



The Coolwaves™ Revolution

Smart and Enhanced Microwaves that Excel in All Body Contouring

- Localized fat
- Cellulite
- Skin tightening

In the USA, exclusively available from



**Our smart
microwaves are
so cool, that your
patients can stay
cool too!**



Our microwaves are not just smart. They are cool!

We have released another game changer: the only system using Coolwaves™, special microwaves that selectively target fat cells to reduce localized fat deposits in a safe, effective and non-invasive way.

Our R&D department has developed a patented smart handpiece that guides the electromagnetic field to the lipocytes in order to destroy them, while the integrated cooling system preserves the skin, ensuring patient safety and comfort.

“ In 1999 DEKA pioneered minimally invasive treatment of localized fat deposits by introducing Laserlipolysis® which achieved worldwide success. Today DEKA has taken one step further. DEKA's unceasing search for new sources and applications has led to the invention of a completely non-invasive system, which specifically destroys the lipocyte membrane, just as the laser did. In very few sessions (usually 4-5), the Coolwaves™ in the Onda system are extremely effective in reducing the localized accumulations of fat in areas like the abdomen, back, trochanter and lower limbs. And that's not all! Coolwaves™ make it possible to treat cellulite even in the most advanced stages and skin laxity. This is a completely painless procedure, with no side effects, which is safe and comfortable for my patients, who were enthusiastic about this innovative treatment. ”

Paolo Bonan, M.D.

ESLD Key Officer Education

In Charge of Laser Cutaneous Cosmetic & Plastic Surgery Unit

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The First Body Contouring System that Excels in All Applications

The new microwave source was developed to provide a non-invasive system to be effective at body remodeling:

- **Localized fat deposits:** The deep handpiece enables Coolwaves™ to penetrate deeply, disrupting the membranes of subcutaneous fat cells. The lysate is drains by stimulating physiological metabolic processes (macrophage lipolysis). The cooling system integrated into the handpieces ensures that enough energy is delivered so that lipocytes are completely destroyed in total safety of the skin and maximum patient comfort.
- **Cellulite:** The shallow handpiece effectively targets the connective septa between the adipose lobules in the more advanced stages of cellulite (visible in the typical “orange peel” effect).
- **Skin tightening:** The system’s special microwaves induce immediate shrinkage of the collagen fibers in the dermis and stimulate the production of new collagen. This makes tissues firmer and more toned.



Unique Design Benefits

Coolwaves™	This is the only system that uses special microwaves to target subcutaneous fat safely with maximum patient comfort.
All-In-One Solution	A single, effective solution for localized fat deposits, cellulite and skin laxity.
Smart Handpieces	A system of LEDs enable smart handpieces (patent pending) to provide an intuitive guide to the operator during the procedure, ensuring that the treatment is both safe and effective.
Skin Cooling	Integrated contact skin cooling system.
Simple & User Friendly	The R&D team developed an ergonomic, attractive design featuring a compact structure with modern lines. Intuitive, simple software helps the operator to perform treatments. The cooled, ergonomic handpieces ensure that sessions are carried out properly and provide the user with warnings, if procedures are performed incorrectly.
Great Benefits	A rapid Return On Investment (ROI) and total patient satisfaction will increase your business!

Specially designed smart handpieces: Deep & Shallow



The internal mechanics of the handpieces are specially designed to emit Coolwaves™ in a controlled fashion, focusing energy only where it is needed (for example in the subcutaneous adipose tissue in the event of localized fat deposits), preserving the adjacent tissues. The two handpieces differ in their depth of action, each designed for different body areas or conditions.



Coolwaves™: a New Concept of Energy

Microwaves are part of the large family of electromagnetic waves, with frequency ranging from 1 - 300 GHz. Today they are common in many fields of everyday life including the medical field, for diagnostic or treatment purposes.

However, not all microwaves are the same. No other device emits microwaves in the same way as the system's smart handpieces!

Microwaves cause the molecules which absorb their energy to oscillate and vibrate, thus heating up the medium that contains the absorbing molecules.



