Chapter 9: Mesotherapy Overview

Mesotherapy Definition

Injection of medications or chemically active substances into the mesoderm (dermis) or subcutaneous tissue.

*Remember:* Mesotherapy is simply a drug delivery technique.

HISTORY/BACKGROUND OF MESOTHERAPY

1791-1853: Dr. Charles Gabriel Pravaz
- Originator of injection therapy
- Administration of injection therapy

1854: Dr. Rynd
- Treatment of neuralgia by application of substances at the level of the responsible nerve

1855: Dr. Wood
- Treatment of facial pain by intradermal injection of opiates into painful points

1883: Drs. Head and Mackenzie
- Description of the visceral cutaneous reflex

1924: Dr. Lemaire
- Metameric injection of procaine to treat visceral pain
1925: Dr. Leriche
- Intradermal injection of histamine into intercostal fractures and tendinous lesions with notable regression of pain.

1929: Drs. Sicard and Lichwitz
- Demonstration of the role of the dermis in the treatment of visceral pain

1932: Dr. Jarricot
- Publication of the thesis “Reflex Phenomena of Dermal Origin”

1933: Dr. Huneke
- Observation of improvement of a migraine crisis by IV injection of procaine

1937: Dr. Aron
- Publications of a study describing 3 basic facts of intradermal injection:
  Analgesic effect in the painful spot
  Rapidity and effectiveness of the action of neurotrophic substances
  Efficacy of histamine as analgesic and anti-rheumatic

1940: Dr. Huneke
- Determination of the Interference Field

1945: Dr. Hazard
- Study of the pharmacological effects of procaine

1947: Dr. Aslan
- Studies of procaine in geriatric patients

1950: Drs. Oury, Estival and Beau
- Suggested the indradermal use of procaine in heart patients

1952: Dr. Pistor
- Intradermal injections of procaine in peripheral area with positive results
- Use of other substances such as vaccinations, antibiotics and vasodilators with good results
1958: Dr. Michael Bicheron
   - Intradermal injections of procaine into chronic painful spots with good results
   - In 1963 he worked with Dr. Pistor and began using Lebel needle

1964:
   - The French Society of Mesotherapy was created

1986:
   - Recognized by the French National Academy of Medicine

CURRENT MESOTHERAPY PRACTICES

Mesotherapy (the name refers to the mesoderm, or middle layer of skin) as we know it today was popularized and “medicalized” by a French physician, Dr. Pistor in 1952 to treat Rheumatism. Modern aesthetic mesotherapy focuses on intra and transdermal, needle based medication delivery to improve the cosmetic appearance of the patient. Mesotherapy is an effective alternative and adjunctive for treatment of cellulite, weight loss, hair loss, face and neck rejuvenation, and localized fat deposits. Unlike surgery, mesotherapy is relatively painless and requires no post-operative recovery time, requires no heavy bandages and no anesthesia is necessary. Mesotherapy involves an injection of a customized mixture of chemically active medication, vitamins, minerals, amino acids, phosphatidylcholine, homeopathic substances and medication just millimeters under the skin into the problematic area. Just a “drop” of solution is used at each injection site.

Mesotherapy is commonly practiced in France, where more than 15,000 physicians utilize mesotherapy for the care of their patients. In France, mesotherapy is taught in medical school. Mesotherapy is also practiced in many other countries around the world, including Germany, Spain, Belgium, Colombia, Argentina and throughout Europe.

Mesotherapy benefits include:

Vasodilation: Improved blood flow to the area
Increased pO2 to localized tissue
Softening fibrotic, hardened connective tissue
Improved lymphatic drainage

Mesotherapy also has a variety of medicinal uses. Treatments can benefit those patients suffering from muscle spasms, stress, insomnia, carpal tunnel syndrome, fibromyalgia, infections, RSD, (reflex sympathetic dystrophy), and osteoarthritis, among other conditions. Such a wide variety of conditions can be treated with this technique as each treatment is formulated to meet each patient’s unique problem. Mesotherapy is administered only into problematic areas, avoiding the side effects of taking oral medications. For example, the dosage of medication used to alleviate the pain of osteoarthritis is approximately 1/50th of that comparable to the equivalent oral dose taken over a one-week period.
Mesosculpting is the answer to the question that so many people have been asking: Is it possible to lessen areas of fat accumulation without having some kind of invasive procedure? For those who find liposuction “too much” LipoLite™, with its vela, carboxy and mesotherapy componentsy for fat loss and body contouring....YES is absolutely the answer. The results obtained with LipoLite™ can be very pleasing.

Mesotherapy, by itself is a modest and inexpensive way to reduce localized fat collections without surgery, anesthesia, or dieting. I have been performing mesotherapy with PTC for sometime, before the integrated, multimodal LipoLite™ program with modest success. You can reduce by 0.5 to 2 cms the circumferential diameter of problematic contour areas, with an average of 1 cm. Mesotherapy and carboxytherapy likely contribute to 20-30% of the overall therapeutic outcome of the LipoLite™ program. You could consider doing a VelaSmooth™ only LipoLite™ program, BUT, mesotherapy alone would fall far short of the Vela program.

The number of mesotherapy treatments needed depends on a number of factors: the severity of condition, the cause of the problem, chief among them. Response to therapy is generally seen after three to five sessions. Each treatment is separated by 2 weeks.

Mesotherapy is not considered an alternative to an educated and self-empowered lifestyle. It is however, a very useful LipoLite™ program tool to have in your weight loss and skin beautification toolbox!

**PHOSPHATIDYLCHOLINE (PTC) & ITS USE IN MESOTHERAPY**

**INTRODUCTION TO MECHANISM OF ACTIONS & AREAS COMMONLY TREATED**

I divide Meso into PRE and POST PTC-DEC. Pre PTC-DEC, our mesotherapy outcomes were inconsistent and unspectacular. With PTC, Mesotherapy fat contouring and cellulite reduction is more consistent and pleasing and, when combined with a multimodal assult on the fat cell, as with LipoLite™ the results are VERY pleasing. Mesotherapy with PTC is used for localized lipolysis. Efficacious for small localized fat deposits, e.g. sub-mental, “bra strap area”, etc., post-liposuction irregularities and improvements in skin integrity following various surgical cosmetic procedures. It is used for fat reduction observed in the abdominal area, face, neck, thighs, “Bra-Strap area”, etc.

PTC alone has shown modest, efficacious results when injected into fat pads under eyes to minimize puffiness. Simple in-office injections of PTC may be as good as lower eye Blepharoplasty for treating modest herniated infraorbital fat pads. The injections are performed at bi-weekly intervals.
Phosphatidylcholine (PTC) is the most abundant phospholipid component in all cells. PTC is an excellent “fat burner” and “melts away” the fat and cellulite. Its role in the maintenance of cell membrane integrity is vital to all of the basic biological processes. These are: information flow that occurs within cells from DNA to RNA to proteins; the formation of cellular energy and intracellular communication or signal transduction. It’s main reasons for use in mesotherapeutic LipoLite™, however, comes from its ability to increase cholesterol and triglyceride solubility, alter composition of fat deposits (lecithin phospholipid membrane action) and inhibit plaque aggregation (lipoprotein Lipase activity).

