

# BIOCOMPLEMENTATION: A NEW FRONTIER IN AESTHETIC MEDICINE 3 PHASIC SYSTEM®: BIOSTIMULATION WITHOUT NEEDLES

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## Summary

Chemical peeling for skin originated in ancient culture: Egypt, Mesopotamia and Africa. Medical knowledge relating to chemical peels is the result of centuries of experience and research. Many substances used in peeling have been described, with a more or less marked action.

**Objective.** In this work we aim to describe the concept of biocomplementation through the use of a needle-free system called 3Phasic System®.

**Methods.** The 3Phasic System® consists of a peeling (containing various exfoliating substances) associated with a topical home protocol consisting of topicals and probiotics. This protocol also favors the correction of incorrect eating habits also thanks to the integration with vitamins and probiotics. In this protocol a superficial peeling is used and the indications are: skin resurfacing of the face or body even in dark phototypes, acne vulgaris results, postinflammatory hyperpigmentation, melasma, scars and photodamage. The 3Phasic System® consists of many agents in reduced concentrations, promoting the efficacy of individual agents and reducing adverse effects. However, familiarity with the properties of peels is very important to avoid negative effects. The possibility of administering 3Phasic System® on a monthly basis together with the correction of incorrect eating habits, the integration of deficient factors, the administration of probiotics and the application of correct home cosmetics has proven to be effective and safe in patients. The evaluation of the efficacy of the 3Phasic System® was evaluated through ANTERA 3D® and VISIA® in 450 patients in 18<sup>th</sup> months.

**Results.** No adverse effects were found in any of the patients. All patients reported positive feedback to the physician in the follow-up session. Evaluation with Antera 3D and Visian highlighted the efficacy of the treatment expressed in percentile points (from +20 to +80). There is no difference in the effectiveness of the 3Phasic System® between men and women as the results are comparable.

**Conclusions.** The concept introduced with the 3Phasic System® is one of biostimulation and biocomplementation and not of rejuvenation as the duration of the treatment begins with the first application and continues with topical and oral home treatments, inserting the patient in an aesthetic journey that goes beyond the individual medical treatment.

**Key words:** chemical peel, skin resurfacing, 3Phasic System®, skin rejuvenation, aesthetic medicine

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## INTRODUCTION

We now define a chemical peel as the application of one or more chemical exfoliating agents to the skin. The peel causes skin rejuvenation <sup>1</sup>.

The Egyptians were among the first to use chemical peels, Cleopatra used sour milk to exfoliate and smooth the skin <sup>2</sup>. The results obtained from chemical peeling vary according to the phototype (Fitzpatrick) and the aggressiveness of the peeling. Subjects with low phototype (Fitzpatrick type I-II) respond better to aggressive peels, obtaining better results with fewer complications. The concept of Biocomplementation arises from the need not to trot the patient's imperfection on a single front, but through the use of a professional medicine and the continuation of the therapy according to the needs at home, also through the correction of habit and styles of wrong life.

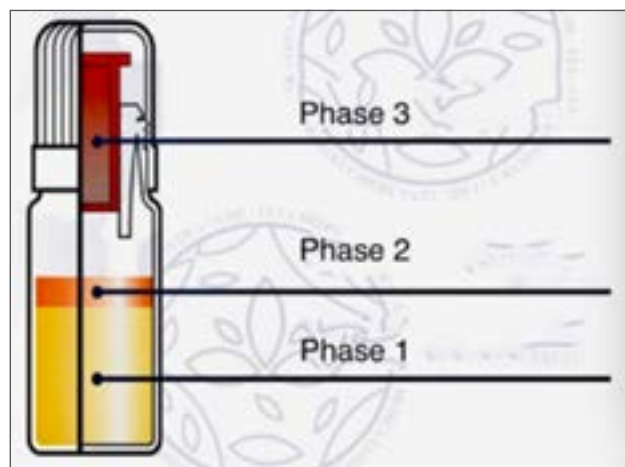
3Phasic System<sup>®</sup> is a needle-free biostimulation system for the skin. It is associated with an oral supplementation protocol using probiotics and a multivitamin complex. 3Phasic System<sup>®</sup> bases its effectiveness on the concept of biocomplementation, i.e. the union of biorevitalization/biostimulation with biorestructuring.

