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INNATE ABILITY

THE Aesthetic Industry Awards
Aesthetic Winner 2018
THE Aesthetic Guide

ONDA

**The Coolwaves™ Revolution.
Smart and Enhanced Microwaves
that Excel in All Body Contouring**

- Localized fat
- Cellulite
- Skin tightening

DEKA
Innate Ability

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



IA INNATE ABILITY **ONDA**

DEKA microwaves are not just smart. They are cool!

Here at DEKA, we have again released another game changer: Onda, 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.

DEKA's R&D department has developed a smart handpiece (patent pending*) 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
Villa Donatello Clinic, Florence - Italy

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Publication number: WO2017/149486 - Publication date: 08 September 2017

The First Body Contouring System that Excels in All Applications

DEKA's new microwave source was developed to provide a non-invasive system, in order to effectively act on the main blemishes requiring body remodeling:

- **Localized fat deposits**: The deep handpiece enables Coolwaves™ to penetrate deeply, disrupting the membranes of subcutaneous fat cells. The lysate is subsequently drained off by stimulating physiological metabolic processes (macrophage lipolysis). The cooling system integrated into the handpieces ensures that lipocytes are broken down in total safety for 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 Onda system's special microwaves induce immediate shrinkage of the collagen fibres in the dermis and stimulate the production of new collagen. This makes tissues firmer and more toned.

Onda's PLUS

Coolwaves™	Onda 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	DEKA's R&D team gave Onda an ergonomic, attractive design featuring a compact structure with modern lines; intuitive simple software that helps the operator to perform treatments, while 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 Onda 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 types of blemish.



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Coolwaves™: a New Concept of Energy

Microwaves are part of the large family of electromagnetic waves [frequency range: 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 Onda system's smart handpieces!

Microwaves lead the molecules absorbing them to oscillate and vibrate, thus heating up the medium that contains the molecules.

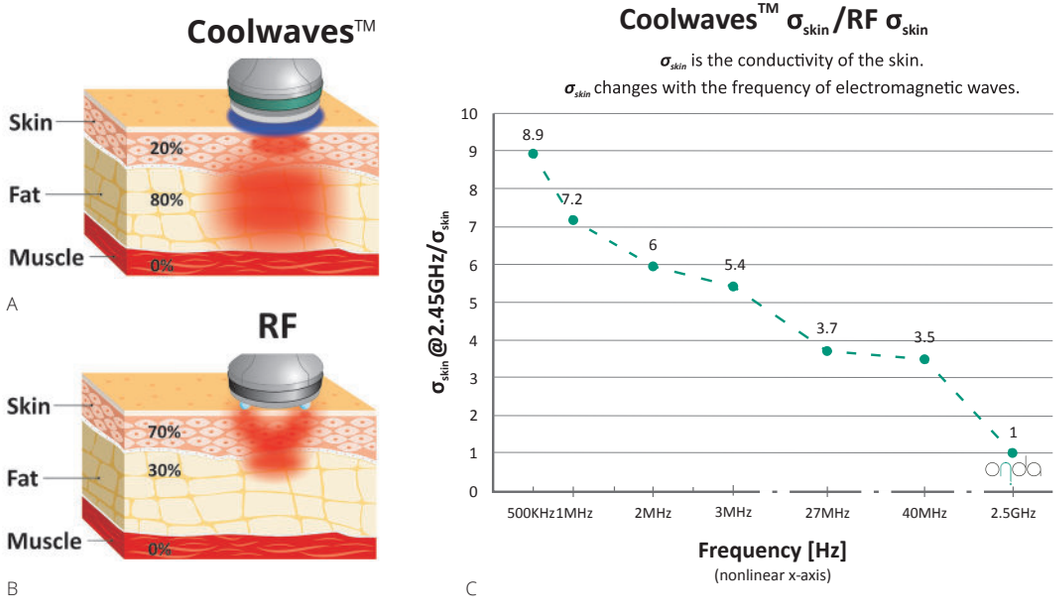
80%
Coolwaves™ energy targeting the fat cells

