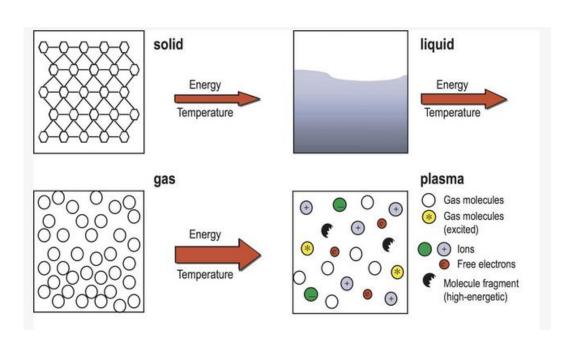


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What is Plasma?

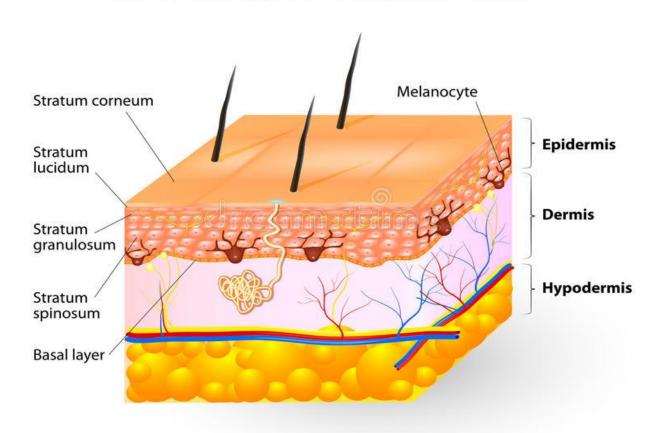
- Plasma from Ancient
 Greek meaning
 "moldable
 substance"
- Described by Irving Langmuir in the 1928
- Fourth state of matter



EM ESTÉTICA

- 1.) Epidermis
- 2.) Dermis
- 3.) Hypodermis

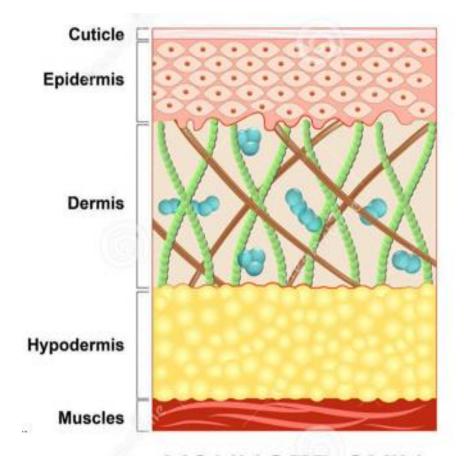
THE LAYERS OF HUMAN SKIN



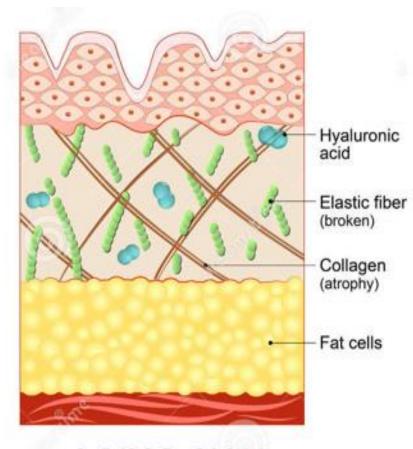


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AGING SKIN

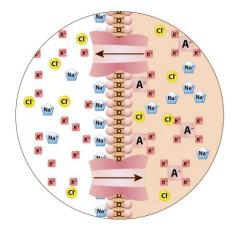


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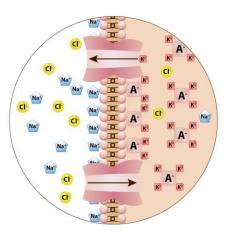
How Does It Work?

- o The membrane of skin cell contains channels, which serves to supply the nutrition and water. Aging leads to closing these channels and mixing ions of sodium and potassium.
- o Plasma discharge helps to open nutrition channels thus water with nutrition is able to get throw the membrane into the cell. Plasma discharge also helps to separate ions of potassium inside the cell and sodium outside the cell, which restores original electrical potential of the cell. Filled with water and restored electrical potential the membrane of the skin cell is getting straightened.

