BIODERMA CONGRESS REPORTS

# IMCAS 2025

Reports written by Dr. Ana Reymundo (Dermatologist, Spain)

## Prejuvenation

Chairs: Dr. Editta Buttura Da Prato (Facial Plastic Surgeon, Italy); Dr. Diala Haykal, MD (France)

### Highlights/key take outs

- Coining the concept "prejuvenation" and what's the difference to the rejuvenation concept
- Generational shifts and the approach to aesthetics and non-invasive skin care routines
- Strategies to combat harmful cosmetic dermatology trends
- Cosmetorexia: what the doctor should know and why this is a new type of dysmorphophobia impacted and influenced by social media
- Injectable peptides as part of the new approaches to achieve better beauty results and set new standards in aesthetics
- Last but not least, the new non-invasive imaging techniques that are an invaluable tool in aesthetic practice as how they can help in estimating the outcomes of skin care

The session ended with a discussion of the best aesthetic practices that should be implemented with regard of the generational differences.

### Strategies to combat harmful cosmetic dermatology trends in generations Alpha and Z

Speaker: Dr Diala Haykal (France)

**As an introduction to her lecture, Dr Haykal discussed that Generation Z and Alpha have grown up very exposed to the influence of social media. They are the first generations to have had the internet since childhood. This greatly influences standards of beauty, body image and self-perception.**

Then Dr. Haykal started discussing the difference in generations and skin care practices that Generation X, Millennials, Generation Z and Generation Alpha are currently applying and specifically how the years they were born impact on the skin care routines and aesthetic procedures they are seeking, as well as the results they are aiming to achieve in terms of their perception of beauty standards.

She cleared out the different beauty standards in beauty in generations as well as generational shifts, pointing out that:

- Generation X prioritises individuality.
- Millennials are inclined towards experimentation with new trends.
  Generation Z and Generation Alpha exhibit a sense of acceptance regarding their appearances, favoring non-invasive procedures, while also being the first generations to grow up in a digital landscape.

Coining out the term “prejuvenation”: it is a ten-year-old term that is defined as a *way to seek active ways to prevent signs of aging in early age in order to preserve natural beauty*. This “approach” in aesthetics is mainly influenced by social media (SM) and all the skin care practices that are shown in different SM platforms. However, non-professionals recommending skin care products and procedures may result in the creation of dangerous treatments. Therefore, there is a strong need for education on what truly works and what doesn’t. The goal should be an embrace in diversity and protection from misinformation that is delivered though SM, as well as to bring about body positivity, and the responsibility to make informed decisions.

Time spent on social media can trigger dysmorphophobic disorders and obsessive thoughts related to physical appearance. This has also led to a growing interest in the use of skincare by younger and younger people, and the use of unsuitable treatments can be worrying (see Figure 1.) We should help young people to have the tools to critically evaluate the content they consume on social media in order to avoid social pressures and the use of treatments that are often unnecessary.


Figure 1. This is an advertisement to raise awareness that skincare is not necessary for children

Dr. Haykal emphasized the responsibility of medical practitioners to address the following concerns:

- Do social media platforms exacerbate dysmorphophobic issues?
- Can the burgeoning interest in cosmetics cultivate critical skills among the youth?
- In what ways can aesthetic practitioners encourage body positivity and informed decision-making among younger generations?

**To equip young individuals with critical skills for evaluating social media content and ensuring safety, Dr. Haykal proposed a collaborative effort involving healthcare professionals, parents, policymakers, industry leaders, IT developers, cultural consultants, and educators.**

Aesthetic providers should take responsibility for their output on social media, because they have an invaluable expertise and can combat misinformation and offer insights in

cosmetic procedures. They can also highlight potential risks. In their hands is to launch awareness campaigns of the safety practices in cosmetic dermatology and necessity of age. A great role in the protection of Generation Alpha would be played by their schools and the information imbedded in the school curricula. The industry's role in protecting Gen Alpha is to determine how marketing is being done, which impacts the cosmetic trends among the young individuals. For example, currently industry companies are producing campaigns that raise awareness of the harmful trends published out on SM.

Conclusions:

- Proactive educational approach is vital for improving mental health outcomes and mitigating the psychological impacts of digital media.
- It will help future generations face social media pressures with confidence and critical awareness.
- Equipped to navigate the complexities of a digital world with confidence and critical awareness.
- It would mitigate the harmful effects of content promoting cosmetic procedures created by beauty influencers on social media.

To go further, Dr Haykal suggests referring to the following article: Haykal *et al*., Educational strategies to combat harmful cosmetic dermatology trends in Generations Alpha and Z, https://doi.org/10.1016/j.clindermatol.2024.05.004

## Prejuvenation concept: What young men want

Speaker: Dr Khaled Othman (Consultant in dermatology, andrology and aesthetic medicine, UAE)

Dr Khaled starts his presentation by pointing out that prejuvenation is a trend from 2021. **Prejuvenation is about preventing the appearance of aging from an early age, using minimally invasive techniques with the prospect of not having to correct the signs of aging later on with more invasive techniques.** This trend also affects men and is influenced by social media. A worrying thing is that **85% of the prejuvenation content being consumed comes from non-healthcare professionals.**

Studies show that Gen Z is engaging in aesthetic treatments at an earlier age compared to previous generations. Their premature aging is influenced by unhealthy lifestyles, stress, and constant exposure to digital screens. In fact, over the past 5 years there is a 92% increase in dermal fillers and a 236% rise in neurotoxin procedures among millennials and GenZ.

**Key Aesthetic Concerns of Gen Z:**

- **Males: Hair thinning.**

- **Females: Under-eye bags & overall skin texture.**

The holistic approach combining diet, mental health, exercise, and skincare is now emphasized to enhance overall well-being. Several innovative treatments are revolutionizing the field of prejuvenation for Gen Z:

- **Skin boosters**: targeting acne scars, hydration, and overall skin texture improvement.
- **Laser treatments:** effective for dermal rejuvenation and epidermal barrier enhancement.
- **Microneedling & PRP:** stimulate collagen production and addresses acne scars.
- **Neurotoxins & Fillers:** used for facial contouring and wrinkle prevention.
- **Light lasers & chemical peels:** promote skin renewal with minimal downtime.
- **Topical vitamin C:** boosts skin health and fights oxidative damage.

Dr Khaled also posed on some growing issues in the industry:

- The rise of non-professional practitioners performing aesthetic procedures
- An estimated 85% of treatments are conducted outside regulated medical environments, posing serious safety risks
- The alarming trend of young individuals, some as young as ten, undergoing cosmetic procedures (following social media trends)

Looking ahead, the industry is focusing on safer, more natural approaches, such as:

- Growth factors (GF) and organic skincare components.
- Infrared light therapy for at-home rejuvenation.
- Advanced mask treatments promote skin regeneration.

Men are most concerned about hair loss, but there is also a growing trend in demand for the use of fillers and botulinum toxin, as well as improving skin quality through the use of topical products, peels and lasers. In these groups it is important to get good advice on which treatments are needed, and which are not.

Conclusions:

- Increase physician awareness of evolving patients concerns and treatment goals; ensure patient concerns are incorporated with clinical assessments in developing treatment plans
- Adress patient concerns and fears related to potential barriers to treatment consultation
- Improve patient education on benefits of early intervention and preventive treatments and understand the evolving role of technology in patient education and awareness of aesthetic treatments
- Encourage patients to share all aesthetic concerns, even if patients may not think treatment options exist

- Communicate in language that resonates with patients
- Discuss skin quality and related concerns with all patients

To go further, Dr Khaled suggests referring to the following articles:

- Hogan *et al.*, Prejuvenation: Definition of the Term and Evolution of the Concept, DOI: 10.1097/DSS.0000000000002929
- Haykal *et al.*, Prejuvenation: The Global New Anti-Aging Trend, https://doi.org/10.1093/asjof/ojad061

## Prejuvenation and traditional rejuvenation: Is there a difference?

Speaker: Professor David J Goldberg (USA)

Professor Goldberg has made a classification of the different generations to distinguish the concept of prejuvenation, which is more typical of the Alpha and Zeta generations who were born with access to the internet from a young age (Figure 2.). They are characteristically more concerned with how they look in a photo than how they are in reality. Millennials also care about their image and embrace the concept of prejuvenation, but also of using corrective treatments when they are older.


Figure 2. Segmentation of “generations” by age/birth year.

Professor Goldberg also goes back on the definition of prejuvenation, coined by Ken Arndt in 2013: the use of skin care and non-invasive cosmetic treatments to prevent or delay signs of aging. It is a proactive approach that values prevention over correction to

maintain or enhance youthful aesthetic features, typically through topical regimen and cosmetic procedures. This trend as previously mentioned is very much influenced by social media. It focuses on the use of wrinkle-preventing skincare, baby botox, skin booster and the use of laser with low downtime.

Traditional rejuvenation is more typical of generation X and baby boomers. They already have damage, and it is a matter of correcting it. Therefore, it is more typical to use ablative lasers such as CO2, fillers or even surgery (Figure 3.).

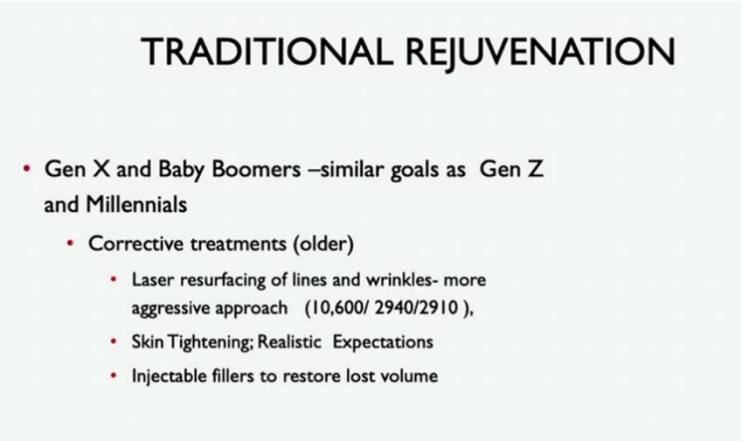



Figure 3. Traditional rejuvenation techniques and target groups.

Prof. Goldberg concludes that some people say both approaches look alike, but they have nothing to do with each other. One is about doing less invasive procedures to prevent ageing, and the other is about correcting ageing when it is already present.

## Cosmeticorexia

Speaker: Professor Maria Jose Pelli (Dermatology, Argentina)

Summary:

**Cosmeticorexia, primarily affecting females aged 8 to 17, is a compulsive obsession with cosmetics and skincare, influenced by social and cultural factors. Although not yet officially recognized as a mental disorder, it presents both dermatological and psychological challenges.** The condition has gained attention due to increased screen time during the COVID-19 pandemic, social media influencers, the cosmetic industry, and unrealistic beauty standards. Early diagnosis and intervention by healthcare professionals, along with parental guidance, are crucial in the prevention and management.

**What is cosmeticorexia?**

It is the compulsive use of cosmetics and/or home-made products as a result of social and cultural influences, which may be a sign of underlying compulsive or dysmorphic disorder. The condition predominantly affects young females between the ages of 8 and 17. Dr. Pelli explained that the condition involves obsession with appearance, excessive skincare regimens, and significant expenditures on cosmetic products. The condition is not yet recognised as a mental disorder.

As an example, Dr. Pelli, shared a case from her practice of a 12-year-old female patient suffering from acne exacerbated by excessive at-home cosmetic treatments. The lesions were irritative and itching. Psychological evaluation revealed compulsive tendencies and anxiety related to beauty. With this case, the speaker underscored the necessity of addressing both dermatological and psychological aspects when treating cosmeticorexia.

**Key aspects of cosmeticorexia**

Dr. Pelli continued the lecture by identifying the three major aspects of cosmeticorexia:

1. Dermatological conditions

Patients with cosmeticorexia often suffer from:

- Acne cosmetica
- Irritative lesions
- Contact dermatitis
- Infections
- Chemical burns
- Post-inflammatory lesions

2. Psychological symptoms

- Obsession with beauty and self-image
- Anxiety related to appearance
- Obsessive-compulsive behaviours leading to addiction
- Depression and social isolation
- High expenditure on cosmetics
- Early signs of body dysmorphic disorder

3. Underlying mental disorders

Cosmeticorexia may be an early indicator of mental health conditions, including:

- Body dysmorphic disorder (dysmorphophobia)
- Obsessive-compulsive disorder (OCD)

**Why is cosmeticorexia an emerging issue?**

Several factors have contributed to the emergence of cosmeticorexia as a widespread issue:

1. Increased screen time during the COVID-19 pandemic
2. Influencers on social media who promote unrealistic beauty standards, often endorsing numerous cosmetic procedures and products.
3. Aggressive marketing by the cosmetic industry
4. Evolving unrealistic societal beauty standards

**How can doctors identify cosmeticorexia? How can it be effectively treated and prevented?**

Dr. Pelli outlined key indicators for doctors to suspect cosmeticorexia in young patients:

- Female patients aged 8-17
- Excessive screen time and social media exposure
- Heightened concern about beauty and physical appearance
- Obsessive skincare routines
- Significant financial investment in cosmetics
- Repeated pursuit of cosmetic treatments

The management of cosmeticorexia requires a dual approach:

1. Dermatological treatment: addressing skin conditions such as acne, dermatitis, and post-inflammatory sequelae through appropriate medical interventions.
2. Psychological support: identifying compulsive tendencies and underlying mental health issues through psychological evaluation and treatment if there is necessity for it.

Prevention starts at home, with parents playing a crucial role in guiding their children:

- Monitoring social media influence: parents should be aware of the beauty standards their children are exposed to online.
- Encouraging critical thinking: adolescents should be taught to question beauty trends and endorsements by influencers. Key questions to consider:
    - Who is recommending this treatment?
    - What are their qualifications?
    - Is this product suitable for my skin type?
    - Is there a commercial motive behind this recommendation?
- Promoting consultation with medical professionals: young individuals should be encouraged to seek expert advice rather than relying on self-diagnosis and influencer recommendations.

**If not identified and addressed properly on time, young females suffering from cosmeticorexia will probably become demanding patients, who are never satisfied and ask for more treatments than they need.**

In conclusion**,** with the growing influence of social media, societal pressures, and aggressive cosmetic marketing, young females are increasingly vulnerable to developing obsessive skincare behaviours. Therefore, doctors should be aware of the emerging cosmeticorexia. **Early identification, professional intervention and parental guidance are essential in the prevention and management of the condition.**

## The role of injectable peptides in integrative aesthetics

Speaker: Professor Raheleh Sarbaziha (USA)

The aim of this talk is to discuss what peptides are, which peptides are available on the market for injections and FDA regulation. **Peptides are short chains of amino acids that act as signaling molecules in the body. They are gaining popularity in aesthetic medicine for their ability to stimulate cellular processes for regeneration, repair and antiaging.**

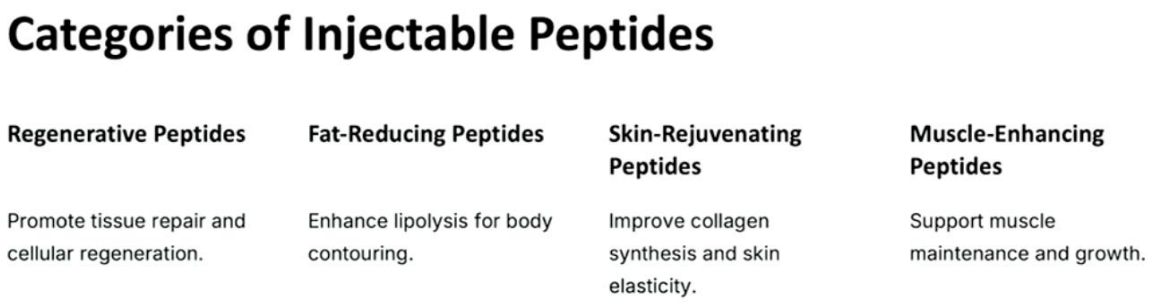



Figure 4. Most famous injectable peptides.

It is important to know which peptides are legal in one's country of practice and be careful with the protocols to be able to combine them. It is important to educate the patient because many are subcutaneous and will have to be administered at home. Professor Sarbaziha has been using them for 5 years and has never had any problem or analytical alteration.

Here are her key takeaway messages on the topic:

- **Versality**: Injectable peptides offer a wide range of applications, including skin rejuvenation, fat reduction, muscle maintenance and overall anti-aging benefits.
- **Mechanism**: These peptides work by mimicking or enhancing biological processes, targeting receptors to stimulate collagen production, tissue repair, and hormonal balance. Peptides such as GHK-Cu, BPC-157 and CJC-1295

demonstrate significant improvements in skin elasticity, wound healing and body contouring, making them effective tools in aesthetic treatments.

- **Safety profile**: Peptides generally exhibit a good safety profile with minimal side effects when used appropriately, although proper dosing and patient selection are crucial.

The field of injectable peptides in aesthetic medicine is growing, with ongoing research expanding their therapeutic potential and optimizing formulations for targeted applications.

## Combining imaging technologies and clinical assessment for multimodal investigation of the effects of facial skin aging in healthy women.

Speaker: Dr Franck Bonnier (France)

Dr Bonnier spoke of an ongoing research project to assess ageing with imaging techniques such as ultrasound and OCT. The combination of techniques provides more data.

Key points:

- Multimodal/multinstrumental studies generate large data sets (quantitative metrics): Construction of comprehensive models using multivariate analysis
- Prediction of clinical scores from instrumental variables with good accuracy
- Explain signs of aging with modifications in biomechanical properties of skin and/or modifications in skin microstructures
- Clinical scores can be replaced by other features (e.g., photography)
- Can be applied to dermatological procedures
- LC-OCT imaging
- Powerful method that opens prospectives for better understanding of modifications in skin microstructures
- Requires large data sets to compute models.