The intestinal microbiota plays a fundamental role in aging and in the health of the organism. There are numerous therapeutic approaches targeting the microbiota: probiotics, prebiotics, nutraceuticals, functional foods and faecal microbiota transplantation. The intestinal microbiota is linked to the quality of the skin, to aging as it is now known <sup>3-6</sup> the close correlation between intestinal diseases, malnutrition, intolerances, etc. is now known. with the possibility of related skin diseases <sup>7-9</sup>.

Classification of chemical peels and 3Phasic System<sup>®</sup>. Chemical peels are classified according to the depth of action.

They are divided into <sup>10</sup>:

- very superficial that remove the horny layer of the skin;
- superficial that cause exfoliation up to the basal layer of the skin;
- mediums that draw on the papillary dermis;
- deep that grind to the reticular dermis;
- 3 Phasic System<sup>®</sup> is a superficial peeling consisting of 3 phases (Fig. 1):
  - phase 1 (powder) consisting of different peptides but above all of pyruvic, mandelic, glycolic, salicylic, lactic, azelaic and kojic acid;
  - phase 2 (lipophilic) patented complex based on bisabolol, bergamia and vitamin E;
  - phase 3 (hydrophilic) various peptides and hyaluronic acid.



**Figure 1.** 3 Phasic System: 3 phases.

## MATERIALS AND METHODS

We conducted an observational and descriptive study. We used an ANTERA 3D<sup>®</sup> and VISIA<sup>®</sup> system to evaluate the effectiveness of the 3Phasic system<sup>®</sup>.

VISIA<sup>®</sup> Digital Skin Analysis is the first diagnostic tool that provides clinical measurements of superficial and deep epidermal irregularities, VISIA's photo technology captures a clear, multi-dimensional image and examines age-related skin problems such as fine lines and wrinkles, hyperpigmentation, pores, even skin tone (color change), porphyrins (evidence of bacterial growth), sun damage (UV spots). VISIA scans measure skin pigmentation, pore size and porphyrins. It also analyzes UV spots, sun damage, texture and wrinkles.

Antera 3D<sup>®</sup> is based on an advanced optical analysis method that allows for 2 and 3-dimensional skin analysis and multi-spectrum analysis of epidermis and dermis pigmentation.

Antera 3D<sup>®</sup> measures skin roughness and texture, the width, length and depth of fine lines, wrinkles and furrows. Furthermore, thanks to the use of multi-spectrum sources and the three-dimensional mapping of the skin surface, the pigmentation analysis is extremely accurate. Visia<sup>®</sup> and Antera 3D<sup>®</sup> allow you to objectively evaluate the images before and after treatment, promoting an objective evaluation.

All patients were evaluated with Antera 3D<sup>®</sup> and Visia<sup>®</sup> before treatment (T0), during treatment (two weeks after the first session, T1) and at the end of treatment (one week after the last application, T2-T3).

The contraindications to the biostimulation technique described are:

- allergy to the constituents of the 3Phasic System;
- pregnancy and breastfeeding;
- active infections or unhealed wounds;

**Table I.**

Area	ml	Time
Face	1	5 min
Neck	0,5	5 min
Décolleté	1	5 min
Hand	0,5 for hand	10 min
Elbow	0,5 for elbow	10 min
Arms	1 for elbow	10 min
Buttocks	2 for buttock	10 min
Knees	0,5 for knee	10 min

- pathological scarring;
- cutaneous oncological pathology;
- active dermatoses;
- strong immunosuppression;
- severe bleeding diathesis;
- dysmorphophobia;
- active general oncological pathologies;
- taking medications that may affect the result.

The treatment protocol used involved 1 session every week for 4-6 weeks:

- T0 before treatment;
- T1 after two treatment sessions;
- T2 after 4 or 6 treatment sessions;
- T3 one week after the last treatment session.

The maintenance protocol included 1 session per month which can be repeated twice in the same year.

The body and face areas were treated according to the application times indicated in the technical data sheet (Tab. I).

All T1 patients continued the home therapy with the daily application of 3Phasic System Cleanser® and Mineralizer® and Intense Cream® once a day for two months.

In addition, all patients received one Entero 3Phasic System® tablet per day for two months.

In patients requiring the treatment of skin hyperpigmentation, the daily application of a protective factor (SPF50) was added.

