

# Mesotherapy

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## What is Mesotherapy?

Mesotherapy is a medical technique of direct administration of active drugs or nutrients into the target tissues where they are needed, by means of intra-dermic micro-injections. Mesotherapy was introduced in France by Dr. Michel Pistor in 1952. According to Dr. Pistor's saying.

*A little, not very often, in the right spots.*

The term, 'meso' is derived from the mesoderm or middle layer of the skin. Mesotherapy is a treatment that stimulates the mesoderm, which relieves a wide variety of symptoms and ailments. The connective tissue of the body, primarily the collagen, ligaments, tendons, and muscle, is derived from the mesoderm. The mesoderm also involves adipose tissue and connective tissues around organs.

The term, 'mesotherapy' first introduced in French medical press by Pistor, *the action of local procaine injection on the tissues originating from the mesoderm is so extensive that these treatments deserve the global name of mesotherapy.*

In 1964, the French Society of Mesotherapy was formed. In 1976, the First International Conference on Mesotherapy was held, and first used in in-patient settings in France.

In 1987, the French Academy of Medicine confirmed officially mesotherapy as a part of traditional medicine.

The International Society of Mesotherapy encompasses about 20 countries throughout Europe, South America, and Africa. Currently, in excess of 20,000 physicians world-wide have used mesotherapy on a daily basis for a variety of problems, especially aesthetic purposes including topical fat deposit reduction, treatment of cellulite, hair loss, scar revision and wrinkle elimination.

In Korea, mesotherapy has been rapidly spreading all around the country since October of 2002 when first introduced, thousands of patients have been treated due to various medical or cosmetic problems.

Mesotherapy is also getting more popular in the United States. In Europe, mesotherapy has been used extensively for pain management, however, in the United States, several numbers of associations are forming with a primary focus on aesthetic applications, and mesotherapy solutions and techniques in the US are being modified, do not follow the traditional principles. For example, many American doctors use phosphatidylcholine as a main compound to reduce localized fat deposits. This type of treatment is not embraced by the International Society of Mesotherapy, nor do they certify or recognize the training offered.

## Advantages of Mesotherapy

Mesotherapy is a safe technique. Mesotherapy solution is placed directly into the target area thus minimizing side effects, allergies, and drug interactions.

Mesotherapy is also an effective alternative for the treatment of cellulite, localized fat deposits, alopecia, and face/neck rejuvenation. Unlike surgery, mesotherapy is virtually painless, requires no post-operative recovery time, requires no heavy bandages or girdles, and no anesthesia is necessary. While many surgical procedures require one to two weeks of recovery, patients undergoing mesotherapy have no interruptions to their daily life, while obtaining a natural cosmetic rejuvenation.

### 1. Mesotherapy: Mechanism of Action

Mesotherapy employs both the physical (mechanical) and the chemical stimulation of circulatory competence unit, nervous competence unit, immune competence unit, and fundamental competence unit within dermis and subcutaneous tissue, which promotes the body's circulatory, lymphatic, and immune system to create a biological response and reverse abnormal physiology.

Solutions injected intra-dermally remain in the injected area longer compared to subcutaneous injection, and act as a natural

time-release agent for up to 7 days, The injected solutions act to adjacent problematic tissues by continuing to diffuse into the deeper tissues.

The technique involves the injection of substances to stimulate the mesoderm for various biological purposes. For instance, if the circulation is poor, a vasodilator is used; if excessive inflammation is present, an anti-inflammatory medication is used; or if inflammation/stimulation is needed; a fibroblast proliferating solution is injected. Conditions such as cellulite are due to lymph veno-lymphatic insufficiency, therefore a stimulator of venous and lymph flow is used.

### Indications of Mesotherapy

#### 1. Sports injuries

Arthropathy, Barre-Lieou Syndrome, Chronic Joint Swelling, Ligament Sprain, Meniscal Tear, Muscle Tear, Muscular Bruises, Overuse Injuries, Periosteitis, Plantar Fasciitis, Shin Splints, Stress Fractures, Tendon Calcifications, Tendon Degeneration, Tendon Strain

#### 2. Chronic painful conditions

Bone Spurs, Bursitis, Calcific Tendonitis, Carpal Tunnel Syndrome, Causalgia, CervicoBrachalgia, Chondromalacia, Chronic Low Back Pain, Contractures, De Quervain Tenosynovitis, Degenerative Arthritis, Degenerative Disc Disease, Dupuytren's Contracture, Fibromyalgia, Frozen Shoulder, Gout, Herniated Disc Pain, Herpes Zoster Pain, Ligament Sprain, Migraine Headaches, Muscle Spasms, Myofascial Pain, Neuralgia, Osteochondrosis, Post-Fracture Pain, Post-Surgical Pain, Post-Whiplash Pain, Pseudogout, Radiculopathy, Reflex Sympathetic Dystrophy, Rheumatoid Arthritis, Spondylolisthesis, Tarsal Tunnel Syndrome, Tension Headache, TMJ Syndrome, Trigeminal Neuralgia, Trigger Finger, Ulnar Neuropathy

#### 3. General medical conditions:

Allergies Alopecia Asthma Autoimmune Disases Bronchitis Childhood Infections Chronic Fatigue Chronic Infections Chronic Sinusitis Chronic UTIs Cigarette Addiction Compulsive Behavior Constipation Coronary Insufficiency Degenerative Arthritis Depression Dysmenorrhea Gastritis Generalized Anxiety Genital Herpes Glaucoma Glossodynia Hearing Loss Hemorrhoids Hepatitis Insomnia Irritable Bowel Syndrome Lymphedema Menstrual Irregularity Migraine Headache Obesity Presbyopia Prostatitis Restless Legs Rheumatoid Arthritis Slow