80%

Coolwaves™ energy reaches the fat cells



20%

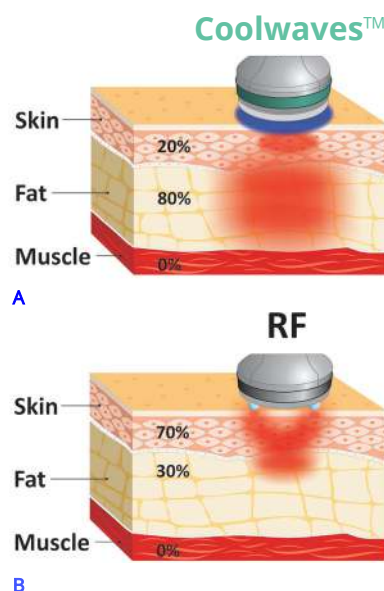
Secondary superficial thermal effect

The system generate microwaves at 2.45 GHz, a frequency that is preferentially absorbed by fat molecules rather than by water molecules. **Since the epidermis and dermis contain plenty of water but no fat, their conductivity is much greater than the hypodermis' conductivity.** Therefore, when the Coolwaves™ penetrate the skin, they pass straight through the top layers without overheating them (using about 20% of the energy), while they concentrate their effects on the subcutaneous fat that highly absorbs them (about 80% of the energy). By contrast, traditional radio frequency systems (frequency range 0.1 - 40 MHz) act only on the surface. This means that they not only fail to penetrate deep into the body to treat fat, but they also risk to damage the skin.



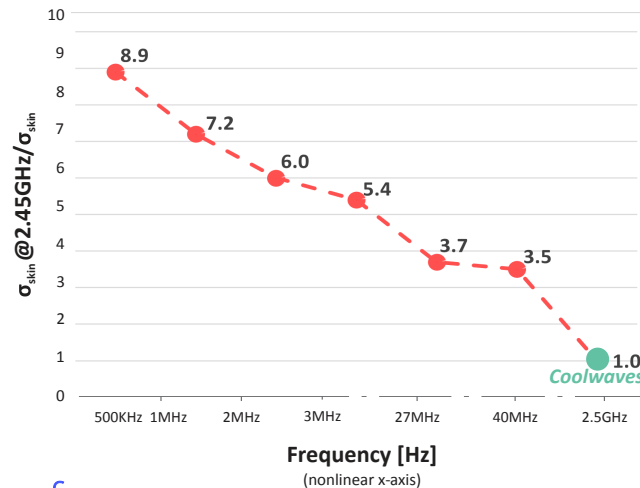
Coolwaves™ & Smart Handpieces: Safety and Effectiveness

For greater safety and improved patient comfort, the handpieces have integrated cooling that acts as a barrier between the Coolwaves™ delivery source and the skin. This protective layer for the epidermis and the dermis allows the action to be concentrated deep in the skin on the targeted fat. Therefore, Coolwaves™ does not risk causing hot spots on the skin like those found with electrodes used in radiofrequency systems.



Coolwaves™ σ_{skin} versus RF σ_{skin}

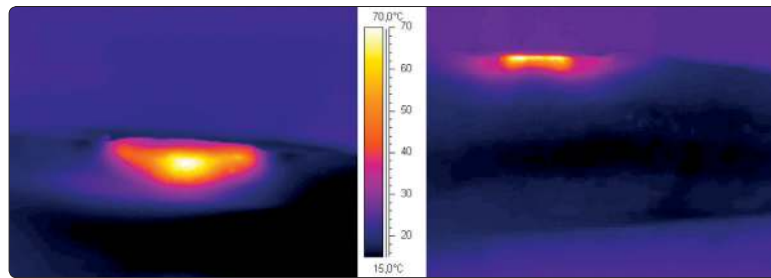
σ_{skin} is the conductivity of the skin.
 σ_{skin} changes with the frequency of electromagnetic waves.



(A): The Coolwaves smart handpieces (patent pending) are designed so that only 20% of the energy goes to the dermis, and is **offset** by the integrated cooling system. The remaining 80% of the energy penetrates into the fat, acting effectively on the lipocytes.

(B): With RF energy, the situation is quite different because the heat starts at the surface of the skin.

(C) The outer layers of skin are 3.5 to 8.9 times more susceptible to RF energy than Coolwaves. That means most of the RF energy gets stuck in the epidermis and dermis, heating them up to such an extent that there is a risk of tissue **injury/damage**. Moreover, since the RF energy remains close to the surface, it fails to reach the hypodermis (where the fat cells are located and whose membranes must be broken in order for treatment to be effective).

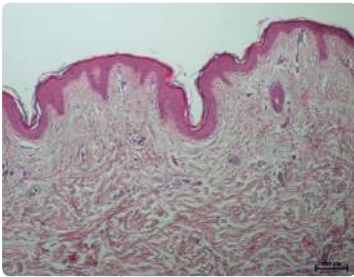


(A) Thermographic image of ex-vivo tissue treated with a Coolwaves handpiece. A "hot zone" can clearly be seen **below** the top layers of the skin, which stay cold and appear blue.

