

# HYALUAL PEELS + REDERMALIZATION = YOUNG SKIN

## WHY IT IS IMPORTANT TO PREVENT SKIN AGEING AT ANY AGE?

### Anastasia Mashkina discusses the use of chemical peels, hyaluronic acid, and sodium succinate for facial rejuvenation



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**I**MPROVING SKIN QUALITY in the last few years has become one of the most urgent problems faced by a dermatologist and among patients of different age groups. Early photoaging, untimely acne treatment, and impaired local skin immunity lead to problems of skin quality at a young age. Dull skin, reduced turgor, dryness and tightness, age spots, fine wrinkles are basic complaints of dermatologist patients.

The main problem is dermal inflammation associated with the imbalance of local immunity, increased proinflammatory cytokines, and matrix metalloproteinases. Inflammaging is a chronic, mild, asymptomatic type of inflammation. It's characterized by an increased level of proinflammatory cytokines: IL-1, IL-6, IL-18, and TNF- $\alpha$ . Matrix metalloproteinase (MMP)—a family of extracellular zinc-dependent endopeptidases capable of destroying protein extracellular matrix in the dermis<sup>1,2</sup>.

An important feature of chronic dermis inflammation for dermatologists is the ability to affect the early stages of imbalance of pro-inflammatory cytokines and prevent the rapid ageing manifestation. Thus, all aesthetic procedures should be started with the restoration of this imbalance<sup>3</sup>.

In my practice, I prefer to treat both the epidermis and target the suppression of chronic dermis inflammation. The technique

involves the use of superficial peels and injections of high molecular weight hyaluronic acid and sodium succinate in one session. I prefer Hyalual peels and Xela Rederm.

Exfoliation accelerates the renewal of the epidermis, aligns the skin relief, reduces hyperkeratosis. We can select different combinations of acids depending on the skin problem that needs to be addressed<sup>4,5</sup>.

Each chemical acid has its specific properties to correct a particular aesthetic problem. But patients usually have associated problems and need multi-functional effects. Hyalual peels—multicomponent peels which contribute to a significant renewal of the epidermis, creating skin surface, inhibit the activity of tyrosinase and, consequently, prevent excessive formation of melanin.

Redermalization is intradermal injections of Xela Rederm, H&S or Electri, which contains light weight hyaluronic acid and sodium succinate. High and low molecular weight hyaluronic acid differently influence macrophage activation. Low molecular weight hyaluronic acid induced a classically activated-like state, confirmed by up-regulation of pro-inflammatory genes. Introduction of low molecular mass hyaluronic acid produces proinflammatory mediators—nos2, TNF- $\alpha$ , IL-12, and cd80. High molecular weight hyaluronic acid promoted an alternatively activated-like state confirmed by up-regulation of pro-resolving gene transcription, including arg-1, IL-10, and Mrc-1. High

molecular weight hyaluronic acid interacts with CD-44 receptors and forms a ligand-antagonist of pro-inflammatory cytokines. Also, high molecular weight hyaluronic acid reduces matrix metalloproteinase-9 which destroys the intercellular matrix. Thus, use of high molecular weight hyaluronic acid gives an opportunity to reduce the level of inflammaging, to improve the architectonics of the dermal space, and to prevent the formation of aesthetic problems of a skin<sup>1,2,6</sup>.

Sodium succinate reduces the level of matrix metalloproteinases-2, which destroys the structural proteins of the skin, normalizes microcirculation and cellular energy metabolism. Sodium succinate is an antioxidant and protects the genome of the cells. Succinic acid is an important component in cellular metabolism. By regulating biochemical and physiological cell processes, it activates healthy metabolism and oxygenation of cells<sup>7</sup>.

At the time of the combined procedure peeling, Xela Rederm and skin injury trigger the cascade of reparative processes in the skin, potentiate the action of each other, enhancing the final effect. When it enters the skin, the succinate acts to block the enzyme of melanogenesis—tyrosinase. Melanin synthesis is inhibited, and the pigment is not formed. In the end, the colour intensity of melanin decreases: it goes from a darker oxidized eumelanin in a lighter restored pheomelanin. Accordingly, the tone of the face becomes lighter.

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The combined technique can be recommended to patients with various photoaging levels, to improve the skin quality as an individual or complex procedure.

