Original informational scientific article

Muscle Mass Increase And Fat Loss Therapy With Wonder Technology: Electromagnetic and Electrostimulation Combined Emissions.

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I. Introduction.

Non-invasive body image enhancement, slimming and toning treatments are increasingly in demand and popular. Statistics show an increase of more than double between 2012 and 2016.

Therapies such as cryolipolysis, radiofrequency, low-level laser and HIFU (High Intensity Focused Ultrasound) are the most widely used to offer services to decrease the volume of localized fats and improve the condition of the skin.

However, all these aesthetic procedures have important limitations, since they are all specifically based on thermal effects, acting on the fat accumulations with effects caused by cold or heat. All of these modalities are designed to address only adipose tissue, never muscle.

The objective of this study was to make an initial evaluation of a new technology under the name of Wonder MT, which is based on the combination of focused electromagnetic waves and selective high-intensity electrostimulation, which are applied simultaneously to the muscle groups corresponding to the abdomen, legs and buttocks, in order to assess the physiological response in the people analyzed.

An attempt has been made to detect any effect that the treatments may have on the tissues, as well as to establish hypotheses for future investigations of this technology. The study results are expected to suggest whether Wonder MT can potentially be used as a new technology for non-invasive body contouring treatments.

The use of magnetic stimulation has a long history of treating various medical indications, such as neurology, psychiatry, and physical therapy. Thanks to its non-thermal and non-ionizing nature, its application is considered safe. However, it is not as widely used or effective in the muscle building process as electrical stimulation is.

The use of electrical stimulation of muscle is much more common and its positive effects much more studied. Electrical muscle stimulation produces a non-voluntary muscular contraction induced by an electrical stimulus.

Its effect is obvious if one considers the fact that the central nervous system controls voluntary muscle contraction by sending signals to the nerves. Wonder MT's technology also uses motor units to induce contraction, but doing so prevents signals from the brain.

According to a bibliographic investigation carried out by the author prior to this study, there is no history of technologies that combine both techniques.
We therefore hope that this document will serve as the basis for further, more in-depth research on the performance of body remodeling therapies through the simultaneous combination of Focused Electromagnetic Emissions and Selective High Intensity Electrostimulation.

II. MATERIALS AND METHODS USED.

This prospective, multicenter, non-randomized pilot study involved 6 people, 4 women and 2 men. The average age of the participants was 36 years.

Exclusion criteria included pregnancy, lactation, any medical condition that contraindicates the application of an electromagnetic or electrical field, cardiac disorders, unhealed wounds in the abdominal area, and any concomitant medications known to cause edema or affect weight.

Patients were financially incentivized to participate in the study. Informed consent was obtained from all of them. The study was conducted in accordance with applicable ethical standards.

Before the treatments, each participant was asked about their physical activity habits, classifying them as inactive, medium or active. All patients were asked to maintain their diet and routine activity level unchanged until the end of the study.

Subsequently, the patients received four treatments (separated by 2 to 5 days) using a Wonder MT device according to the protocol approved by the manufacturer.

III. PROCESS.

During the application, the analyzed individuals did not receive anesthesia and were lying in the prone position. All the procedures were applied simultaneously to the abdomen, buttocks and legs, and they were asked to carry out exercises recommended by the manufacturer under the name of "WonderGym", having to raise the abdomen and legs at the time of contraction, in order to provoke voluntary contractions.

Each session lasted 30 minutes of continuous application, of which 25 minutes in the "Hypertrophy" program of greater intensity, frequency of action and depth, followed by 5 minutes in the "Cellulite" program, with characteristics of lymphatic drainage and relaxing effects.

Participants in the study were placed in a special suit called "ElectroSuit" over a special underwear that guarantees their hygiene and privacy.

The ElectroSuit is equipped with magnetic coils placed on the buttocks and a system of electrodes placed on the abdomen, buttocks, quadriceps and hamstrings. The intensity of the stimulation started at 0% and within 60 seconds after treatment, the operator slowly increased until reaching the tolerance threshold of the treated person.