PTC is a lecithin, a fat emulsifier, therefore the term “Thinjections”. Lecithin is a major source of choline, a lipotropic (fat breaking) substance which functions in the body’s metabolism as an agent that aids in the digestion of fats. Lecithin is also a component of a number of food products that is widely attributed with certain positive effects on one’s health. The deoxycholate of the PTC-DEC formulation may well be a more active compound than the PTC alone, however, more DEC research may be required.

Phosphatidylcholine has been shown to reduce the systemic levels of cholesterol and triglycerides. By increasing phosphatidylcholine, the cell membranes improved their receptor properties, augmented their sensitivity to insulin, and accelerated lipolysis. Phosphatidylcholine has also been employed intravenously in patients with cardiac ischemia. A marked reduction of atheromatous plaques without a reduction in plasma cholesterol occurrence has also been seen. Phosphatidylcholine is a bile component and is responsible for the lipid emulsification from the diet.

**PHOSPHATIDYLCHOLINE**

**DESCRIPTION**

Phosphatidylcholine is a phospholipid that is a major constituent of cell membranes. Phosphatidylcholine is also known as 1, 2-diacyl-sn-glycero-3-phosphocholine, PtdCho and lecithin. It is represented by the following chemical structure:

The term lecithin itself has different meanings when used in chemistry and biochemistry than when used commercially. Chemically, lecithin is phosphatidylcholine. Commercially, it refers to a natural mixture of neutral and polar lipids. Phosphatidylcholine, which is a polar lipid, is present in commercial lecithin in concentrations of 20 to 90%. Most of the commercial lecithin products contain about 20% phosphatidylcholine.

Lecithins containing phosphatidylcholine are produced from vegetable, animal and microbial sources, but mainly from vegetable sources. Soybean, sunflower and rapeseed are the major plant sources of commercial lecithin. Soybean is the most common source. Plant lecithins are considered to be GRAS (generally regarded as safe). Egg yolk lecithin is not a major source of lecithin in nutritional supplements. Eggs themselves naturally contain from 68 to 72% phosphatidylcholine, while soya contains from 20 to 22% phosphatidylcholine.
The fatty acid makeups of phosphatidylcholine from plant and animal sources differ. Saturated fatty acids, such as palmitic and stearic, make up 19 to 24% of soya lecithin; the monounsaturated oleic acid contributes 9 to 11%; linoleic acid provides 56 to 60%; and alpha-linolenic acid makes up 6 to 9%. In egg yolk lecithin, the saturated fatty acids, palmitic and stearic, make up 41 to 46% of egg lecithin, oleic acid 35 to 38%, linoleic acid 15 to 18% and alpha-linolenic 0 to 1%. Soya lecithin is clearly richer in polyunsaturated fatty acids than egg lecithin. Unsaturated fatty acids are mainly bound to the second or middle carbon of glycerol.

Choline comprises about 15% of the weight of phosphatidylcholine. (See monograph on Choline)

**ACTION AND PHARMACOLOGY**

**ACTIONS**

Phosphatidylcholine may have hepatoprotective activity.

Phosphatidylcholine is important for normal cellular membrane composition and repair. Phosphatidylcholine is also the major delivery form of the essential nutrient choline. Choline itself is a precursor in the synthesis of the neurotransmitter acetylcholine, the methyl donor betaine and phospholipids, including phosphatidylcholine and sphingomyelin among others. (See the Choline monograph for further discussion.) Phosphatidylcholine is involved in the hepatic export of very-low-density lipoproteins.

**MECHANISM OF ACTION**

Phosphatidylcholine’s role in the maintenance of cell-membrane integrity is vital to all of the basic biological processes. These are: information flow that occurs within cells from DNA to RNA to proteins; the formation of cellular energy and intracellular communication or signal transduction. Phosphatidylcholine, particularly phosphatidylcholine rich in polyunsaturated fatty acids, has a marked fluidizing effect on cellular membranes. Decreased cell-membrane fluidization and breakdown of cell-membrane integrity, as well as impairment of cell-membrane repair mechanisms, are associated with a number of disorders, including liver disease, neurological diseases, various cancers and cell death.
PHOSPHATIDYLCHOLINE...Gene Switch?

There are some theories that the fat gene has become deactivated and that PTC serves to activate or turn that gene switch back on.

PHOSPHATIDYLCHOLINE CELLULAR PHYSIOLOGY

PROPOSED PTC MECHANISM OF ACTION...in Localized Lipolysis

Restoration of physiological ACM (Adipocyte Cell Membrane) ratios of PTC:SM (sphingomyelin) and increased ACM fluidity leading to enhancement in expression of PPAR (Peroxisome Proliferator Activated Receptors), mRNA and thus more physiological ACM properties and function. PTC is a methyl donor...synthesis from phosphatidylethanolamine is carried out by...two methyltransferases.

PPAR’s regulate the expression of numerous genes and affect:
- Glycemic Control
- Lipid Metabolism
- Vascular Tone
- Inflammation

Activation of the Isoform PPAR-gamma
- Improves insuli sensitivity
- Decreases inflammation
- Decreases plasma levels of free fatty acids and blood pressure

LEADING to ...inhibition of atherogenesis, improvement of endothelial function and reduction of cardiovascular events.

PPAR-gamma was shown to have a key role in adipogenesis and proposed to be a master controller of the “thrifty gene response” leading to efficient energy storage.

PHARMACOKINETICS

Phosphatidylcholine is absorbed into the mucosal cells of the small intestine, mainly in the duodenum and upper jejunum, following some digestion by the pancreatic enzyme phospholipase, producing lysophosphatidylcholine (lysolecithin). Reacylation of lysolecithin takes place in the intestinal mucosal cells, reforming phosphatidylcholine, which is then transported by the lymphatics in the form of chylomicrons to the blood. Phosphatidylcholine is transported in the blood in various lipoprotein particles, including very-low-density lipoproteins (VLDL), low-density lipoproteins (LDL) and high-density lipoproteins (HDL); it is then distributed to the various tissues of the body. Some phosphatidylcholine is incorporated into cell membranes.
Phosphatidylcholine is also metabolized to choline, fatty acids and glycerol. The fatty acids and glycerol either get oxidized to produce energy or become involved in lipogenesis. Choline is a precursor of acetylcholine. Serum choline levels peak between 2 to 6 hours after oral intake.

**INDICATIONS AND USAGE**

Phosphatidylcholine may be indicated to help restore liver function in a number of disorders, including alcoholic fibrosis, and possibly viral hepatitis. It may also be indicated for the treatment of some manic conditions. There is some evidence that Phosphatidylcholine may be useful in the management of Alzheimer’s disease and some other cognitive disorders. A possible future role in cancer therapy is also suggested by recent research. It may also be indicated in some with tardive dyskinesia.

