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INDIAN SOCIETY OF MESOTHERAPY

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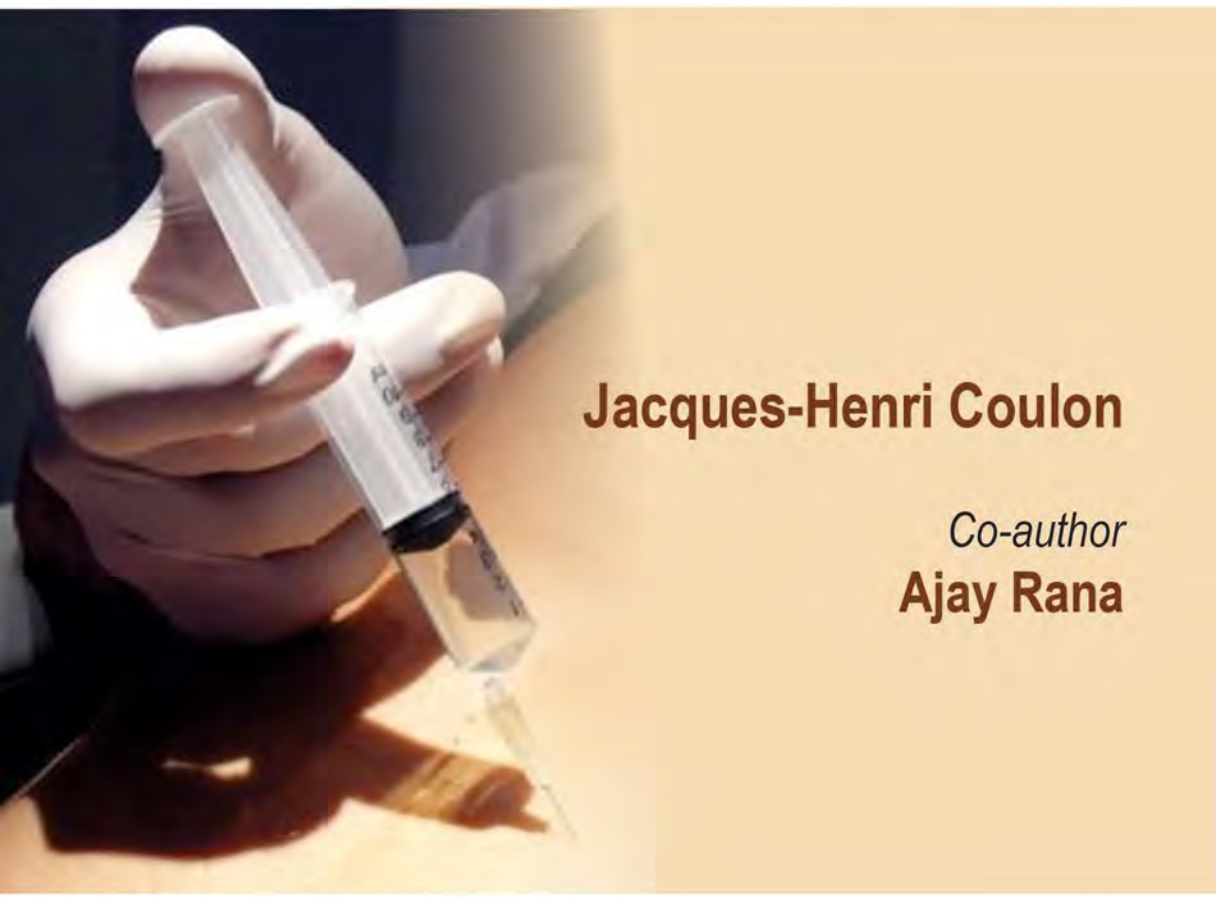
Step by Step Guide to MESOTHERAPY



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1

HISTORY OF MESOTHERAPY

Dr Pistor was the inventor of *mesotherapy*.



Dr Pistor began to practice in 1958 and discovered the interest of injecting small amounts of medications on the skin, first for pain relief, and had a particular interest for other applications like fat problems, cellulite, alopecia, venous insufficiency, and aesthetic and dermatological problems.