# Lasers in acne (in collaboration with STLD)

## Acne pathogenesis: What's new ?

Speaker: Professor Rym Benmously Mlika (Tunisia)

Recent studies have highlighted new factors involved in the pathogenesis of acne such as cutaneous dysbiosis with predominance of *Cutinobacterium acnes* phylotype IA1 which is a trigger for activation of innate immunity and impairment of barrier function.

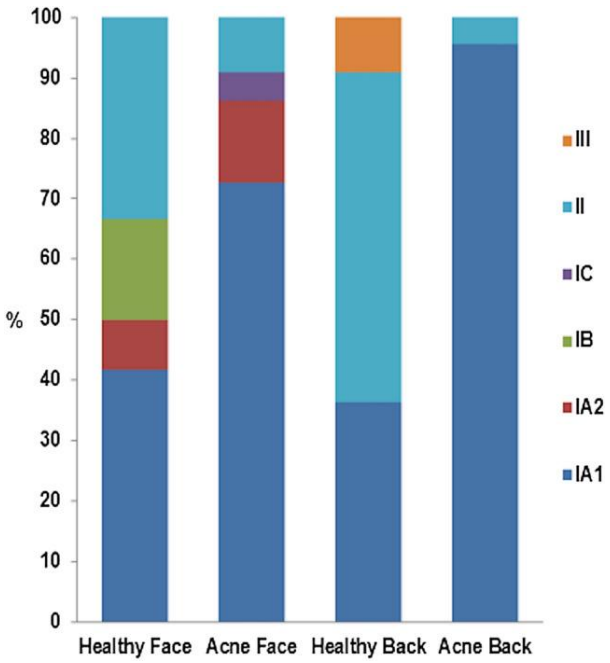



Figure 5. from Dréno et al., The Skin Microbiome: A New Actor in Inflammatory Acne (doi: 10.1007/s40257-020-00531-1). Dysbiosis is related to the loss of diversity of *C. acnes* phylotypes on the face and back of acne patients [13]. Phylotype IA1 (in dark blue) is abundant in acne skin. Reproduced from [13], with kind authorization from Acta-Dermato-Venerealogica, under the creative commons licence (Attribution-NonCommercial 4.0 International, CC BY-NC 4.0).

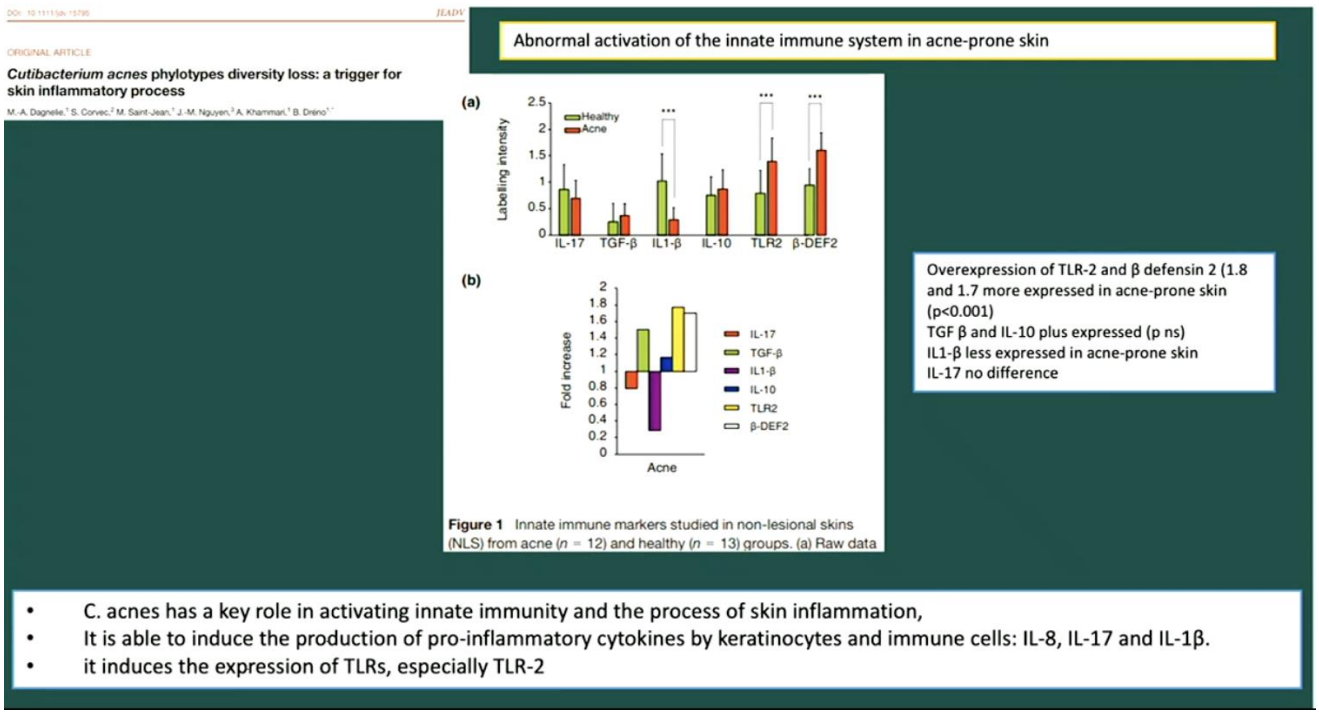


Figure 6. From *Cutibacterium acnes* phylotypes diversity loss: a trigger for skin inflammatory process

She has also highlighted other known factors such as sebaceous hyperfunction and follicular hyperkeratosis.

## Lasers in acne: How they compare with medication

Speaker: Dr Iñigo de Felipe (Spain)

Dr de Felipe highlighted the role of lasers in the treatment of active acne and their concomitant use with medical treatment.

Classical guidelines do not include lasers in the management of acne, only oral and topical treatment. The most widespread treatment is the use of isotretinoin at high doses**. Even so, when treatment is discontinued, 32% of patients have a relapse of acne.**

Dr de Felipe has treated patients with isotretinoin and YAP 1340 nm Neodymium laser (4-5 sessions) and in a long-term follow-up (5 years) no relapses have been observed. **In their practice, out of 17540 patients treated with low dose isotretinoin and 1340 nm/IPL laser only 6.75% relapsed after 12 months.**

Conclusions:

- Treating acne simply with topicals is a good way to always have acne until it naturally goes away;
- Using antibiotics will not reduce relapses and might increase other diseases of special interest;
- High doses of isotretinoin are the only medical treatment that has given complete cure in some patients, but success rates might be as low as 50%;
- Concomitant use of lasers of EBD will enhance significantly the treatment and offer shorter periods of treatment and reduced relapses.

## Lasers for acne – why, what and how?

Speaker: Professor Victor Gabriel Glatici (Romania)

Prof. Glatici has highlighted the role of lasers in the treatment of acne. They serve to control *Cutibacterium acnes* overgrowth, reduce sebum production (by destroying or minimising the number of sebaceous glands), modulation of hair follicle keratinisation, immune and inflammatory response. **Combination of lasers with medical therapy offers the best results in the treatment of acne.** (Thiboutot D, Gollnick H, Bettoli V *et al*. New

insights into the management of acne: an update from the global alliance to improve outcomes in acne group. J Am Acad Dermatol 2009; 60:51-60).

**Laser and light-based acne treatments can be an alternative to medical treatment for non-responders and are associated with minimal adverse effects. These devices also offer an option for those patients who have moderate to severe acne but are concerned about oral medications because of potential adverse effects.**

Before doing any treatment, you have to make a good assessment and adjust well the expectations of the patient by telling them the number of expected sessions and the expected results. It is important to study everything that has been published with the device you have in the clinic and to know everything about your patient.

## Active acne: Which laser for which skin of color?

Speaker: Dr Asma Sioud (Tunisia)

**This is a fantastic review of the use of lasers for acne with an emphasis on the new 1726 nm lasers with an affinity for the oil gland and those more specific for high phototypes** (Goldberg DJ, Andriessen A, Bhatia AC, *et al*. Treatment of mild to severe acne with 1726 nm laser: A safe alternative to traditional acne therapies. J Cosmet Dermatol. 2023;22(11):3026-3032. doi:10.1111/jocd.15964).

Table 1. Summary of light-based procedures that have been used for inflammatory acne. Extracted from (Goldberg DJ, Andriessen A, Bhatia AC, *et al*. Treatment of mild to severe acne with 1726 nm laser: A safe alternative to traditional acne therapies. J Cosmet Dermatol. 2023;22(11):3026-3032. doi:10.1111/jocd.15964).

| Device | Mechanism of action | Side effects |
|---|---|---|
| Fractional $CO_2$ laser | Photothermolysis of sebaceous glands | Pain; erythema; bleeding; transient PIH |
| Potassium titanyl phosphate (KTP) laser | Thermal injury to sebaceous glands; reduction of *C. acnes* | None reported |
| Pulsed dye laser (PDL) | Targets dermal blood vessels; increases growth factor | Pain; erythema; edema; peeling; crusting; blistering; |
| 1064 nm Nd:YAG Infrared laser | Destroys sebaceous glands; reduces perifollicular stratum corneum; reduces | Erythema; dryness; burning; crusting; transient PIH |
| 1450 nm Nd:YAG Infrared laser | Destroys sebaceous glands | Erythema; edema; transient PIH |
| 1540 nm infrared laser | Destroys sebaceous glands | Erythema; edema; heat sensation |

| Device | Mechanism of action | Side effects |
|---|---|---|
| 1565 nm nonablative fractional laser | Destroys sebocytes; reduces *C. acnes* | Erythema; edema, crusting; transient PIH |
| 800 nm diode laser with gold microparticles | Selective destruction of pilosebaceous infundibulum and glands with gold-coated | Erythema; overall well-tolerated |
| Blue light 407–420 nm | Photoactivation of bacterial porphyrins; reduces *C. acnes*; reduces inflammation | Erythema; stinging |
| Red light 620–700 nm | Anti-inflammatory effects | Few side effects by itself; mild to severe discomfort following |
| Intense pulsed light (IPL) 400–1200 nm | Photothermolysis of sebaceous glands; activation of bacterial porphyrin; | Transient PIH; can worsen nodulocystic lesions |
| Photopneumatic therapy (IPL with suction) | Expels comedones with suction; thermal destruction of follicles; reduces *C. acnes* | Erythema; edema |
| Photodynamic therapy (PDT) after application of topical aminolevulinic acid (ALA) or | Destroys sebaceous glands; reduces *C. acnes*; reduces inflammation | Pain (intolerable with ALA 20%); erythema; edema |

There are many lasers and light treatments that can be used in skin of color. The 1726 nm laser is the best option to treat acne in all phototypes. Because the peak absorption of the sebaceous gland is between 1700 and 1720nm, the 1726 nm laser is really specific for treating the sebaceous gland but is really expensive (Goldberg D, Kothare A, Doucette M, et al. Selective photothermolysis with a novel 1726 nm laser beam: A safe and effective solution for acne vulgaris. J Cosmet Dermatol. 2023;22(2):486-496. doi:10.1111/jocd.15602).

Many others may be used: We must adapt the wavelengths to the skin of color. Dark skins → IR lasers are safer. Lasers remain absent from recommendations of the 1st and 2nd line acne treatment options.

Further studies should be continued not only for that but also to include the skin color.

# Scars and keloids (in collaboration with gTDEC)

## Innovative fractional QS1064 nm LIOB picosecond laser protocols for keloid and hypertrophic scars

Speaker: Professor Leonardo Marini (Italy)

We can use laser and energy-based devices to treat scars. Indeed, laser & light can interact with wound healing in different ways and during the various stages of wound healing. The best treatment approach is always a personalized combination strategy since each scar and each patient are unique. The best time to intervene is as soon as possible (Figure 7).

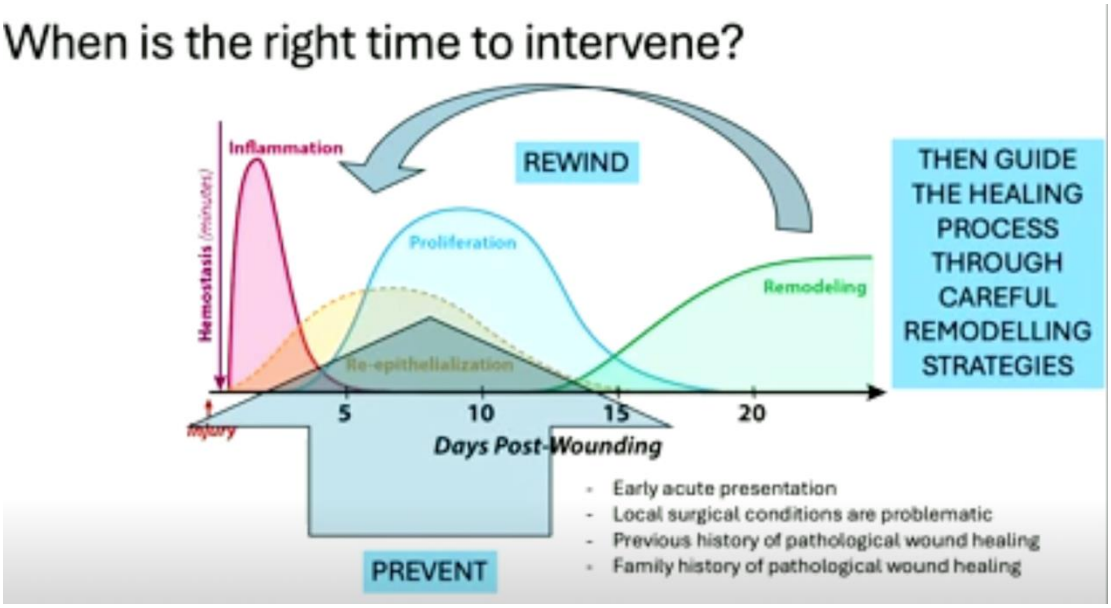



Figure 7. Illustration of when lasers should be best used to improve healing.

In his lecture, Professor Marini described the use of fractional picosecond and nanosecond lasers in the treatment of scars. These are short pulse devices with a fractional lens. They create laser induced optical breakdown (LIOB) in the skin by stimulating the generation of collagen (Figure 8).

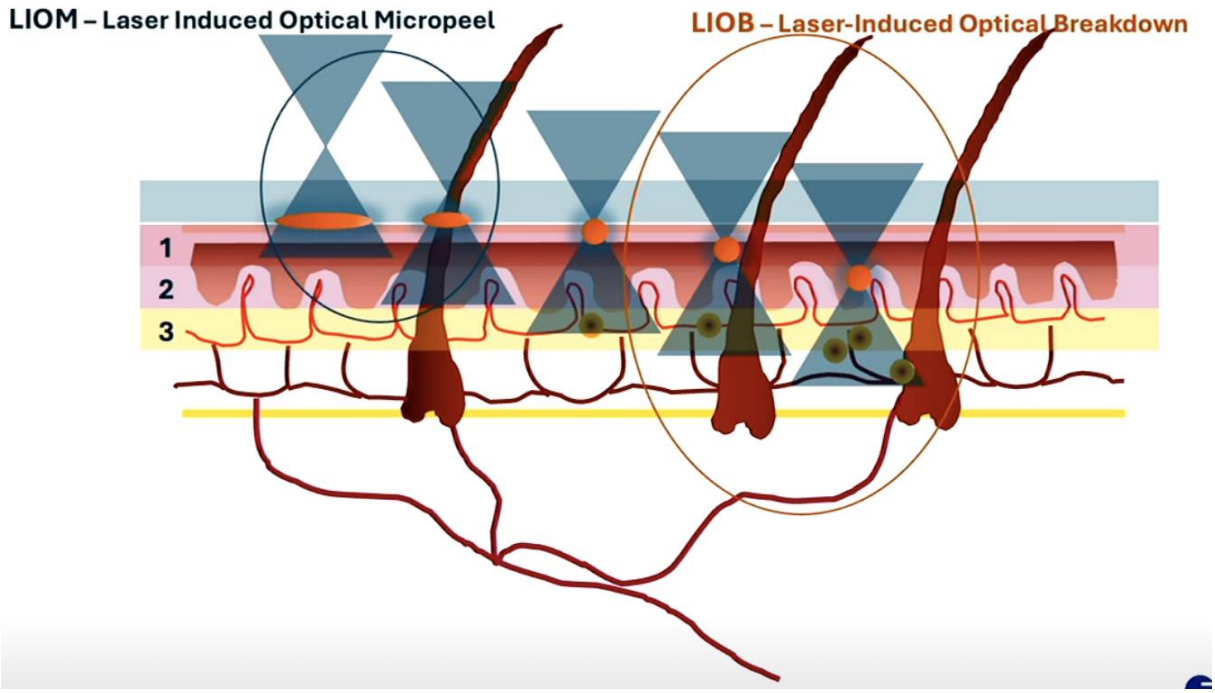



Figure 8. Difference between laser-induced Optical micropeel and breakdown.

In the treatment and prevention of keloids and hypertrophic scars, Prof. Marini combines it with corticosteroids and imiquimod (Figure 9).