Before

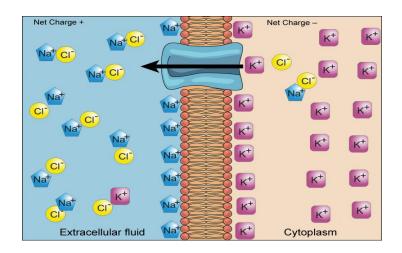


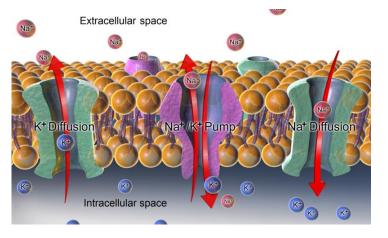
After



Effect on Skin Cells I

OPlasma discharge causes a polarity reversal

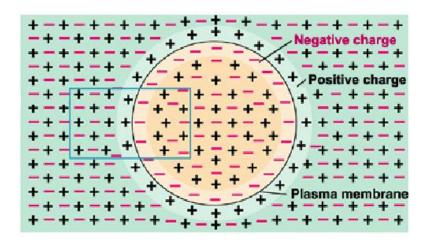


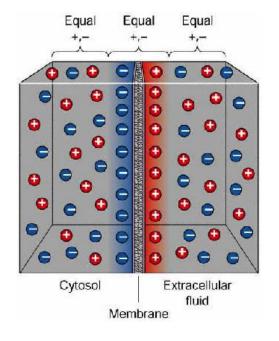


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Effect on Skin Cells II

- Membrane potential (difference of electric potentials between the two sides of the membrane)
- Inner side negative charge
- Outer side positive charge





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Results

water gets into the cells. Skin cells are "inflated" and fill the wrinkles.

- 2. Opening Na − K channels of the cell membrane → change a membrane potencial \rightarrow membrane is stretched.
- 2. plasma energy continues to work beneath the skin's surface creating the right conditions and natural growth factors for creating new collagen.

Instead of collagen fibres plasma technology affects directly the skin cells. Thanks to the added energy Na-K channels are open and 3Whereas collagen fibres are stable for years, skin cells are naturally generated each 2 weeks. It means that between **Before** renewed cells are got at their place and plasma dis

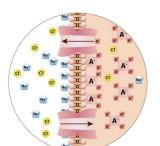
The cells restore their original shape

another cells then the session before.

This plasma-contain through the skin's s

- remove old p cells
- ➤ Water goes th
- ► Na-K channel
- > stimulaci růst faktoru a stimul promote collage doba hojení se

After



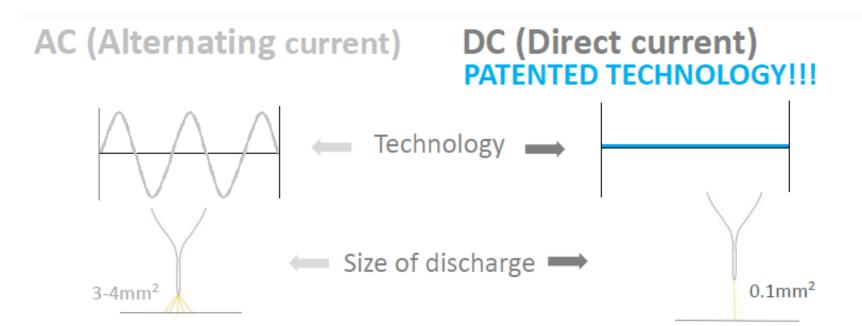
When this process occurs in the majority of skin cells in certain area, the result is then visible to the

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Plasma Devices

Two types of devices:

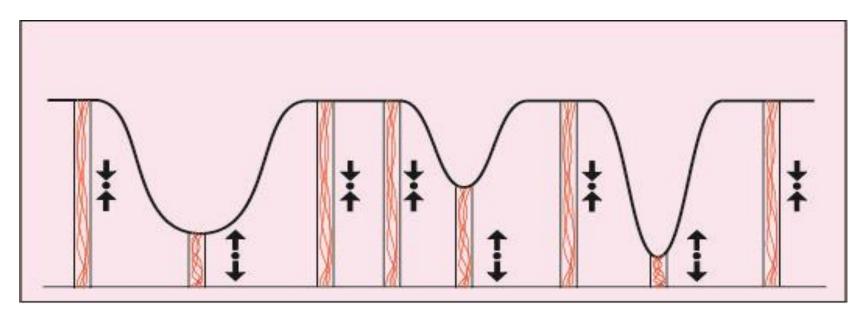
- 1.) device with alternating current
- 2.) device with direct current



