



SMARTLIPO®

MEDICINE AND AESTHETICS

SMARTLIPO®

Laserlipolisi®
Laser-Assisted Liposuction
Axillary Hyperhidrosis and Osmidrosis
Pseudogynecomastia
Removal of Lipomas
Filler Granulomas

Pulse and Wavelength: the Perfect Synergy for Laserlipolysis

Smartlipo: the First System in the World Specially Created for Laserlipolysis



The Code of Excellence

SMARTLIPO®

LASERLIPOLISI®: SCIENTIFIC INNOVATION SEES THE LIGHT AT DEKA

DEKA is the first company in the world to have invented an innovative method for removing localised fat deposits: Laserlipolisi®. Through the exploitation of a specific 1064 nm wavelength and an exclusive pulse shape, DEKA has perfected a minimally invasive laser treatment that stands out from the rest. This unparalleled achievement stems from over ten years of research, publications, and case studies.

"The Smartlipo has been my greatest ally for years. Laserlipolysis created new and important opportunities for my patients. This is the most innovative and safest technique for anyone who wants to permanently change targeted body areas by removing excess fat and reducing flabbiness while improving skin tone. Now especially, laserlipolysis enables me to give patients what they really want: minimally invasive treatments with very short recovery times. The procedure is carried out under local anaesthetic and patients can immediately return to their daily activities thereafter. Over the years, the safety, versatility, and special features of the Smartlipo system have enabled me to explore new areas of application, experimenting, for example, the reduction of bags under eyes and the reabsorption of filler granulomas."

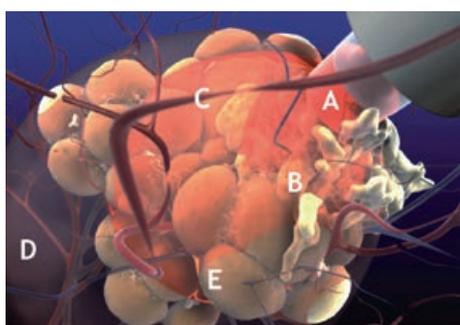
Nicola Zerbinati, MD

*Department of Clinical and Biological Sciences
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MEDICINE AND AESTHETICS

SMARTLIPO®

LASERLIPOLYSIS: THE TARGETED SOLUTION FOR ALL TYPES OF LOCALISED FAT



Active Principle of Laserlipolisi®:

A: The laser beam, inserted through the cannula into the hypodermis, acts on the adipocytes and surrounding tissues.

B and C: Due to the photomechanical effect, part of the laser energy ruptures the membrane of the adipocytes closest to the end of the fibre, while due to the photothermal effect another part closes the blood vessels.

D: By working in the more superficial layers of the hypodermis, part of the laser energy produces an immediate shrinkage effect in the dermal collagen with photostimulation of the neocollagenesis.

E: In some cases, the adipocytes are not destroyed immediately. Nevertheless, the laser energy still manages to cause irreversible damage that leads to their destruction within a few months.

The Smartlipo system can be used for two different procedures: Laserlipolysis and Laser-Assisted Liposuction.

Laserlipolysis: DEKA's Innovation that Has Revolutionised Liposculpture

The laser light is conveyed by optic fibres inserted in microcannulas with a diameter of 1-1.4 mm that reach the cells of the hypodermis. The high peak power emitted, together with DEKA's exclusive Gradient Pulse technology, break the membranes of the adipocytes facilitating the discharge of the cell content while minimising the thermal effects on the surrounding tissues.

Laserlipolysis is also indicated for treating localised fat deposits in specific body zones and is extremely effective in areas where diet and physical exercise fail to produce positive results. It is even possible to treat the more delicate areas for which traditional liposuction is not normally recommended, such as lower eyelids, cheeks, double-chin, arms, inner thighs, knees, back, upper abdomen and mons pubis.

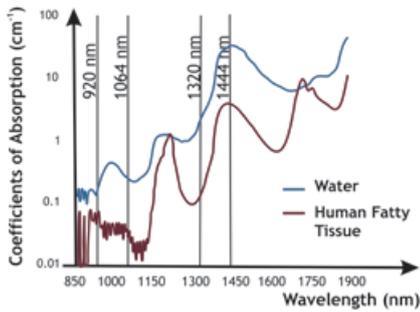
Since it has a shrinking effect, while also stimulating the dermal collagen, Smartlipo greatly reduces flabby skin. That's why it can be successfully used with traditional liposuction techniques after emptying the volumes.