He used procaine for many purposes, which has since been replaced by xylocaine, lidocaine, and mesocaine.

Etymology of the Term Mesotherapy

Mesotherapy comes from—The Greek *mesos*, "middle" and therapy from the Greek *therapeia*, "to treat medically".

It means therapy within the mesoderm.

Originally mesoderm refers to one of the three primary germ cell layers in the very early embryo. It is not the real meaning of mesotherapy target.

So, many significations have been used.

Chronology

- Dr Pistor founded the *French Society of Mesotherapy* in 1964.
- The first *National Congress* occurred in 1976.
- Creation of the *Center of Research in Mesotherapy (CERM)* in 1981.
- Creation of the *International Society of Mesotherapy* in 1984.
- Recognition by the *French Academy of Medicine* in 1987.

Mesotherapy: An Interesting Alternative to More Traditional Therapies

Mesotherapy provides an interesting *alternative* to traditional therapies.

It is a *noninvasive* technique that patients appreciate, as it is painless and efficient. Another advantage is that the *cost* of the treatment is relatively low.

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Fundamental Studies in Mesotherapy

Study Le Coz—Knee Articulation
Study—Dr Pitzurra/Questel
Double Blind Study—Le Coz/KacOhana
Pharmacokinetic Studies
Mixtures Compatibility Studies

Other Studies in Mesotherapy

Bibliographies of 1200 titles
Enatome I
Enatome II
Lumbago—Perrin
Lumbago. Art post—Ms/Infiltration—Mrejen
Pubalgia—Laurens/Demarais

Some Definitions to Begin

"The most allopathic of soft medicine and the most soft of allopathic medicine"
—Dr Pistor

Mesotherapy, "a royal way of introducing medicines", is an original technique of injection of micro-measured allopathic medicines, with a needle with cone Luer from 04 mm to 13 mm depth.

We owe this technique to Doctor Pistor, French doctor, who finalized the protocols of treatment of a large number of affections usually met in daily practice.

The injections are made, either in the hand, or with electronic devices of type Den' Hub" or "Pistormatic", or more rarely with devices of "mésoperfusion".

Used medicines are well-known and listed in the French pharmacopeia dictionary, and although the list of the available products is reduced, it is



Fig. 1: Mesogun—Den' Hub.

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possible to treat many pathologies, whether these are in rheumatology, in infectious, vascular pathology, etc.

The basic medicine of the mesotherapy was for a long time the procaine with acid pH, because of its fundamental properties, because it is thanks to it that are made (Fig. 1):

- The penetration of medicines which are associated to it
- The delayed effect which it confers on these medicines
- An effect of stimulation of the microcirculation
- An effect of immunizing stimulation:
  - An effect of regulation of the neurovegetative nervous system.
  - Procaine is always used, but, because of risks of allergy connected to its chemical composition, we prefer the xylocaine or the mesocaine.

No more than three products should be used in the same mixture, because after three medications one does not know what is working. However, one can make two separate mixtures in two different syringes.

The sessions are not too frequent in time: D0–D7–D14–D30 and every month or 2 months. It depends on the acute or chronic character of the pathology.

Why and How?

Innocuity or rare side effects—the medications we use are generally not dangerous if properly dosed. Some medications cannot be used together, for example calcitonin + anti-inflammatory, which makes a precipitate.

Some medications are contraindicated—no corticoids and risk of necrosis. No B_{12} vitamin in case of cancer story, we shall develop it in the pharmacology subject.

Economy for the Health System

Because of the small amount of medications, patients do not have to use too much oral medications; it allows patients to decrease their consumption of drugs.

It explains the few number of sessions.

After a Precise Diagnosis

(We shall develop that in the consultation of mesotherapy), you can define the right mixture, the right number of sessions.

This is an etiopathogenic therapy corresponding with the pathology.

Mesotherapy uses the classic injectable medications, so it is easy to find them in the classic pharmaceutics centers.

Few Rarely On The Right Place (Dr Pistor)

How?

How does it works? (Supposed action)

There are several mechanisms involved in the act of mesotherapy:

- The action of the needle

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- A pharmacological action of the medications
- A vascular action
- An immunologic action
- A neuroendocrine action
- Sometimes a placebo effect can occur.

