when the skin is stretched<br/>Treatment method: pigmentation treatment - ALT<br/>Preparations containing retinol, regenerating agents, peeling</p>                                                                        |

Brown spots



Red spots



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)

- 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 system level (Joules) 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 end point: 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 treatment - 20-30 J



- 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
- Energy level for treatment: between 20-30 j

## Post Treatment

- Burning sensation and edema - up to 24 hours after the treatment
- It is recommended not to wash the area with water 24 hours after the treatment
- Combining products: Antibacterial soap, preparations containing niacinamide
- Use of sunscreen with a protection factor is mandatory

## Special attention

1. Do not treat in situations where the inflammation is still active
2. In bony areas, energy reduction will often be necessary
3. There are situations where PIE is widespread, and the spots are raised - it is not recommended to treat these situations because these spots require complementary medical treatment (ointments containing steroids and prescription antibiotics)

# Vascular Treatment

**Leo.**  
Your skin care

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 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



**LeoAcademy**  
Presents.

A light beam is absorbed by a chromophore  
(pigment)  
Mostly oxyhemoglobin

Light is converted to heat

Coagulation inside blood vessels

Selective destruction of the capillary vessel

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



- Vascular treatment will be only performed in the face and décolleté areas
  - Only a superficial vessel which is red or pink in color can be treated. Deeper purple vessels - cannot be treated



- Erythema
- Vessels may disappear, darken, lighten or appear unchanged but fade over time
- When a capillary refill test is performed, blood flow is static
- Urticaria or a “cat scratch” appearance to the treated vessel
- Possible purpura
- If the capillary color has turned to gray, this may indicate that the treatment was carried out incorrectly and with too much energy

Correct treatment - good result



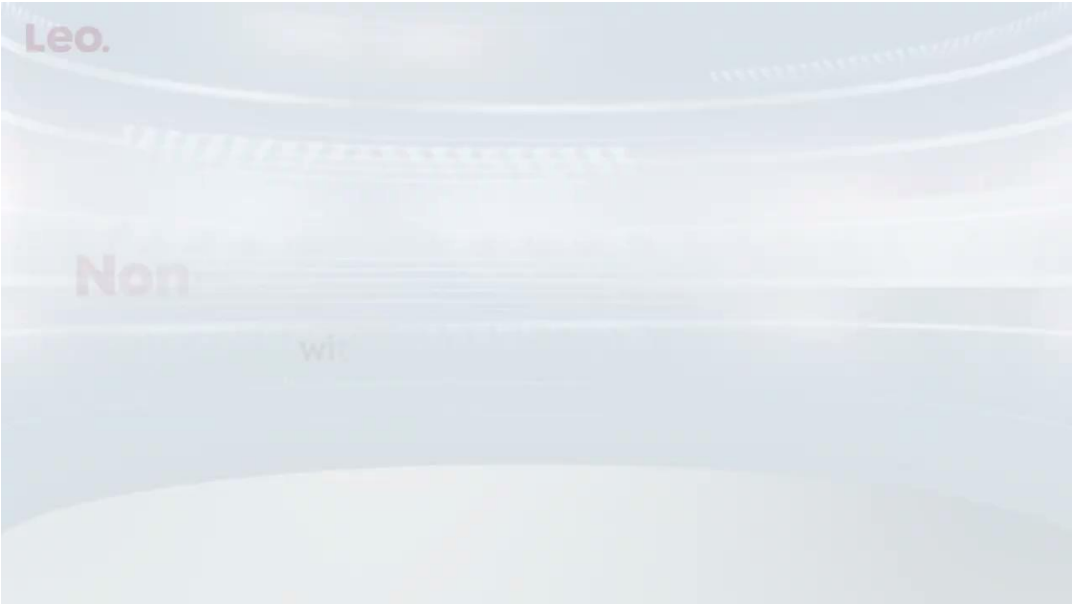
Two hours after the wrong treatment



Wrong treatment - capillary color turned gray



- Apply 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 end point
- Once appropriate settings are selected, 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 on the treatment area. Every 2 pulses stop for 15-40 seconds and observe the reaction of the blood vessel (end point )





# Nail Fungus

**Leo.**  
Your skin care

Improvement  
in the nail  
appearance

Eradication of  
the fungus

- Fungal infection caused mostly by dermatophytes, yeast and mold - the most common species is *Tinea unguium*
- The heat creates selective damage, without harming the healthy tissue
- Treatment with the device alone is insufficient and should be combined with a dedicated topical treatment for fungal infection

The light beam is absorbed by the fungus color in the nail bed functioning as a yellow-brown chromophore

The light is transformed into heat (48 degrees)

Structural changes and destruction of the fungus

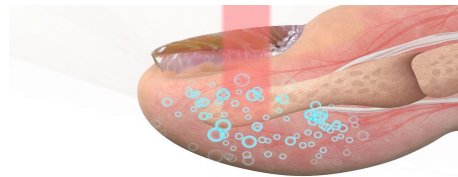
Approx. two weeks after the 10th treatment session, new growth of the nail is seen



- a. 4 weeks before treatment: Apply XERIAL 50 gel twice daily on the nail (doctor's prescription required)
- b. The preparation peels off the keratin layer of the nail and softens it
- c. The preparation contains:
  - Salicylic Acid
  - Glycolic acid 5%
  - Urea 50%
- d. An alternative suggestion - full sanding of the infected nail

## Contraindication

- 1. Oral antifungal treatment
- 2. Diabetic patients
- 3. Diseases related to venous and lymphatic conductions



Stage 1



- The nail bed is still shiny and transparent, but white spots begin to appear above the nail and yellow spots appear between the nail bed and the keratin (hard) layer
- Treatment at this stage will be effective

Stage 2



- The nail bed becomes turbid and yellowish
- The yellow spots spread on the entire nail bed
- Partial destruction of the nail
- Treatment at this stage will be effective

Stage 3



- The nail bed thickens, and the fungus reaches close to the matrix area (if it's reached the matrix there is total destruction of the nail)
- Treatment at this stage is not effective, but can be preventive/cosmetic

Before



After



- 10 treatment sessions
- One week interval between treatments

### Treatment stages

1. Cover the cuticle with a moist gauze pad.
2. Select treatment type in the device - vascular treatment
3. Filter 530 nm
4. Select skin tone in the device
5. System level should be increased gradually
6. 6-9 pulses on the treated area with a 10-second interval between pulses

# References

**Leo.**  
Your skin care

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