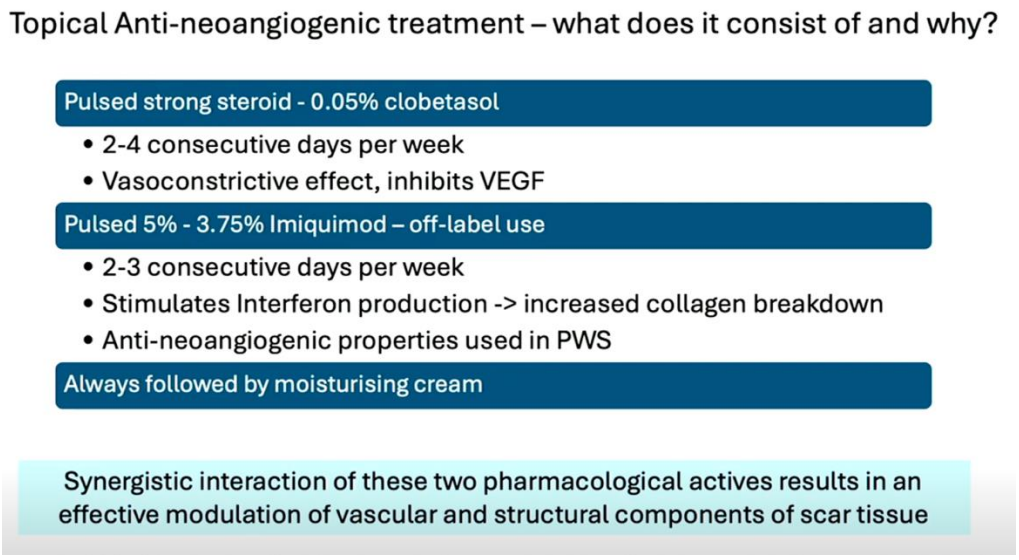



Figure 9. Protocol proposed by Professor Marini

He also combines it with hyper diluted botulinum toxin A (BTX) in order to reduce the tension of the scar at the periphery of it.

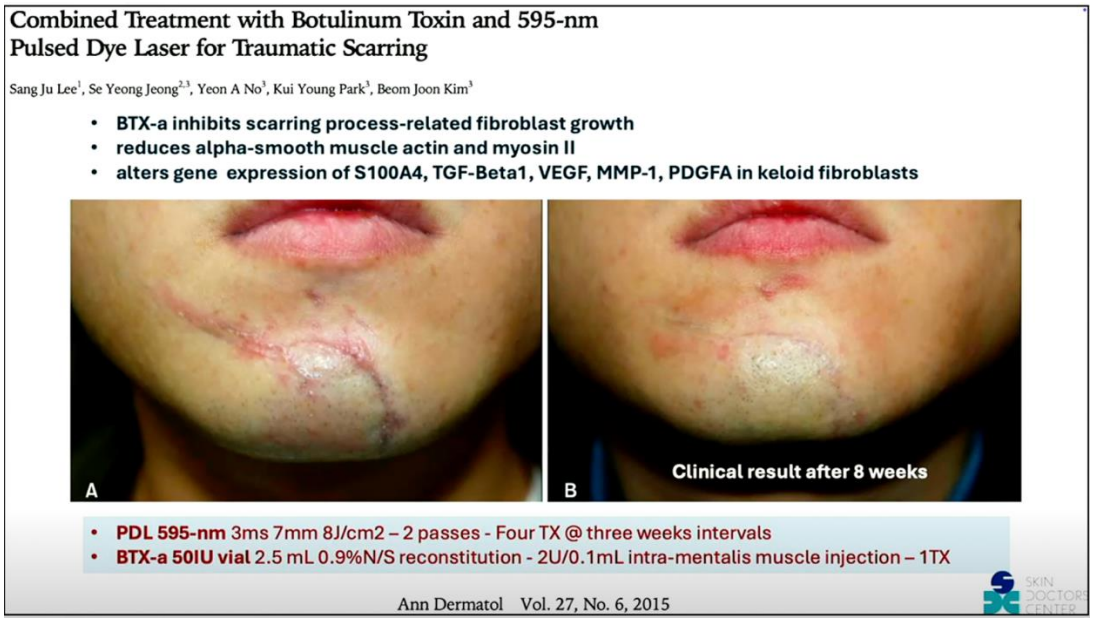



Figure 10. From Lee SJ, Jeong SY, No YA, Park KY, Kim BJ. Combined Treatment with Botulinum Toxin and 595-nm Pulsed Dye Laser for Traumatic Scarring. Ann Dermatol. 2015;27(6):756-758. doi:10.5021/ad.2015.27.6.756

Conclusions:

- Laser and light should be considered an integral part of wound healing both as preventive and curative treatment strategies.
- QS 1064 nm LIOB picosecond fractional laser tissue remodeling can be effective, either alone or in combination with other pharmacological therapies, with positive synergistic clinical effects.
- QS 1064 nm LIOB ps fractional laser tissue remodeling is almost painless due to the focused subepidermal peak photo-conversion cores.
- Non thermal QS 1064 nm LIOB picosecond fractional photo-acoustic scar remodeling is particularly useful when photo-thermal bio-stimulation is to be minimized as in keloids and hypertrophic scars.

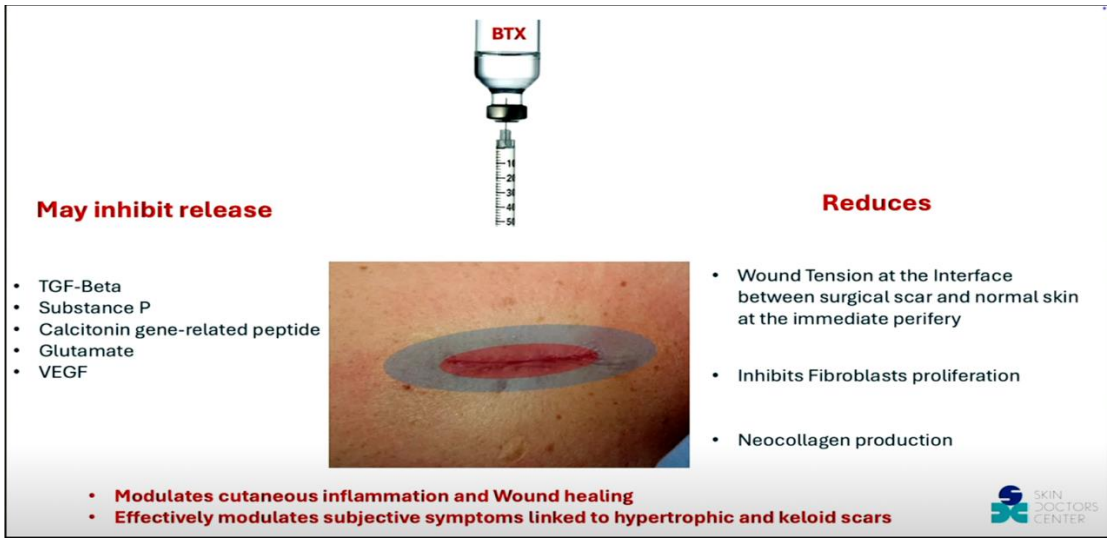



Figure 11. Benefits of BTX in scar management.

## Treatment of scars without devices

Speaker: Dr Brian Hibler (USA)

Dr Hibler's lecture was about how to treat scars if you don't have lasers or energy-based devices. The adequate use of sunscreen to prevent hyperpigmentation, proper cleansing of the scar to prevent infection and the use silicon gels are recommendable. In the cases of hypertrophic scars and keloids intralesional drugs such as corticosteroids and 5-FU can be used to control de volume of the scar.

Vitamin E, onion extract or trolamine don't have enough evidence, just like cryotherapy.

In the case of earlobe keloids, Dr Hibler combines surgery with the topical application of 5% imiquimod cream. This technique has good results, and the combination reduces the risk of relapse.

For acne and atrophic scars, retinoids had demonstrated improvement in the texture and appearance of the scars. He commented on a split face study comparing retinoids with microneedling with similar results (Figure 12).

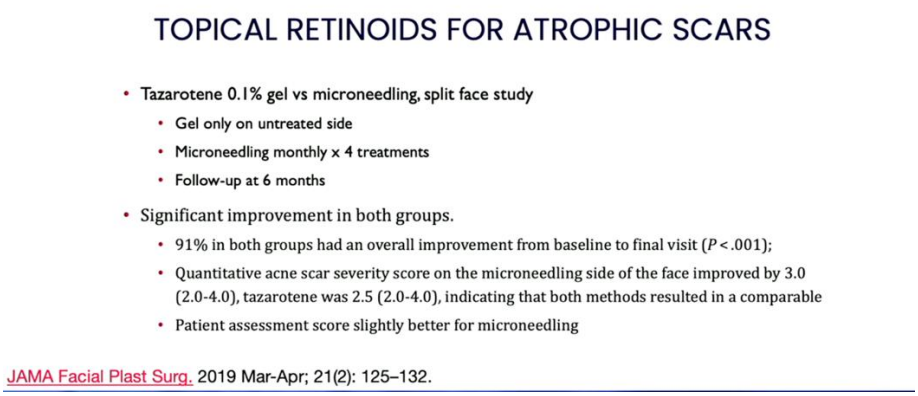



Figure 12. Comparison of retinoids and microneedling for the treatment of atrophic scars

Other useful tools are subcision, the use of chemical peels such as TCA or surgical techniques like punch elevation/excision.

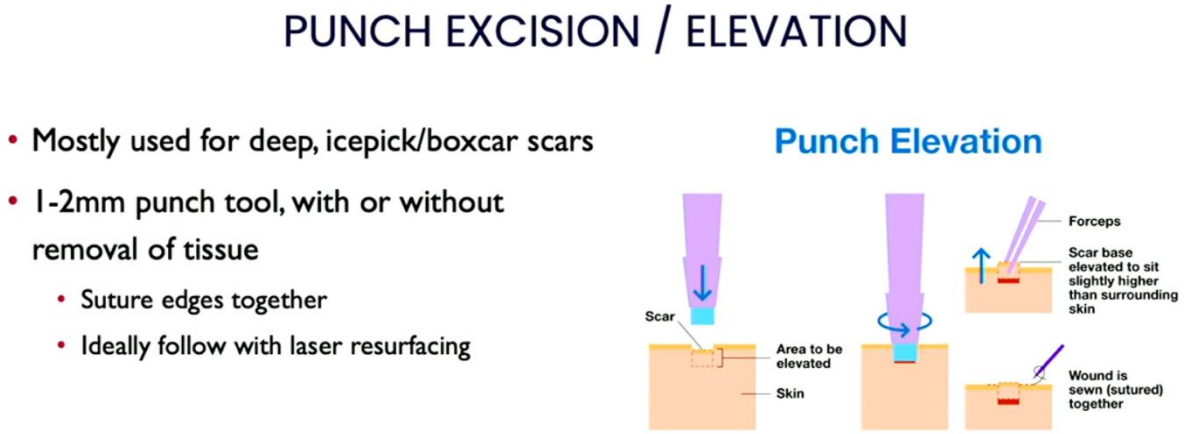



Figure 13. Protocol of punch excision/elevation for atrophic scars.

**Conclusions**:

- Scar treatment depends upon age and type of scar
  - ➢ Traumatic/Surgical: silicone gel, massage, intralesional steroids.
  - ➢ Keloids: Intralesional steroids/5FU, cryotherapy, excision + topical imiquimod or radiotherapy
  - ➢ Acne scarring: retinoids, microneedling, chemical peels/CROSS, subcision, punch excision
- Optimal treatment often involves lasers and energy-based devices
- Future direction: exosomes, stem cells, novel wound dressings
- Early intervention is key

## My approach for post-surgical scars

Speaker: Dr Fatima Zahra Belgnaoui (Morocco)

In this talk Dr Zahra has stressed the importance of surgery in our field and also the importance of preparing the skin before surgery and performing proper disinfection to avoid infection as much as possible (it seems that chlorhexidine is better than povidone iodine for this). This will help to improve healing, reduce downtime and improve the cosmetic result.

It is also important to use low diameter sutures and surgical techniques to reduce wound tension and improve healing. Once the wound is formed, proper wound care, the use of silicone gels or early laser would improve the outcome.

## Comparative cumulative effect of simultaneous laser wavelengths to the scar

Speaker: Dr Eugenio Gandolfi (Italy)

Dr Gandolfi described a new pocket-sized laser with dual wavelength 1927 nm/1550 nm. The combination of both improves the scars and its portable and easy to use.

It can be used as well for the treatment of stretch marks, non-ablative resurfacing and can be useful for the management of hyperpigmentation and melasma.

## Overview of established treatment modalities for keloids

Speaker: Dr Brian Berman (USA)

Dr Berman divided his lecture in 3 sections.

1. **Post excision keloids recurrences:** The average recurrence rate is 71.8% using only surgery. Things that we can use to reduce this rate is:
   a) Combine the excision with radiotherapy (3 sessions 6-10 Gy), reducing the recurrence to only 10% in a study from 2020 (Berman B et al. J Clin Aesth Dermatol; 2020:13)
   b) Imiquimod: Is an immune response modifier that upregulates the promotion of INFalpha which is an antifibrotic agent. He recommends combining 5% imiquimod cream with shaving of keloids. He conducted a study with 5 years follow up (information is in the figure below). Only 20% of keloids relapse in 5 years.


Figure 14. From Stashower ME. Successful treatment of earlobe keloids with imiquimod after tangential shave excision. Dermatol Surg. 2006;32(3):380-386. doi:10.1111/j.1524-4725.2006.32077.x

c) Intralesional injections: In a recent metanalysis they compared all the intralesional drugs used for the treatment of keloids. They concluded that the combination of 5-FU and TAC was more effective than the rest.

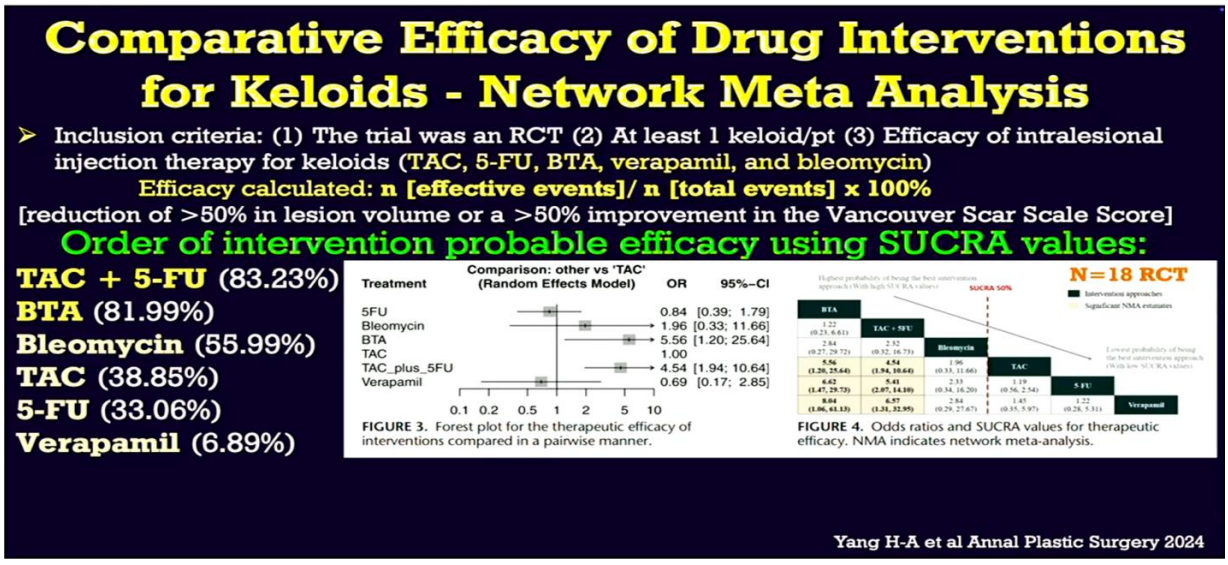



Figure 15. Yang *et al.* Annal Plastic Surgery 2024.

d) Botulinum toxin is also an effective treatment for scars and also prevents their appearance. (Hu *et al.* Botulinum toxin A for surgical scars. Plastic and Reconstructive Surgery 2018; 141:646-650)

2. **Laser treatment for scars**
    a) Laser pre-treatment of planned surgical incision sites

A single presurgical 1540 nm Erbium glass laser treatment, of a planned incision site is a simple, safe, and painless strategy to significantly improve the final scar appearance (Friedman *et al*. Laser pretreatment for the attenuation of planned surgical scars: A randomized self-controlled hemi-scar pilot study. J Plast Rec Aesth Surg 2020 ; 73 : 893-898)

    b) Laser therapy for acne scarring

Treatment with ablative lasers was more effective than non-ablative lasers, but with greater hyperpigmentation and time to heal

    c) Use of concomitant isotretinoin

The Global Acne Scarring System score for concurrent isotretinoin and laser treatment was significantly lower than the side treated with isotretinoin and 6 months later laser (Taleb *et al.* Lasers Surg Med. 2023)

3. **Prevention of acne scars.**
    a) Retinoids such as adapalene and tripharotene can prevent the formation of atrophic scars (Dano *et al*. The effect of 24 weeks of Adapalene 0,3% and Benzoyl Peroxide 2,5% gel vs vehicle on risk atrophic acne scar formation in moderate to severe acne. Am J Clin Dermatol 2018)

## Innovative treatment modalities for keloids. Intralesional Chemotherapy and contact Cryotherapy.

Speaker: Dr Michael H Tirgan (USA)

Dr. Tirgan is an oncologist specialised in the treatment of keloids. He does not recommend surgery as a first treatment of an early keloid. It can make it worse. Laser can be useful but there is insufficient evidence to support it (Leszczynski R et al. Laser therapy for treating hypertrophic and keloid scars. Cochrane Database of systematic reviews. 2022; 9.CD011642)

1. **Intralesional Chemotherapy**: He talks about 5-FU, vincristine, docetaxel and bleomycin.
   5-FU is used combined with corticosteroids and he uses as first line therapy. If this combination does not work, he adds vincristine, and if that does not work, he adds docetaxel (Figure 16).

