



**The efficacy of the treatment of abdominal cellulite and skin tightening with a Venus Freeze (MP)²-
A pilot study**
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Introduction & Objectives

The study objective was to determine the efficacy of a multipolar radio frequency and pulsed magnetic fields device, MP(2), in treatment of abdominal cellulite and skin tightening.

The causes of cellulite and lax tissue have been accredited to many commonly known factors; weakened connective tissues, low metabolic rate of adipocytes, deterioration of the dermal vasculature, excessive fluid retention, vascular compression and hypoxia and an architectural disorder of adipose tissue. Cellulite is characterized by the padded and nodular appearance of skin and is typically seen on but not limited to the posterolateral thigh, pelvic region and abdomen.

Materials and Methods

25 Female subjects with Fitzpatrick skin type III (12%) and IV (88%) aged 18-65 years old with abdominal cellulite grade II-III received 8 MP(2) treatments performed at an interval of one treatment per week for 8 weeks consecutively.

MP2 technology is the systematic algorithm of deploying RF from a series of electrodes in a fashion which allows each to have the potential to be either positive or negative, moving this rotation a million times per second while simultaneously emitting PEMF.

Pulsed Electro Magnetic Fields (PEMF) have proven effective and been used in mainstream medicine to accelerate angiogenesis, cutaneously heal wounds, repair bones and nerves as well as decrease post-surgical pain and edema. PEMF in cosmetic medicine is used for its non-thermal action of triggering the production of collagen fibers by direct stimulation of fibroblasts and promotion of fibroblast proliferation. PEMF complements RF treatments in that it speeds up the natural wound healing response initiated by radiofrequency.

Another unique aspect of PEMF technology is the initiation of angiogenesis. Stimulation of dermal fibroblasts by magnetic pulses stimulate the production of vascular growth factors mainly FGF-2 and other growth factors which stimulate proliferation of endothelial cell and tubulization and induction of changes in different surrounding cells. The consequence is enhancement of angiogenesis = formation of new capillaries and small blood vessels. The improved vascularity enhances the supply of oxygen and nutrients,



promote waste removal and supports optimized biological function of all skin components.

Combining these two technologies produces a synergistically effective dermal-hypodermal (multi-dimensional depth of penetration tissue functional improvement inducing long term collagen remodeling and adipose tissue contouring. Both, short- and long term results are consistent, predictable and can be seen progressively.

The patients were assessed at the 3month post treatment series mark. Objective results were documented for body weight and abdominal circumference at the umbilical level as well as the subcutaneous tissue thickness was measured by ultrasound at baseline and 1-week after treatment. Subjective assessments were performed through standardized photographs and patient satisfaction rating.

Results

All patients experienced post operative erythema from mild: 3(12%) to moderate: 22(88%) with no immediate post operative complications found.

Ultrasonographic evaluation showed significant decreases of cellulite thickness (both axial and sagittal plane) and fat thickness (sagittal plane) as well total subcutaneous thickness (both axial and sagittal plane).

The degree of satisfaction among the slight and good categories of subjective evaluation increased or sustained from the one week follow up to the 12 week follow up demonstrating sustainability of the results achieved. Fig 1

In the group of BMI<23, there was a significantly higher percentage of patients who sustained improvement (p=0.021) and the group of sustained improvement has significant lessor baseline abdominal circumference (p=0.025). Fig 2 and Fig 3