20%
Secondary superficial thermal effect

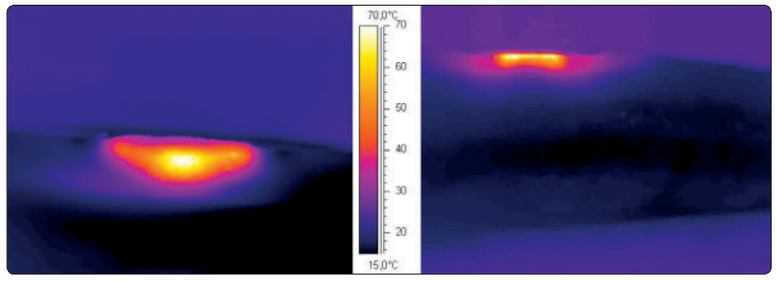
The Onda system handpieces generate microwaves at 2.45 GHz, a frequency that is preferentially absorbed by fat molecules rather than by water molecules. The conductivity of the epidermis and the dermis, which contain plenty of water but not fat, is therefore much greater than the hypodermis' one. Therefore, when the Coolwaves™ penetrate the skin, they pass straight through the top layers without overheating them (using about 20% of the energy from the microwaves), while they concentrate their effective action 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 since highly absorbed by water molecules. 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: Guarantee of Safety and Effectiveness

For further safety and improved patient comfort, the handpieces are equipped with an integrated cooling system that acts as a barrier between the Coolwaves™ delivery source and the skin. This creates a thermal layer which protects the epidermis and the dermis, allowing the action to be concentrated deep down in the skin on the targeted fat. Coolwaves™ therefore do not risk causing hot spots on the skin, as the electrodes used in radiofrequency systems.

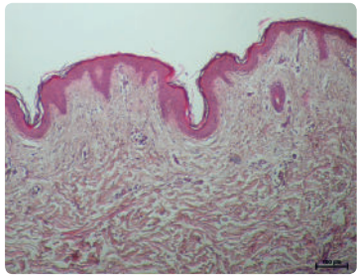


(A): Onda smart handpieces (patent pending) are designed so that only 20% of the energy goes to the dermis, and this is in any case counterbalanced by the integrated cooling system that annuls the effects of such heat. The remaining 80% of the energy penetrates into the fat, acting effectively on the lipocytes.
(B): the situation is quite different with RF handpieces. For Coolwaves, the conductivity of the outermost layers of skin is at least 3.5 times higher than that of the commonly-used RF irradiation systems in aesthetic medicine (Graph C). That means that 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 damage. Moreover, as 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 the treatment to be effective.

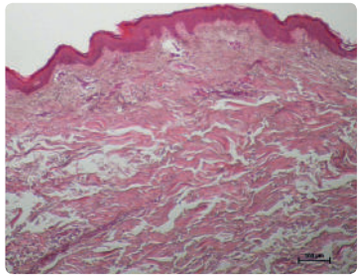


(A) Thermographic image of ex-vivo tissue, seen in section, treated with an Onda handpiece. A "hot zone" can clearly be seen just below the top layers of the skin, which stay cold and are therefore displayed in blue. The image next to it (B) corresponds to a similar ex-vivo tissue treated with bipolar radiofrequency. The tip effect where the electrodes and the skin come into contact clearly creates a strong rise in temperature on the surface, while deeper the tissue remains cold, which proves that it is not possible to reach the correct treatment temperatures in the subcutaneous fat.

