

# Hair Removal

## Traditional Methods for Hair Removal

- Waxing: It is a short-term treatment.
- Electrolysis: It is applied to individual follicles.

### Disadvantages:

- Need for repeated treatments.
- Tedious and time consuming.
- Risk of side effects such as infections and scars.

## Indications for Hair removal

### Hypertrichosis:

- Excessive hair in normal and/or abnormal locations.
- Genetic or ethnic causes.
- Secondary response to medications or endocrine disturbances.

### Hirsutism:

- Females having a masculine hair pattern.
- Secondary to endocrine disorders.

### Aesthetic Reasons:

- Social conventions.

## Contraindications

- Active localized or systemic infections.
- Compromised immune system.
- Coagulation disorders.
- Photosensitivity or allergy.
- Currently use of aspirin or antioxidants.
- Mentally incompetent.
- Pregnant women.

## Do not treat:

- Dark moles
- Tanned areas
- Psoriasis
- Eczema (dermatitis)
- Skin cancers
- Porphyria (photo-sensitivity)
- Diabetes
- Pregnant women
- Children under 16 years old

## Hair Removal and Growth Cycle

- Plasmalite affects fully grown follicles in the anagen phase.
- Hairs in anagen phase at the time of treatment are destroyed.
- Hairs in telogen phase continue to grow.
- The newly grown hairs are not affected, but they will be destroyed by the following sessions.
- Follicles are deeper on the body than the face

## Principles of operation

- Delivery of energy by photons.
- Photons are absorbed by the hair or the bulb, directly and indirectly.
- Minimal absorption in the epidermis/dermis.
- Absorbed photons are transformed into heat.
- Target is heated up directly or by conductivity.
- Hair follicle is destroyed.
- Clearance by phagocytosis and hair cycle - TIME!

## Skin Types (Fitzpatrick Classification):



- |     |                              |
|-----|------------------------------|
| I   | Always burns, never tans     |
| II  | Always burns, sometimes tans |
| III | Sometimes burns, always tans |
| IV  | Rarely burns, always tans    |
| V   | Moderately pigmented         |
| VI  | Black skin                   |

## Number of Sessions

- Typically 3 to 7 (depending on the body areas)
- Leave 2 months after 1st treatment
- Leave 3 months thereafter
- 'Best' results could be seen after 2nd or 3rd session

## Treatment Protocol

1. Counsel the client.
2. Explain the procedures.
3. Explain the potential side effects.
4. Ask about any photosensitivity.
5. Select a test patch area.
6. Shave the area.
7. Clean the skin with soap
8. Switch on Plasmalite.
9. Insert a fresh polymer strip.
10. Set the pulse duration.
11. Apply the cold gel on 6 x 6 cm<sup>2</sup> area.
12. Put on dark glasses.
13. Apply Plasmalite to an area and trigger 1 pulse.
14. Remove the hand piece immediately.
15. Wipe off the warm gel.
16. Apply more cold gel, if required.
17. Once complete remove the gel.
18. Clean the treated area.
19. Apply ice-bags and moisturising lotion, e.g. Aloevera gel.
20. Inform the client not to use any soap on the same day of the treatment.
21. Inform the client to avoid direct sun exposure for 2-4 weeks after treatment.
22. Clients should not wax or electrolyse during Plasmalite treatment

## Test patch

- Apply one stroke and wait 15 minutes.
- If there is no massive redness or burn, start the treatment.
- If there is reaction, decrease the energy and repeat the test in another place.
- If the skin continues to react, stop the test and repeat it with lower energy at another session (after 1-2 weeks).
- Tweeze immediately after the test patch to see the effect.
- Test patches differ across the body areas.
- Dark-skin clients may feel more pain.
- High density areas generate more sensation.

## Immediate Response

- Erythema and/or edema around hair follicles - perifollicular response.
- Response may delay up to 24 hours in dark skin.
- Visible perifollicular response may not be desirable in dark skin.
- Slight skin erythema.
- A smell of burnt hair.
- Brownish colour of the gel.
- As new hair grows and old hair falls out, the clients may not see an immediate result!

## Parameters Guidelines

Plasmalite HR/SR					MBC AB
Guideline settings					
Hair removal (HR)					
Skin type	Hair colour/thickness	Filter type	Lamp length	Energy fluency	Note
<i>Fitzpatrick</i>		<i>Colour/cut on</i>	<i>mm</i>	<i>J/cm<sup>2</sup></i>	
I-II	Light/thin	Orange / 580 nm	21 +/- 1	30-40	Follicle depth <2 mm **
I-II	Light/medium	Orange / 580 nm	21 +/- 1	30-35	Follicle depth <2 mm **
I-II	Light/thick	Orange / 580 nm	21 +/- 1	25-35	Follicle depth <2 mm **
I-II	Brown/thin	Orange / 580 nm	21 +/- 1	30-35	Follicle depth <2 mm **
I-III	Brown/medium	Red / 610 nm	21 +/- 1	30-35	*
I-III	Brown/thick	Red / 610 nm	21 +/- 1	25-35	*
I-V	Black/thin	Red / 610 nm	21 +/- 1	25-35	*
I-V	Black/medium	Red / 610 nm	21 +/- 1	20-35	*
I-V	Black/thick	Red / 610 nm	21 +/- 1	20-35	*
Skin rejuvenation (SR)					
Skin type	Treatment		Lamp length	Energy fluency	Note
<i>Fitzpatrick</i>			<i>mm</i>	<i>J/cm<sup>2</sup></i>	
I-II	Facial vessels	Light Yellow / 535nm	16 +/- 1	35-42	Vessel diam. <0.5 mm **
I-II	Collagen stimulation	Light Yellow / 535nm	16 +/- 1	30-40	**
I-II	Pigmentation	Light Yellow / 535nm	16 +/- 1	20-40	**
III	Facial vessels	Yellow / 550 nm	16 +/- 1	30-35	Vessel diam. <0.3 mm **
III	Collagen stimulation	Yellow / 550 nm	16 +/- 1	25-35	**
III	Pigmentation	Orange/ 580 nm	16 +/- 1	20-35	**
IV	Facial vessels	Orange/ 580 nm	16 +/- 1	30-35	Vessel diam. <0.2 mm **
IV	Collagen stimulation	Orange/ 580 nm	16 +/- 1	20-30	**
IV	Pigmentation	Orange/ 580 nm	16 +/- 1	20-30	**
V	Pigmentation	Red / 610 nm	16 +/- 1	20-25	**
* Pre-cooling of the distal bare sapphire waveguide with cryo spray is highly recommended ! ** Pre-cooling of the distal bare sapphire waveguide with cryo spray is OBLIGATORY! *** Fluency = Energy Meter (MBC Nova) reading [Joule / 2] ---- (Spot size of waveguide is 2cm <sup>2</sup> !)					