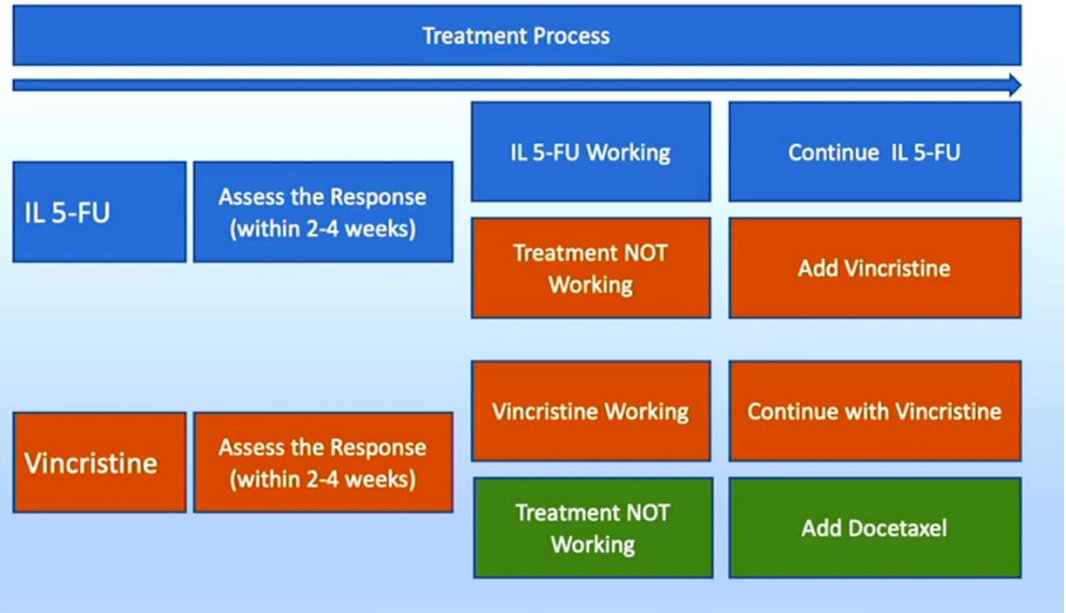



Figure 16. Protocol proposition for intralesional chemotherapy

2. **Contact Cryotherapy**. He uses this technique a lot to treat earlobe and ear keloids. He freezes completely the surface of the keloid (he uses a folded gauze and the freezes it with nitrogen) with good results and low rate of relapse. It can also be combined with intralesional chemotherapy to improve the results.

## How to get drugs into keloids

Speaker: Dr Albert Wolkerstorfer (Netherlands)

The way drugs are injected into keloids is important to avoid skin atrophy. Sometimes this is challenging. Little is known about biodistribution (Yin Q *et al*. The biodistribution of triamcinolone acetonide injections in severe keloids: an exploratory three-dimensional fluorescent cryomicrotome study. Arch Dermatol Res 2024. 8; 316-368) and there are simple tricks to improve it, such as the use of thin needles and syringes and the concomitant use of contact cryotherapy.

## Treatment of keloids with phenol

Speaker: Dr Madiha Frikha Mseddi (Tunisia)

Dr Mseddi proposes the use of 40% phenol weekly application for the treatment of keloids. They have been using it since 2010 (Mseddi M *et al*. Treatment of keloid with phenol: a new therapy. Ann Dermatol Venereol. 2014; 141: 493-499) **Phenolisation is an innovative and promising treatment. Regression of more than 60%**

**of the scar in 85% of cases. Nearly a quarter of the patients achieve the disappearance of the entire scar. It's generally well tolerated and has a reassuring character.**

# Learning with passion

Speakers: Rox Anderson, Jean Carruthers, Sebastian Cotofana

## Anatomical approach of aesthetic procedures on the face

Speaker: Professor Sebastian Cotofana (USA)

Prof. Cotofana's talk was about the anatomy of the lips and how this area is one of the first we look at. He stressed the importance of the location of the facial artery (Cotofana S *et al.* Distribution pattern of the superior and inferior labial arteries: Impact for safe upper and lower lip augmentation procedures. Plast Reconstr Surg 2017. 139: 1075-1082, Cotofana S *et al*. Anatomy of the Superior and Inferior Labial Arteries Revised: An ultrasound investigation and implication for Lip Volumization. Aesth Surg J. 2020; 40: 1327-1335) and its implication in the injection technique (Ghannam S *et al*. Treating the lips and its anatomical correlate in respect to vascular compromise. Facial Plast Surg 2019; 35: 193-203).

Finally, he talked about a recent study that he published about lip compartments and their potential clinical relevance (Cotofana S. *et al*. Intralabial Lip Compartments and their potential clinical relevance. Plast Reconstr Surg. 2023). (Figure 17)

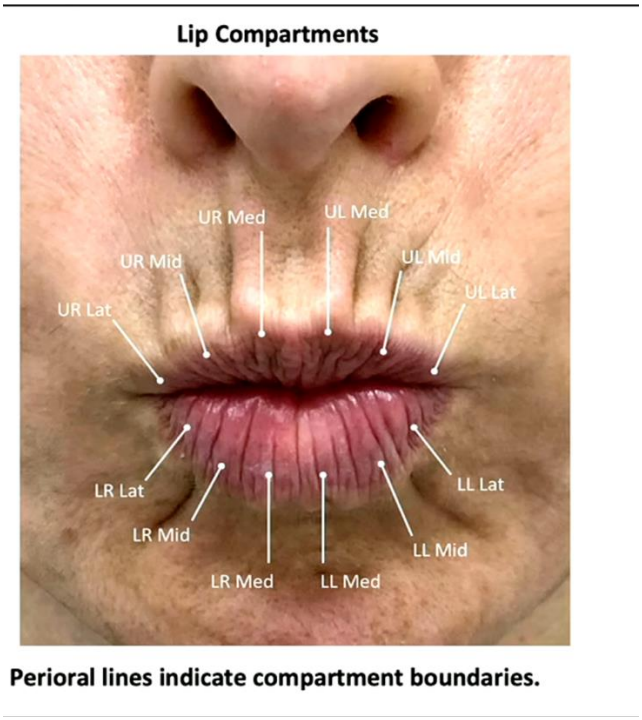



Figure 17. Perioarl lines help locate the various lip compartments

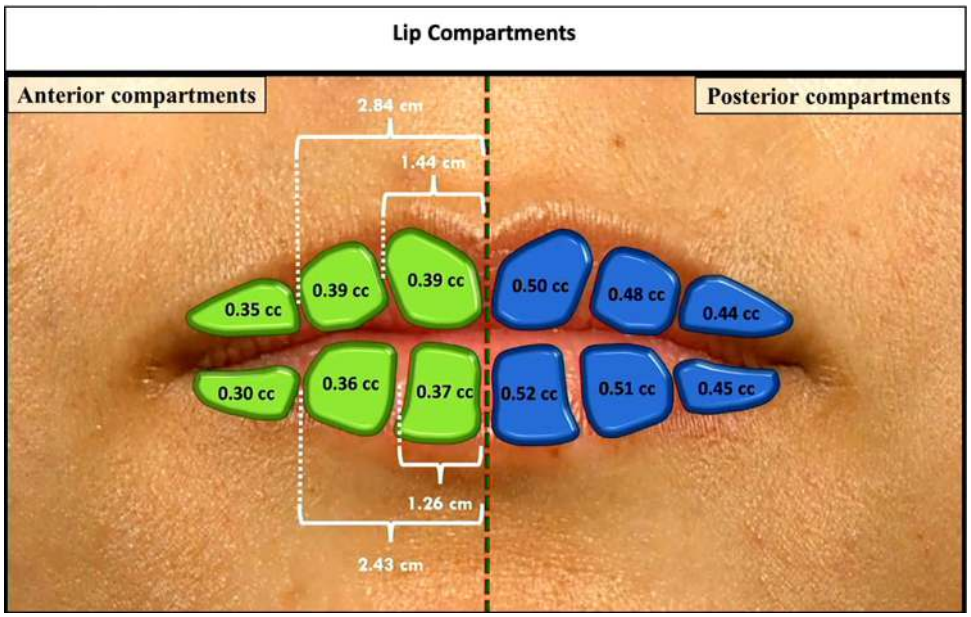



Figure 18. Lip compartments.

He proposes that injections be made in the lips compartment with needle vertical technique to avoid breaking the walls between compartments (Figure 18).

## A journey towards beauty

Speaker: Dr Jean Carruthers

In this presentation Dr Carruthers talks about how she and her husband, Dr Carruthers, described the use of botulinum toxin for cosmetic purposes in the treatment of expression wrinkles. At first, they were told that their idea would go nowhere, but in 2022 3,945,282 neuromodulator treatments were performed in the world.

Dr Carruthers proposes that botulinum toxin in combination with other treatments prolongs aesthetics results.

**She proposes injecting platysma and oris angle depressor before EBD treatments in the lower third and neck to improve the result.**

## Lasers in dermatology: Past and future

Speaker: Dr Richard Rox Anderson (USA)

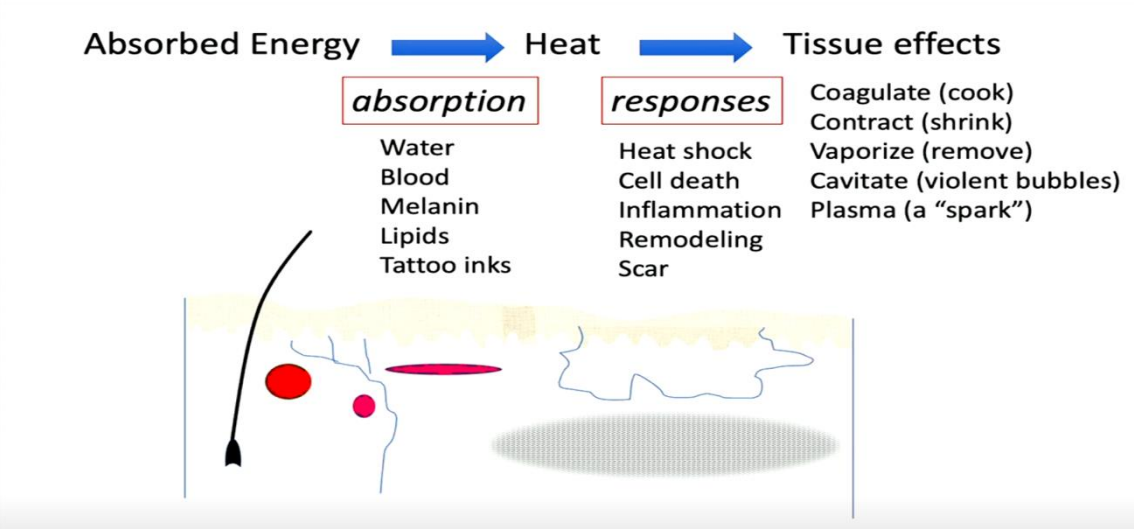
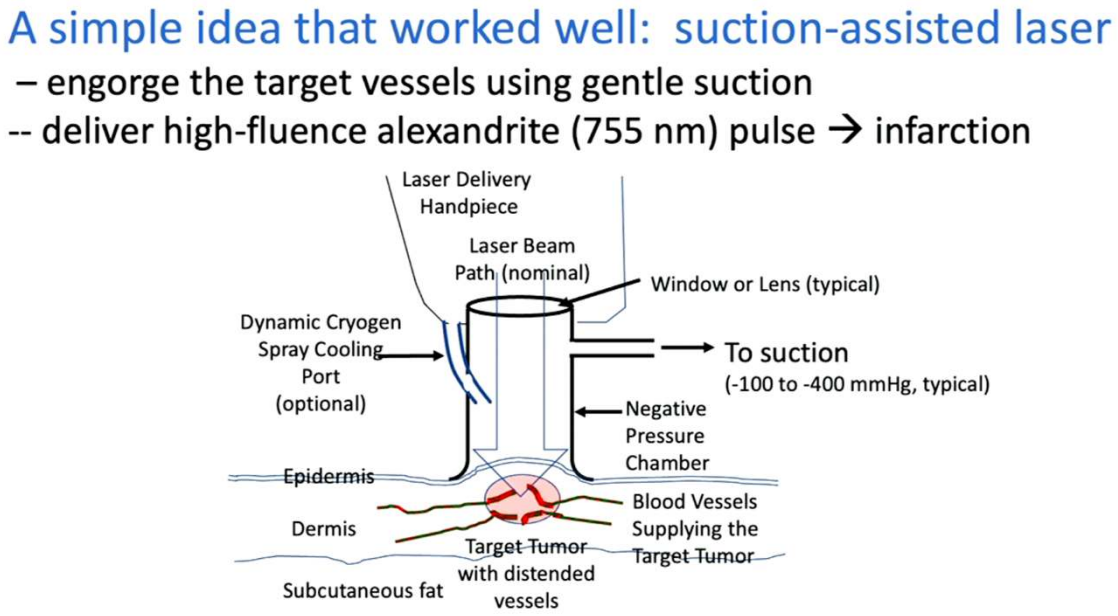



Figure 19. Summary of the main effects on the skin with energy-based devices.

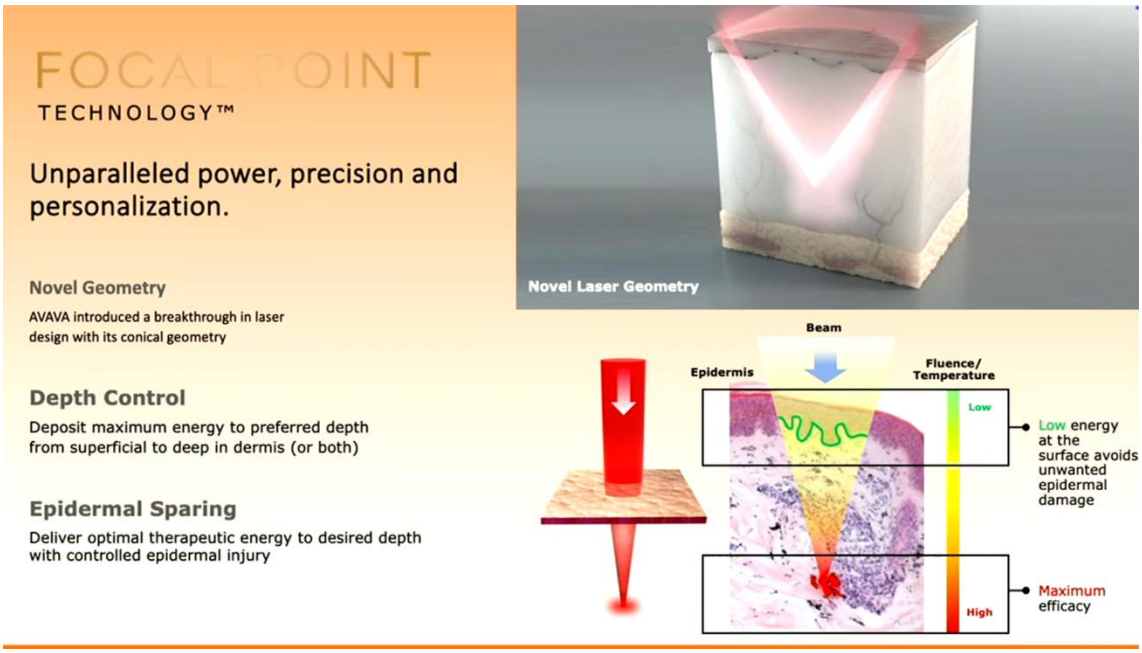
In 1983 Dr Anderson published a groundbreaking paper: "Selective photothermolysis" and people thought he was crazy at first. It is the foundation of all EBDs available today.

**What is new?**

- Fractional lasers may reduce skin cancer risk
- Sebum specific (1726 nm) lasers for acne treatment (they can be used in any phototype)
- Suction-enhanced vascular laser targeting




- Intradermal focused laser




- Laser microscopy is getting faster, better, and practical (OCT, confocal microscopy)

## Next Generation Awards

### Hyaluronic acid dermal fillers in renal transplant patients: Safety and management of potential complications

Speaker: Dr Meryem Ozlem Ozturk (Turkey)

They conducted and studied where they injected renal transplant patients and healthy controls. They use 0,5 ml Hyaluronic acid in the zygomatic arch. No complications were observed in either the renal transplant or the healthy group after 6 months follow up. The frequency of adverse effects was similar. HA injection procedures can be safely applied to these patient groups.

## Luscious lash hunt. Goodbye to lash extensions with 0.03% bimatoprost

Speaker. Dr Armeela Javaid (Pakistan)

Bimatoprost 0,03% has FDA approbation for lash growth. It has been studied for efficacy and safety. It is a structural analogue of Prostaglandin F2. It is intended to be used topically not as an eye drop. It is a gradual growth with full results in 16 weeks. Dr Javaid enrolled 45 patients that applied the solution daily for 120 days. 80% of patients had darker and longer lashes. Only 4 patients had slight eye dryness and irritation. The safety profile was good.

## Treatment of retronychia: Potential benefit of intralesional corticosteroid combined with total avulsion to decrease post-surgical onychodystrophy or recurrence

Speaker: Dr Maximiliano Maass (Chile)

Dr Maass proposed the use of intralesional steroids (0,1 ml triamcinolone acetonide on the lateral sides at the level of the proximal nail fold) after surgical avulsion to prevent recurrence and adverse events (nail dystrophy, growth abnormalities...) and they conducted a study when they compared total nail avulsion and total nail avulsion plus corticosteroid injection.
Preliminary results suggest that this combined approach may reduce the incidence of post-surgical nail dystrophy. The results must be confirmed in prospective randomized controlled trials with larger sample size.