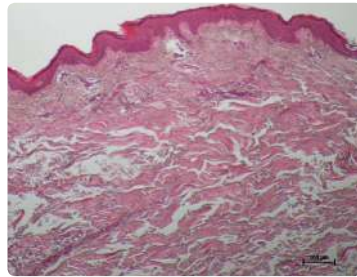
(B) The image next to it is similar tissue treated with bipolar radiofrequency. The tip effect (where the electrodes **contact** the skin) clearly creates a strong rise in temperature on the surface, while deeper tissue remains cold. **Thus, proving** that it is not possible to reach the correct treatment temperatures in the subcutaneous fat.



Histological & Clinical Study



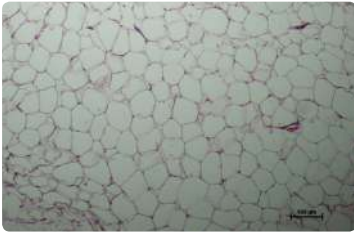
A



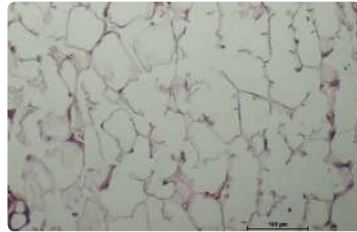
B

H&E histological images of human abdominal tissue. (A): control. (B): Sample from the same patient immediately after treatment with Onda Coolwaves™.

When we compare the two images, it is clear that the epidermis in the treated sample has not **been effected**. Moreover, the collagen in the **treated** dermis looks more eosinophilous (pink). Heat causes shrinking or tightening of collagen, resulting in greater eosinophilia due to the higher collagen concentration. **This** is accompanied by the presence of lighter spaces clearly visible in H&E, freed up by the aggregating collagen.



A



B

Histological images of tissue with human abdominal fat. (A): Control (magnification x10). (B): Sample from the same patient immediately after treatment with Onda Coolwaves™ (magnification x20).

Image (B) clearly shows the ruptured lipocytes and initial hyperemia with dilatation of the blood vessels.

Courtesy of Prof. R. Perrotta, M.D. and M.S. Tarico, M.D., Catania - Italy

The Coolwaves™ technology is quick, easy to learn, and can be put immediately into action by different categories of staff (doctors, medical assistants, nurses).



A



B

Before and after 3 sessions.

Courtesy of Prof. R. Perrotta, M.D. and M.S. Tarico, M.D., Catania - Italy



A



B

Before and 45 days after 1 session.

Courtesy of Prof. P. Bonan, M.D., Florence - Italy



Simple, User-Friendly and Intuitive Software

**Built-In Database:
Specifically
Tailored
Protocols**

Graphic User Interface (GUI)

A simple, intuitive touch-screen interface helps the operator select the most appropriate protocol, based on the specific features of each patient. The large LCD Touch Screen offers a quick and easy selection of the operating parameters.

From an operational viewpoint the procedure is very simple:

- The handpieces are automatically recognized by the system.
- The simplified software and integrated database permit rapid choice of parameters for any kind of treatment and body area.

- An accumulator displays the dose delivered during the treatment and an acoustic signal notifies the user when the desired end-point has been reached. Upon notification, the operator can treat another area.



multimedia



user-friendly



design



simplicity



Technical Data

Specifications	
Source	Microwaves - Coolwaves™
Frequency	2.45 GHz
Power	120 W
Smart Handpieces (Patented*)	Deep: Ø 6.6 cm - 35 cm ² Shallow: Ø 5.6 cm - 25 cm ² LED system control to provide an intuitive guide to the operator during the procedure
Handpiece Cooling	Integrated Skin Cooler
Emission Control	Fingerswitch
Graphical User Interface	10.4" Color Display Touch Screen
Data Base	Integrated tutorial with treatment protocol
Dimensions	16" (W) x 43.75" (H) x 27.75" (D)
Weight	133 pounds
Electrical Requirements	100-240 Vac; 50-60 Hz; 1500 VA

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Innate Ability

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DEKA Innate Ability

A spin-off of the El.En. Group, DEKA is a world-class leader in the design and manufacture of lasers and light sources for applications in the medical field. DEKA markets its devices in more than 80 countries throughout an extensive network of international distributors as well as direct offices in Italy, France, Japan and USA. DEKA manufactures laser devices in compliance with the specifications of Directive 93/42/EEC and its quality assurance system is in accordance with the ISO 9001 and ISO 13485 standards.

For More Information

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