

body contouring

New Zealand cosmetic surgeon
Dr Mark Gray explores combined
technologies for body contouring.

Adipose tissue (fat) is an essential storage chamber for energy in the body. In the world of aesthetics, body conscious individuals spend years of their life dieting and exercising in a quest to rid themselves of these local depositions of this adipose tissue which they find cosmetically unpleasing. Shaping the body to reduce these lipodystrophic zones is by no means new, however the ability to re-contour and shape these areas in a minimally invasive fashion is a recent innovation. New technologies/techniques have now allowed us to provide a nonsurgical option with very consistent and predictable results.

Mesotherapy is one technique that has become very popular for body contouring. Developed in France in 1952 by Dr M Pistor, the mesotherapy technique has gone through a full evolutionary process and is being used for everything from chronic pains and sports injuries to the more common aesthetic applications including fat and cellulite reduction.

Mesotherapy is a medical discipline involving the injection of antioxidants and vitamins combined with traditional medications directly into problem areas. These substances are delivered directly into the mesoderm through tiny injections using either a fine needle and syringe or a specialised mesotherapy 'gun'. Most people ask, why

not take these substances orally? The oral absorption of these substances would mean that they were either excreted or distributed throughout your whole body system. This local injection process allows these specific substances to bypass systemic absorption and therefore decrease the risk of local as well as systemic side effects.

The largest variance with mesotherapy is the combination of the vast number of compounds available for use. Mastering these compounds can make the difference in achieving a positive cosmetic outcome. The popularity of mesotherapy with physicians in the cosmetic field has taken off in recent years due to the increased consistency of fat reduction results. These results are usually achieved by using formulas that target the fat cell receptors. Fat cells have alpha receptors that are responsible for storing fat and beta receptors that are responsible for removing fat. Therefore specific formulas which modulate these receptors can block fat storage and promote fat release.

Body shaping mesotherapy treatments usually take 20-30 minutes and can involve anywhere between eight to 250 shots, depending on the condition and amount of area covered. Most patients report a slight pinching feeling depending on the type of formulation administered. The number of mesotherapy treatments needed depends upon many variables, including the quantity of size reduction desired. Usually three to five sessions performed once a week generally promotes a response. In total up to 14 sessions may be performed depending on the severity of the condition and the desired result. Patients treated with mesotherapy alone may see anywhere between 1-3.5 cm reduction in the treated area after a full treatment course.



Figure 1 Shows a positive response from dual technique body shaping

The initial tissue reaction to the VelaSmooth technology is an increase in local blood supply to the adipose tissue. Simultaneous to this increased availability of oxygen is an increase in oxygen dissociation from oxyhemoglobin. This increase in available oxygen may facilitate an increase in fat metabolism. By delivering infrared light and conducted electrical energy, the VelaSmooth increases ambient local tissue temperature, which theoretically increases the available oxygen for fat metabolism. Additionally, a mechanical action is incorporated in the treatment to physically break the fat cell clusters and to stretch the fibrous bonds. This mechanical action may also promote lymphatic drainage by stimulating the evacuation of fat decay products.

Treatments with the VelaSmooth are used specifically for a localised effect on fat cells and take approximately 30 to 45 minutes. During the treatment the heat created by the infrared light and electrical energies increase the ambient skin temperature which results in a slight pinkness to the treatment area and inner warmth felt by patients. Many patients comment that the treatment feels like a warm massage, reporting that the treatment is very tolerable and quite soothing. The recommended treatment schedule consists of two treatments a week for up to six weeks (12 treatments). Previous clinical studies report most patients experience between 2-6cm reductions after 8-12 treatments using VelaSmooth alone.

As with most cosmetic procedures the combination of a few separate techniques allows a greater flexibility to achieve a positive cosmetic result for patients. The combination of mesotherapy and VelaSmooth provides an opportunity to push the limit of minimally invasive body contouring results with the most advanced techniques available. To effectively incorporate both technologies in the practice, the treatment protocol was changed to one VelaSmooth session followed two days after by one mesotherapy session per week. Patients are advised to remain on the program for a full course of 10 dual treatments (10 weeks).

It is interesting to note that during the course of the dual technique program the time taken to reach the VelaSmooth treatment endpoint decreased over the course of treatments. It could be postulated that this is a result of its interaction with mesotherapy. This requires further investigation.

In conclusion the combination of two techniques for minimally invasive body contouring/shaping is very promising. It appears to amplify the results compared to the techniques employed separately. Syneron has developed a disposable treatment head for each patient and this could result in the ability to perform the VelaSmooth treatment directly after the mesotherapy treatment. This variation to the dual technique protocol would allow for the prescribed course of two VelaSmooth treatments a week, enhancing results. **acsm**

Table 1 Shows patient's (Figure 1) dual technique program

	Mesotherapy	VelaSmooth
Week 1	Used 2ml of Pentoxifylline, 2ml of Aminophylline and 1ml of Procaine	Treated buttocks, and whole thigh erythemic Endpoint reached at 52min
Week 2	Used Procaine 1ml, Yohimbine 2ml, and L-Carnitine 2ml	Treated buttocks, and whole thigh erythemic Endpoint reached at 55min
Week 3	Used 2x 2ml Pentox, 2ml Caffeine, and 1ml of Procaine	Treated buttocks, and whole thigh erythemic Endpoint reached at 48min
Week 4	Used 2ml of Aminophylline, 2ml of Pentoxifylline and 1ml of Procaine	Treated buttocks, and whole thigh erythemic Endpoint reached at 50min
Week 5	Used 2x 2ml Pentoxifylline and 2x 2ml of L-Carnitine and 2x 1ml of Procaine	Treated buttocks, and whole thigh erythemic Endpoint reached at 44min
Week 6	Used 2x 2ml Pentoxifylline and 2x 2ml of L-Carnitine and 2x 1ml of Procaine	Treated buttocks, and whole thigh erythemic Endpoint reached at 42min
Week 7	Used 2x 2ml of Pentoxifylline and 2x 2ml of Yohimbine and 2x 1ml of Procaine	Treated buttocks, and whole thigh erythemic Endpoint reached at 40min
Week 8	Used 2x 2ml of Aminophylline and 2x 2ml of Yohimbine and 2x 1ml of Procaine	Treated buttocks, and whole thigh erythemic Endpoint reached at 41min

Measurements

Patient had decrease of 8.6cm measured mid buttock (Circumference)

Patient had decrease of 5.8cm measured mid left thigh (Circumference)

Patient had decrease of 3.5cm measured mid left thigh (Circumference)

Note: Patient satisfaction was high, treatment was tolerated well and patient was very happy with the body contouring results

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Another body shaping technique gaining a lot of attention at the moment is the VelaSmooth. The VelaSmooth is a new device for the local size reduction of adipose tissue deposits. Using ELLOS technology developed by Syneron, the system includes the simultaneous application of light energy to the tissue at a controlled infrared wavelength, conducted electrical energy, and mechanical manipulations of the skin and fat layer.

The mechanism of therapeutic effect is theorised in the following manner:

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