Metabolism Slow Metabolism Spasmodic Colitis Vaginal/Anal Itching Vascular Insufficiency Vertigo

#### 4. Skin conditions:

Acne, Alopecia, Cellulite, Contusions, Eczema, Hair Loss, Herpes Infection, Hypertrophic Scars, Lipodystrophy, Male/Female Hair Loss, Obesity Stretch Lines, Psoriasis, Rides, Scar Disorders, Sun Damaged Skin, Telangiectasias, Venous Insufficiency, Vitiligo, Wrinkles

#### 5. Medical Aesthetics

Cellulite, Localized fat deposits, Wrinkles (Face and neck rejuvenation), Alopecia, Scar, Striae

### Mesotherapy: Materials and Technique

#### 1. Material

- Syringe: 3 ml, 5 ml, 10 ml
- Needle: Lebel's needle (4~6 ml/26~30 G), 13 mm/30 G needle
- Injector guns: DHN, Pistor, Meso-system, Mesalyse, etc
- Gloves
- Disinfectant: Biseptine (Chlorhexidine benzalkoniumchlorure), 70% alcohol

#### 2. Technique of Injections

##### ME (Mesotherapie epidermique)

- Retarded effect, bleeding (-), pain (-)
- 30 G, 13 mm needle

##### Papule (intra-basal injection)

- Intra-basal layer injection, <0.1 ml /point

##### Nappage (multi-pricking injection)

- semi-retarded effect
- 4 mm needle
- 2~4 injection/sec, 0.5~2 mm depth, 30~60

##### PPP (Point-by-point)

- 4 or 6 mm needle
- 0.03~0.1 ml/point, 0.5~2 cm distance
- punctual & painful, more or less profound

##### Mesoperfusion

- Sequential mesotherapy (MS) or Mesotherapy lente
- 2~13 mm depth, 5~45 min (1~5 sec injection 10~50 sec intervals, sequentially)
- effective esp. chronic pain

##### MPS (Mesotherapie Pontuelle Systematisee)

- Dermo-hypodermic injection (2~10 mm) into fixed, objective, and reproducible points
  - Mesotherapie seche et mouillee
  - Mixed

#### Classification by injection depth

- IED (intra-epidermic injection): < 1mm
  - Technique: ME, superficial nappage
- IDS (superficial intra-dermic injection): 1~2mm
  - Technique: papule, IDS nappage
- IDP (profound intra-dermic injection): 2~4mm
  - Technique: PPP, mesoperfusion
- IHD (intra-hypodermic injection): 4~10mm
  - Technique: PPP, mesoperfusion, MPS
- DHD (dermo-hypodermic injection): used in MPS

### 3. Medications used in Mesotherapy

Substances administered in mesotherapy are pharmaceutical drugs, nutrients (vitamins, minerals, amino acids), plant extracts, and homeopathic agents. Commonly used medications are vasodilators, anti-inflammatory agents, muscle relaxants, lipolytics, proteolytic enzymes, vaccines, and hormones. These compounds are often combined in cocktails with or without local anesthetics (procaine or lidocaine). All medications used are FDA-approved for their use. In combination, some medicines for mesotherapy are used for 'off-label' purposes. A recent illustration of this distinction is Botox. Although Botox was FDA approved for controlling muscle spasms, the medical community embraced it for its cosmetic properties of controlling wrinkles. For many years, plastic surgeons and dermatologists used Botox for off-label purposes.

1) Medications used in mesotherapy should meet the requirements of

- Isotonicity
- Tolerance of skin or subcutaneous tissue
- Absence of pain, nodule formation, or necrosis
- Integration with the tissues of injected substances
- Absence of allergies or hypersensitivity
- Non-use of oily solution
- Avoidance of possible incompatibilities
- Efficacy verified

### 2) Treatment sessions and duration

Mesotherapy treatments are typically given once per week. As improvement is seen, the treatments may be given less frequently, such as once every two weeks or once per month. The wide use of mesotherapy, even by unqualified personnel, may be responsible for systemic and local side-effects, very often due to incorrect use of drugs and to errors in procedure. Above all this alternative medical process has been associated with the development of atypical mycobacterial infection, due to lack of aseptic measures.

### 4. General Considerations

#### Before Mesotherapy

- Confirm whether any allergy or skin problems (atopic dermatitis, infectious diseases) are present through medical interview and physical exam
- Diagnose areas for treatment
- Set goals
- Determine the schedule: frequency & duration
- **Patient Education**
  - Do not put any creams, body lotions, cosmetics on the treatment area on the treatment day.
  - Wear clean clothes and avoid tight jeans.
  - Stop taking medications such as aspirin, NSAIDs, dipyridamol, etc. 48 hours before procedure.

#### After Mesotherapy

- Bruises or slight swelling may appear at the injection sites.
- Healthy diet and regular exercise are encouraged.
- Results are fairly constant for changes in skin appearance and circulatory improvement.
- Results are variable for volume loss in suppression of localized fat cells depending on the extent of the problem areas. The changes in fat loss are very patient specific
- **Patient Education**
  - Do not take a bath or shower within 12 hours after treatment
  - Do not get the procedures such as iontophoresis, ultrasound, electrostimulations, etc. within 72 hours.