FUSION MESOTHERAPY RF
MONOPOLAR RADIO FREQUENCY ELECTROPORATION
FUSION MESOTHERAPY is a new concept in non-invasive aesthetic medicine. A new approach of mesotherapy based on breakthrough systems and products.

"Needle-free" Fusion Mesotherapy is without doubt offering all the advantages in non-invasive and painless skin rejuvenation: safety, efficiency, easy to operate, cost-effectiveness, immediate and long-lasting results.

Fusion mesotherapy RF is a radio frequency device. It enhances the transdermal (through the epidermis to the dermis) and transcellular transport of products. The radiofrequency produces a cellular electroporation reducing the permeability of the skin and opening cellular pores. It induces the opening of the protein channels on the cellular membranes; this phenomenon allows the substances to reach the heart of the cells.

At the same time the radio frequency increases the skin temperature of 2 to 4°C to stimulate the collagen synthesis producing a skin tightening effect. The controlled temperature effect also improves the active ingredients diffusion.

This technology has been successfully used to enhance the skin permeability for molecules with differing lipophilicity and size including biopharmaceuticals with molecular weights greater than 20 kDa. In addition the effect of the device on the skin is 100% reversible with no damage to the epidermis and no morphological modifications.

Fusion Mesotherapy RF, can also be combine with Skin needling systems (roller and pen) or subcutaneous injections. This synergy improves the effectiveness of injected products and results. It has been demonstrated through our clinical study to be very effective for lipolysis offering a real alternative to plastic surgery lipoplasty and lipo-lasers.

The effectiveness of subcutaneous injections is improved because of a higher product dissemination in the tissues and a higher cellular transfer. The side effects of mesotherapy are also reduced. This technique can be applied for face and body.

The clinical study was performed on lipolysis by conventional mesotherapy vs fusion mesotherapy RF mesotherapy. Interesting results were demonstrated on all patients:

- A reduction of 50% of the side effects including oedema, pain bruises.
- Ultrasound images show a hyperrecogenesis more homogeneous as an expression of higher effectiveness and dissemination.
- In histopathology, the sections show varying degrees of subcutaneous cell tissue damage. There is reversible (hydropic, balloon-like degeneration) and irreversible (fat necrosis with lipogranuloma formation) cell damage. In all cases, there was a higher effect of fat cellular destruction on the side treated with the Fusion Mesotherapy RF.

MAIN INDICATIONS: Skin rejuvenation, expression wrinkles, wrinkles, skin tightening, whitening, acne, anti-cellulite, lipolysis, sport medicine etc.

Using our skin care formulation is of the greatest importance to obtain the best results.
Technology

Fusion Mesotherapy RF is a Radio Frequency device. It emits pulsed radio frequencies at different intensities (from 600 volts to 2200 Volts) and frequency (from 0.5 MHz to 1.5 MHz) depending on treatment mode. These electromagnetic pulses are producing a transitory structural perturbation of lipid bilayers membranes also called “electroporation”. Channels are opened on the cellular membrane permitting the products to be introduced through the skin by transcellular pathway and also reach the heart of the cells.

The electroporation phenomenon was discovered by Dr. Praunist, on the basis of the studies of the Dr. P. Agree and Dr. R. Mackinnon, who were awarded the Nobel Prize in Chemistry in 2003.

Many publication and clinical studies have demonstrated the effectiveness of electroporation for transdermal delivery. It’s also used for RNA vaccination to increase the cellular transfer for a better immune response, cancer tumour treatment by electrochemotherapy, gene therapy etc.

In "Needle-free" Fusion Mesotherapy RF the product is applied over the skin and diffuses to the deep epidermis during the treatment. Up to 48 hours after the treatment the products will continue to diffuse to the dermis. The treatment is effective for superficial skin concerns. Tests have been performed with Indian Ink to confirm the effectiveness of the device (needle-free clinical study).

Many parameters are of great importance for a high transdermal delivery:

**Parameters of devices to reach high transdermal delivery**
- Pulse voltage higher +
- Pulse length longer +
- Pulse number +
- Contact time of the probe on the skin +
- Moderate temperature effect +

**Parameters of products to reach high transdermal delivery**
- Low viscosity +
- Low molecular weight +
- Polarity +
- Skin transfer boosters +
- No competitive ions +

**Parameters of products for patient safety**
- Sterilized products, preservative free
- No colouring
- No perfume
- No animal extracts
- No allergens

In Fusion Mesotherapy RF & needle treatment the product is injected and the radio frequencies are applied after injections. The consequence is that much more products diffuse into the cells and is disseminated more evenly into the tissue.