## Jet injection assisted photodynamic therapy for basal cell carcinoma

Speaker: Dr Saud Aleissa (USA)

Jet injection works *via* active diffusion, forcing a stream of liquid through a precision nozzle. The high speed and pressure of the liquid enables it to penetrate in a web-like distribution. They conducted a study with 15 patients with Basal cell carcinoma and they used jet injection photodynamic therapy (4 PDT + excision and 11 2 sessions of PDT separated 4-6 weeks) with promising results.

### Evaluation of the diffusion characteristics of letibotulinumtoxinA in comparison to ona- and abobotulinum toxinA in a doubled-blind, randomized split face study

Speaker: Dr Maxine Bennek (Germany)

They conducted a split face study. In one side of the face, they injected ona or abobotulinum toxin and in the other side letibotulinum and compared their diffusion capacity. They conclude that differences in the diffusion characteristics should be considered, especially when switching products. LetibotulinumtoxinA is a highly precise and targeted toxin with predictable diffusion.

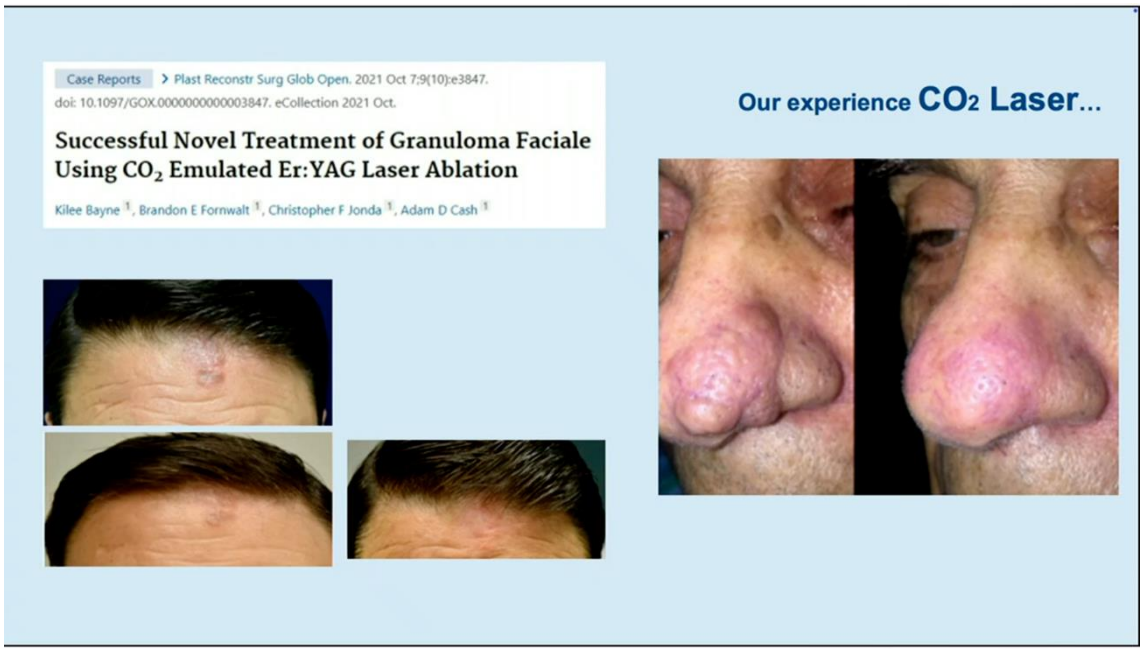
# Lasers and inflammatory skin conditions (in collaboration with GEDET)

## Lasers and autoimmune diseases

Speaker: Professor Pablo Boixeda (Spain)
The most important thing before treating these diseases is an accurate diagnosis. Prof. Boixeda proposes some principles treating skin manifestations in systemic diseases:

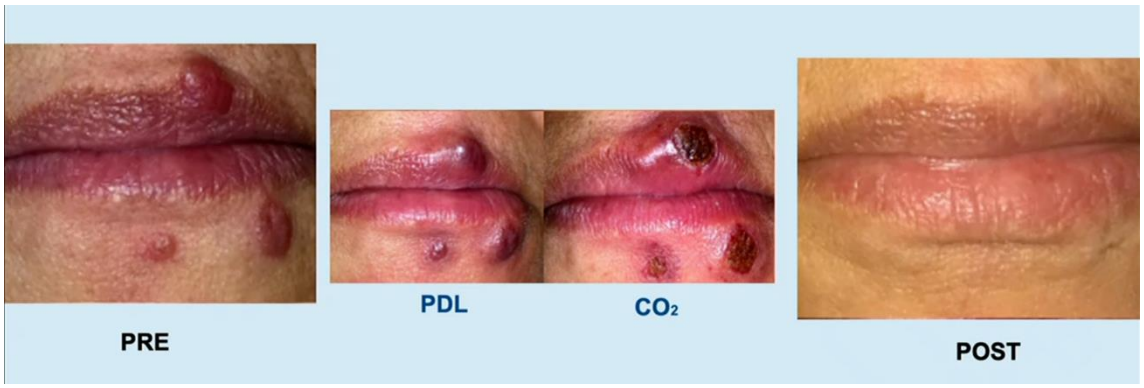
- Improve symptoms and appearance without making the disease worse
- No contraindications combining with medical treatment
- Clarify expectations depending on the device used

**Granuloma faciale**: It can be treated with picosecond, ablative lasers and even vascular lasers.

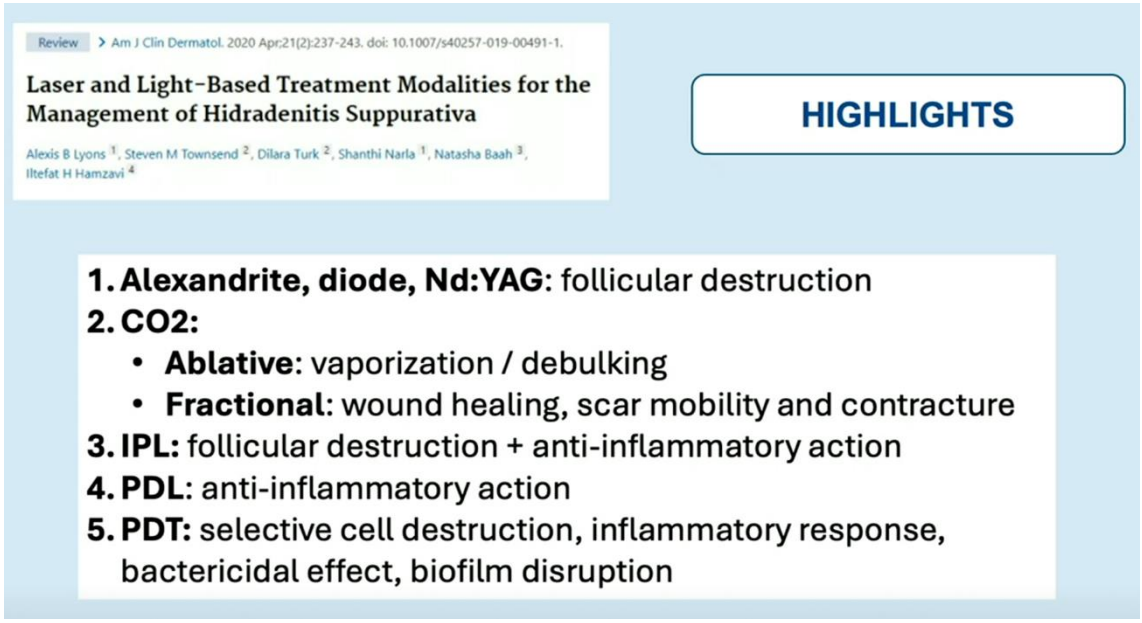



**Necrobiosis lipoidica**: Pulse dyed laser can be used but using wide spot and long pulses. The endpoint is erythema. It is recommended to use sub purpuric settings in order to avoid ulceration.

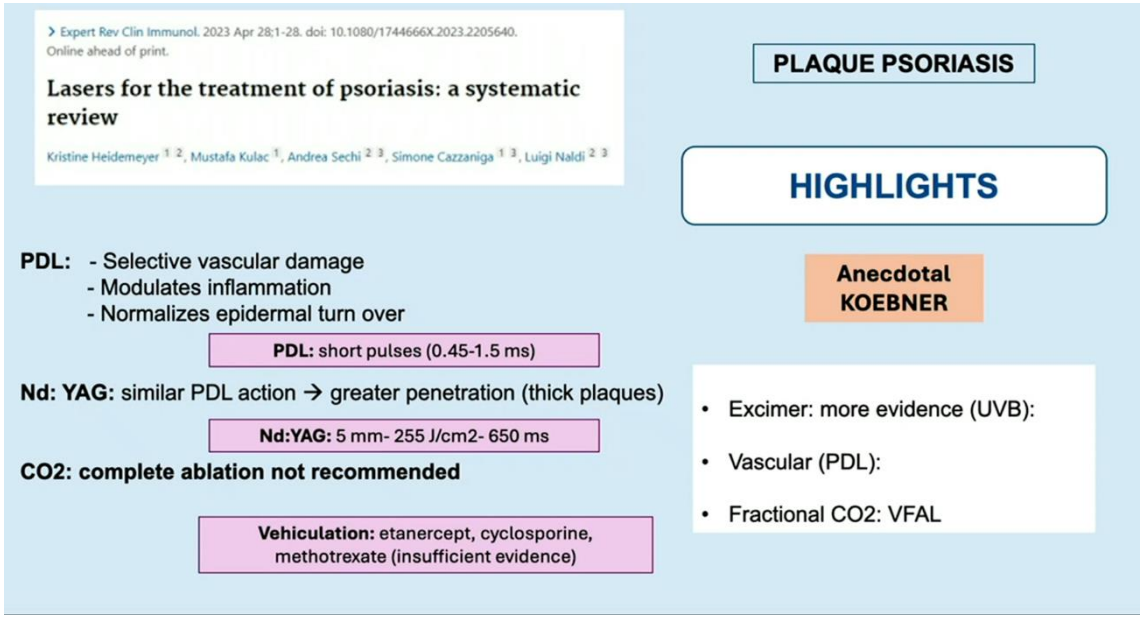
**Sarcoidosis:** Chronic facial lesions can be treated with PDL in combination with CO2



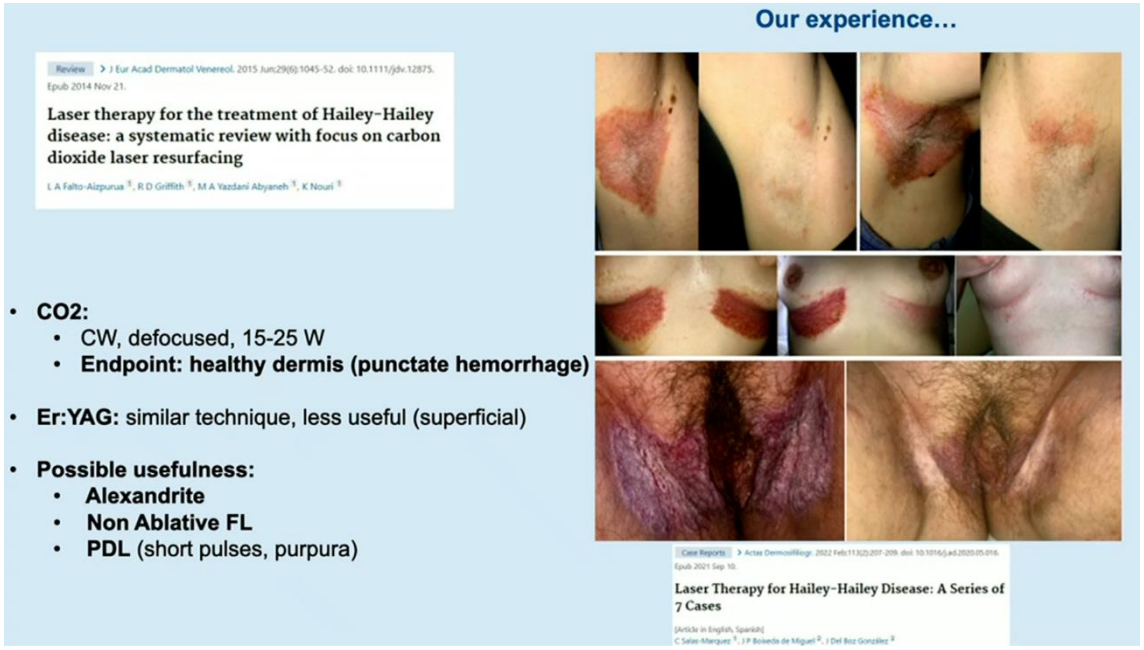

**Hidradenitis suppurativa**



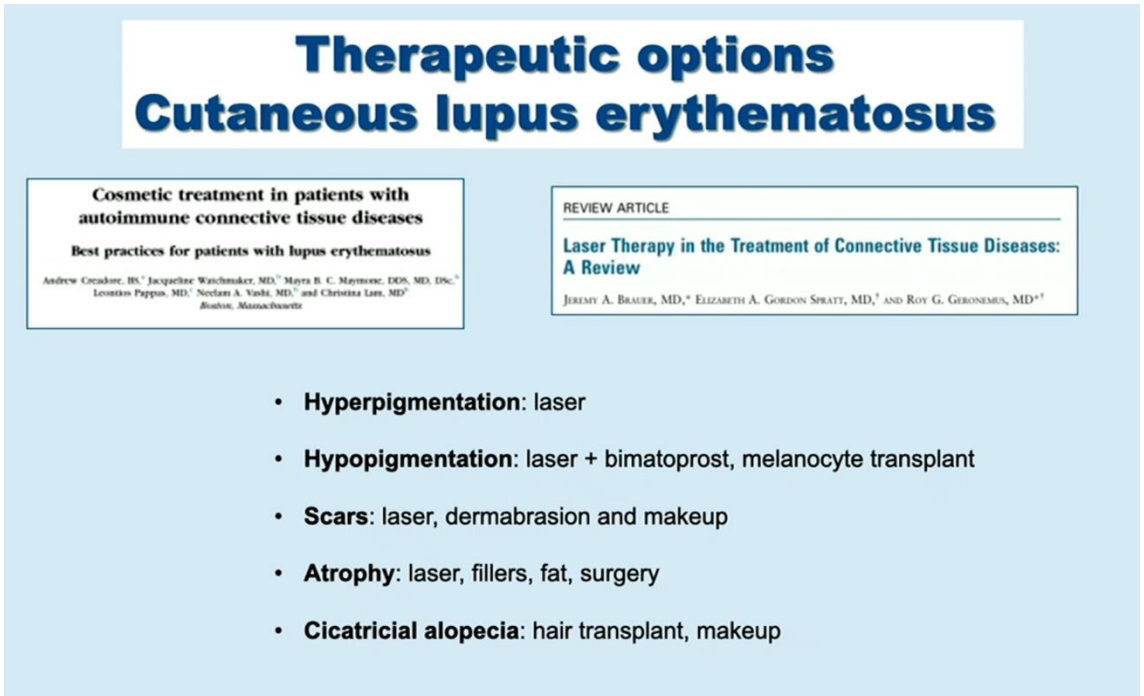

**Psoriasis:** Its 2nd line treatment but it can be useful for nail psoriasis.




**Haley-Haley**




**Lupus**




Conclusions: **Laser should be used with caution especially in higher phototypes. Most evidence consists of case reports and a small case series. Larger studies are needed to determine the effectiveness of these treatments.**

## Laser and pseudotumors

Speaker: Dr Claudio Marasca (Italy)

**Pseudotumor is a term encompassing dermatological conditions which are not true proliferations, but either have a clinical resemblance to a known tumor**. Recurrent melanocytic nevus is defined as the proliferation of remaining melanocytes that occurs after the partial removal of a melanocytic nevus, which leads to repigmentation at the site of previous excision.

Exophytic lesions can be treated with ablative lasers while flat lesions can be treated with nano or picolasers. Recurrences can occur in 2% of patients, especially when we treat intradermal nevi.

The occurrence of recurrent nevi was inversely associated with increased patient age, darker phototypes and dermal nevus. The presence of dark brown colour, multiple colours, dots, terminal hair and an annular distributed pigmentation around adnexal structures. But how can we differentiate recurrent nevi of recurrent melanoma? By their characteristic dermoscopic patterns

- Recurrent nevus:
    - Radial lines
    - Symmetry
    - Centrifugal growth pattern
- Recurrent melanoma:
    - Circles (face especially)
    - Eccentric hyperpigmentation at the periphery
    - Chaotic growth pattern
    - Noncontinuous growth pattern
    - Pigmentation beyond the scar's edge

**Congenital nevi**: More than 4 years of follow-up is required to evaluate the efficacy of lasers in CMN, and partial excision and laser combination treatment might be an effective treatment option.

**Melanocytic nevi after laser hair removal**. It can present some dermatoscopic changes such as pigmentary blotches with crust formation, pigmentary blotches with subsequent loss of pigment network, asymmetric pigment network with gray-blue dots and milky red veil, blue-gray areas, loss of pigment network and peppering morphology. The delay or error in diagnosis often occurs because the pathologist does not know that the lesion has undergone some local destructive treatment and, therefore, they diagnose melanoma instead of pseudomelanoma.