## The essence of the procedure

### Preparatory stage

In the preparation phase patients use home care products with a low content of fruit acids and sunscreen products. For 2 weeks before the procedure, exposure to the sun is contraindicated. before the procedure, it is important to carefully question the patient, identify possible contraindications, and carry out photo documentation of the initial skin quality.

### The conduct of the procedure

Table 1 shows the protocol of the procedure depending on the prevailing skin problems of the patient.

- Prepare and clean the skin
- Application of Hyalual peel solution with exposure time 4-7 minutes. Exposure time depends on the patient's skin condition and reaction to the acid solution
- Rinse the solution with water
- Intradermal injections of Xela rederm, H&S or Electri in a micropapules technique with more dense pigmentation treatment in volume 1 or 2 ml
- Application of spray Profi Deluxe which eliminates redness and discomfort after the procedure
- Application sunscreen cream SPF 50 to protect the skin from UVA and UVB and prevent the formation of post-traumatic hyperpigmentation.

### Post-treatment care

As a home care between the

Table 1 Combinational protocol of Redermalization and Hyalual Peels for different indications				
Problem	Ageing	Pigmentation	Seborrhea, post-acne (sensitive skin)	Dull skin
Number of procedures	3-5 procedures 2-3 weeks apart	4-5 procedures 2 weeks apart	3-4 procedures 2 weeks apart	2-3 procedures 2-3 weeks apart
PROCEDURE				
Product	Advanced Resurfacing peel. Exposition 4-7 min.	Brightening peel. Exposition 3-6 min.	Clarifying peel. Exposition 5-8 min.	Glow Enhancing peel. Exposition 4-7 min.
	Rinse the solution with water	Rinse the solution with water	Rinse the solution with water	Rinse the solution with water
	<b>Xela Rederm 1.8% 2.2% or Hyalual 1.8% 2.2%</b> - 1ml, 2 ml papules or cannula	<b>Xela Rederm 1.1% or Hyalual 1,1%</b> - 1-2 ml papules for more detailed treatment of pigmentation	<b>H&amp;S</b> - 1.5 ml papules for more detailed treatment of pigments	<b>Electri</b> - 1.5 ml papules or cannula

procedures the use of spray with sodium succinate and sunscreen cream is recommended. Cream with SPF 50 is advisable to continue for 1.5 months after the course of procedures to prevent the formation of post-traumatic hyperpigmentation.

It's necessary to make 3-4 procedures at intervals of 2 weeks.

Figure 1 patient before treatment and a month after confirming the effectiveness of the procedures. We can observe on the documents of the Antera 3D the improvement of skin texture and reduction of enlarged pores, reducing pigmentation and wrinkles, reduction of capillary.

After a course of combined procedures, patients subjectively noted improvement in their complexion, a smoothing of skin texture, reduction in pores, the disappearance of small and the reduction in large age spots, reduction in the depth of wrinkles, improvement in skin elasticity, and a reduction in vascular pattern.

We conclude the high effectiveness of the joint application of peeling, high-molecular hyaluronic acid and sodium succinate for the preservation of youthful skin at any age.



Figure 1 (A) Before and (B) 1 month after treatment for acne and acne scars

## References

1. Franceschi C., Campisi J. Chronic inflammation (Inflammaging) and Its Potential contribution to age-associated diseases. *Journal of Gerontology: Biological sciences*, published by Oxford University Press, 2014.
2. HHS Public Access. *ACS Biomater Sci Eng*, July 2016.
3. Bolyky PL, Lord JD, Masewicz SA, Evanko SP, Buckner JH, Wight TN, Nepom GT. Cutting Edge: High molecular weight hyaluronan Promotes the Suppressive Effects of CD4+CD25+ Regulatory T Cells. *J. Immunol.* 2007; 179: 744 - 747. (PubMed: 17617562)
4. Garcia A., Fulton J.E. The combination of glycolic acid and hydroquinone or kojic acid for the treatment of melasma and related conditions. *Dermatol. Surg.* 1996.
5. Ortonne J.P., Passeron T. Melanin pigmentary disorders: treatment update. *Dermatol Clin.* 2005
6. Alexis A. F., Sergay A.B., Taylor S.C. Commo dermatologic disorders in skin of color: a comparative plastic survey. *Cutis.* 2007; 80.