

# Plasma V C02

Fact based PPT

# Plasma v CO2

- The First plasma device for the treatment of Aesthetic indications was the Rhytec Portrait PSR.
- It was designed as a replacement of CO2 to be used for skin resurfacing.
- Back in the Early 2000, plastic surgeons would use a fully ablative laser resurfacing protocol which would yield good results but would cause considerable downtime and risks.
- The proof that a method is too aggressive is when manufacturers come up with less aggressive versions of using the device some to the point of almost loss of efficacy

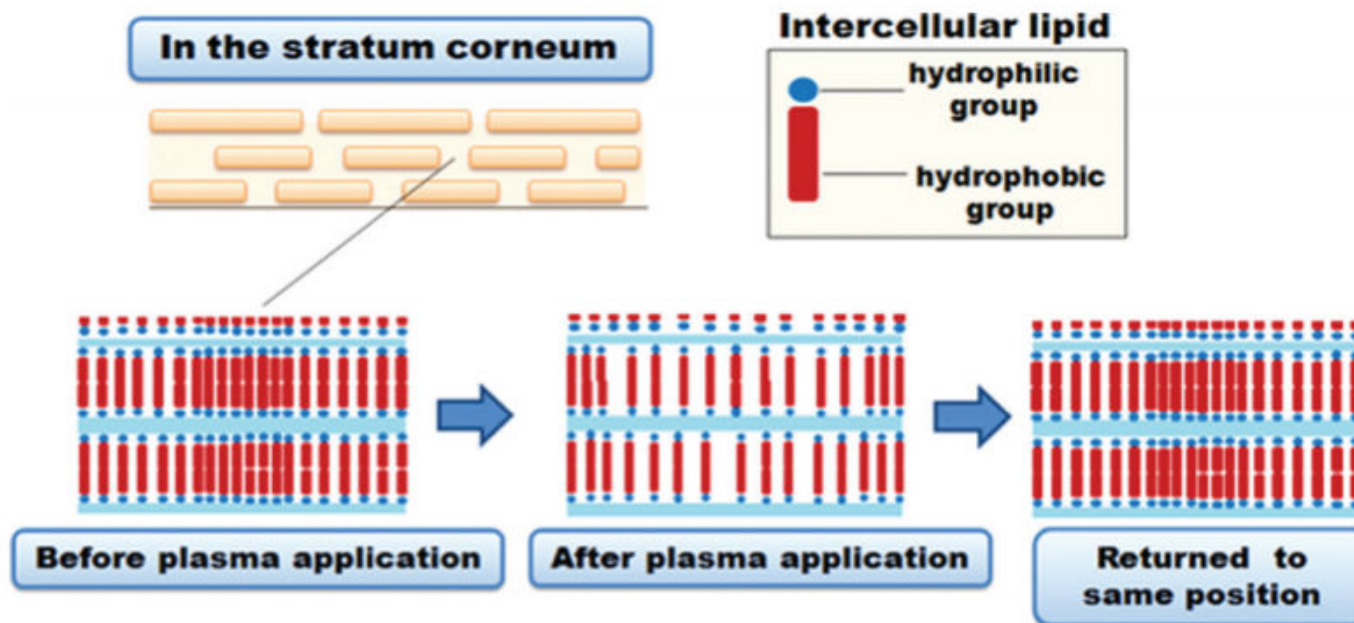
**Complication Rates.** This table was from a cross skin type study reporting the occurrence of complications. The large variation on the CO2 results is due to variance in delivery from fractional to fully ablative treatments. Interestingly fungal and viral infection occurrence were more prolific with fractional than they were with fully ablative.

<b>Complication</b>	<b>CO2 published occurrence rates</b>	<b>Nitrogen plasma Reported Rates</b>
<b>Hyperpigmentation</b>	<b>25-100 %</b>	<b>0.23 %</b>
<b>Hypopigmentation</b>	<b>6-20 %</b>	<b>0.00 %</b>
<b>Bacterial infection</b>	<b>7.6 %</b>	<b>0.2 %</b>
<b>Fungal Infection</b>	<b>1 – 3 %</b>	<b>0.01 %</b>
<b>Viral Infection</b>	<b>2 – 7 %</b>	<b>0.03 %</b>
<b>Scar</b>	<b>&lt;1%</b>	<b>0.08 %</b>