Laser-Assisted Liposuction

In this case, the photomechanical action of the laser is assisted by low-pressure aspiration through a special microcannula with a diameter of only 3 mm. The fat is removed immediately without any trauma or lesions. This procedure is particularly suitable when removing larger volumes in patients who want immediate results.

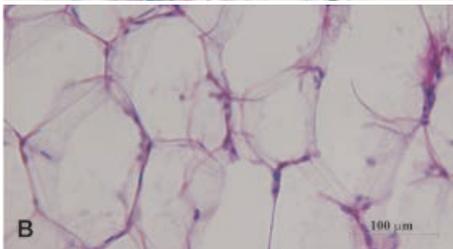
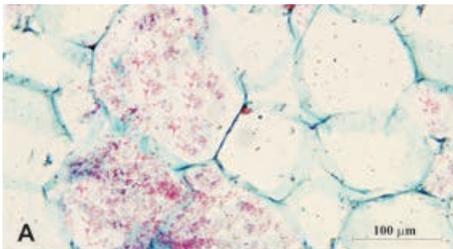
1997	DEKA filed the first worldwide application for a patent for Smartlipo, granted in 1999.
1997	Registration of the Laserlipolisi® brand.
Over 2000	The number of systems installed worldwide (data from January 2010).
Over 500.000	Laserlipolysis treatments carried out.
Over 50	Scientific publications demonstrating the validity of DEKA's research.

THE BEST SOLUTIONS SPRING FROM YEARS OF EXPERIENCE



DEKA utilizes a special Nd:YAG laser source especially designed for Laserlipolysis. While other wavelengths may seem more effective since they are absorbed more readily by water and fat, they can prove to be more damaging in terms of the consequences of the excessive thermal effect generated.

Absorption spectra of water and fat for the wavelength from 850 nm to 1900 nm. [Measured on human fat samples by INOA, Photometry and Lighting Laboratory - Florence, Italy.]



Studies conducted on the use of Smartlipo have demonstrated that it induces apoptosis of the adipocytes. The enhanced absorption by fat and water, often associated with continuous emission laser treatments, instead generates an excessive rise in temperature with the possibility of cell necrosis. The elevated thermal effect produced by other lasers with different wavelengths or different light emission times may also cause polymerisation of the triglycerides and esterification of the fat: in these cases, the mobilisation of the fat lysate is more difficult and induces a pro-inflammatory action in the tissues.

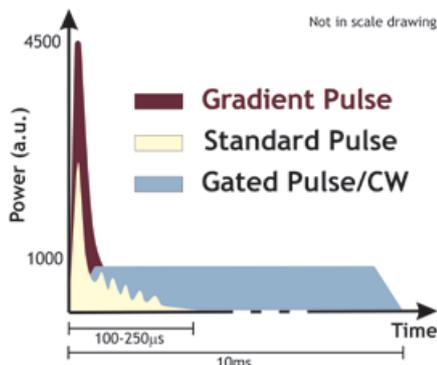
In the event of polymerisation of the triglycerides the fat inside the cells is "vitrified", meaning it loses its liposolubility in the lipidic solvents, which is an indication of complexation with the proteins and cerification. This phenomenon was discovered via routine H&E staining of histological samples of human fat.

A: Fat treated with a diode laser. The cerification of the fat and splitting of the membrane can be observed. B: Fat treated with the Smartlipo Nd:YAG laser. The splitting of the membrane is evident but no lipidic cerification is observed.

[Histological photos: Prof. G. Rossi – University of Camerino, Italia. PhotoBiolab – Florence, Italy]

