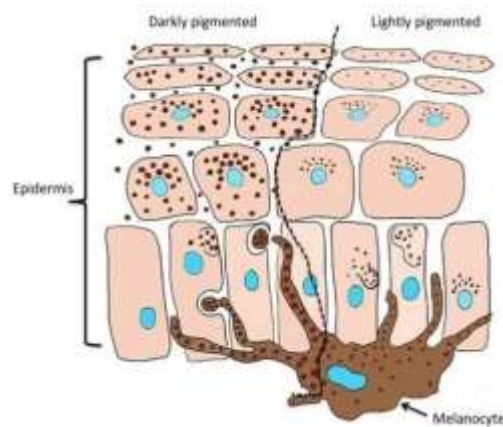


DETERMINING SKIN TONE

There are 4 major biochromes, or natural pigments found in the skin responsible for determining the overall skin tone. There are Melanin, Carotene, Oxygenated Hemoglobin and Deoxygenated Hemoglobin.



SKIN PIGMENTATION

- Melanocytes are cells found in the stratum basale of the epidermis. They contain the pigment melanin inside special organelles called melanosomes.
- Melanocytes deposit the melanosomes into the epidermal cells which then migrate, over time, towards the surface of the skin.
- The difference in pigment in darker skin types is not due to the number of melanocytes but the rate at which they produce melanin.
- Melanin absorbs the harmful UV radiation in sunlight, protecting the delicate structures of the dermis below.
- Melanin is converted from the amino acid tyrosine, by the enzyme tyrosinase.
- Hydroquinone inhibits the enzyme tyrosinase and therefore reduces melanin production.
- Hydroquinone (*Love Beauty Lighten Pigment cream*) can be used to inhibit melanin production if there is a risk of hyperpigmentation as a result of a plasma treatment.

FITZPATRICK SKIN TYPING

Skin Type	Skin colour	History of tanning & sunburn
I 	White	Always burns easily, never tans
II 	White	Always burns easily, tans minimally
III 	Light brown	Burns moderately, tans gradually
IV 	Moderate brown	Burns moderately, tans gradually
V 	Dark brown	Burns minimally, tans well
VI 	Darkest brown	Never burns, deep cool pigmentation



Type I Type II Type III Type IV Type V Type VI

Fitzpatrick 1 - Have white skin are red heads or naturally blonde clients. They will always burn in the sun without protection and simply cannot tan, this is due to their melanocytes producing very little melanin.

Fitzpatrick 2 - Will always burn in the sun without protection but will eventually get a tan after a week or so. Typically, Dark blonde or Brown hair blue or green eyes.

Fitzpatrick 3 - Burns moderately but within 48hrs will tan. Typically, dark brown hair with brown eyes, of Mediterranean decent.

ALL THE ABOVE TYPES ARE SAFE TO HAVE PLASMA TREATMENT.

SKIN TYPES THAT CANNOT BE TREATED:

Indian Ancestry (Fitzpatrick 4-5)

African Ancestry (Fitzpatrick 5-6)

MODULE 4 - DETERMINING SKIN TYPE/TONE

- Asian, Indian or Caribbean skins have melanocytes capable of making large amounts of melanin.
- When dark to black skin is injured; the melanocytes will either hyperpigment or hypopigment.
- Dark skins have greater natural protection from the sun and a lower risk of skin cancer. They have UVB protection factor of 13.4% while white skins have only 3.4%.
- They have fewer signs of ageing such as deep wrinkles, fine lines and sunspots.
- They have a greater risk of forming keloid and hypertrophic scars.
- **Dark/black skin** – above Skin Type III – **must never be treated with Plasma Device** (outside of advanced rejuvenation only treatments where the skin is not fully broken).

HYPERPIGMENTATION

Hyperpigmentation is a **discoloration** of the skin caused by **excess melanin**, which results in dark spots and patches on the skin. It often appears on areas most exposed to the sun, like the hands and face, and can appear anything from light brown in color to black. Hyperpigmentation may look like small brown spots or may cover a larger area. Often referred to as **age spots** and sunspots.

Causes

When skin is compromised, melanin is produced to help protect it. This excess melanin can look like a tan, or it may appear in patches and spots. Most hyperpigmentation is caused by sun exposure. Darker skin tones are more prone to hyperpigmentation. It can also occur as the result of medical issues, like a change in hormones, or damage to the skin like acne and inflammation. It can also be found on the décolletage from the wearing of fragrance in the sun, many fragrance houses now offer alcohol free summer fragrances to avoid this.

Hyperpigmentation can also be caused by trauma. A combination of the inflammatory response and ultraviolet causes inflammation to disrupt the basal cell layer. Melanin pigment can then be released but subsequently trapped by macrophages in the papillary layer. Once the wound healing is complete and the junction repaired, **the melanin pigment granules caught within the dermal layer basically have no way of escape.**

SPF 40+ should be applied 4-6 weeks before plasma treatment. If the client is at risk of hyperpigmentation, they can be given a tyrosinase inhibitor as pre-treatment to prevent production of melanin.

POSSIBLE ADVERSE REACTIONS

- **Hyperpigmentation/PIH** Can occur due to trauma to the skin. Most likely to occur in clients with Fitzpatrick 3-6 or anyone who has had UV/sun exposure or has applied tanning creams/solutions to the treated area 4-6 weeks pre or post treatment.
- **Pink Atrophic spots** (where the dots/spots were applied by our Plasma device) can last up to 6 months after treatment although this is incredibly rare and rarer still from low to medium intensity treatments. It is not completely clear, but one of the main causes is the premature loss of the scab usually caused by the use of make-up, other inappropriate products and/or poor personal aftercare during the short-term healing process. May take up to 6 months to clear but there have been no reported cases of it being permanent.
 - **Prevention** Remind your clients to leave the dots/scabs alone and don't do anything to cause premature loss of scabs. Pat the skin dry, never rub or scratch at the area treated. Do not apply any products during the initial 5-7day healing phase (or until the scabs have fallen off naturally) except for the Factor Five Serum. Less likely to happen when all post care instructions are followed. Use **SPF40 sun protection on a daily basis prior to treatment and also once the skin has healed and all dots have fallen off.** Post treatment clients should use it for at least 12 to 20 weeks and ideally indefinitely as part of their **aftercare** program. Also recommended is the Love Beauty HQ Lighten Cream.