## RESULTS

### EPIDEMIOLOGY

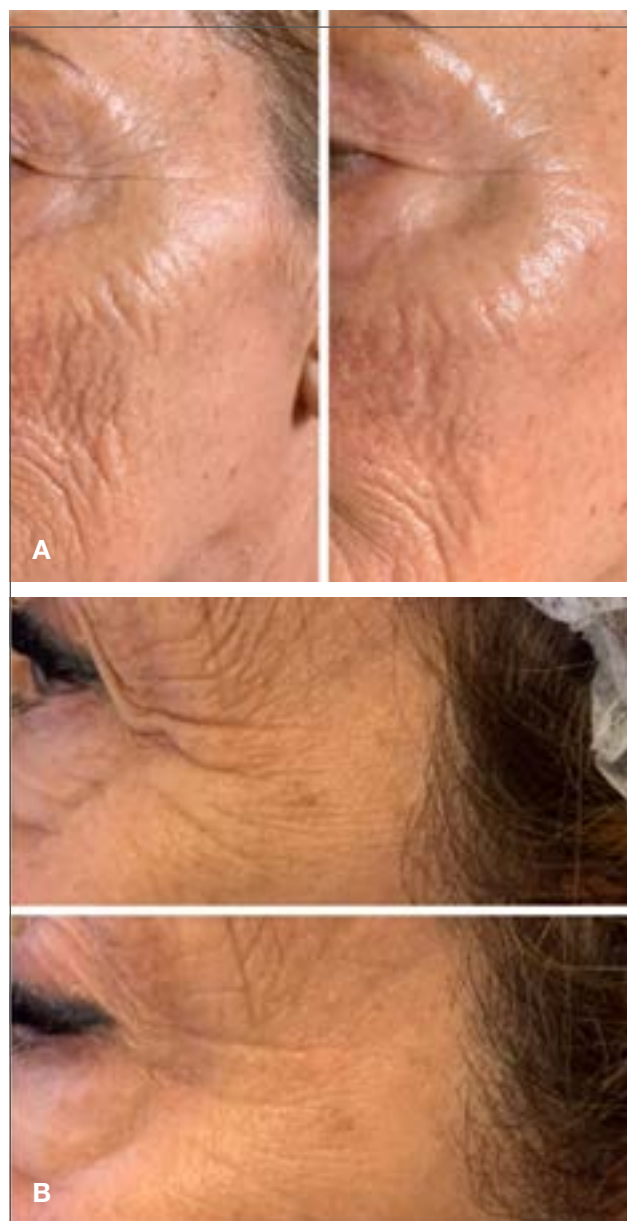
In total, 450 patients, 300 female (F) and 150 male (M), were treated in 18<sup>th</sup> months. The age of the treated patients is between 18 and 80 years.

The application of 3Phasic System® was performed mainly on the face (180F-180M, buttocks (20F-20M), abdomen (3F-2M), trunk (3F-2M), elbows (2F-2M), knees (4F-2M) and back of the hands (5F-5M).

### TREATMENT

All (450) patients were treated respecting the times and quantity of application according to the indications of the technical data sheet:

- the 360 patients treated to the face underwent a weekly treatment with 3Phasic System® for 6 weeks. 1ml of 3Phasic System® was used for the whole face held for 5 minutes (Figs. 2-3);
- the 20 patients treated at the neck underwent a weekly treatment with 3Phasic System® for 6 weeks. 0.5 ml of 3Phasic System® were used over the entire neck held for 5 minutes;