# Red face: My approach on diagnosis and treatment

Speaker: Dr Monika Fida (Albania)

The red face is a broad of differential diagnosis and in most cases is a benign disease (rosacea, seborrheic dermatitis or photodermatosis), but we must not forget other causes such as drug reactions, carcinoid syndrome etc.

Differential diagnosis of the most common dermatosis is presented in the table below:

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IMCAS **Differential diagnosis**

| | ROSACEA | ACNE VULGARIS | SEBORRHEIC DERMATITIS | SLE |
|---|---|---|---|---|
| MORPHOLOGY | Erythema<br>Teleangiectasia<br>Papules,Pustules<br>Comedones absent | Polymorphic eruption<br>Comedones prominent | Follicular papules with greasy,loose scales | Erythema and edema<br>Papules and pustules infrequent |
| BACKGROUND | Erythema and Teleangiectasia | Oiliness | Greasiness | |
| DISTRIBUTION | Convexities of face<br>Symmetrical<br>Spares peri-orifical areas | Face, deltoid region, trunk<br>Asymmetrical | Eyebrows,scalp, eyelashes, nasolabial folds, retroauricular region | Butterfly area |
| ASSOCIATIONS | Intolerance to heat and spices<br>Eye complications | | | Systemic symptoms frequent |

Dr Fida described the most common treatments and her approach for rosacea (antibiotics, topical with azelaic acid, antibiotics and gentle cleanser and lasers), seborrheic dermatitis (low topical corticosteroids, topical antifungal agents, topical calcineurin inhibitors and in resistant cases always test for HIV and oral itraconazole can be an effective treatment), atopic dermatitis (topical corticosteroids, immunosuppressors, antiinterleukin4/13, JAK inhibitors…), psoriasis and lupus.

**Take home message**

Managing facial erythema can be frustrating for both patients and dermatologist.
The key to success is to make a clear diagnosis and to aid the patient with treatment of compliance.

## Positive and negative stimulation: How to create a balance with three whales of aesthetics.

Speaker: Dr Yaryna Turkevych (Ukraine)

Dr Turkevych talked about collagen stimulators, and she divided them in two groups:

- Positive: Use of regenerative medicine to induce collagen
    - Superficial MNRF Low Energy
    - PDRN
    - Peptides
    - Exosomes
- Negative: They induce control damage to the skin to induce the production of collagen
    - Deep MNRF high energy
    - Er:YAG laser
    - $CO_2$ laser
    - CaHA

**Conclusions:**
There are no direct collagen stimulators that can cause physiological neocollagenogenesis. Using Calcium hydroxyapatite, Polylactic L-acid and energy-based devices it is necessary to combine Polynucleotides and exosomes for more natural and physiological results. We need to investigate and learn a lot in the area of preaging medicine.

## Is IPL the new normal ?

Speaker: Dr Arnaud Lambert (France)

Dr Lambert talked about IPL being the most bought energy-based device in France. In his opinion, it is because of its rentability and versatility (you can target melanin and blood vessels).
In this talked he defends this device because it is affordable and accessible and very polyvalent. Combinations are always a good idea.

## Picosecond laser for the treatment of post-inflammatory hyperchromia

Speaker: Dr Alexandre Filippo (Brazil)

Toning mode with nano and picolaser promotes the decrease in the number of melanocytic dendrites, change in the structure and size of melanosomes and cavitation in the dermis.

Dr Filippo proposes his technique to treat PIH: he combines the toning mode (7 mm fluence 0,6-0,8 J with several slow slides) and fractional mode (6x6 fluence 1,5J) in order to improve the extracellular matrix.

He uses this approach for all the pigmentary disorders.

**Conclusions**

- Chronic pigment disorders stay challenging
- Patient expectation should be managed and reduced
- Consent form and photographic documentation are very important.

- The pathogenesis of pigmentation is complex, with contributions from multiple cell types.
- The combination of treatments reduces time and improves results.

# Combined lasers (in collaboration with SAARC AAD)

## Restoration and natural harmonization of laxity and volumes of the face with the innovative mws system for body and face contour

Speaker: Dr Paolo Bonan (Italy)

Microwave technology can be used to treat localized fat, cellulite and skin laxity. It can penetrate deep into the skin by treating fat more selectively and without damaging the epidermis (Bennardo L *et al.* Microwave Therapy for Cellulite: An effective non-invasive treatment. J Clin Med 2022. 11; 515; Nistico SP *et al*. A new treatment protocol to treat abdominal subcutaneous fat combining microwaves and flat magnetic stimulation. Bioengineering. 2022; 21:182; Zappia E. *et al*. An innovative microwave technology for the treatment of submental skin laxity. Lasers Med Sci 2025; 40:28). The heat generated also serves to induce collagen production and improve skin texture.
It can be combined with $CO_2$ and 1540 nm non ablative diode, as well as with fillers (it increases the proliferation of pre adipocytes).

## Evolution of fractional resurfacing: Ablative to non-ablative

Speaker: Dr Anil Ganjoo (India)

The technique of resurfacing has evolved from conventional ablative to conventional non ablative to fractional ablative and non-ablative to microneedling radiofrequency to subablative RF and now to nano-subablative RF. This evolution happened due to the quest to develop a technique of resurfacing that would be devoid of side effects as far as possible while producing maximum results.

## Combining fractional ablative laser with injectables

Speaker: Dr Anthony Rossi (USA)

Dr Rossi's talk was about the possibility of combining different technologies such as botulinum toxin, fillers, and ablative lasers. He has shown different cases in which he performs all 3 procedures in one session. He starts with the toxin in the muscle plane, then topical anesthesia, fillers and finally lasers. As he works on different planes (muscular, subcutaneous, and dermal) there is no problem in performing all 3 procedures at the same time (Dempsey A *et al*. Practice patterns regarding combination treatments and laser and energy-based devices: A survey of American Society for Laser Medicine and Surgery Members. Lasers Surg Med 2023. 55:16-21).

## Unconventional uses of lasers in dermatology

Speaker: Dr Neeraj Pandey (Singapore)

Over the years with the evolution of technology, the laser has become a fundamental, irreplaceable omnipresent device of modern dermatology practice. At present, new devices have been under development for the therapy of different kinds of diseases. The lasers, already in use, are evolving to be more effective and useful in many other disorders.

Some unconventional uses of lasers are:

- Lichen planus pigmentosus: QS Nd:YAG 1064 nm can help clear the residual hyperpigmentation. Multiple sessions are necessary. It can only be used when the condition has stabilized and there is no spread of the disease. Dr Pandey uses triple spot laser treatment (8 mm, 7 mm and 4 mm)
- Ashy dermatosis and Riehls melanosis: Dr Pandey uses the triple spot laser treatment as well with good results as well.
- Pseudoacanthosis nigricans: He uses in combination with lifestyle modifications and topical agents with good results.
- Granuloma annulare: It can be treated with $CO_2$ and erbium laser.

- Vitiligo: Surgical $CO_2$ laser can be used to ablate stable vitiligo lesions when single/few in number and not responding to medical treatment. Wounding therapies may regenerate de novo hair follicles by Wnt-dependant pathway. Moreover, the role of hair follicles in the repigmentation of vitiligo is longstanding knowledge. The combination of both therapies may increase the penetration and the well-known efficiency of UV radiation.
- Laser hair removal can be useful for pilonidal sinus, hidradenitis suppurative, keratosis pilaris, trichostasis pinulosa, Becker nevus among others...

**Take home messages**

- With so many unconventional uses of laser in dermatology being explored, this modality has emerged as a major boom for patients with difficult dermatological conditions.
- The laser surgeons need to keep their eyes open to the possibility of the use of Laser in various unconventional indications so that prompt relief can be provided to the patients.

## Combining laser and polynucleotides for acne scar management

Speaker: Dr Anjali Mahto (UK)

The multimodal approach in the treatment of acne scars is highly recommendable. It provides synergistic effects for superior outcomes (we can treat the textural irregularities, volumetric loss and pigmentation changes).

Dr Mahto's protocol is to apply polynucleotide with gentle cannula subcision to improve hydration and elasticity 2 sessions 2 weeks apart. And she uses laser to do a resurfacing treatment. Afterwards, she applies topical exosomes to enhance healing and reduce downtime.

Polynucleotides stimulate fibroblast activity and collagen synthesis, enhance hydration and elasticity, and promote extracellular matrix remodelling. They act as a priming to the dermis.

Exosomes are extracellular vesicles rich in growth factors and cytokines that reduce inflammation and erythema and enhance collagen synthesis and dermal repair. Applied post laser, they can accelerate healing and improve scar texture, tone, and recovery times.

Therefore, combining these three technologies can lead to fewer sessions and improved patient outcomes.

## Effective strategies for managing stretch marks

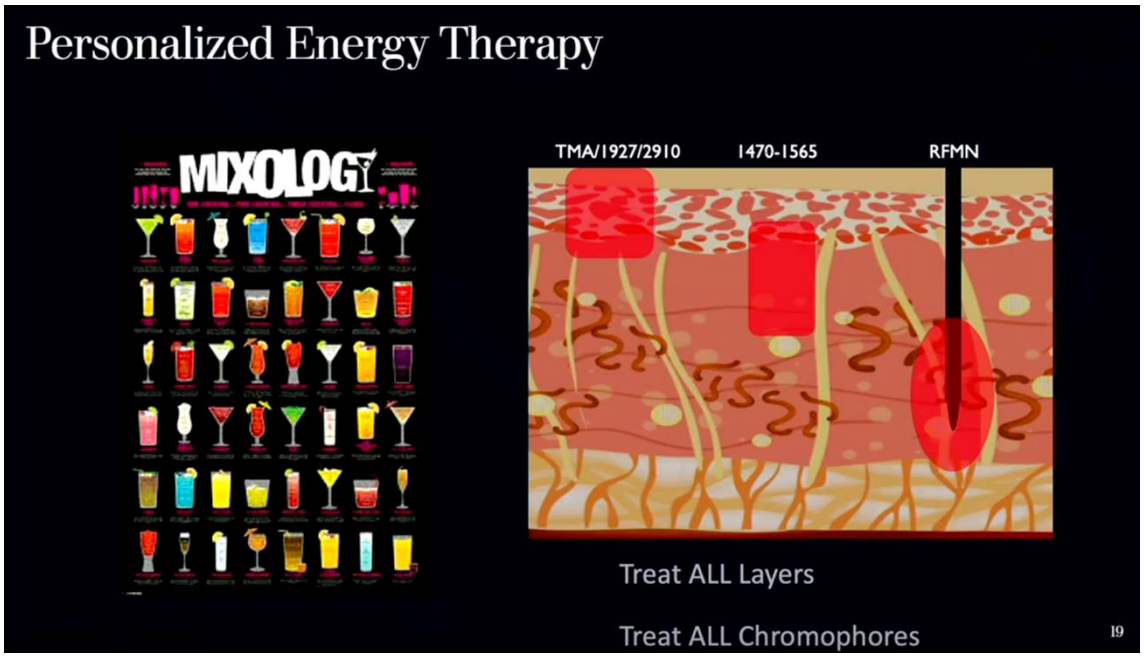
Speaker: Dr Sang Ju Lee (Korea)

In this lecture, Dr Lee discussed the different therapeutic options that can be used for the treatment of stretch marks.
Microneedling, non ablative fractional laser, and ablative fractional laser are all effective for stretch marks. Among these three methods, ablative fractional CO2 laser was the most effective.
Applying 30µm sized PLLA after ablative fractional laser was more effective than laser alone.

## Synchronous energy treatment for optimal outcomes: Patient selection is key

Speaker: Dr Dianne Quibel (USA)

Dr Quibel talked about combining different lasers and energy-based devices depending on the layer of skin you want to treat. And that in some cases the combination with peelings, botulinum toxin, corticoids, vaporisation can be very useful.



Reports written by Dr. Lidiya Todorova (Dermatology, Bulgaria)

# HA Skin boosters – Product Analysis (Round Table)

Speakers: Dr Muriel CREUSOT (Dermatologist, Belgium) and Dr Alessio REDAELLI (MD, Italy)

**Session summary**:

The session was a round table with a focus on skin boosters, where experts gave their scientifically backed opinion and recommendations. Skin boosters are more than just a beauty trend; they are scientifically backed treatments that enhance hydration, stimulate collagen, and improve skin texture. Whether used alone or in combination with other aesthetic procedures, they offer significant benefits without the risk of fibrosis. As research continues, their role in dermatology and regenerative medicine is expected to expand even further.

The session was a round table that included representatives of skin booster brand producers, including Dr Alessio REDAELLI, who introduced the topic, Dr Aude BERNARDIN (Allergan Aesthetics), Dr Natalia SUKMANSKAYA (Fillmed), Xiaoming LIN (Galderma), Dr Mimi Rosealie BORRELLI (Merz Aesthetics), Dr Silvia INNOCENTI (Relife), Dr Jimmy FAIVRE (Teoxane).

After a brief introduction of each one of them, Dr. Redaelli initiated the discussion with a short overview over each presented product (details within the following table):

| **Company** | **Brand Name** | **Indications** | **Active Ingredients** |
|---|---|---|---|
| **Allergan Aesthetics, an AbbVie Company** | Juvéderm® VOLITE™ | Fine lines and skin texture | Cross-linked hyaluronic acid (HA), 12mg/ml, with lidocaine (0.3% w/w) |
| **Laboratoires FILLMED** | NCTF® 135 HA | Intense revitalization and hydration of tired or dull skin, filling of superficial wrinkles, and skin redensification | 60 essential active ingredients chosen for their role in skin metabolism at precise dosage |
| **Galderma Laboratories, L.P. Fort Worth** | Restylane® Skinboosters™ Vital, Vital | Face and non-facial indications for | HA manufactured using NASHA (Non-Animal Stabilized |

| Company | Brand Name | Indications | Active Ingredients |
|---|---|---|---|
| | Lidocaine, Vital Light Lidocaine | Restylane® Skinboosters™ | Hyaluronic Acid) technology |
| **Merz Aesthetics** | Belotero Revive® (HA20G; CPM-HA; Belotero Revive®) | Overall skin quality improvement and skin revitalization, hydration, elasticity, and firmness. Smoothing fine and superficial facial lines | Glycerol with a cohesive poly-densified matrix of hyaluronic acid (HA) at a concentration of 20G |
| **Teoxanne** | RHA®1 | Correction of the superficial of the fine wrinkles of the face and skin quality | 15 mg/g high molecular weight HA (4 MDa) |
| **Relife** | Definisse™ hydrobooster | Aging, to maintain hydration, to improve tone and elasticity, smile lines | Non-animal sodium hyaluronate with high molecular weight (> 3 million Da), obtained from Streptococcus equl |

The Round table began with a zealous discussion, followed by questions asked online and on-site in the conference room. The initial questions posed were whether **skin boosters are myth or reality,** how do they work, and how do they truly deliver on their claims? Indeed, for some time, skin boosters have become a key player in aesthetic dermatology, promising improved skin texture, hydration, and collagen stimulation. All the brands' representatives confirmed not only that these injectables enhance skin texture and hydration by boosting aquaporin 3, but there is also an increased skin elasticity and fibroblast activity that stimulates collagen production and extracellular matrix (ECM). The hydrating qualities of skin boosters can be also explained with the natural ability of hyaluronic acid to attract water. New clinical trials confirm the new collagen formation, while ultrasound examination proves the improved skin texture, hydration, and increased skin thickness. Moreover, skin boosters also improve dermal regulation, skin sensation, and barrier function, and can accelerate wound healing processes. In fact, ex vivo and in vitro studies show that fibroblast migrate towards the hyaluronic acid gels within two weeks and therefore they are able to form new tissue.

The next question concerned **collagen stimulation**. The ability of skin boosters to stimulate collagen production is a crucial factor in their effectiveness for skin rejuvenation. The brands have explored how their formulations influence collagen synthesis and skin quality, yielding promising results. Skin boosters stimulate the production of pro-collagen, collagen types 1 and 3, and this is without inducing fibrotic tissue. Studies have shown slight inflammation upon injection in animal models and ex vivo conditions. However, there is no significant fibrotic scar tissue surrounding the gel, allowing for natural collagen formation. It was also mentioned that skin boosters stimulate collagen production by occupying space within the dermis. When injected, the first response involves collagen 3 production (associated with wound healing), followed by collagen 1 synthesis.

In terms of **volumization**, the experts agreed that while primarily acting as biostimulators, skin boosters also exert mechanical action by stretching and volumizing skin defects and can deliver plumping effect through water retention and of course collagen stimulation, which enhances skin density and leads to more tissue formation within the same space.

A discussion followed on the **mechanism of action**. Skin boosters operate through mechanical transduction signals, increasing water content within the skin. This modification in hydration alters the mechanical properties of fibroblasts, leading to enhanced collagen synthesis.

How about **combination treatments**? Many of the experts on the round table recommend combining skin boosters with hyaluronic acid fillers for comprehensive aesthetic results. Skin boosters can be applied to the superficial layers of the skin to improve its sheen and luster, while fillers add volume. These treatments can be performed in a single session for optimal effects. Combining skin boosters with NCTF for reduced complications and side effects is also a good option. The combination with lasers has also been suggested, where laser treatments are performed before skin booster injections to prime the skin. Combined treatments enhance overall outcomes and should be specified individually.

**Do skin boosters have any effect on the subcutaneous tissue?** They do not directly stimulate adipocytes. However, hyaluronic acid stimulates fibroblasts within the fat tissue, which then contributes to skin regeneration and repair.

A very modern and timely question regarding the use of **skin boosters in patients undergoing treatment with semaglutide** was posed, but it still remains an area of ongoing research. As the anti-diabetic drug is a relatively new medication, no definitive guidelines exist for integrating skin boosters into the treatment regimen. Current advice

suggests individual patient assessment to determine the appropriate timing and approach.