**RESEARCH SUMMARY**

Clinical studies have demonstrated that choline is essential for normal liver function. Phosphatidylcholine is a better delivery form and is also more tolerable than choline. But, in addition, research has shown that phosphatidylcholine, independent of its choline content, has striking hepatoprotective effects. In two animal studies using baboons fed diets high in alcohol, some supplemented with a soy-derived polyunsaturated lecithin (60% phosphatidylcholine) and some unsupplemented, both fibrosis and cirrhosis were largely prevented in the phosphatidylcholine group. Most of the unsupplemented animals in these studies, which continued for up to eight years, developed fibrosis or cirrhosis.

Because these researchers had previously found that choline, equal in amounts contained in the phosphatidylcholine-rich lecithin they subsequently used, had no comparable protective effects on the liver, they concluded that the polyunsaturated phospholipids themselves may have been responsible for the benefits observed.

*In vitro* studies have shown that these phospholipids increase hepatic collagenase activity and may thus help prevent fibrosis and cirrhosis by encouraging collagen breakdown. Several other mechanisms under investigation may also contribute.

Others have reported similarly encouraging results in animal models. Clearly, human trials are warranted.

In addition, phosphatidylcholine has demonstrated other protective effects in non-alcoholic liver disorders, including protection against various other toxic substances. Its benefits in viral hepatitis were reported some years ago by several different research groups in Europe and elsewhere. In one of these studies, individuals suffering from hepatitis type A and B were given 1.8 grams of phosphatidylcholine daily. Compared with unsupplemented
controls, the phosphatidylcholine group enjoyed quicker recoveries, fewer relapses and quicker normalization of liver function tests.

Researchers in Great Britain treated chronic active hepatitis C patients with 3 grams daily of phosphatidylcholine in double-blind fashion. The phosphatidylcholine patients had significantly reduced symptoms, compared with controls. All histologic evidence of the disease disappeared in some cases. These researchers, like others, have hypothesized that phosphatidylcholine’s possible antiviral effects are related to the supplement’s apparent ability to increase cellular membrane fluidity and repair the membranes of liver cells.

Phosphatidylcholine may help some with tardive dyskinesia, a neurological disorder characterized by defective cholinergic nerve activity. Both supplemental choline and phosphatidylcholine were found to reduce the muscular hyperactivity of this disorder by about 50% in some studies. However, one significant trial did not see a beneficial effect.

There is some very preliminary evidence that phosphatidylcholine may help control manic symptoms in some.

There has been hope, for some time, that phosphatidylcholine would demonstrate clear-cut benefits in cognitive disorders, such as age-related memory loss and Alzheimer’s disease. There are a few reports that supplemental choline can improve short-term memory skills and enhance the memories of those who are initial poor learners.

Those with Alzheimer’s disease have a diminished ability to synthesize and/or utilize the neurotransmitter acetylcholine, particularly in those areas of the brain related to memory, thus the hope that supplemental choline/phosphatidylcholine might be of benefit. A few studies have suggested some small benefit in memory restoration, but most have not. Research continues.

Recently it has been suggested that phosphatidylcholine might eventually have some therapeutic role in some cancers. There is no evidence of this to date, but animal studies indicate that deficiencies in choline and phosphatidylcholine may disrupt cell membrane signal transduction in ways that could lead to various cancers. There is ample evidence that liver cancer is promoted in various animals by choline-deficient diets, and it has been shown that excess choline can protect against liver cancer in a mouse model.

Phosphatidylcholine has been used to lower serum cholesterol levels, based on the premise that lecithin cholesterol acyltransferase (LCAT) activity has an important role in the removal of cholesterol from tissues. A few studies have shown reduction in serum cholesterol with phosphatidylcholine intake. The results were quite modes, and most studies have not shown any significant cholesterol-lowering activity.

CONTRAINDICATIONS, PRECAUTIONS, ADVERSE REACTIONS
CONTRAINDICATIONS

There are no reported or known contraindications of phosphatidylcholine supplementation.

PRECAUTIONS

Those with malabsorption problems may develop diarrhea or steatorrhea when using phosphatidylcholine supplements. Those with the antiphospholipid-antibody syndrome should exercise caution in the use of phosphatidylcholine supplements.

ADVERSE REACTIONS

No major side effects have been reported. Mild side effects have been noted occasionally such as nausea, diarrhea and increased salivation in some. This holds for all forms of phosphatidylcholine.

INTERACTIONS

There are no known interactions.

OVERDOSAGE

There are no reports of overdosage.

DOSAGE AND ADMINISTRATION

There are several forms of phosphatidylcholine supplements. Typical commercial lecithin supplements contain 20 to 30% phosphatidylcholine. Softgel capsules containing 55% and 90% phosphatidylcholine are available. Liquid concentrates containing 3 grams of phosphatidylcholine per 5 milliliters (one teaspoon) are also available.

Recommended doses range from 3 to 9 grams of phosphatidylcholine daily in divided doses.

As an injectable, no more than 1000 mg of PC/DC should be used daily.
AREAS COMMONLY TREATED

- Sides of abdomen (love handles)
- Front of abdomen
- Outer thighs, inner thighs (saddlebags)
- Back of thighs (bananas)
- Upper arm
- Chin
- Neck
- Infraorbital (fat pad below the eyes)
- Buttock area
- Area between bra straps and underarms
- Above the knee

LITERATURE


**LipoLite™ MESOTHERAPY ANATOMY & PHYSIOLOGY**

THE human integument skin is composed of two main layers:

- The **EPIDERMIS** is the surface layer made of epithelial cells.

- The **DERMIS** “the true skin”, is made up of dense irregular tissue.

**HYPODERMIS:**

This layer really is not part of the skin. It is known as the subcutaneous or adipose tissue, which connect the dermis with the muscle tissue below (fat cells found here). It acts as a cushion between muscles and skin and provides energy from stored fat and helps
keep the skin smooth. One of the reasons our skin ages is that the hypodermis shrinks, as we grow older.

The hypodermis is the layer of loose connective tissue immediately deep to the dermis of the skin. The anatomical terms for this region are superficial fascia and panniculus adiposus. However, the latter is preferred as superficial fascia bears little comparison to the deep fascia.

The hypodermis contains:

- Loosely arranged elastic fibers
- Fibrous bands anchoring skin to deep fascia
- Fat:
  - Absent in eyelid, scrotum, penis, nipple and areola
  - Distribution is a secondary sexual characteristic: it forms the breasts of females and accentuates the contour of female hips
- Blood vessels en route to dermis
- Lymphatic vessels en route from dermis
- Hair follicle roots
- The glandular part of some sudiferous glands
- Nerves:
  - Free endings
  - Pacinian corpuscles
- Bursae: only in the space overlying joints in order to facilitate smooth passage of overlying skin
- Sheets of muscle: panniculus carnosus

The Hypodermis (subcutaneous tissue superfi cial fascia) is NOT part of the skin. It consists mainly of adipose tissue plus some areolar tissue. “Beer belly” in man and thick thighs and buttocks in female are due to too much fat stored in the hypodermis of these regions of the body. This fatty layer is the deepest layer. This layer varies in thickness from person to person.