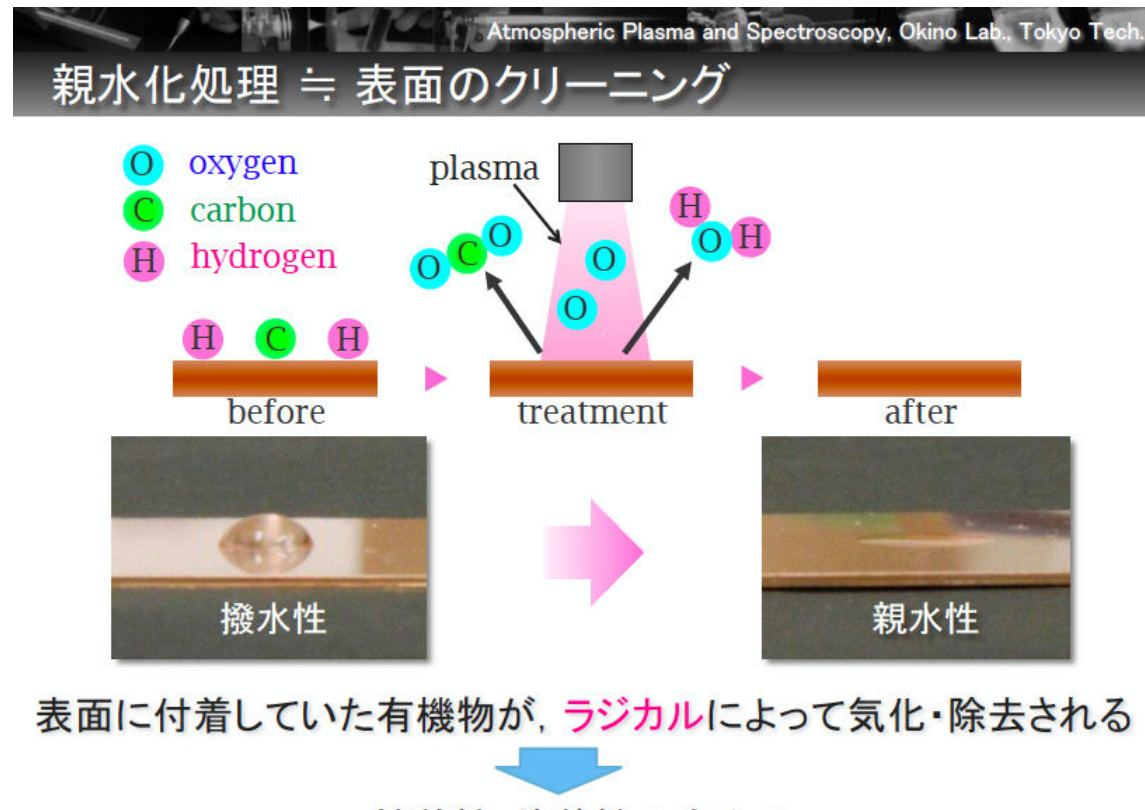
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- Plasma has many differences other than its reduced complication rates.
- It is non chromophore dependent. ( hence not specific to indications requiring a given wavelength)
- Nitrogen Plasma is non ablative when used correctly
- When using nitrogen Plasma the treated layers are denatured but remain in place while the new tissues develop below. Then flaking off thus reducing risk of infection.
- All gas derived plasma devices are dermal thickening. Lasers thin the dermal layers with every treatment.
- Plasma treatments are longer lasting
- Plasma can be used safely in the whole periorbital region with ocular guards
- Plasma can be safely used on skin types 1 to 5. Skin 6 is possible.
- Plasma heat energy can effectively manage active acne
- Low energy plasma increases trans dermal permeability by temporary altering the hydrophilic, hydrophobic membrane that improves absorption of a vast range of topical substances.

# 24 hour cycle after low energy plasma irradiation



The pressurised pulsed plasma shots purge oxygen and the other gases from the treatment. Nitrogen was proven to be the best gas .



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- Because nitrogen plasma does not have a specific wavelength it is not limited by chromophore dependency in indication treatment.
- Plasma can treat all the indications treated by a CO2 laser and future developments will see smaller high pressured spot size for the removal of skin tags.
- Additionally this enables plasma to be used in conjunction with lasers for more stubborn revisions such as post surgical and trauma hypertrophic scars and aged stretch marks.
- Pure gas derived plasma devices are an effective tool for , Plastic Surgeons, Dermatologist, Aesthetic doctors and Aesthetic Practitioners.

# Nitrogen Plasma, Treatable Indications

- **Aesthetic, Anti-Aging.**
- Pore size reduction
- Fine lines and Wrinkles
- Deeper Rhytides
- Superficial Pigmentation
- Soft Blepharoplasty
- Skin tightening
- Stretchmarks
- Acne Scars (Asian Skin Types)
- **Medical, Drug Delivery.**
- Active Acne
- Melasma
- Atopic Dermatitis
- Psoriasis
- Actinic Keratosis
- Onychomycosis
- Burns revision and Oral Infection currently undergoing clinical trial.