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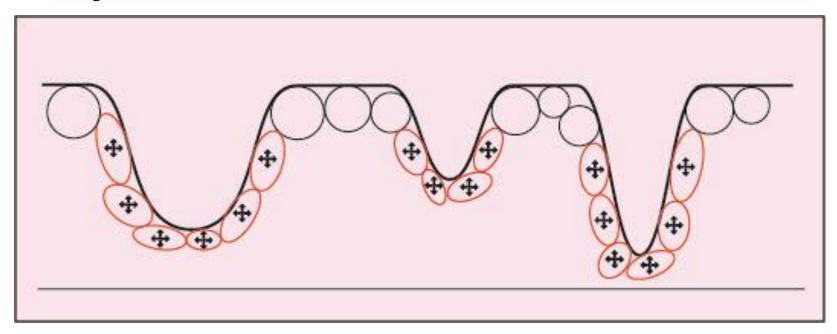
IPL, RF Technology

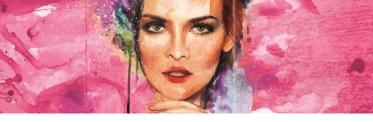
- o IPL and RF technology is based on generating heat which is supplied into the skin.
- o Thanks to this energy solidificated collagen fibres are shrinked and wrinkles get smoother.
- o Results are time limited and the treatment must be repeated continually. After 2 or 3 year of repeating the collagen fibres loose their elasticity and IPL and RF technology ceases to be effective.



Plasma Technology

- o Instead of collagen fibers plasma technology affects directly the skin cells. Thanks to the added energy Na-K channels are open and water and nutrients get into the cells. Skin cells are "inflated" and fill the wrinkles.
- o Whereas collagen fibers are stable for years, skin cells are naturally generated each 2 weeks. It means that between two sessions renewed cells are got at their place and plasma discharge affects another cells then the session before.





IPL, RF x Plasma

TECHNOLOGY	GENERATING OF HEAT	PLASMA DEVICE	
Efficiency	limited – 2-3 years of using	endless	
Size of treated area	only for wide areas	possibility of use near eyes	
Size of the machine	80 cm in height, between 20 an 40 kilos of weight	20 cm in height, 0,3 kilos of weight	
Focusing of energy	Not focused	Very focused and strong	
Operating costs	IPL – special bulb for need, expiration 25 000 waves	Without operating costs	
	RF – without operating costs		



Plasma in Aesthetics

Plasma ability:

- Smoothing of both fine and deep wrinkles
- Skin rejuvenation
- Acne after the acute phase

Plasma device is good for:

- o Incorporating acive ingredients (e.g. Hyaluronic acid) into deeper layers of the skin
- Improvement of skin elasticity
- Restoration of microcirculation in the skin

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Clinical Studies

oClinical Study I (May − July 2014)

oClinical Study II (October 2013 – March 2014)

Clinical Study III (January 2018 – ongoing)

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Clinical Study I

- o LD Clinic in Prague, Czech Republic
- o May − July 2014
- o Miloš Kravciv, MD

Aim of the study:

- Indications suitable for the use of device
- o The lenght of the application for individual indications
- The frequency of the applications
- Side effects
- Treated clients' subjective feelings concerning the application

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Clinical Study I

- o 12 people
- Average age: 46 years
- Average number of treatments: 6
- o Average time of treatment: 10 min

Treated indications:

- Wrinkles in eye and mouth area
- Veins
- o Pigmentation
- Stretch marks
- o Scar

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Clinical Study I

Gender	Age	Treated Area	# of Treatments	Treatment Time	Results
М	45	Wrinkles in the Eye Are	6	10 min	Visible improvement after 3rd treatment
F	55	Wrinkles in the Eye Are	5	15 min	Visibile elimination of wrinkles
М	57	Wrinkles in the Eye Are	5	10 min	Visibile elimination of wrinkles
М	56	Wrinkles in the Eye Are	8	10 min	Visibile elimination of wrinkles
M	67	Wrinkles in the Eye Are	8	10 min	Visibile elimination of wrinkles
F	53	Wrinkles around mouth	2	10 min	Case terminated
F	62	Wrinkles around mouth	7	10 min	Visibile elimination of wrinkles
М	56	Veins on tight	2	15 min	Veins lightely brigter
F	39	Veins around nose	7	10 min	Some of veins faded
F	6	Stretch marks on hip	6	10 min	No improvement
F	47	Keloid Scarin Decollet	7	10 min	Scar faded
F	14	Inborn extensive naevus flammeus	6	10 min	Brighter lines visible

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- Application tolerated without problems
- Local anesthesia is not needed
- Special care after the application is not needed
- After the application, no limitation in sports, etc. are needed
- Suitable indications are wrinkles in facial area, little widened veins
- o Application time is between 10-15 minutes
- The most suitable frequency of applications is once a week during 4-6 weeks
- No sides effects were identified
- Slight burning during applications which disappered after the end of treatment





Clinical Study II

- o Medical Centre in Prague, Czech Republic
- October 2013 March 2014
- o Jan Polák, MD