SAFETY & EFFICACY

Most research shows that PTC is considered to be very safe. PTC is available as an over-the-counter nutritional supplement in health food stores. PTC, as it is currently sold by pharmacies outside the US for injectable use, has not received a 510K for any companies that attempt to sell it. Lipostabil, a drug made by Aventis, contains some PTC, has not been presented to the FDA nor has it been approved anywhere in the world for cosmetic use. However, it is legal for a physician to see a LipoLite™ patient and write a prescription to a licensed US compounding pharmacist for PTC and have that pharmacist send the patient’s injectable PTC to the physician. The physician and patient then have an MD -> compounding pharmacist (by prescription) -> PTC to MD -> MD to patient. The
actual prescription used is then kept on file with the patient. The advantages of this legal conduit of drug delivery, is the compounding pharmacy will be able to verify the % concentration, strength, potency, sterility and stability of the PTC. I have a couple of US based compounding pharmacists that I will share with you.

Lipostabil, also known as lipo-dissolve, contains soy lecithin (the same antioxidant found in much lower dosages in multivitamins), which is used in Germany and Italy to treat clogged arteries via injection. Unlike the other mesotherapy ingredients, injectable soy lecithin is not approved for any use in the US, so many doctors get their stash overseas or compound their own.

PTC is usually consumed as a dietary supplement and has just been banned by Brazil’s equivalent of the FDA for cosmetic purposes in injectable form. That agency lists the known risks of phosphatidylcholine as including nausea, diarrhea, depression and arrhythmias.

Even the other FDA approved drugs that physicians use haven’t been approved for these sorts of cocktail injections. The physicians who use these cocktails find that the biggest complication of mesotherapy is that of black and blue marks.

Some physicians are aware of reports of toxic reactions “where pieces of skin will die and slough off”. A report from Belgium, for example, cited several examples of serious skin infections. It is difficult to verify the medications used and if a sterile technique was used or not. 20/20’s investigations found no reports of bad infections in American patients.

There is minimal research available regarding any form of mesotherapy whether for use with PTC or the other cocktails and this is a limitation. However, there are a couple of longitudinal studies of single individuals works, particularly Dr. Fettes from Brazil, who have injected pure PTC safely in thousands of patients.

Following all the contraindication list and not administering PTC to any of the clients determined to have those conditions listed should keep the practitioner safe.

The use of a non FDA approved drug may open the practitioner up for investigation by the FDA only if there are reported untoward reactions as the FDA will not investigate unless they receive complaints. Only if there are problems will the agency step in. They will not even comment on any substance that is not approved by the FDA.

Careful screening and proper education of the client should minimize the risk of this occurrence. The use of a certified USA based compounding pharmacist, familiar with PTC is alwasy a critical step in ensuring safety.

PTC POTENTIAL COMPLICATIONS
CONTRAINDICATIONS

Candidates with the following conditions should not be treated with PTC Mesotherapy:

- Pregnancy/Lactation
- Allergic to Soy
- IDDM
- Gross Obesity (50 lbs. or more overweight)
- Multiple Cardiac Drugs
- Needle Phobia
- Elderly
- Acute Febrile Illness
- Anticoagulant Therapy
- Debilitated Individuals
- Acute Superficial Thrombophlebitis
- Lupus
- NIIDM *obtain approval of the patient’s physician
- Under 18 years of age
- Hepatopathy or Nephropathy
- Dermal Lesions
- Those who prefer procedures that are FDA approved
PTC POTENTIAL COMPLICATIONS

COMPLICATIONS

COMPLICATIONS ARE RARE. Complications associated with Mesotherapy injections are infrequent and are generally avoidable with experience and careful choice of injection sites and doses.

ECCHYMOSIS/HEMATOMAS: Is a side effect associated with any type of injection and may be more prominent in clients who are using blood thinning medications or clients who bruise easily.

PAIN: A few patients may experience mild pain at the site of injection. The area may be tender to the touch after treatment. This pain is usually temporary, in most cases lasting from 1-7 days at most. NSAID may be taken to provide relief.

SUPERFICIAL BLEBS OR WHEALS: Is a temporary side effect and will usually resolve in 1-3 days if it does occur.

WOUND INFECTION: Is a side effect associated any time the skin barrier is broken. May be a result when aseptic technique is not utilized or if poor post care is followed. May require topical antibiotics as well as oral antibiotics. See Post Care instructions.

POOR HEALING: A side effect which may be experienced. Selection of appropriate candidates should keep this down to a minimum.

SCARRING: A permanent side effect associated with any injection. Hyper/Hypopigmentation may also be experienced.

SWELLING/ERYTHEMA: Is a temporary effect which may be experienced any time there is injury to the tissue. This side effect may be minimized by applying the ointment compound of Triamcinolone/Ketoprofen topical ointment. Application of ice also decreases this side effect.

ALLERGIC REACTION: May occur anytime a foreign substance is introduced into the body. A thorough history taking should help reduce this possibility. If reaction is local the Triamcinolone/Ketoprofen topical ointment should provide some relief and minimize the condition. For a systemic reaction an over the counter anticholinergic should provide relief. If reaction is severe then emergency measures should be taken.

RASH: As above.

NECROSIS: Injections always present this possible side effect. Use of aseptic technique will minimize this possibility.
CONTOUR IRREGULARITY: The use of PTC may result in localized atrophy of fat and may lead to localized skin indentation and irregularities, which may require further surgery and which may not be correctable.

NAUSEA, VOMITTING: Higher doses of PTC may cause nausea and vomiting.

ARRYTHMIA: Rare instance of cardiac arrhythmia are reported with the use of PTC.

PRE AND POST TREATMENT INSTRUCTIONS

PRE-TREATMENT INSTRUCTIONS

Some practitioners recommend avoidance of:

- **Alcoholic beverages**
- **Anti-inflammatories** (such as Ibuprofen, Motrin, Advil, Aleve, Vioxx, etc.) aspirins, Vitamin E & Ginko Biloba, or other nonsteroidal inflammatory drugs (e.g., arthritis medicine) **two days prior to treatment**, in order to reduce possible side effects of bruising/swelling in the areas of treatment.

**Instruct:**

To bring loose fitting clothing for treatments to the body.

To eat a light meal or snack 1½ hours before appointment.
PRE AND POST TREATMENT INSTRUCTIONS

POST-TREATMENT INSTRUCTIONS

- Immediately following the procedure, ice should be applied to the area & may be applied as needed to reduce swelling for the first 48 hours.

- Triamcinolone/Ketaprofen ointment may be applied to treated area. Ointment may continue to be applied three times a day to area up to 48 hours post treatment, this will decrease swelling and bruising to the area.

- Maintain normal activities. Resume exercise program, even if it’s walking.

- Avoid hot baths for 1 week. Avoid direct shower spray into facial area if face has been treated.

- Should any redness or a small lump be experienced, use warm compresses several times a day. If any open area is experienced use Polysporin Ointment (NOT NEOSPORIN) to the affected area along with the warm compresses.