Fig 1

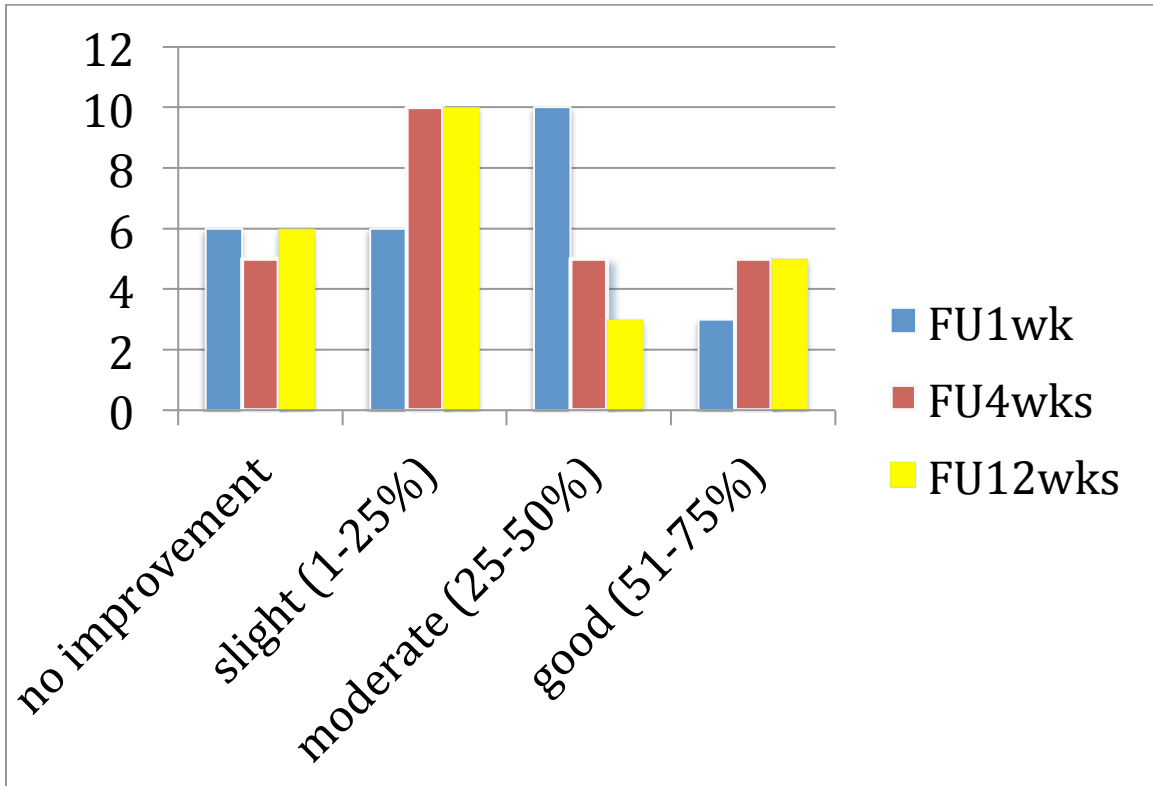


Fig 3

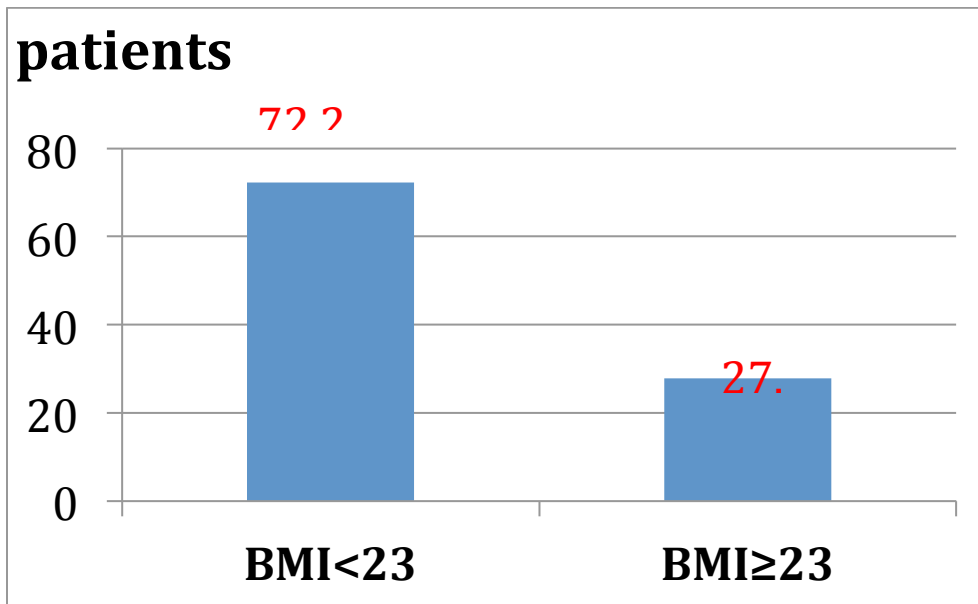


Fig 4

<ul style="list-style-type: none"> ▪ Improvement after three follow ups 	<ul style="list-style-type: none"> ▪ Baseline abdominal circumference (cm) 	
	<ul style="list-style-type: none"> ▪ Mean 	<ul style="list-style-type: none"> ▪ SD
<ul style="list-style-type: none"> ▪ With improvement (n=18) 	<ul style="list-style-type: none"> ▪ 81.78 	<ul style="list-style-type: none"> ▪ 4.9
<ul style="list-style-type: none"> ▪ Without improvement (n=7) 	<ul style="list-style-type: none"> ▪ 87.95 	<ul style="list-style-type: none"> ▪ 7.7

Conclusions

Age, skin type, degree of erythema reaction and power used in a procedure display no significant correlation with improvement of abdominal cellulite and tightening.

Multi-polar radio frequency with pulsed electromagnetic fields demonstrated the efficacy in abdominal cellulite and fat thickness reduction with results being sustainable and in some cases, increasing throughout the follow up of 12 weeks.