In all, the session delivered unmatched information on how skin boosters work, and why they play a vital role in aesthetic medicine by stimulating collagen production, enhancing hydration, and improving skin elasticity. They can be effectively combined with HA fillers, laser treatments, and other regenerative therapies for comprehensive skin rejuvenation. With ongoing research and emerging clinical applications, skin boosters continue to prove their efficacy in enhancing skin quality and overall aesthetic outcomes.

# Exosomes: Safety & Data

## Exosomes, what is real in 2025?

Speaker: Dr Monika Fida (Albania)

Dr. Monika Fida, an esteemed dermatologist from Albania, gave a highly scientific talk on the very contemporary topic on exosomes. She explained that in nature exosomes are a subpopulation of extracellular vesicles (EV), nanosized particles, lipid-bilayer enclosed, naturally secreted from cells after the fusion of intracellular multivesicular bodies with the plasma membrane. The experiments in which EVs were specifically identified as *"biological entities carrying enzymatic and functional potential"* began in the 80s and the term was coined in this period.

Compared to traditional dermatological therapy, the cell-free exosome therapy offers several advantages: targeted delivery, low toxicity, tissue repair, personalized treatment and multifunctionality, including:

- **Anti-inflammatory**: they can be used as an alternative to steroids for different types of dermatitis, lichen planus, disease of the scalp and genitals.
- **Antioxidant**: they help suppress radical oxygen activity, that is harmful to the human body and have strong antioxidant effect, therefore perfect in the management of wrinkles (anti-age effect).
- **Regenerative**: exosomes can induce the regeneration of damaged cells through paracrine effects, rebuild skin barriers and create blood vessels.
- **Pigment regulating**: they improve skin colour, reducing melanin production.

These advantages make exosome-based therapy a promising new and relatively safe method for individual treatment approach to variety of skin conditions [1], [2].

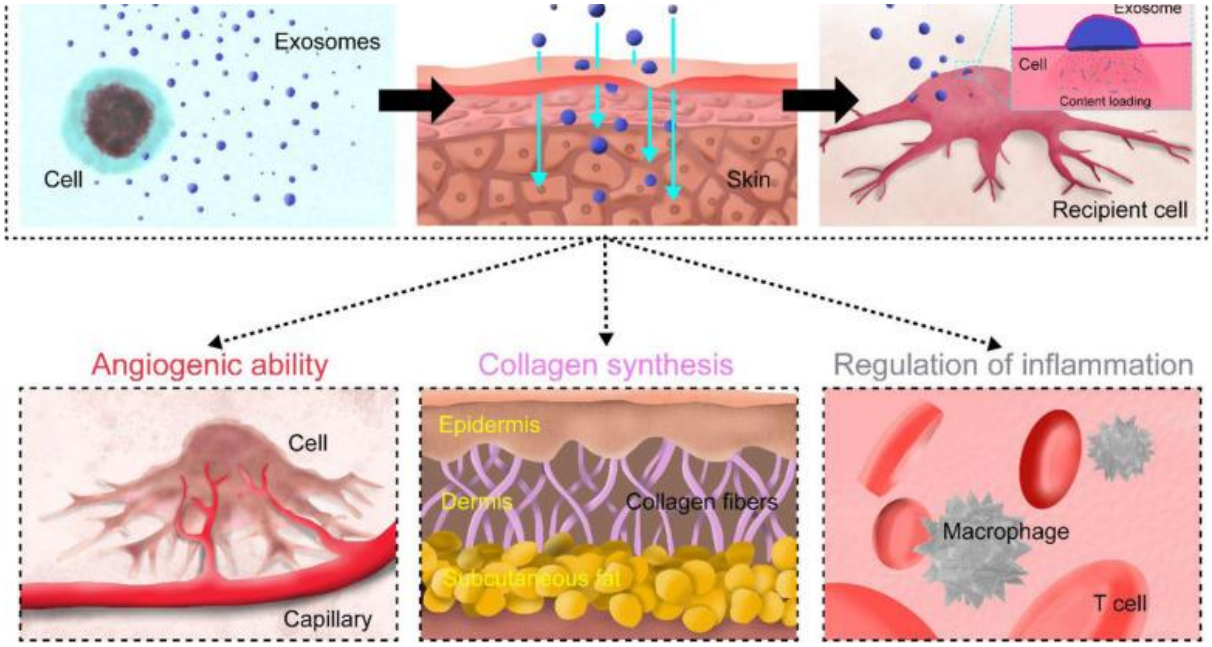


Figure 20. *"Schematic representation showing skin regenerative abilities of exosomes"* [3]

Currently, exosomes are clinically effective in wound healing and scars, as well as their application as an anti-age treatment, but research on inflammatory and autoimmune skin conditions is still in the preclinical stage.

Studies done confirm their effectiveness in improving skin wrinkles, elasticity, hydration and pigmentation. It is also proven that they potentiate other treatments like fractional CO2 lasers in the treatment of acne scarring.

How exosomes work in different conditions:

- **Skin regeneration**: they upregulate collagen synthesis, reduce the oxidative stress of fibroblasts via activation of the TGF-B/Smad pathway and inhibition of MAPK/AP-1 one, thus enhancing skin elasticity.
- **Wound healing**: they enhance the main effector skin cells to accelerate wound healing; when derived from platelet-rich plasma, they promote re-epithelisation and angiogenesis in diabetic wounds.
- **Hair restoration**: exosomes stimulate the conversion from telogen to anagen phase and delay the progression to catagen delivering prolonged anagen. They also increase the levels of B-katenin, leading to augmented hair growth.
- **Melasma**: stem-cell derived exosomes improve the symptoms of melasma, but more research data is demanded.
- **Inflammatory skin diseases**: psoriasis, atopic dermatitis, vitiligo, systemic lupus erythematosus, systemic sclerosis, hypertrophic scars and keloids
    - Exosomes from stem cells, including epidermal stem cells, human umbilical cord mesenchymal stem cells, umbilical cord blood

mononuclear cells, are proven to alleviate **psoriasis** through immune regulation [4].

- Exosomes are involved in the pathogenesis of **atopic dermatitis** and might be potential biomarkers for its diagnosis and target treatment. Adipose derived stem cells-based exosomes are proven to effectively suppress inflammatory responses and promote skin barrier repair in patients with atopic dermatitis.
- In **vitiligo** patients, a large number of miRNAs are abnormally expressed, reflecting the activity and histological changes of the disease, therefore the exosomal miRNAs are an attractive diagnostic and therapeutic target [5].
- The serum exosomes of **systemic lupus** are immunologically active and can be used as a novel biomarker to predict disease activity. In addition, bone marrow mesenchymal stem cells-based exosomes can promote M2 macrophage polarization and decrease T-cell infiltration, leading to alleviation of clinical symptoms associated with the disease [6].
- Exosomes derived from **hypertrophic scar** fibroblasts have been found to play a significant role in the development of hypertrophic scars. Adipose-derived stem cells exosomes inhibit fibroblast activity and collagen deposition, thus reducing scar formation [7].
- Mesenchymal stem-cell fibroblasts can reduce fibrosis of fibroblasts and regulate the function of immune cells to ameliorate **systemic sclerosis** [8].

Indisputably, exosomes are future in regenerative medicine. But what are the current challenges that surround these treatments?

- Exosomes have an inherent short-half-life leading to difficulties in effectively delivering to injury sites as well as maintaining their presence at the target site.
- They have a noted residence time of 2 hours in blood circulation.
- Macrophages have demonstrated clear exotics that enter circulation.
- Short term benefits of exosomes may turn in long term problems, if their half-life is extended [8].

In conclusion, Dr. Fida highlighted that exosomes promise a future of tissue regeneration, skin rejuvenation and targeted therapies, but further investigations are needed to optimize their efficacy for clinical use.

Articles used by Dr. Fida in her presentation:

1. Abhishek D *et al*. Present and Future Use of Exosomes in Dermatology. Indian J Dermatol. 2024 Nov-Dec;69(6):461-470. doi: 10.4103/ijd.ijd_491_23.

2. Xiong M *et al*. The novel mechanisms and applications of exosomes in dermatology and cutaneous medical aesthetics. Pharmacol Res. 2021 Apr;166:105490. doi: 10.1016/j.phrs.2021.105490.
3. Yang G et al. Overcome the barriers of the skin: exosome therapy. Biomater Res. 2021 Jul 3;25(1):22. doi: 10.1186/s40824-021-00224-8.
4. Jiang M *et al*. Keratinocyte exosomes activate neutrophils and enhance skin inflammation in psoriasis. FASEB J. 2019 Dec;33(12):13241-13253. doi: 10.1096/fj.201900642R.
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8. Bhandari R *et al.* Human dermal fibroblast-derived exosomes induce macrophage activation in systemic sclerosis. Rheumatology (Oxford). 2023 Feb 6;62(SI):SI114-SI124. doi: 10.1093/rheumatology/keac453. PMID: 35946522; PMCID: PMC9910573.

## Investigating molecular profiles of adipose MSC-derived exosome from different ages of donor

Speaker: Dr Atchima Suwanchinda (Thailand)

**Lecture summary:** Exosomes from young versus old donors: what are their regenerative capacity and clinical implications? Exosomes derived from adipose mesenchymal stem cells (AMSCs) have been explored to determine how donor age affects their molecular profiles. Current research, presented by Dr. Suwanchinda, Vice President of the International Society for Dermatologic Surgery and the Association for Dermatologic Surgery in Thailand, reveals key differences between young and old donor exosomes. **Younger exosomes show greater regenerative potential due to higher levels of cytokines and growth factors, while older exosomes still maintain functionality but exhibit a decline in regenerative capacity.** These findings may play a key role in the future application of exosomes in terms of personalization and therapeutic indication.

What are the differences between exosomes derived from young and old donors? Do these differences impact their regenerative capacity? These questions have been addressed through recent research presented by Dr. Suwanchinda. Her study explores the quality of AMSCs-derived exosomes in relation to donor age, shedding light on their functional characteristics and potential clinical applications.

The key findings on their structural and functional differences are the following:

- Older donor exosomes exhibit a higher concentration of functional decline.
- Size variations in exosomes may reflect differences in cell health, age, or physiological state of the donor cells.
- Factors like nutrient availability, oxygen levels, and metabolic activity influence exosome size and concentration.
- Cellular aging, stress, and physiological state play a critical role in determining exosome size and concentration.

The **cytokine profile** analysis of the explored groups revealed:

- Exosomes from young donors contain more pro-inflammatory and regenerative cytokines.
- Younger donor exosomes demonstrate stronger immune modulation capabilities.
- Older donor exosomes show a decline in key cytokines, particularly TGF-β, essential for tissue repair, fibrosis control, and immunoregulation.
- Aging reduces regenerative and anti-inflammatory properties but does not completely disable exosome function.
- Older exosomes exhibit lower TNF-α, INF-γ, and IL-5 levels, suggesting reduced immune signaling, which could lower inflammation associated with aging.

When the scientific group led by Dr. Suwanchinda compared the **regenerative potential** of young- and old-donor exosomes, they found the following interesting observations:

- Younger donor exosomes accelerate wound closure more effectively.
- Older donor exosomes still promote healing but at a slower rate, indicating that age does not entirely impair their function.
- The regenerative capacity of exosomes is influenced by donor age.
- Despite reduced potency, older donor exosomes remain therapeutically relevant, challenging the assumption that only young exosomes are beneficial.

**Senescence and aging** markers were estimated through the measurement of cytokines such as IL-6, IL-10, and IL-18. They showed no age-dependent differences, therefore their exosomal anti- and pro-inflammatory activity may be maintained across lifetime. When measuring Jagged1 (major NOTCH signalling ligand), responsible for tissue regeneration, wound healing and angiogenesis, the scientists established that it has decreased with age. Therefore, this suggests reducing regenerative potential with aging.

What are the key clinical applications of these findings:

- **Wound healing:** Jagged1 plays a critical role in tissue repair, and its reduced presence in older donor exosomes results in slower wound healing. Younger exosomes, with higher Jagged1 levels, exhibit greater regenerative capacity.

- **Cancer implications:** Jagged1 is linked to poor prognosis in breast cancer due to its role in angiogenesis and metastasis. While higher Jagged1 levels promote regeneration, excessive activity may pose a risk for tumor growth. Therefore, its therapeutic use must be carefully balanced.

Conclusions:

- Younger donor exosomes contain higher levels of regenerative markers such as CD9, TGF-β, and Jagged1, leading to faster healing.
- Older exosomes still function but may be less potent due to declining Jagged1 and TGF-b levels.
- Despite age-related decline, older exosomes maintain therapeutic potential, making them viable for clinical applications.
- These findings support a personalized approach to exosome therapy—where younger exosomes may be preferred for regenerative treatments, while older exosomes may be suitable for less aggressive interventions.

**The final thoughts of Dr. Suwanchinda highlighted that exosome therapy presents exciting possibilities for regenerative medicine, aging, and inflammation control. While younger exosomes display superior regenerative potential, older exosomes still hold significant therapeutic value. Understanding and optimizing exosome compositions will be key to unlocking their full clinical potential.**

# PRP Innovations

Chairs: Jeremy Magalon (Pharmacologist, France); Dr Sophie Menkes (MD, Switzerland) ; Dr Hernan Pinto (PhD – Research, Spain)

## Platelet rich plasma and the toolkit in regenerative aesthetics: Advances and controversies

Speaker: Dr Shadi Kourosh (Dermatology, USA)

Dr. Shadi Kourosh, a renowned U.S. dermatologist, delivered the opening lecture at “PRP innovations” session, providing an overview of platelet-rich plasma (PRP) and the secretome in hair restoration and skin rejuvenation. She analysed recent data, highlighting both advancements and controversies in the protocols used in regenerative aesthetics. Her presentation concluded with expert guidance at future research with the goal of fostering innovation in patient care.

For her lecture, Dr. Kourosh acknowledged the guidance of Prof. Maria Hordinski, dermatologist, recognized for her expertise and research in hair diseases and the peripheral nervous system as it relates to hair follicle biology, and introduced a structured approach to regenerative aesthetics through the "7 S" framework:

1. Signals (Growth Factors (GFs), mRNA, Secretome)
2. Stress (Hormesis)
3. Stage (Scaffolds/Stem Cells)
4. Sparkles (Light/Photobiomodulation)
5. Style (Lifestyle/Epigenetic Factors)
6. Synchrony (Circadian Clock)
7. Special Suiting (Precision Medicine)

She emphasized the regenerative potential of blood, particularly its ability to transmit youthful signals while reducing senescence-associated secretory phenotypes (SASP). Parabiosis, or the shared circulation of two organisms, was discussed as an emerging concept in enhancing regenerative capacity. The goals are to transmit youthful signals to tissue, to decrease senescent signals (SASP) and to increase the regenerative capacity of the organism. The blood includes everything necessary: growth factors (GFs), mRNA, platelets, secretome, exosomes. PRP, a widely used method, remains inconsistent due to variations in its composition, preparation, and application protocols, which are influenced by factors such as:

- Type of PRP vs. PRF (presence of WBCs)
- Use of activators and additives (exosomes, hyaluronic acid, stromal vascular fraction)
- Patient factors (age, comorbidities)
- Preparation techniques (centrifuge settings, gel separation)

Dr. Kourosh outlined key challenges in PRP use, including the frequency of treatment, patient selection criteria, stability of growth factors, mode of delivery, and efficacy in non-androgenetic alopecia. She emphasized the need for standardization in PRP preparation and dosing to ensure optimal regenerative outcomes. Current approaches recommend an induction phase of three treatments at monthly intervals, followed by maintenance phase of one treatment every 3-6 months.

Combination therapies are emerging as an effective strategy. PRP combined with hyaluronic acid stabilizes growth factors, enhancing rejuvenation. Additionally, PRP used alongside fractional lasers (1550nm and 1927nm) stimulates follicular stem cells and growth factors and achieve remarkable results in treating androgenetic alopecia and telogen effluvium. Low-level laser therapy (photobiomodulation) presents a low-risk, at-home option for hair restoration, but when combined with PRP the results are remarkable.

Key questions and challenges for the future of regenerative medicine include:

- Measuring the regenerative capacity of PRP
- Establishing optimal dosimetry for clinical outcomes
- Standardizing treatment protocols
- Addressing regulatory concerns shaping future innovations
- Integrating PRP with other regenerative modalities for enhanced effectiveness

Dr. Kourosh's lecture highlighted the immense potential of PRP in regenerative medicine while emphasizing the pressing need for standardization and optimization. As the field evolves, refining protocols and integrating complementary treatments will be key to achieving consistent, effective results. The future of PRP is to be tailored to individual patient needs, ensuring its role as a main regenerative capacity inductor.

## PRP secrets revealed: Practical fixes for low platelet concentration in "liquid gold" to boost quality and results

Speaker: Patrick Yam (Dermatology, Canada)

Dr. Patrick Yam is a recognized expert in the field of platelet-rich plasma (PRP) preparation and use. As a featured speaker at IMCAS 2025, he delivered a lecture on how platelet concentration in PRP affects clinical efficacy and how to improve PRP quality using simple visual cues and centrifuge adjustments. The audience gained practical tips for enhancing PRP concentration and clinical results, with optional insights into when and how hematology analysis might be beneficial.

Dr. Yam, the second lecturer in the "PRP Innovations" session, began his lecture by sharing his daily use of a hematology analyzer for a variety of aesthetic and medical PRP treatments. He then referenced Marx's (1998) classic definition of PRP as a high concentration of platelets in plasma, where platelet levels exceed 1 million per microliter, reaching concentrations 4-5 times greater than baseline. The preparation of PRP involves collecting blood in tubes, separating the plasma from red blood cells via centrifugation, and immediately collecting PRP. An optional second spin can be performed for even higher concentration.

