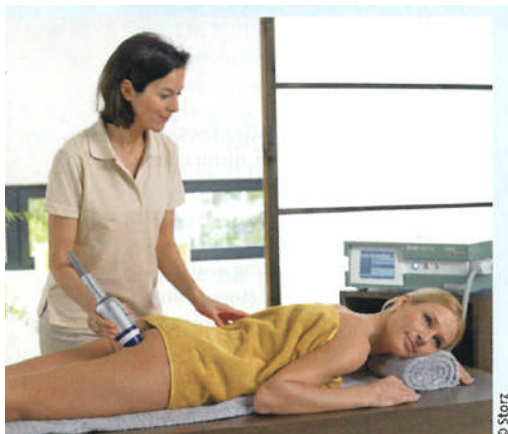


Acoustic Wave Therapy (AWT®)

Cellulite - Sound waves for smoother skin

Acoustic waves are gaining momentum in aesthetic medicine and in anti-cellulite therapy in particular. Since it was brought to the German market two years ago, Acoustic Wave Therapy (AWT®) has become increasingly established as an effective treatment option in the fight against cellulite. Extensive coverage in the consumer press is expected to further boost the demand for AWT® among customers and patients.



Acoustic waves are applied to improve subcutaneous microcirculation and lymphatic drainage

Acoustic waves

Acoustic waves are sound waves with high pressure amplitudes in comparison to the ambient pressure. They have been used in medicine with great success for 30 years. Initially, these so-called shock waves were primarily used for the fragmentation of kidney stones. As the skin surface in the treated body regions was found to become smoother after ESWT treatment, the procedure has been further developed and is now available as Acoustic Wave Therapy for cosmetic applications.

Cellulite is considered a purely cosmetic problem rather than a disease. Still, many affected women literally suffer from this skin condition and the reduced quality of life that comes with it and are desperately in search of a remedy. Since the commercial launch of Acoustic Wave Therapy in Germany about two years ago, German dermatologists have been able to offer their patients a promising new therapy method.

Pathophysiology of cellulite

The process of cellulite formation is very complex. The specific structure of the female connective tissue is one of the main causes for the appearance of this skin condition. Female subcutaneous fat tissue differs from male tissue in

that the dense connective tissue septa are oriented in a vertical direction relative to the skin surface. They are unable to contain the enlarging fat cells, causing them to bulge upwards towards the epidermis, which gives the skin the typical dimpled appearance. Moreover, women have a much higher number of fat cells than men and experience hormonal variations that frequently result in increased lipogenesis. The enlarged fat cells generate higher tissue pressure which reduces microcirculation and lipolysis and exacerbates cellulite. As cellulite progresses to more advanced stages, it may lead to the formation of oedema and local inflammation.

AWT – Method and biological effects

Acoustic Wave Therapy is conducted to stimulate metabolic activity in the subcutaneous fat tissue and to improve local microcirculation and lymphatic drainage in order to break the vicious circle of hypoperfusion, pressure increase and reduced lipolysis.

During AWT, extracorporeally generated high-energy acoustic waves are applied to the affected body regions at high frequencies. When used in anti-cellulite therapy, oscillating radial waves have proved to be most effective. Treatment is painless and does not cause any skin lesions. Ultrasound gel is applied to the skin before starting the therapy in order to avoid energy loss during sound transmission.

Each treatment session takes about 30 minutes. Depending on the degree of cellulite, 6 to 10 sessions at 3 to 4 days' intervals may be needed.

The application of acoustic waves has a variety of effects on different types of cells and tissue.

It improves cell membrane permeability and metabolism and increases perfusion as a result of, among other factors, angiogenesis and higher cell proliferation. The improved cosmetic appearance of cellulite is primarily due to the increased blood and lymph circulation in the subcutis and the higher rate of lipolysis.

Demonstrated effectiveness

The effects of AWT have been examined in several clinical and observational studies. The pilot study conducted by Dr. Gerhard Sattler in 2007 (published in "Ästhetische Dermatologie" 2/2008) furnished proof of the significant potential of Acoustic Wave Therapy. Since then, further studies have appeared that support the benefits of this therapy option. Most recently, Dr. Maurice Adatto and his colleagues from the Skinpulse Dermatology & Laser Center in Geneva presented the results achieved in 21 patients at last year's Congress of the European Academy of Dermatology and Venerology (EADV) in Berlin. Again, these results confirm that AWT is a safe and effective anti-cellulite therapy with almost zero side effects.



Interview with Dr. med. Gerhard Sattler, Rosenpark Klinik

Dr. Sattler, which group of women benefits most from anti-cellulite AWT therapy?

AWT is most effective in young women or, more precisely, in women who have not been suffering from cellulite for too long. This is due to the fact that the therapy success depends not so much on the women's age but rather on the cellulite stage and tissue condition. If cellulite has continued to worsen over many years or even decades and severe fibrotic tissue transformation has occurred, AWT will be unable to remedy the condition.

How can the effectiveness of this therapy be assessed or evaluated?

As with any other anti-cellulite treatment option, assessing the effectiveness of AWT is a rather complex matter. Clinical evaluations need to be conducted to determine if and how well the therapy performs. Pictures are taken to document the skin condition and enable before-and-after comparisons. The conditions in which the photos are taken should be identical to make the before and after pictures truly comparable.

This alone is a real challenge as it is rather difficult to ensure that conditions are as similar as possible when taking the photos. At the end of the day, the decisive criterion for measuring the therapy success is the degree of satisfaction among patients.

How long do the effects last? Are there any long-term results available at present?

It is not possible to make any general statement about the quality and duration of the therapy effects. This is because each case is different and because the women's lifestyle in terms of their diet and exercise habits plays an important part. Although the results of AWT therapy cannot be compared to those achieved with laser lipolysis, it represents a valuable addition to the range of anti-cellulite treatment options that can be performed on an outpatient basis.

Does AWT have any side effects or contraindications?

Pregnancy is the only exclusion criterion. The therapy is not known to have any significant side effects.

Is Acoustic Wave Therapy an economically viable option for dermatological practitioners?

Whether or not the purchase of an AWT system eventually pays off depends on several factors. Apart from ongoing overheads such as rent and staff wages, factors such as the system utilisation rate and the price that must be or can be charged for the therapy play a key role. I believe that the investment will have paid off after about a year provided that the system utilisation rate is good and the price charged per therapy session is between 50 and 60 euros.

Dr. Sattler, thank you very much for this interview.

Dr. med. Gerhard Sattler, dermatologist at Rosenpark Klinik, a specialist clinic for aesthetic surgical dermatology and plastic surgery in Darmstadt, Germany, conducted the AWT pilot study in 2007.

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