**Main advantages compare to conventional needle treatments:**
- Improve effectiveness of 20%
- Improves diffusion of the products
- Reduces sides effect up to 50%

**Power supply:** 110-220 V /50-60 Hz
**Power absorption:** 120 W
**Command management:** microprocessor
**Display:** LCD 2x20 negative blue
**Management:** Digital
**Maximum sound level:** 3 dB
**Case size:** l: 350 mm h: 170 mm d: 250 mm
**Weight:** 3 Kg
**Use temperature:** +10 to +35°C
**Humidity relative:** 30 of 75 %
**Security:** Class 1 type BT [norm NF EN 60335-1]
**Maintenance:** Every 5 years.
**Warrantere:** 2 Years

Made in France
Product penetration and diffusion

**Topically applied products:**

- By transcellular way: natural diffusion of substances through the skin is a slow process, limited by stratum corneum.
- By interstitial way: through the lipids of the intercellular space.

**Fusion Mesotherapy RF applied products:**

- By transepidermal way: the substance crosses the skin as it overcomes the barrier of the stratum corneum.
- By pilosebaceous way: hydrolipidic and lipidic products absorption takes place through the epithelial cells of the sebaceous glands.
- By sudoriparous way: hydrolipidic and ionic products absorption takes place at the level of the sudoriparous glands.
- By transmembrane way: through aquaporins (page 3).

**Fusion Mesotherapy RF & skin needling applied products:**

- By transdermal way: through needling pores created by the skin needling through the epidermis directly to the dermis. These pores by their size are allowing a massive diffusion of products directly to the dermis.
- By transepidermal way: the substance crosses the skin as it overcomes the barrier of the stratum corneum.
- By pilosebaceous way: hydrolipidic and lipidic products absorption takes place through the epithelial cells of the sebaceous glands.
- By sudoriparous way: hydrolipidic and ionic products absorption takes place at the level of the sudoriparous glands.
- By transmembrane way: through aquaporins (page 3).

**Fusion Mesotherapy RF & mesotherapy injected products:**

- The products are directly introduced into the skin at the target level. No transdermal penetration is needed only transcellular through aquaporins (page 3).
Indications & contraindications

Indications of Fusion Mesotherapy RF
- Anti-ageing
- Skin tightening
- Skin whitening
- Pigmentation & melasma
- Eye bags & dark circles
- Skin moisture
- Expression lines
- Wrinkles
- Cellulite
- Flaccidity
- Oily skin and open pores
- Hair loss

Contraindications:
- Severe acne
- Infection
- Pregnancy
- Chronic diseases
- Electronic implanted medical devices
- Metallic implants
- Epilepsy
- Hyper sensitivity to electromagnetic field
- Allergy to injected product
- Cancer
- Systemic and local Infections
- Diabetics

Additional indications of Fusion Mesotherapy RF with skin needling
- Local fat excesses
- Stretch marks
- Scars
- Deep wrinkles

Main advantages

- No electric contact with the patient. So there is no risk of burns, muscular fasciculation, pain or inflammation.
- Monopolar device, waves penetrate up to superficial skin fat layers but do not cross the full body between + and - or between emissor and receptor.
- Does not induce molecular ionization of the transported substances or molecular disintegration. All types of substances can be used (ionic, non-ionic, water or oily based). The transport speed of substances is 0.8 g per minute.
- Fusion Mesotherapy RF does not induce molecular ionization of the substances.
- Fusion Mesotherapy RF does not require any conductor gel.
- Fusion Mesotherapy RF is practical, transportable and easy to handle.
- Fusion Mesotherapy RF introduces substances of low to high molecular weight.
- Fusion Mesotherapy RF is 100% painless.
- Fusion Mesotherapy RF is easy to use and offers various treatments modes.
- Fusion Mesotherapy RF is affordable and beneficial compared to concurrency.
Needle-free protocols

Needle-free Fusion Mesotherapy facial protocol:
- Cleansing cream to remove impurities and make-up 3 min.
- Peeling cream to gently eliminate dead cells 10 min.
- Active blend with Fusion Mesotherapy RF 25 min.
- Mask or collagen matrix 10 to 20 min.
- Face cream application 3 min.

Needle-free Fusion Mesotherapy body protocol:
- Cleansing with water or alcohol 3 min.
- Active blend with Fusion Mesotherapy RF 35 min.
- Body cream application 10 min.
Needle protocols

Needle Fusion Mesotherapy facial protocol:
- Desinfection 3 min.
- Skin needling with roller or pen or conventional mesotherapy.
- Fusion Mesotherapy RF application 20 min.
- Collagen matrix 20 min.

Needle Fusion Mesotherapy body protocol:
- Desinfection 3 min.
- Skin needling with roller or pen or conventional mesotherapy.
- Fusion Mesotherapy RF application 30 min.