Proper action of the needle: The simple action of the needle causes a vascular effect on the skin—vasodilatation and an action on the neurologic *gate control system*, which is blocking the pain receptors and promoting the endorphin secretion.

Endorphins are released by the ends of the descending nerve fibers or going down fibers that come down the spinal cord from the brain.

When we feel a certain level of pain, the descending nerve fibers release endorphins at the level of the spinal cord, where they meet the sensory nerves carrying the pain messages from our body.

This local release of endorphins by the nerve inhibits some of all the pain messages going up from the brain.

Skin Structure

It is important to recall the structure of the skin (Fig. 2) because it is the main place we have to work with.

The deeper you inject, the more you have risks of side effects, from a simple allergy to an anaphylactic shock.

It is necessary to have a resuscitation structure with oxygen and adrenalin (Fig. 3).

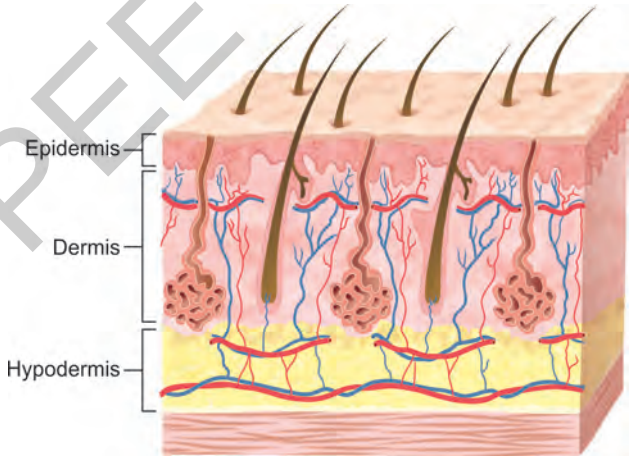

Fig. 2: Skin structure.

Theory of the four units of competence:

The structure of the skin depends of those four units:

1. Fundamental unit (extracellular matrix)

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Fig. 3: Resuscitation material.

2. Circulation unit (arteriovenous system)
3. Neurologic unit: Sensitive nociceptive (afferent) and neurovegetative (efferent)
4. Immunitary unit.

Pharmacological Action of the Medications

Each medication has its specific action and must be properly adapted to the pathology.

The *pharmacology* studies:

- The action mechanism between an active principle and the organism in which it evolves, so it makes it possible to use those results for therapeutic purposes.
- The way to administrate the medications
- The side effects of those medications
- The medication interactions.

There are the three notions to consider in the act of mesotherapy:

The pharmacopeia: It is a collection of regulatory official and authorized medicines in a country or a group of countries.

The pharmacodynamics: Studies the action of medication on the organism, and especially the interaction between receptor and the active principle.

The active principle diffuses in the site of action of the organ, combines with:

- Membrane receptor
- Enzyme
- Other cellular structure

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And occurs a response.
The effects wanted or the toxic effects mainly depend on the concentration of medication on the site of action.

The Pharmacokinetics: Studies what happens in the organism to the active principle which is contained in the medication.

Four phases can be described: *Absorption, distribution, metabolization, and elimination* of the active principle (Fig. 4).

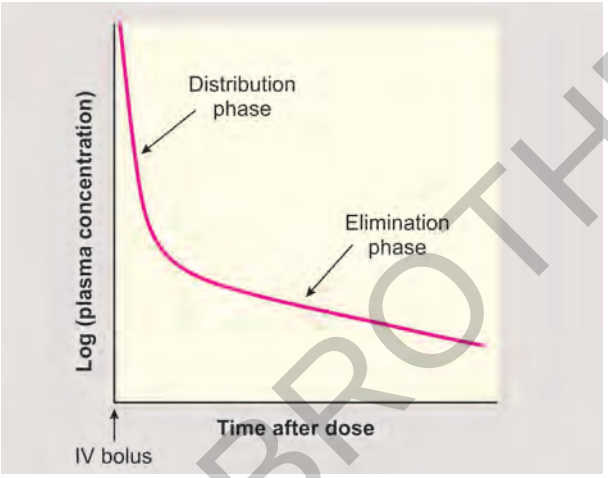

Fig. 4: Pharmacokinetics.