**Figure 2A-B.** Facial treatment with 3Phasic System (description in the text).





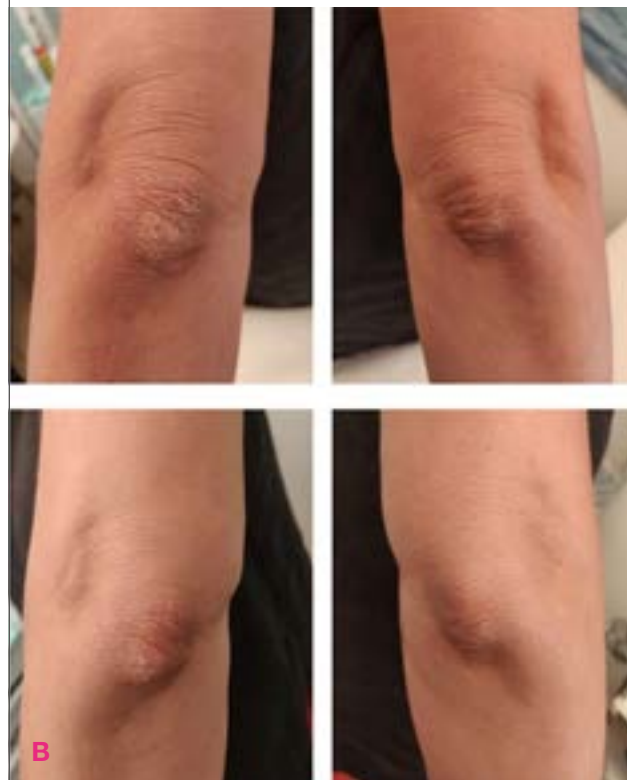
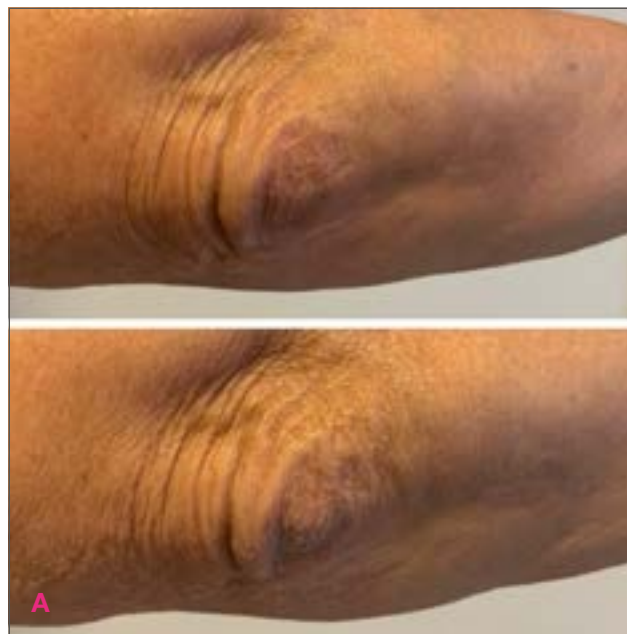
**Figure 3.** Facial treatment with 3Phasic System (description in the text).

- the 5 patients treated at the décolleté (truck) underwent a weekly treatment with 3Phasic System® for 6 weeks. 0.5 ml of 3Phasic System® were used over the entire décolleté for 10 minutes (Fig. 4);



**Figure 4.** Décolleté treatment with 3Phasic System (description in the text).

- the 4 patients treated at the elbows (arms) underwent a weekly treatment with 3Phasic System® for 6 weeks. 0.5 ml of 3Phasic System® was used for each elbow and kept it on for 10 minutes (Figs. 5-6);
- the 5 patients treated at the abdomen underwent a



**Figure 5A-B.** Elbow treatment with 3Phasic System (description in the text).



**Figure 6.** Elbow treatment with 3Phasic System (description in the text).

weekly treatment with 3Phasic System® for 6 weeks. 1 ml of 3Phasic System® was used for each abdomen and kept it on for 10 minutes;

- the 6 patients treated at the Knees underwent a weekly treatment with 3Phasic System® for 6 weeks. 0.5 ml of 3Phasic System® was used for each knee and kept it on for 10 minutes;
- the 40 patients treated at the buttocks underwent a weekly treatment with 3Phasic System® for 6 weeks. 2 ml of 3Phasic System® were used for each buttock (Fig. 7) and kept it on for 10 minutes;
- the 10 patients treated at the hands underwent a weekly treatment with 3Phasic System® for 6 weeks. 0,5 ml of 3Phasic System® was used for each hands and kept it on for 10 minutes (Fig. 8).

All patients took 1 Entero 3Phasic System® tablet per day on an empty stomach in the morning for 60 days. In addition, all patients applied 3Phasic System Cleanser and Mineralizer® and Intense Cream® at home once a day for two months.

## DISCUSSION

In aesthetic medicine there are many techniques used to improve blemishes: Microneedling, Laser, Biorevitalization, Radio Frequencies, Fillers, Botulinum Toxin and Peeling.

All the techniques have by now demonstrated efficacy and each one has precise indications.



**Figure 7.** Treatment of buttocks with 3Phasic System (description in the text).



**Figure 8.** Hand treatment with 3Phasic System (description in the text).

Over the years peelings have gained more and more space as they allow you to obtain excellent results and treat many blemishes: skin laxity, skin spots and wrinkles. Peels are also cheaper and allow for easy

transportation with the ability to easily deliver the treatment to the clinic. The effectiveness of a peeling is linked to the power of action, however, as the depth of action increases, complications and healing time increase.