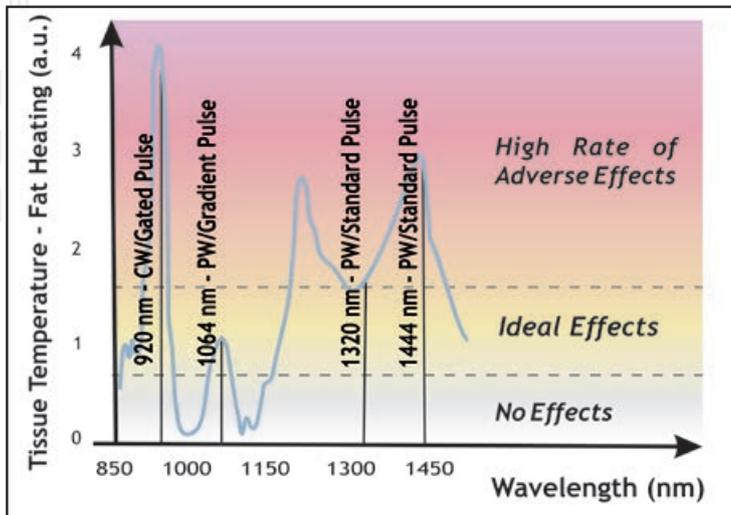
PHOTOBIO LAB

GRADIENT PULSE: A NEW PULSE SHAPE



The Smartlipo® technology is based on the issuing of very short, high-power pulses with a wavelength of 1064 nm. Unlike continual emission lasers or those with different pulse shapes, Smartlipo does not damage the surrounding tissues or the lymphatic system which, by correctly draining the liquids and removing the dissolved fat, also reduces the risk of forming seromas.

Comparison of the pulse shape in the various systems used for laserlipolysis. Smartlipo's exclusive "Gradient Pulse" ensures safe and effective treatment. The other pulse shapes cannot produce the mechanical effect that leads to the destruction of the membrane of the adipocytes. Their action is only thermal, which means the tissue damage threshold (necrosis) is often exceeded.



Trend of the rise in temperature in human fat and surrounding tissues due to absorption at different wavelengths and the effect produced by different types of emission (Gradient Pulse, Standard Pulse, Gated/CW Pulse). This illustrates how Smartlipo is the only system that combines safety and effectiveness due to a proper balance between wavelength and pulse shape.

**FROM LIPOSCULPTURE TO NEW APPLICATION TREATMENTS:
THE FORCE OF AN INNOVATIVE PRINCIPLE**

Laserlipolysis goes far beyond traditional treatments. Smartlipo unique wavelength and pulse shape allow for several different applications: from hyperhidrosis and pseudogynecomastia, to the removal of lipomas and skin imperfections from filler allergies. Effective, safe and delicate, even on sensitive areas, Smartlipo is designed to let physicians venture beyond the traditional borders of lipolysis.



Laserlipolysis
Courtesy of A. Goldman, Plastic Surgeon - Brazil.



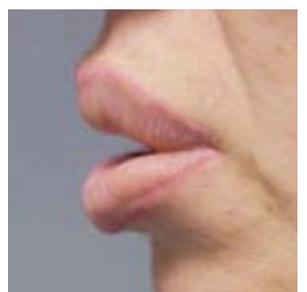
Laserlipolysis
Courtesy of N. Zerbinati, Dermatologist - Italy.



Laser-Assisted Liposuction
Courtesy of: G. Addamo, Gynaecologist and A. Gaspar, Gynaecologist - Argentina.



Treatment of Silicoma (adverse reaction to dermal filler)
Courtesy of N. Zerbinati, Dermatologist - Italy.



TECHNICAL DATA

	SMARTLIPO®	SMARTLIPO_10®	SMARTLIPO_18®
Laser Type	Pulsed Nd:YAG	Pulsed Nd:YAG	Pulsed Nd:YAG
Wavelength	1064 nm	1064 nm	1064 nm
Average Power	6 W (max.)	10 W (max.)	18 W (max.)
Repetition Rate	10-40 Hz	10-40 Hz	20-80 Hz
Pulse Duration	150 µs	180 µs	250 µs
Beam Delivery	300 µm optical fibre	300 µm optical fibre	300 µm and 600 µm optical fibres
Electrical Requirements	115 Vac / 10 A – 16 A (max.) / 50-60 Hz		
Aiming Beam	Diode laser 3 mW @ 635 nm		
Dimensions & Weight	68 cm (H), 23 cm (W), 65 cm (D), 38 Kg		



CAUTION

Visible and invisible laser radiation.
Avoid eye or skin exposure to direct or scattered radiation.
Class 4 laser product.

This brochure is not intended for the market of USA.

LASERLIPOLISI® - LASER-ASSISTED LIPOSUCTION - AXILLARY HYPERHYDROSIS AND OSMIDROSIS - PSEUDOGYNECOMASTIA REMOVAL OF LIPOMAS - FILLER GRANULOMAS

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The Code of Excellence



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DEKA The Code of Excellence

A spin-off of the Ei.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, Germany, Japan and USA. Excellence is the hallmark of DEKA's experience and recognition garnered in the sphere of R&D in over thirty years of activity. Quality, innovation and technological excellence place DEKA and its products in a unique and distinguished position in the global arena. 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.