Aim of the study:

- Check the effect of the plasma discharge on the skin
- Check the safety of the method
- o To define the basic contraindications of the use



Clinical Study II

- o 50 women
- Aged 35 60 years

Treated indications:

- Shallow and deep wrinkles
- Pigment/Age spots
- o Spider veins, Couperosis

Clinical Study II – Verification of the Effect

Deep and Shallow Wrinkles

- the plasma discharge is able to eliminate and in some cases even remove wrinkles
- o after very first application the results are visible
- o if applided more than once (2-6 times), the effect is durable



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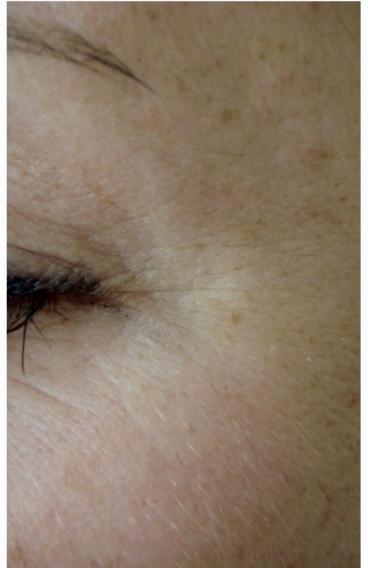
















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Clinical Study II – Verification of the Effect

Pigment/Age Spots

- Decrease of the concentration of the accumulated melanin caused by plasma discharge is gradual
- Pigment spots do not disappear after the first application, yet they are brighter
- 5-6 treatment sessions is neccessary
- Use of de-pigmentation serum for better results









Clinical Study II – Verification of the Effect

Spider veins, Couperosis

 Strenghtening of the vein walls and brightening of red veins is gradual

Neccessary to undergo 5-6 treatment sessions



Clinical Study II - Results

Deep and Shallow Wrinkles

- o 31 respondents
- o 100% women have had visibly effect after first application
- o 16% women have had much more significat effect
- Average mark of sensitivity is 1,69
- o Two women had slight reddening on treated area



Clinical Study II - Results

Pigment Spots

o 10 respondents

o 8 women had visible effect immediately

o 2 women had negative effect

Average mark of sensitivity is 2,4

Clinical Study II - Results Veins, Couperosis

Overy small effect

OAverage mark of sensitivity is 3



Frequency:

 $\circ 4 - 6$ sessions, 1-2 per week

Intensities:

oapproximate

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Protocol of Treatment

OClean and dry the skin

Apply an exfoliating cream: to open the pore and remove impurities

- OApply serum
- Apply ultrasound gel







Protocol of Treatment

 Move back and forth with the plasma discharge above the wrinkle

A zig-zag move above the wrinkle

o 1-2 minutes



Body Treatments





ESTÉTICA DE SÃO PAULO

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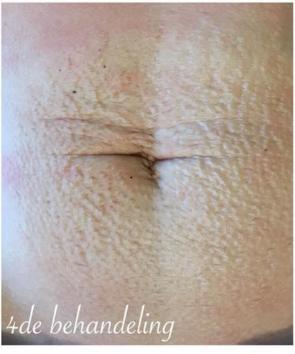
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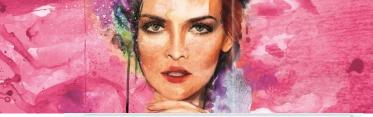












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behandeling









estética (Disão Paulo)

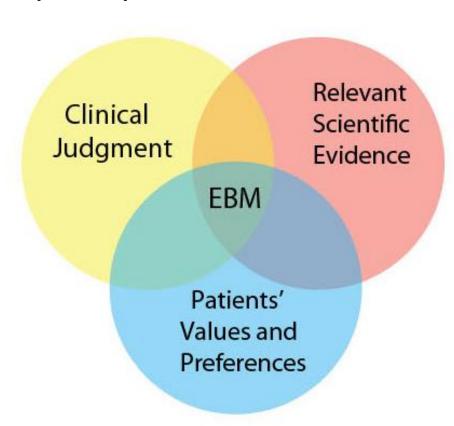
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Treatment Video

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Evidence Based Medicine (EBM)

- Plasma discharge applications can be considered as a noninvasive technique that can eliminate wrinkles, rejuvenate skin, fight couperosis
- This method is based on an interesting and logic scientific basis



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Summary

- Skin treatment is natural
- Safe
- No side effects
- non-invasive technique
- Plasmic flows
- Non-invasive treatment
- Comfortable and relaxing
- Effective cosmetic impact: lifting, rejuvenation, hydration
- Therapeutic effects: acne, hyperpigmentation, couperose