The concept of biocomplementation exploited with the 3Phasic System<sup>®</sup> makes it possible to exploit the 7 peeling effect of the drug in synergy with home therapy and to correct incorrect lifestyles.

Thanks to the combination of several agents, the 3Phasic System<sup>®</sup> makes it possible to exploit the therapeutic effect of each of these, however the low concentration limits the possibility of complications as long as the operator is trained in the application. The lack of trichloroacetic acid avoids the inflammatory response associated with it which, unlike other exfoliating agents, involves the deposition of type 1 collagen which is of the fibrotic type 11. The 3Phasic System<sup>®</sup> stimulates the deposition of type 3 collagen which is the traditional constituent of the dermis, thanks to the absence of trichloroacetic acid in the preparation.

The 3Phasic system<sup>®</sup> consists of 3 phases (Fig. 9):

- phase 1: arginine, hexapeptide 8, pyruvic acid, mandelic acid, glycolic acid, salicylic acid, lactic acid, azelaic acid, kojic acid;
- phase 2: patented complex of Citrus Bergamia oil, olive oil, bisabolol, vitamin E;
- phase 3: hyaluronic acid, glycine, cysteine HCL, valine, proline, lysine, creatinine, vitamin C, vitamin B12.

The parameters evaluated for each patient using Visia were: spots, inflammatory areas, wrinkles, pores, porphyrins and textures in the various anatomical regions treated. The parameters evaluated by Anther 3D were Texture, dilation of the skin pores and hemoglobin content of the various anatomical regions treated.

With both systems, patients were evaluated at time T0 and T3:

- the study on 360 patients treated with the 3Phasic System on the face and evaluated with Visia showed

an average percentile improvement of 23 points on the total;

- another 3D showed an improvement of 0.33 in an evaluation expressed as a score between 0 and 2;
- the remaining 90 patients were treated with the 3Phasic system in different regions of the body;
- visia showed an average improvement of 8-12 points;
- another 3D showed an average improvement between 0.27 and 0.35.

## CONCLUSIONS

In conclusion, no serious or permanent adverse effects were found in any of the patients. The adverse effects observed were transient and resolved spontaneously upon discontinuation of the treatment.

The images show 3 cases of complications due to non-compliance with the proposed protocol which, however, resolved spontaneously by interrupting the treatment and applying a sunscreen (SPF 50) until complete healing (Figs. 9-11).

Patients who had an adverse effect were treated once healed again with the 3Phasic System<sup>®</sup>, strictly following the application schedule and did not show a new adverse effect.

All patients gave a positive feedback to the doctor in the control and evaluation session with Anther 3D and Visia, highlighting the manageability of posttreatment recovery. All patients were submitted by the physician to a verbal satisfaction questionnaire. Were there 4 questions?

- Did you encounter any problems at home after the treatment?
- Did you have to limit your activities the following day due to the treatment you underwent?
- Did the treatment meet expectations? (yes, no and why?)
- Would you recommend the treatment?



**Figure 9.** Photos of patients undergoing treatment with incorrect 3Phasic System (description in the text).



**Figure 10.** Photos of patients undergoing treatment with incorrect 3Phasic System (description in the text).





**Figure 11.** Photos of patients undergoing treatment with incorrect 3Phasic System (description in the text).

Finally, the patient was given a postcard with the possibility of being able to write any comments on the treatment anonymously. Postage-paid postcards could be sent anonymously to your referring physician. There was no difference in efficacy of the 3Phasic System<sup>®</sup> between men and women as the results were comparable considering the same anatomical area of application and the amount and time of application. The concept introduced with the 3Phasic System<sup>®</sup> is of biostimulation and not of resurfacing as the duration of the treatment begins with the first application and continues with topical and oral home treatments, inserting the patient into a beauty path that goes beyond the single medical treatment.

#### CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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#### AUTHOR CONTRIBUTIONS

The authors contributed equally to the work.

#### ETHICAL CONSIDERATION

The research was conducted ethically, with all study procedures performed in accordance with the requirements of the World Medical Association's Declaration of Helsinki.

Written informed consent was obtained from each participant/patient for study participation and data publication.

The data used to support the results of this study were provided by the University of Turin, in the degree thesis of Dr. A. Salvi with supervisor Prof.ssa d. Gaudiello, under license and therefore cannot be made available for free. Requests for access to these data should be addressed to Dr. Andrea Parafioriti.

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