- THIS TREATMENT DOES NOT WORK ON ABOUT 10% OF PATIENTS. YOU CAN USUALLY TELL BY THE 4TH SESSION IF SHOTS ARE EFFECTIVE. SEE TURBO LipoLite™ protocol
LIPOLITE™ NUTRITION EVALUATION
(To be completed by patient)

The following information will be helpful in the assessment and management of your particular problem area:

Present Weight: __________ Desired Weight: __________ Height (no shoes): __________

Describe your typical eating habits:

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Snack habits: (candy, cake pastry, chips, sodas, ice cream; others)

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Why do you have snacks at these times? Please answer in your own words (e.g. hunger, boredom, coffee break)

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Food Allergies: _________________ Do you smoke? _________________

Do you drink alcohol? _________________ How much daily? _________________

Do you drink coffee/tea? _________________ How much daily? _________________

Foods you crave most: _________________

When? _________________
What are your worst food habits?

Describe your usual energy level:

Exercise? ____________ Type: ____________ How often? ______

For what period of time? _____________________________________

Do you drink water? __________ How much? ______________________

I certify that the information I have given above is accurate:

Client Signature ___________________________ Date: ____________
# LIPOLITE™ MEASUREMENT CHART

**NAME:**

**DATE OF CONSULT:**

**DATE TREATMENT BEGAN:**

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**COMMENTS:**

______________________________________________________________
## LipoLite-Vela Smooth Treatment Log

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STORAGE, PREPARATION & DILUTION OF PC/DC

UNCONSTITUTED POWDERED FORM

- Does not require refrigeration
- Has a 6 month shelf life
- The source from Longevity RX comes with its own reconstituting liquid
- A 10 cc syringe is required to draw up liquid and reconstitute powdered form
- Recommendations from the company are to use it within 4 hours of reconstituting
- Following reconstitution directions causes the mixture to be diluted at 50 mg/cc
- Said to be shelf & shipping stable

RECONSTITUTED FORM

- Requires refrigeration
- Needs to be removed & warmed to room temperature prior to use
- This mixture normally comes as 50-100 mg/ml
- Due to requirements of refrigeration there is some concern regarding its stability, especially if ordered from Europe

LIPOLITE™ SUPPLY LIST

SUPPLIES FOR LIPOLITE™ MESOTHERAPY

Body Area:

PC
10 cc syringe (if utilizing the powder form – for reconstitution)
25 or 27 gauge 11/2” needle (for injection)
3 or 5 cc syringe (for injection)
Gloves
Eyebrow pencil or pen for marking areas to be injected (surgical marker may be used but are difficult to remove)
Ice (for post treatment)
Zip Lock Bags (for ice post treatment)
Topical Anesthetic Gel (20 minutes prior to injection)
18 gauge needle (for reconstituting or aspirating PPC)
Scale (for initial visit and followup visits)
Tape Measure (for initial and followup visits)
Camera (for before and after pictures)
Lidocaine 2% (optional) for local anesthetic
Alcohol Swabs (optional for pre cleaning)
Endermologie/Endermatherapy machine (optional for pre & post injections)
Consent Form
History & Physical Assessment Form
Triamcinolone/Ketoprofen Topical (optional post treatment for swelling/bruising)

**Facial Area:**

Same as above except substitute the following:

- 30 gauge ½” needle (for injection)
- 1 cc syringe (for injections)

**Do not need:**
Compression Dressings
Scale
Tape Measure
Endermologie/Endermatherapy machine

**LIPOLITE™ PREFERRED VENDORS**

It is within the practitioner’s discretion to purchase Phosphatidylcholine from source of choice.

Listed below you will find sources from which PTC may be obtained: (this is not an all inclusive list, but provides the practitioner a sampling of sources from which to purchase products). It is recommended that you engage a licensed compounding pharmacist to compound your phosphatidylcholine for you directly. I have provided my PTC formula and the largest single compounding pharmacy in the country.

**PC/DC Formula**

1. PC

The following licensed compounding pharmacists can provide quality PTC. There may well be numerous others that might also provide the substance.

(see specifically Chapter 9 for the compounding pharmacist and formula)
LIPOLITE™ MESOTHERAPY TECHNIQUE

BODY INJECTIONS

Recommended Directions:

Obtain & review medical history. Explain procedure & answer questions. Weigh, obtain vital signs, and BMI% Body Fat (optional).

Obtain proper Informed Patient Consent ... this is not a FDA approved substance for spot fat reduction.

If utilizing refrigerated PC, remove & warm to room temperature.
Reconstitute powdered form if utilizing this.

1. Pre Application Guidelines: Apply topical anesthetic gel to the areas being injected. Apply 20 min. – ½ hour prior to procedure.

2. With a marker, circle the areas on the skin that you will be treating. Next within the area of skin to be treated mark your 1st injection site ... with a dot (starting point). The 2nd injection site, and 3rd, 4th, 5th, etc. Can then be marked 2 cm from starting point. Thus, there is always a 2 cm distance between each injection site. Repeat this procedure as necessary, delineating 2 cm distance point until you have a complete mapping of your original circle of the total area to be injected.

3. Take photographs of area to be injected.

4. Use a tape measure to measure circumference of area to be injected ... i.e. waist, thigh, etc. Use focal points for measuring, e.g. if injecting the thighs, use the femur and hip articulation and note the length from there to the middle of the injection point, for “love handles”, use the umbilicus as a reference point for the waist. Document the injection sites carefully in patient’s chart.

5. Apply alcohol throughly to area to be injected. (optional)

6. Before injecting PC, a local anesthetic injection may be used deemed appropriate. Prilocaine 2% is advised. (We do not do this). Alternatively, good pain control is achieved with a Zimmer or Synercool chiller device.
7. For larger amounts of body fat or larger surface areas: Use a ½ to 1 ½ inch length-
25-27 gauge needle with a 5.0 cc syringe when injecting the PC solution. Each 5
ml contains 250 mg of PC. You may add other drugs to your lipolytic cocktail
(3ml or 60mg of aminophylline and 2cc of 1% xylocaine).

8. Next, inject the PC solution subcutaneously into the designated areas that have
been mapped in #2 above. Inject 0.5 cc (12 mg) of the PC solution into each
individual dot you have designated in #2 above. Clients report less stinging with
pinching up of the area.

9. a. Injection points should always be 2 cm apart until the designated area has been
covered.
   b. If another area is to be injected, then repeat the same procedure as above.
   c. **DO NOT EXCEED 1000 MG OF PC DURING EACH PROCEDURE IN
      A ONE WEEK PERIOD.**

10. In areas of smaller amounts of body fat or smaller surface areas: Use a ½ - 1 ½
    inch length 25-27 gauge needle, with a 10 cc syringe for injection. Next inject the
    PC solution SQ into the designated areas that have been mapped in #2 above.
    a. Injection points should always be 2 cm apart, until the designated area has been
       covered.
    b. If another area of skin is to be injected then repeat same procedure above.
    c. **DO NOT EXCEED 1000 MG OF PC DURING EACH PROCEDURE IN
       A ONE WEEK PERIOD.**

11. When procedure is complete, the treated areas might have a tingling sensation. For
    the next several days, there may be some tissue swelling, aching, and bruising.

12. Apply ice packs, e.g. Use an ace bandage to apply firmly to the area of tissue
    infiltration for 2 hours after the procedure.

13. It is optional to apply Triamcinolone/Ketoprofen Topical ointment prior to sending
    patient home. Recommend wearing of ace wrap at least during hours of sleep
    within first 24 hours of treatment (enhances results).