However, not all PRP is the same. Dr. Yam cited an article by Prof. Magalon [1], who analyzed 36 PRP systems and found a vast range in platelet dose, from 0.6 to 12.8 billion (a 21-fold difference). The concentration varied from 79 to 2310x10^3 (a 29-fold difference). Less than half of the systems produced high-concentration PRP, and some even yielded platelet-poor plasma, with levels lower than baseline. Only one system consistently produced high-quality, high-concentration PRP. Intrigued by these findings, Dr. Yam conducted his own laboratory analysis, which revealed over 300-fold differences in platelet concentration between the lowest and highest PRP samples tested. Concentrations ranged from as low as 5k/µL (99% below baseline, essentially acellular plasma) to over 4 million/µL (more than an 800-fold difference). His research also identified variations in composition, including red blood cell (RBC) and leukocyte contamination. While lower RBC and leukocyte contamination improved PRP quality, it should not come at the cost of platelet concentration.

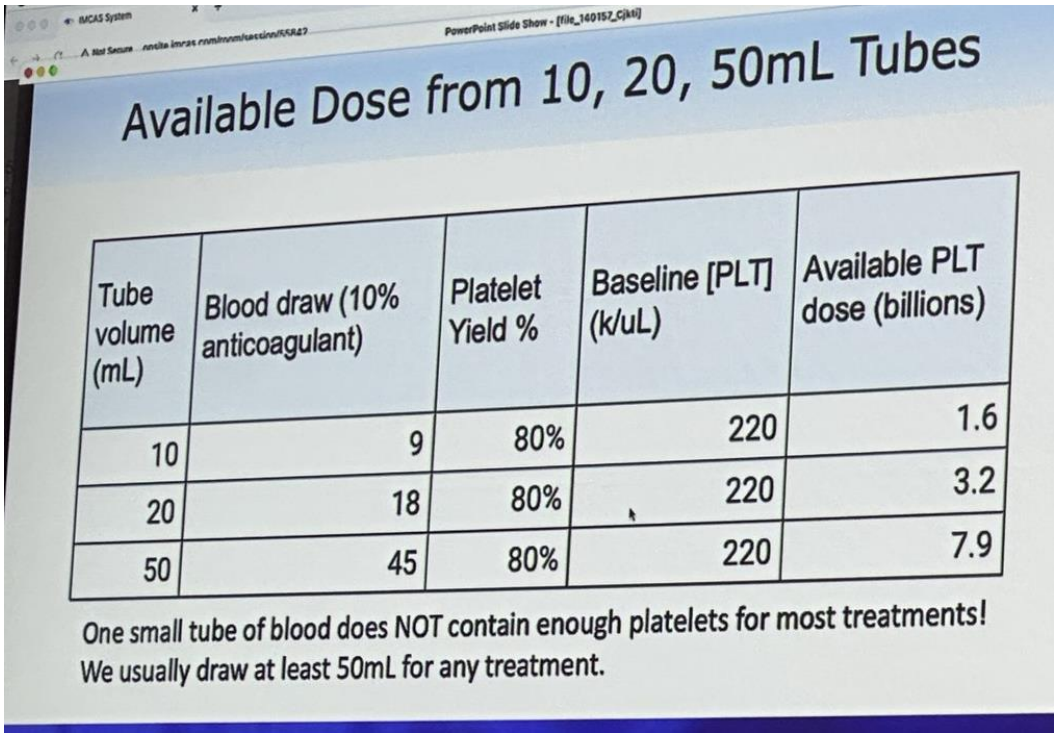
PRP quality is crucial, yet estimating growth factors (GFs) is complex and time-consuming. Instead, platelet count serves as a reliable proxy, as it directly correlates with GF levels. Additionally, some visual indicators can assess PRP quality without requiring a hematology analyzer.

How are platelets calculated? Dr. Yam provided a simple formula:

**Dose = Concentration x Volume**

For example: *1mL x 1 million/µL = 1 billion platelets.*

He also presented a table demonstrating that a small tube of blood does not contain enough platelets for most treatments, highlighting that his team typically draws 50 mL per treatment.




This leads to a critical conclusion: if platelet concentration is lower than baseline, the sample is actually platelet-poor plasma, or "bad PRP." The characteristics of "bad PRP" include:

- Lack of growth factors
- Inhibition of angiogenesis
- Lowered platelet activation
- Inhibition of hair growth

After analyzing more than 11,000 samples, Dr. Yam's research team found that "bad PRP" was very common. While hematology analysis remains the gold standard for detecting poor-quality PRP, there is a practical visual test: *transparent PRP is always very low concentration.* Another simple test involves checking for a visible platelet pellet and the presence of RBCs. PRP prepared in tubes with gels often suffers from overspinning, which traps platelets in the gel, leading to lower concentrations and poor yield.

Dr. Yam then posed the question: **What settings should be recommended?**

The optimal centrifugation settings depend on factors such as baseline platelet concentration, hematocrit, viscosity, tube size, and temperature. A suggested starting point is **6 minutes at 600g for small tubes.**

To maximize PRP's potential, practitioners should:

- Know the platelet dose.
- Pay attention to PRP quality.
- Adjust centrifuge settings when necessary.
- Avoid transparent PRP.
- Use softer spins to retain more platelets.

In conclusion, Dr. Yam's findings emphasize the importance of platelet concentration in PRP efficacy. His research shows that poor-quality PRP is prevalent, but with proper techniques, its effectiveness can be significantly improved. By understanding platelet dosage, using correct centrifuge settings, and avoiding common pitfalls such as overspinning and low-yield tubes, clinicians can optimize PRP treatments for better patient outcomes.

[1] Magalon J *et al.* Technical and biological review of authorized medical devices for platelets-rich plasma preparation in the field of regenerative medicine. Platelets. 2021 Feb 17;32(2):200-208. doi: 10.1080/09537104.2020.1832653.

# The challenge in diagnosing pigmented lesions (in collaboration with SOCS)

Speakers : Prof Andrew F Alexis (Dermatologist, USA); Dr Seemal R Desai (Dermatologist, USA); Dr Albert Wolkerstorfer (Dermatologist, Netherlands)

## How can tranexamic acid help to manage periorbital hyperpigmentation

Speaker: Dr Nicolas BACHOT (France)

Dr. Nicolas Bachot, a renowned French dermatologist specializing in hyperpigmentation and skin aging, delivered an insightful lecture on the management of periorbital hyperpigmentation (POH) using tranexamic acid. He disclosed data about a current clinical study that gives hope in the treatment in this challenging condition.

Periorbital hyperpigmentation (POH) is a widespread concern, with limited scientifically proven treatments offering long-lasting results. POH disproportionately affects melanin-rich skin compared to Caucasian skin and has an estimated prevalence of up to 30%

among Indian individuals. Due to its multifactorial etiology and the presence of melanin in both the dermis and epidermis, POH remains challenging to treat. Despite the high demand for effective therapies, few scientifically validated solutions exist.

In the search for resolution, Dr. Bachot was inspired to start conducting a multi-center clinical study to evaluate the safety and efficacy of microneedling (MN) combined with tranexamic acid (TXA) and niacinamide for POH treatment. The audience at the session was the first to hear the preliminary findings.

The Phase 1 trial took place in Japan and Malaysia, involving 46 patients. The study protocol consisted of three MN sessions, each conducted one month apart, followed by a home treatment regimen between and after MN sessions. MN was performed at a depth of 0.5–0.7 mm, and the solution used during the procedure was niacinamide 10% and TXA 5%, both known for their anti-inflammatory and depigmenting properties. The at-home treatment during the first month included a light depigmenting peel (consisting of lactic acid 8.5%, TXA 5%, ferulic acid 2%). From the second to the fifth month, patients were asked to apply a depigmenting concentrate (niacinamide 10% and TXA 5%). The final assessment occurred in the fifth month.

Evaluation methods included:

1. MN Phase: Colorimeter assessment of melanin, erythema, and color index.
2. MN Phase: Next motion capture for before-and-after photography.
3. Patient and physician questionnaires.

Dr. Bachot presented preliminary results after only two MN sessions, revealing a significant reduction in POH levels. A 43.3% improvement was recorded compared to the control group, with 65% of patients showing good to excellent improvement. Treatment efficacy increased after the second MN session. Notably, no patients developed post-inflammatory hyperpigmentation, and only one patient experienced high erythema, while two reported slight redness and tightness, which were resolved within weeks. Despite the MN sessions, erythema levels decreased by 20.3%, indicating reduced inflammation under the eye. Overall, 47% of patients exhibited clear to mild erythema after the second MN session, demonstrating an improving trend with ongoing treatment.

The study concluded that:

- POH showed statistically significant improvement, with a 43.3% reduction in melanin levels.
- No cases of post-inflammatory hyperpigmentation or rebound effects were observed.
- Erythema levels decreased by 20.3%, highlighting reduced inflammation.
- Treatment efficacy increased progressively with each MN session.

The continuation of at-home treatment is crucial for confirming the therapy's long-term efficacy across varying POH severity levels. Further research will determine the necessity of ongoing at-home treatment and its role in optimizing results over time.

# Hair restoration: Medical treatments, what's new? (in collaboration with AEDV)

Speakers: Dr Yolanda Gilaberte Calzada (Dermatologist, Spain); Prof Andy Goren (Dermatologist, Czech Republic); Dr Sergio Vano Galvan (Dermatologist, Spain)

## 2025: What's new in androgenetic alopecia?

Speaker: Dr Marisa MATHIEU (Dermatology, Belgium)

Dr. Marisa Mathieu, a Belgian dermatologist specializing in hair and nail disorders, delivered an insightful lecture on the latest treatments for androgenetic alopecia (AGA). The presentation featured numerous before-and-after images. Dr. Mathieu covered systemic antiandrogens such as bicalutamide and dutasteride, mesotherapy applications, botulinum toxin, and innovative experimental treatments.

Dr. Mathieu introduced **oral bicalutamide**, a nonsteroidal antiandrogen that blocks androgen receptors. This drug, an analogue of flutamide, offers an improved safety profile and has been shown to enhance hair density, reduce seborrhea, and improve acne and hirsutism. The recommended daily dosage ranges from 10 to 50 mg, though no consensus has been established. Clinical studies confirm its effectiveness in treating female AGA. Adverse effects such as mild increases in transaminases, peripheral oedema, gastrointestinal discomfort, mastalgia, asthenia, myalgia, and reduced libido have been reported. Specialists advise monitoring liver enzymes before treatment, one month after initiation, and then every three to six months. While the risk of severe hepatotoxicity is low, it typically occurs within the first months of therapy. Patients planning pregnancy should discontinue the drug two months prior due to the risk of fetal feminization [1-3].

Another systemic antiandrogen discussed was **oral dutasteride**, a 5-alpha reductase inhibitor with a long half-life of five weeks. Dutasteride blocks both type 1 and type 2 isoforms of the enzyme responsible for converting testosterone into dihydrotestosterone (DHT), thereby reducing the impact of androgens on hair follicles. The recommended dosage is 0.5 mg per day, with specialists suggesting a reduction to 0.5 mg two to three times per week after 12 to 18 months to improve patient compliance. The maximum treatment effect is typically observed within this timeframe. Biological monitoring is not required, except for prostate-specific antigen (PSA) levels. Dutasteride is not recommended for individuals using hepatotoxic medications, patients under 40 years old with a family history of prostate cancer, African American patients, or those over 50. The ideal candidate is an 18-year-old male with AGA. Dr. Mathieu also recommended combining oral dutasteride with oral or topical minoxidil for optimal results [4-5].

**Mesotherapy with dutasteride** has shown to be effective and safe in clinical practice when administered at 0.025% every three months [6]. Even better outcomes are observed when injectable dutasteride at 0.01% is combined with oral minoxidil [7]. Due to its long half-life, mesotherapy is recommended quarterly. Potential side effects include local erythema, pain, pruritus, headaches, oedema, hematoma, and folliculitis, though these are transient and typically resolve within 24 hours. Unlike oral dutasteride, mesotherapy is suitable for both men and women, making it an option for patients who decline oral treatments or experience side effects. Combining mesotherapy with oral or topical minoxidil, oral antiandrogens, or platelet-rich plasma enhances its effectiveness.

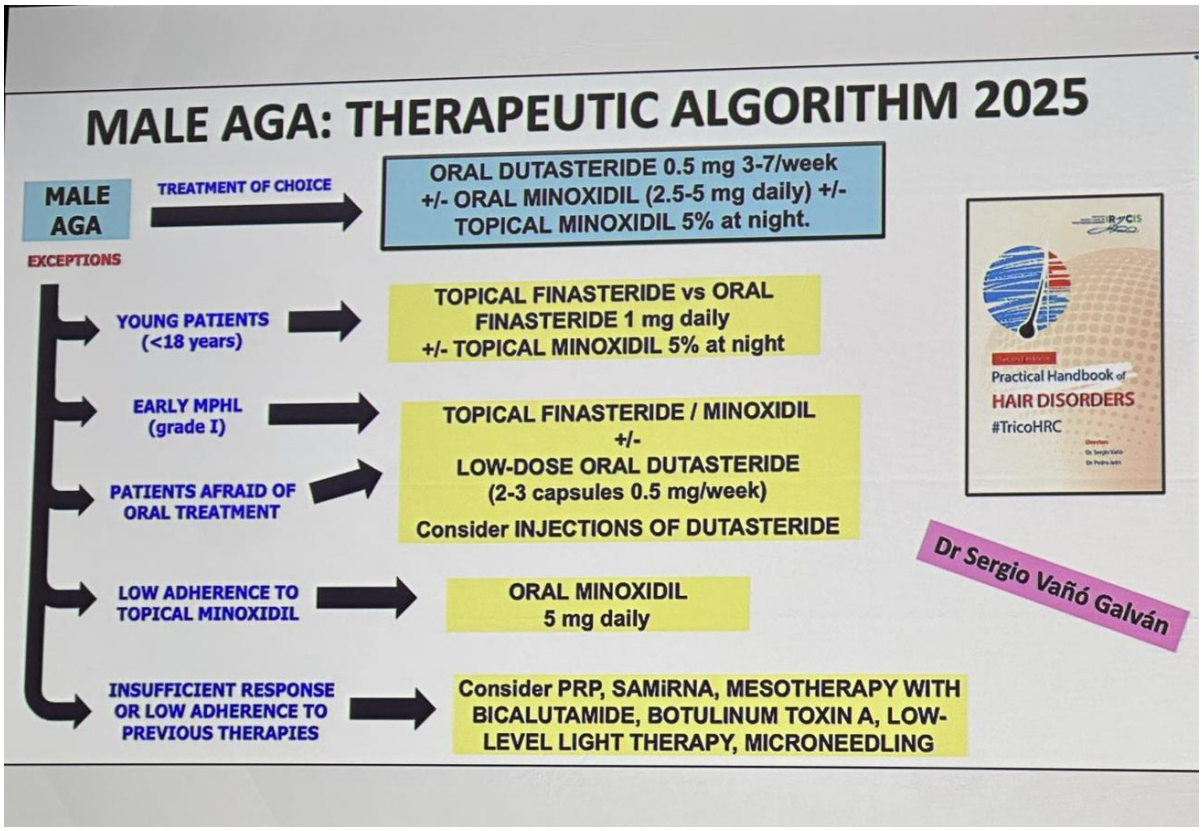
**Mesotherapy with bicalutamide** (0.5%) is an emerging option for treating AGA. It is recommended for female pattern hair loss patients and can be used alone or alongside other treatments. Although initial studies show only subtle improvements, the treatment's side effects are similar to those of dutasteride injections [8-9].

The use of **botulinum toxin type A** for AGA has garnered attention recently. Since alopecic areas suffer from microvascular insufficiency and reduced oxygen levels, this environment encourages testosterone conversion to DHT, which in turn triggers the production of transforming growth factor-beta1, a proapoptotic substance initiating AGA [10]. Although recent studies indicate that botulinum toxin has no significant effect on male AGA, further research continues [11].

Several promising topical antiandrogens are currently being developed, including **GT20029** and **pyrilutamide**. GT20029 degrades androgen receptors by recruiting them for degradation, while pyrilutamide inhibits the binding of androgens to androgen receptors in hair follicles and sebaceous glands. Small interfering RNA (**siRNA**) technology is also being explored as a means of silencing specific genes by degrading their messenger RNA (mRNA). In AGA, siRNA inhibits androgen receptor mRNA, reducing its expression and blocking androgen signaling. Another related development, **SAMiRNA**, targets androgen receptors using self-assembled micelle inhibitory RNA, preventing protein synthesis and decreasing androgen receptor presence in dermal papilla cells [12].

**CosmeRNA**, a cosmetic product with EU certification, is designed to be applied biweekly to inhibit androgen receptor synthesis via inhibitory RNA. Exosome therapy, which utilizes extracellular vesicles containing proteins, lipids, mRNA, and miRNA, is also emerging as a potential treatment. Exosomes promote hair follicle regeneration, enhance cell proliferation, and facilitate angiogenesis. They also possess anti-inflammatory properties, counteracting follicular miniaturization, and deliver key growth factors such as VEGF, IGF-1, and FGF, which support follicular health.

Dr. Mathieu concluded her lecture with an overview of the anticipated treatment algorithm for male AGA in 2025, reflecting the advancements in the field and the promising future of combination therapies for optimal hair restoration:




Articles used in the presentation of the lecturer: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