This tolerance threshold was continuously increasing during the course of the treatments. A dual feedback principle was applied, with the operator visually verifying the intensity and homogeneity of muscle contractions and also regularly asking the patient for feedback on comfort level and balance of contractions in different areas.

IV. EVALUATION.

All six subjects completed the entire study. On average, 15 days elapsed between the start and the last procedure. Most participants tolerated pacing intensities ranging from 20% to 40% of the maximum intensity of the device, depending on individual sensitivity.

The only side effect observed was medium-high muscle pain 1 to 3 days after treatment reported by all six patients. In all cases, the pain resolved within the next 72 hours.

Overall, study participants did not significantly change their lifestyle or dietary intake. However, in order to avoid liver or kidney complications, they were advised to consume plenty of water and to reduce the intake of alcohol and saturated fat.

As a result, a significant improvement was observed in the three aesthetic factors:

Reduction in the thickness of adipose tissue.
Increased thickness of muscle mass.
Improvement of the state of the skin.

The analysis showed that all the participants responded positively and had a substantial aesthetic change. No other structural changes in the tissues were observed. A very significant increase in muscle mass was observed in all subjects.

Fig. 1
Woman. 34 years.
4 Wonder MT sessions.
Work protocol: hypertrophy program 25 minutes followed by 5 minutes in cellulite program

Fig. 2
Man. 36 years.
4 Wonder MT sessions.
Work protocol: hypertrophy program 25 minutes followed by 5 minutes in cellulite program

Fig. 3
Woman. 40 years. 4 Wonder MT sessions.
Work protocol: hypertrophy program 25 minutes followed by 5 minutes in cellulite program

V. DISCUSSION

The present study has shown that the application of Wonder MT technology can cause important changes in muscle tissues in a non-invasive way. The visual improvement in participants' appearance in the present study observed two weeks after the start of treatment appears to be much greater than the effects of non-invasive heat or cold fat reduction treatments combined with extremely intensive physical training. .

Most therapeutic approaches aim to reduce the subcutaneous fat layer, either surgical or non-invasive, however, none of the above deals with strengthening the muscular foundations. Currently, the only way to strengthen muscle is a physical training plan.

The Wonder MT device used bases its operation on a technology of Focused Electromagnetic Emissions and Selective High Intensity Electrostimulation combined to induce approximately 36 thousand pulses in a 30-minute session.

Such a frequency of nerve stimuli leads to supra-maximal muscle contractions that cannot be achieved voluntarily. Muscle tissue is forced to adapt to this stress, resulting in muscle thickening. The principle of muscle hypertrophy and hyperplasia induced by intensive muscle contractions has already been demonstrated in previous studies.

Although the sample taken to carry out this study is not large enough for a detailed statistical analysis of fragmented subgroups, the data indicates that neither sex nor age affects the results of the treatments.

The fact that slightly more significant changes in abdominal tissues were observed in overweight patients than in slimmer patients turns out to be a striking difference with the rest of known therapies, where it turns out to be the opposite.

Thanks to the great depth of action at which the emission of the studied technology reaches, even patients with a higher Body Mass Index, where the distance between the electromagnetic coil or electrodes and the motor neurons that respond to the current is much greater due to to the fat deposits between spaces, they had highly positive results.

VI. CONCLUSIONS

The data presented in this document show an initial evaluation of 6 patients and suggest possible physiological responses of the human body to the treatments. Analysis of the results showed a significant reduction in the thickness of adipose tissue, an increase in muscle mass and an overall improvement in the state of the skin.

This study presents an initial evaluation of the use of Wonder® MT technology, combining Focused Electromagnetic Emissions and Selective High Intensity Electrostimulation.

The weight change was negligible. None of the subjects reported discomfort. Digital photographs showed an aesthetic improvement in the majority of patients through a better shape and volume of the treated area, which are summarized as follows:

Significant fat loss in the abdominal area
Increased leg muscles
General buttock lift
Reduced muscle laxity
Greater resistance to effort
General feeling of increased muscle tone.

Taking into account the results obtained, we can confirm that the Wonder ® MT technology studied represents a completely new approach in non-invasive body remodeling therapies, offering for the first time results in terms of increasing muscle mass.

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