14. Review & provide in writing post care treatment. Answer any questions the client
    may have.

15. You may send the client home with the anti-inflammatory topical cream and have
    them apply it TID for three days.

16. At the next LipoLite™ VelaSmooth™ session, check weight, measure, check side
    effects, obtain BMI% Body Fat & endermologie/endermatherapy treatment
    (optional).
17. After two weeks, or every 4th VelaSmooth™ LipoLite™ session, you can repeat the same injection sites. To achieve optimal or maximal results the client may require three to six sessions.

18. You may treat another area in 1 week & alternate the treatment areas.

THE ABOVE IS A GENERAL GUIDELINE FROM MEDICAL PRACTITIONERS ON THE UNAPPROVED USE OF PTC. THE PRACTITIONER IS SOLELY RESPONSIBLE FOR VERIFYING THE SAFETY, EFFICACY AND TREATMENT PROTOCOL OF THIS TREATMENT MODALITY AND HOLD SPA MEDICA AND ITS INSTRUCTORS ENTIRELY HARMLESS AS IT RELATES TO THIS TREATMENT MODALITY. ACCEPTANCE OF THE MEDICATION AND ADMINISTRATION OF THIS PROTOCOL IS ACKNOWLEDGEMENT OF THIS FACT.

PRICING THE PROCEDURE

There are several different strategies for pricing the procedure, if you decide to perform the PC Mesotherapy alone. Below you will find several listed. Choose that which best suits your situation and practice or develop one of your own. Those below are only provided as a guide:

STRATEGIES:

The following price structures represent MESO alone, not within the context of the LipoLite™ program

Charge $2500 for each large area treated. Require a $1000 down payment (this will cover between 4-6 treatments). This charge is for the procedure only. Additional charges are made for the supplies.

Charge $350 - $500 per treatment (dependent on what your market can bear & the cost of your supplies)

Charge $350 for an initial consultation and the $250 for each treatment thereafter.

Sell packages of treatments. Such as: charge $300/treatment & sell a package of 4 treatments for $1000 if paid up front.

Charges can include the treatment, supplies, 2 followup visits & 2 endermatherapy/endermologie treatments. Make your charge appropriate for these and also for your area & the clientele you serve.

LIPOLITE™ BUNDLE
(i) Vela Large Head Only
We bundle the 16 VelaSmooth™ treatments (twice weekly) and 4 PC mesotherapies and 4 carboxytherapies together in the LipoLite™ program and charge $3999.00. Every 4th VelaSmooth™ treatment (every two weeks), there is a Vela, mesotherapy and carbooxytherapy treatment.

(ii) Combination Head Therapy: Small & Large Vela Head
8 treatments, once weekly for 8 weeks are bundled together with 4 PC/DC mesotherapies and 4 carboxytherapies together in the LipoLite™ program. A Vela- PC/DC treatment is performed every 2nd visit (every 2nd week), while Vela-carboxy treatments are carried out in between.

Week 1: Vela Large & Small Head + PC/DC
Week 2: Vela Large & Small Head + Carboxy
Week 3: Vela Large & Small Head + PC/DC
Week 4: Vela Large & Small Head + Carboxy
Week 5: Vela Large & Small Head + PC/DC
Week 6: Vela Large & Small Head + Carboxy
Week 7: Vela Large & Small Head + PC/DC
Week 8: Vela Large & Small Head + Carboxy

MARKETING THE SERVICE

The following information is offered as thought stimulating ideas to help you launch your new service. These may not apply to your area or type of business that you choose to cultivate or you may utilize them as are or possibly add your own thoughts or ideas to these.

There is a much expanded text you will receive in your LipoLite™ marketing kit, entitled “Marketing your LipoLite™ business”. This marketing book has been a very successful guide I have used to launch my aesthetic medspa services.

Launch your new services as : A NEW APPROACH TO BODY CONTOURING, AND CELLULITE. Or as the NEW LIPOSUCTION REPLACEMENT.

Offer a free seminar. Advertise the seminar as introducing a new Anti Aging technique & present info on Mesotherapy & the other services you provide in your office. Have some testimonials. Run a few clients who are good candidates through a trial so they can be your spokesperson at the seminar. Provide these services free of charge or at a discounted rate to these individuals with the understanding they will be a spokesperson. Make sure you invite your current clients. Have drawings for door prizes for free services and mention this in your advertising. Offer special discounts to anyone who books an appointment the night of the seminar.
Send mail outs to your current clients introducing the new service. Possibly offer special
discounts to your current customers. 10-25% discounts off of 1st treatment or for the
package, great treatment results will spread the word to those whom you do not have as
customers.

Display copies of articles provided in the Marketing Package in your office waiting rooms.
Remove other magazines & have selected articles about services which you provide as
opposed to other readings. You have a captive audience. Educate your audience.

Provide treatments free of charge to hair stylists/salon owners/spa personnel, they will talk
it up & already have a built in client base who are interested in their appearance and
usually have the financial ability to afford your services. (This strategy really works well
& has a minimal financial investment on your part, not nearly as expensive as newspaper,
radio, tv advertising & usually nets already qualified candidates).
NEW ADDITIONS

Dr. ___________ is pleased to announce exciting new services which have been incorporated into her practice and will benefit all of her patients.

Beginning March 1, 2004, Dr _____________ will open its new Medical Spa under the direction of Demi Moore, RN and will provide a complete program of anti-aging treatments including Microdermabrasion, Medical Facial Peels, Sclerotherapy, Botox, Collagen/dermal filler treatments, Permanent Makeup, & Mesotherapy, the new localized fat treatment, and a complete line of skin rejuvenation products for your new look!

Your program will be custom tailored to your individual needs by our highly experienced ________________ RN using her extensive training and background to provide you with the newest and most effective treatments available.

As one of our valued clients, we invite you to help us celebrate our expansion and get acquainted with the staff. Each of us will be on hand to discuss any questions or concerns you may have about your anti aging procedures.

To show our appreciation and to introduce you to our new Medical Spa, we have arranged for our Nurse Director to prepare a special gift for you (or offer a 10-25% discount off the new service), just for stopping by and learning more about our new service/services.

We are looking forward to seeing you at our open house on March 27, 2004 between 11:00am and 7:00pm. We would appreciate your RSVP by March 25, 2004. Refreshments and hors d’oeuvres will be served.

Sincerely,

DR. ____________________
NEW DEVELOPMENTS FOR ALTERNATIVE SOURCES & APPLICATIONS

FDA approval for PTC is not expected any time soon.

There are several sources for obtaining PTC in several different forms.

Mesotherapy can be used for treatment of cellulite, skin rejuvenation, hair loss, weight loss, etc., but you must be trained in the special formulations of ingredients used for each condition.

Treatment of fat deposits can be treated by Liposuction, as an alternative, a much more costly investment which involves anesthesia & heavy bandages.