Histological & Clinical Study

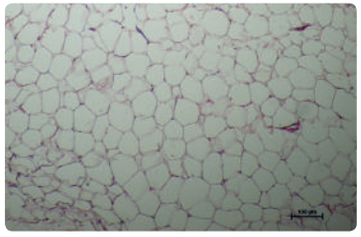


A

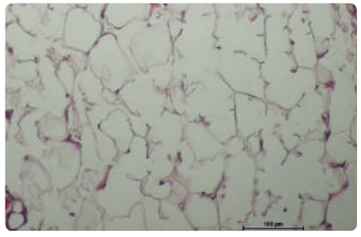


B

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 undergone any alteration compared with the control. Moreover, in image (B), the collagen in the dermis looks more eosinophilous (pink): heat causes shrinking or tightening of collagen, resulting in greater eosinophilia, due to the higher collagen concentration, and is always accompanied by the presence of lighter-coloured 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 hyperaemia 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

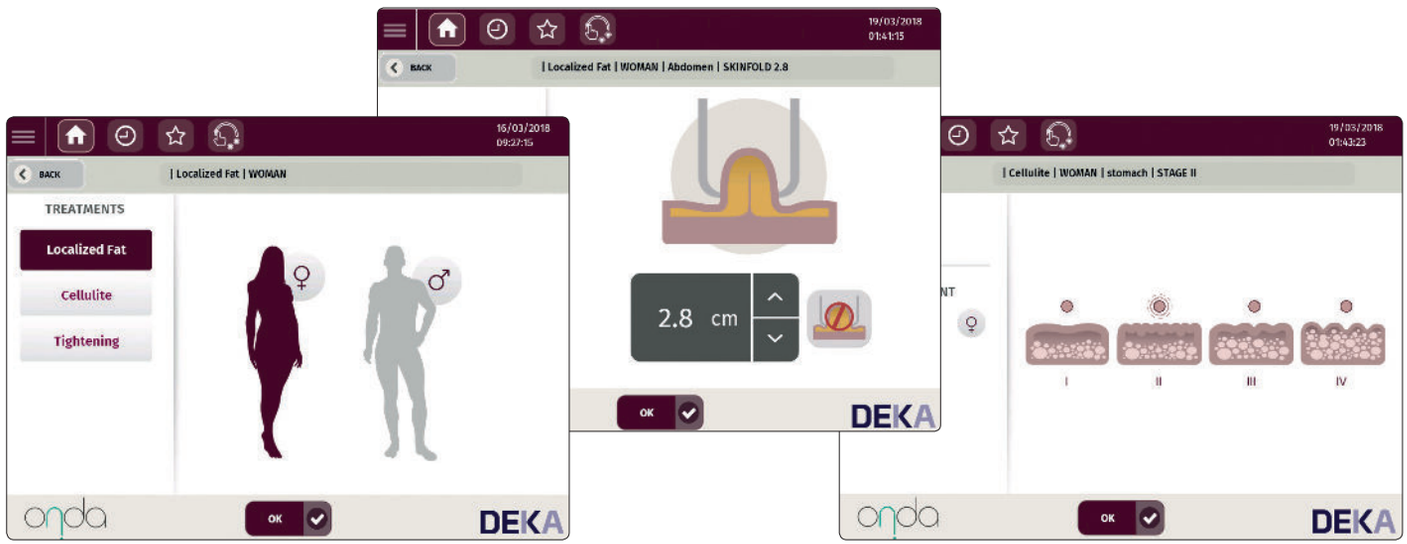
Graphic User Interface (GUI)

A new simple, intuitive touch-screen interface helps the operator to 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 warns the user when the desired end-point has been reached. At this point the operator can treat another area.

multimedia · user-friendly · design · simplicity



Technical Data



Onda	
Source	Microwaves - Coolwaves™
Frequency	2.45 GHz
Power	200 W
Smart Handpieces (Patent Pending*)	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" Colour Display Touch Screen
Data Base	Integrated tutorial with treatment protocol
Dimentions	400 (W) mm x 1100 (H) mm x 700 (D) mm
Weight	60 Kg
Electrical Requirements	100-240 Vac; 50-60 Hz; 1500 VA

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This brochure is not intended for the market of USA.

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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.

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