The Rules of Pharmacology in Mesotherapy

- *Primum non nocere*, which means—do not harm the patient
- One patient, one syringe, one needle, one bulb (ampule)
- Diluted, aqueous, and active
- Necessity of officially authorized medication
- Choice of the dilution product
- Choice of the associated product
- *Compatibility* between the products
- A *maximum of three products* in the mixture.

Vascular Action of the Mesotherapy

Important vasoactive effect with alternating vasoconstriction and vasodilatation (circulatory UC).

Immunologic Action

Pharmacological effect of the medications on the basal layer by immunostimulation (Fig. 5).

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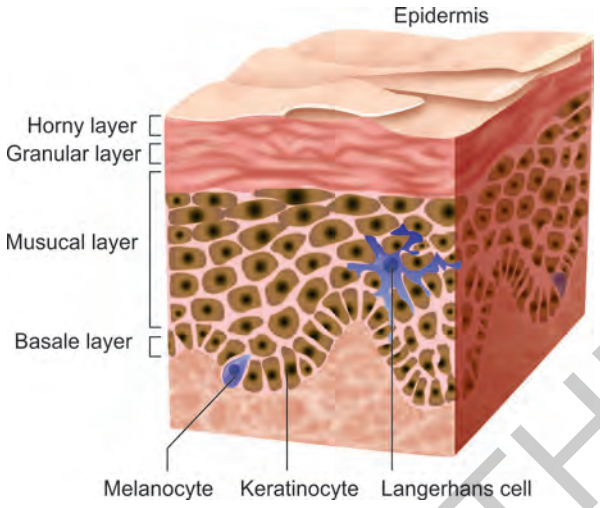

Fig. 5: Immunostimulation.

Neuroendocrine Action

Direct mechanical effect of the needle tip on the sensory receptors of the stratum corneum (Fig. 6).

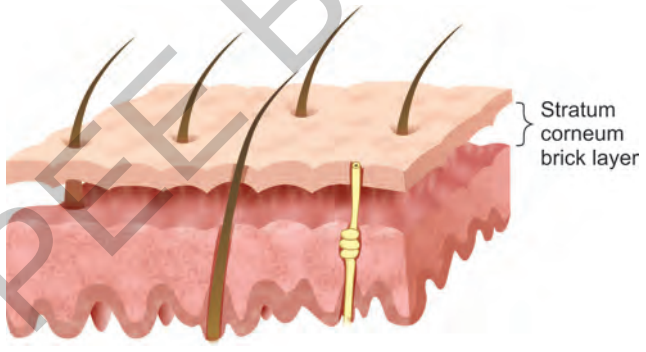

Fig. 6: Stratum corneum.

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MESOTHERAPY EQUIPMENT

- The basic kit: Needle syringe (Fig. 7)



Fig. 7: The basic kit for mesotherapy.

- The types of needles (Fig. 8):
  - 32 G 0.27 × 13 mm: IED IDP DHD
  - 30 G 0.30 × 13 mm: IED IDS IDP DHD
  - 30 G 0.30 × 4 mm
  - 27 G 0.40 × 13 mm
  - 27 G 0.40 × 4 mm: IDS

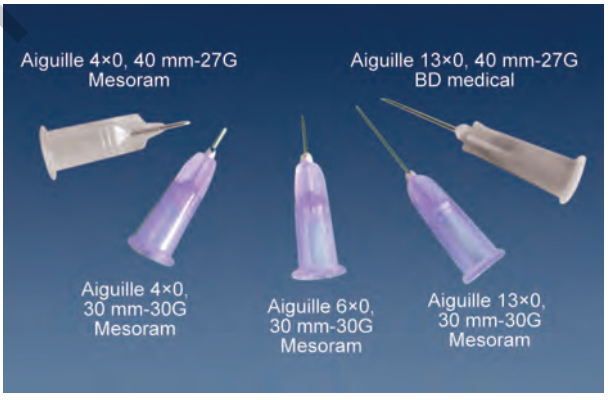

Fig. 8: Types of needles.