LIPOLITE™

PTC BIBLIOGRAPHY/REFERENCES

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www.style.com/w/feat_story/111501/full_page.html
www.elle.com/article.asp?print_page=y&section_id=36&article_id=2694&page_nu...
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Menedez, Juan Carlos, MD & Bruce H. Shelton, MD. Mesotherapy Seminar.
www.dr-lautenschlaeger.de/pc-e.htm
Phosphatidylcholine

- No official protocols have been established, how many shots, dosage, frequency.
- How much of the drug to use has been determined by trial and error.
- Only study is a small series out of Brazil.
- Lipostabil is phosphatidylcholine, a liquid form of lecithin, which occurs naturally in the body.
- It was first used in the 1950’s to dial down climbing cholesterol and triglyceride numbers.
- It is approved for use, in Brazil, Germany, Italy, and other countries in South America.

Mode of Action

A natural component of the cell’s membrane.

- It has a lipolytic activity by affecting the permeability of the adipocyte’s membrane and fat mobilization.
- It improves the receptor properties and augmented their sensitivity and accelerated lipolysis.
- High concentration act directly on the fat’s output which will be later eliminated.

Indications


As a nutrition supplement.
Presently as a major component of fat dissolving combos in aesthetic mesotherapy.

**Aminophylline**

**Mode of Action**

- Competitively inhibits phosphodiesterase, the enzyme that degrades cyclic 3’, 5’-adenosine monophosphate (cAMP). Increased concentrations of intracellular cAMP may mediate most of the pharmacologic effects of the drug.

- Aminophylline exhibits many of the B-Adrenergic effects of epinephrine.

- Above resulting in increase in the cell metabolic activity and therefore we get a lipolytic action on fat cells.

- Indications:
  - Conventional use in pulmonary medicine.
  - In Mesotherapy: localized obesity.

Common concentrations:
- 25 mg/ml, vials of 10 or 20 ml

**OTHER MEDICATIONS**

- Lidocaine or Procaine: numbing agent and diffusion vector.
  - Procaine requires allergy testing.

- Vasodilators: improve circulation.

- Glutathione, alpha lipoic acid, cysteine, etc.

- Placebo effect of injections: Local growth factors, etc.
The various techniques of injection in Mesotherapy are the following:

- Intra epidermal (IED) depth: 1mm
- Intra dermal superficial (IDS)
  - multi pricking-napping technique
  - point by point technique (PPP) = wheal depth: 1 to 2 mm
- Intra dermal deep (IDP) depth: 4 mm
- Mesoperfusion depth: 5 to 6 mm
- Intra hypodermic (IHD) depth: 6 to 13 mm

**LIPOLITE™**

**LOCALIZED LYPODYSTROPHYSIS**

**ETIOLOGY**

- Lack of exercise
- Excess of food

Quantitative Excess: Snacking
Qualitative Excess:
Refined Sugar – Lack of Fiber
Immediate Insulin Stimulation.
Eventually Excess of Fat

**Lipodystrophy**

- INCREASE of the NUMBER and the SIZE OF ADIPOCYTES
- INCREASE of FAT DEPOSIT? ACCUMULATION
- Mostly TRIGLYCERIDES
TREATMENT of LIPODYSTROPHY

- DIET
- EXERCISE
- ADJUNCT THERAPY
  - One of them MESOTHERAPY
  - OTHER ones Psychotherapy, behavior therapy, massages, etc.

Lipolytics

- Drugs interfering with thyroid metabolism NOT RECOMMENDED
- Caffeine and Aminophylline
- Yohimbine
- Artichoke
- L-carnitine
- Phosphatidylcholine
- Aminophylline Therapeutic dose – 300 to 400 mg
- Intradermotherapy
- Side effects: tachycardia, nausea, vomiting, palpitation, hypertension, headache

Lipolytic Cascade

- Theoretical possibilities

Lipolytic Stimulus:
- Intra-adipocitary Phosphodiesterase inhibition
- Cyclic AMP increase
- Stimulus of Beta receptors (lipolytic action)
- Inhibition of Alpha-2 receptors (antilipolytic action)
- Stimulus of co-factors of fat metabolism

Catecholaminergic Receptors

- It’s a well studied and searched field
- Number of receptors and distributions in the body vary according to:
  - sex
  - age
  - genetic characteristics
  - others....
- Alpha and beta receptors
**Alpha and Beta Receptors**

- Alpha receptors (a1 and a2):
  - Antilipolytic
  - Important in the central control and peripheral blood pressure
- Beta receptors (B1, B2; B3):
  - Lipolytic
  - Participate to the control of the total metabolic expense and thermogenesis

**Mesotherapy**

- Low cost
- Fast process
- Simple technique
- Good tolerance and acceptance
- Low risk
- Minimal collateral risks
- Multiple mechanism of action

**Area of Treatment**

- Hips
- Belly (rather difficult)
- Thighs
- Internal face of knee
- Calves
- Ankles
- Also: areas under the chin and below the arm

**Formulations**

**Mesotherapy Weight Loss**

- Procain/Lidocaine 2%  2 ml
- Phosphatidylcholine  4 ml
- Aminophylline (25mg/ml)  4 ml
- L-Carnitine (200 mg/ml)  2 ml
PROTOCOL

One session every two weeks. Results usually seen after the third treatment. Number required varies on the individual.

10 cc syringe
½” 27 – 32 gauge needle
Anesthetic Ointment/Gel
Alcohol

Cleanse area with alcohol.

Apply Anesthetic. Allow 15 – 20 minutes before beginning procedure.

Intra hypodermic injection.
Injection depth to hub of needle. Injections 2 cm apart. .25 cc per injection.
Pinch skin in a row and insert needle to the hub and inject desired amount. Work down the row until area is treated. No more than 6 cc/ area. An area consists of one thigh, one side of abdomen/hip, one side of buttock. It is advised that not more than 12 cc be injected in any one session.

Application of ice if needed after treatment.

FORMULATIONS

INFRAORBITAL PADS & UNDER CHIN AREA

PC 1 cc (100mg/cc)
Aminophylline 1 cc (25mg/cc)
Lidocaine 2% 1 cc

PROTOCOL FOR INFRAORBITAL PADS

Pre treatment: Consider starting on a Medrol dose pack 24 hours prior (60/50/40/40/40)

4 – 6 weeks between treatments. Will probably only need a maximum of 2 treatments, but can do 3.

3 cc syringe
30 gauge 1” needle
Anesthetic Ointment/Gel
Alcohol

May utilize method taught for PTC (2 injections of .2cc each side utilizing the ½” needle)
Inject .5 – 1 cc into each pad area after threading, tunneling, needle through entire area of infraorbital pad. The injection of solution is retrograde. Injecting as you withdraw the needle. The angle of the needle is perpendicular to the skin & is into the pad while depressing the eyeball for location of pad.

Apply ice after treatment.
Follow same post care as with PTC injections.

**FORMULATIONS**

**INFRAORBITAL PAD & UNDER CHIN AREA**

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<thead>
<tr>
<th>PC</th>
<th>1 cc (100mg/cc)</th>
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<tr>
<td>Lidocaine 2%</td>
<td>1 cc</td>
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**PROTOCOL FOR UNDER CHIN**

4 – 6 weeks between treatments. Will probably only need a maximum of 2 treatments, but can do 3.