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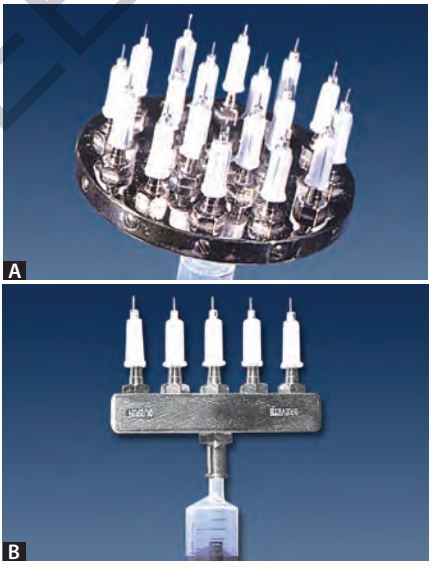
- The syringes:
  - Three sterile parts
  - Single use:
    - 1 mL
    - 2 and 2.5 mL
    - 5 mL
    - 10 mL
- The mesotherapy kits (Fig. 9):
  - Kit 10
  - Kit MPS
  - Mixt kit



Fig. 9: Kit syringe + needle.

- The obsolete supports: Multi-injectors (Figs. 10A and B)



Figs. 10A and B: Obsolete supports.

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- Forbidden material: The Mesoflash (Fig. 11)



Fig. 11: Mesoflash—forbidden material.

- The different mesoguns (Figs. 12A to D):
  - The Den-Hub: DHN1, DHN2, DHN3, DHN4
  - The Pistor 1 and 2



Figs. 12A to D: Mesoguns.

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- The U 225 (Fig. 13)



Fig. 13: U 225.

- The Mesalyse (Fig. 14).



Fig. 14: Mesalyse.

After use, the needles must be put in special boxes for incineration (Fig. 15).



Fig. 15: Boxes for needle destruction.

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Strict rules of asepsis must be applied, and the pistol and accessories have to be disinfected after every session (Fig. 16).

Products for disinfection: Alcohol 70%, Dakin, and Biseptine.



Fig. 16: Disinfection of the mesogun.

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Step by Step Guide to MESOTHERAPY

Salient Features

- Mesotherapy is a remarkable technique involving painless microinjections into the skin, of conventional or homeopathic medicines, vitamins, minerals, and amino acids.
- Among many applications, mesotherapy can be used for many purposes, mainly for the relief of painful pathologies: arthritis and joint problems, sport injuries, and many other indications. It is also used in aesthetic and dermatologic indications: fat and cellulite reduction, weight loss, wrinkle elimination, scar improvement, and stretch marks.
- There are many advantages using mesotherapy:
  - Innocuity or rare side effects
  - Economical for the health system
  - Efficiency, painless injections.
- Mesotherapy technique is taught in France by members of the French Society of Mesotherapy and in India, the Indian Society of Mesotherapy founded by Dr Ajay Rana, Eminent Dermatologist in New Delhi (India), organizes many workshops to train young physicians.

Jacques-Henri Coulon MD is a physician and mesotherapy expert, practicing since 1978 in the East of France. He is the Member of the French Society of Mesotherapy and President of the Franche-Comté Society of Mesotherapy.

Since 2012, he collaborates with Dr Ajay Rana, Founder of the Indian Society of Mesotherapy, and participates in workshops all around India. He has trained a vast number of fellow doctors over the last 30 years, and promotes relentlessly excellence in mesotherapy.

Ajay Rana MD is a Dermatologist and Aesthetic Surgeon and the Founder of the Institute of Laser and Aesthetic Medicine (ILAMED) in India over a decade ago and of the Indian Society of Aesthetic Medicine (ISAM). A most interesting journey was recently completed with creation of the Indian Society of Mesotherapy (ISM). He was able to set up the ISM with the support of a wonderful and dynamic network of specialists in mesotherapy from across the world. To ensure a sustained development of the discipline, he is continuously involved in and supports research in mesotherapy along with the dissemination of information to specialists and patients.

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