3 cc syringe
30 gauge ½" - 1” needle
Anesthetic Ointment/Gel
Alcohol


May utilize method taught for PTC (multiple injections of .5cc into fat area under chin into problem area)

OR

Inject 1 cc subcutaneously into fat at left outer area of fat area under chin while fanning needle during injection. Repeat procedure on right outer area. Repeat procedure proximal to chin. There are a total of 3 injections of 1 cc each, injected into the fatty area while fanning the needle during injection.

Apply ice after treatment.

Follow same post care as with PTC injections.
CELLULITE: ETIOPATHOLOGY

Various Factors:

- Endocrinous
- Neurovegetative
- Genetic
- Dietetic
- Psychologic
- Mechanical
- Enzymatic

CELLULITE: DEFINITION

- Modification of the texture of subcutaneous tissue characterized by
  - Increased
    - Thickness
    - Consistency = Orange’s skin
    - Sensibility
  - Decreased
    - Mobility

PATHOPHYSIOLOGY OF CELLULITE

- 1. Venous and lymphatic stasis with edema
- 2. Hyperpolymerisation of MPS due to hormonal and enzymatic troubles
- 1+2 = diminution of exchanges between adipocytes and blood.
- Accumulation of fat, fibers and increase of cellular and vascular asphyxia.
CELLULITE

• Find out the causes and work on it:
  • Overweight = diet + mesotherapy
  • Lymphatic insufficiency = massage + mesotherapy
  • Hormonal dysfunction = mesotherapy
  • Sedentarity = exercise

Useful Treatments

• Liposuction
• Mesotherapy
• Palper – rouler – CeluM6 LPG
• Lymphatic drainage
• Ultrasounds
• Diet
• Sport

MESOTHERAPY OF CELLULITE

Side effects:

• Bruising and hematoma very frequent
• Allergy to some component, rather seldom

Contra-Indications:

• Pregnancy
• Anticoagulants
• Cutaneous Lesions
• Allergy to one component
• Cancer
**Lipotropic Drugs**

- Aminophylline
- Theophylline
- Caffeine
- Yohimbine
- PHOSPHATIDYLCHOLINE

**RESULTS**

Decrease in volume loss of centimeters
Disappearance of the “orange skin”
  (by action VS fibrosis)
Amelioration of skin elasticity and increase of skin firmness

**FORMULATIONS**

**MESOTHERAPY CELLULITE**

- Procain/Lidocaine 2%  2 ml
- Phosphatidylcholine  4 ml
- Aminophylline (25mg/ml)  4 ml
- *Hyluronidase  6 ml

*Must be tested for allergic reaction (at least 1 hr prior to treatment, under inner aspect of upper arm). Must be kept refrigerated.

**PROTOCOL**

One session every two weeks. Results usually seen after the third treatment. Number required varies on the individual.

10 cc syringe
6 mm / 27 – 32 gauge needle
Anesthetic Ointment/Gel
Alcohol

Cleanse area with alcohol.

Apply Anesthetic. Allow 15 – 20 minutes before beginning procedure.
Standing up, mark areas needing treatment (dimples – circle, banding – draw line).
Lie down for treatment.
Intra hypodermic injection.
Pinch up area to be injected. Inject directly into line drawn. Injection depth to hub of needle.
Injections .5 cm apart. .25cc per injection. Pinch circle dimpled area and inject multiple
injections into circle. You will see an immediate redness from the Hyluronidase.

Application of ice if needed after treatment.

FORMULATIONS

MESOTHERAPY CELLULITE ALTERNATIVE

<table>
<thead>
<tr>
<th>Formula</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procain/Lidocaine 2%</td>
<td>2 ml</td>
</tr>
<tr>
<td>*Hyluronidase</td>
<td>2 ml</td>
</tr>
<tr>
<td>Caffeine 20%</td>
<td>2 ml</td>
</tr>
<tr>
<td>Triac or Homeopathic formulation</td>
<td>2 ml</td>
</tr>
<tr>
<td>L-Carnitine</td>
<td>2 ml</td>
</tr>
</tbody>
</table>

*Must be tested for allergic reaction (at least 1 hr prior to treatment, under inner aspect of
upper arm). Must be kept refrigerated.

PROTOCOL

One session every two weeks. Results usually seen after the third treatment. Number required varies on the individual.

10 cc syringe
6 mm / 27 – 32 gauge needle
Anesthetic Ointment/Gel
Alcohol

Cleanse area with alcohol.

Apply Anesthetic. Allow 15 – 20 minutes before beginning procedure.

Standing up, mark areas needing treatment (dimples – circle, banding – draw line).
Lie down for treatment.
Intra hypodermic injection.
Pinch up area to be injected. Inject directly into line drawn. Injection depth to hub of needle.
Injections .5 cm apart. .25cc per injection. Pinch circle dimpled area and inject multiple
injections into circle. You will see an immediate redness from the Hyluronidase.
Application of ice if needed after treatment.

**FORMULATIONS**

**MESOTHERAPY COMBINED WEIGHT LOSS & CELLULITE**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procain/Lidocaine 2%</td>
<td>1 ml</td>
</tr>
<tr>
<td>Phosphatidylcholine</td>
<td>3 ml</td>
</tr>
<tr>
<td>Aminophylline (25mg/ml)</td>
<td>3 ml</td>
</tr>
<tr>
<td>*Hyluronidase</td>
<td>4 ml</td>
</tr>
<tr>
<td>L-Carnitine</td>
<td>1 ml</td>
</tr>
</tbody>
</table>

*Must be tested for allergic reaction (at least 1 hr prior to treatment, under inner aspect of upper arm). Must be kept refrigerated.

**PROTOCOL**

One session every two weeks. Results usually seen after the third treatment. Number required varies on the individual.

10 cc syringe
6 mm / 27 – 32 gauge needle
½” 27-32 gauge
Anesthetic Ointment/Gel
Alcohol

Cleanse area with alcohol.

Apply Anesthetic. Allow 15 – 20 minutes before beginning procedure.

Standing up, mark areas needing treatment (dimples – circle, banding-draw line).
Lie down for treatment.
Intra hypodermic injection.
Treat area marked for cellulite. Using 6 mm / 27 – 32 gauge needle pinch up area to be injected. Inject directly into line drawn. Injection depth to hub of needle. Injections .5cm apart. .25cc per injection. Pinch circle dimpled area and inject multiple injections into circle. You will see an immediate redness from the Hyluronidase. Utilize up to 12 cc to treat cellulite areas. Using ½” needle pinch up and inject rows down area indentified for weight loss. Continue to work area until approximately 12 cc has been used for weight loss. A total of 24 cc may be used to treat for both cellulite and weight loss.

Application of ice if needed after treatment.
**BODY**

6mm 30 g needle
Mixture
   6cc PC
   3cc amino
   1cc lido (mix 2% without)
Technique
   Inject multiple sites – 1-2/10 cc per injection

**CELLULITE**

6mm / 27 – 32 gauge
Mixture
   3cc PC
   2cc Amino
   5cc Hyaluronidase (150mg/cc)
   2cc lido
Technique
   Inject dimples, use needle band cutting technique with compression wrap.