



# Practice Advisor Special Edition 2016

Grow Your Practice Quickly and Wisely:  
**Laser Physicians Tell You How**

Interviews with leading European laser dermatologists and plastic surgeons on the use of lasers and light-based systems in their daily practices

Dr. Francesca de Angelis, Dr. Matteo Tretti Clementoni, Dr. Gerd Gauglitz, Dr. Gerd Kautz, Professor Alina Fratila and Dr. Patricia Ortiz Garcia share their expertise, tips and tricks

# Grow Your Practice Quickly and Wisely: Laser Physicians Tell You How

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# Grow Your Practice Quickly and Wisely: Laser Physicians Tell You How

If you want to add or update your laser or light-based treatments, read what six of your colleagues have experienced with the Lumenis M22™ multi-application platform and CO<sub>2</sub> lasers, the UltraPulse® and AcuPulse™.

## ➤ M22™ – All you need. All in one

First, the M22™ consists of four modules with more than 30 FDA-approved indications for skin conditions and hair removal.

### M22™ modules' indications and features

#### Universal IPL\*

##### Indications

Photorejuvenation, vascular lesions, pigmented lesions, active acne, hair removal

##### Features

Optimal Pulse Technology (OPT™), Single handpiece with changeable filters and light guides



#### ResurFX™ \*\*

##### Indications

Skin resurfacing, striae, surgical scars, acne scars, dyschromia, wrinkles

##### Features

Fractional, non-ablative, CoolScan™ scanner, no disposables



#### Multi-Spot™ Nd:YAG

##### Indications

Leg veins, vascular lesions

##### Features

Multiple Sequential Pulsing, 4 sized light guides



#### Q-Switched Nd:YAG

##### Indications

Skin toning by treatment of pigmented lesions, dark tattoo removal

##### Features

Homogeneous beam profile, 7 spot sizes



## • Popular M22™ Applications

The most in-demand treatments among the interviewed physicians using the M22™ modules are for vascular conditions (haemangioma, rosacea, telangiectasia), photorejuvenation and scars. The physicians also use the M22™ modules to resurface skin and to treat striae, pigmentation, and lentigos.

“Since I am also a phlebologist I use the Nd:YAG (Multi-Spot) laser a lot,” says Professor Alina Fratila, an expert in dermatology, phlebology and aesthetic laser therapy. “In fact, I find the Nd:YAG extremely useful because I can successfully treat legs with a lot of spider and reticular veins in one session without the risk of thrombosis and hyperpigmentation, a common problem in sclerotherapy. I don’t need a compressive dressing and there is no risk of post-inflammatory hyperpigmentation (PIH)”. Professor Fratila, who practices in Bonn, Germany, has been using the UltraPulse®, M22™, ResurFX™, and LightSheer® systems for many years.

Dr. Patricia Ortiz Garcia, a dermatologist-venereologist at her Plasderma clinic in Almeria, Spain, uses the Universal IPL or the PhotoFractional™ combination of IPL and ResurFX™ 1565 nm laser for photorejuvenation and treatment of pigmentation, redness, and telangiectasia. Dr. Gerd Gauglitz treats atrophic and other types of scars, resurfaces skin, and treats rosacea and lentigos. “Striae treatments are becoming more and more popular with the M22™,” he says. Dr. Gauglitz is a dermatologist and head of the department for aesthetic dermatology and laser medicine at the Department of Dermatology and Allergy of the Ludwig-Maximilian University in Munich University Hospital.

When asked to name the “workhorses” used in the most popular treatments, four physicians immediately named the Universal IPL and ResurFX™ modules of the M22™. “I used to use the 1540 nm fractional laser, but I switched to the non-ablative ResurFX™ fractional laser because my



M22™ multi-application system

\*Intense pulsed light. \*\* ResurFX is FDA approved for skin resurfacing and coagulation of soft tissue.



patients are extremely happy with their ResurFX™ treatments and I receive many calls from their friends and families for treatment,” says Dr. Francesca de Angelis, plastic surgeon and owner of DEA Centre in Napoli, Italy. Dr. Ortiz Garcia uses the IPL to remove the redness and lentigos and the AcuPulse™ CO<sub>2</sub> laser to remove thicker lesions.

## • Other M22™ Indications

Dr. de Angelis uses the fractional non-ablative ResurFX™ laser to treat resistant keloids, which do not respond to standard treatment options, at various body locations. “Although there is no worldwide consensus, I inject steroid into the keloid and follow with the laser and I see 100% regression in all patients,” she says. Dr. de Angelis emphasises that correct identification of the scar is the key to success with this procedure. “The keloid must be a pure keloid,” she says. “If histological study shows that the scar is a combination of keloid and hypertrophic scar, the result won’t be as good”.

Professor Fratila uses the ResurFX™ to remove keloids that arise spontaneously or after surgery. “For the first pass I use 50 to 60 mj and 200 microbeams/cm<sup>2</sup> density, and then I treat over the scar with 30 mj and 400 microbeams/cm<sup>2</sup> density,” she says. “In the first session I use IPL and ResurFX™ followed by triamcinolone/steroid. I send the patients home with instructions to apply at home silicone gel sheet regularly for 6 weeks. I repeat this treatment protocol every 6 months and the keloid improves to varying degrees. Ear keloids I excise first and then treat with the ResurFX™ to prevent recurrence. If the keloid is red I also treat with IPL.”

## • Intense Pulsed Light for Photorejuvenation

The Lumenis Universal IPL features Optimal Pulse Technology (OPT™), a single handpiece, and continuous cooling. The OPT™ controls the IPL pulse shape and permits delivery of low and high fluences over the entire range of both short and long pulses. The IPL’s single handpiece has 9 filters and 3 light guides that can be changed in seconds. FDA-approved indications of the Universal IPL include photorejuvenation and treatment of vascular lesions, pigmented lesions, active acne, and hair removal.

The interviewed physicians use the Universal IPL for photorejuvenation, rosacea, vascular and pigmented lesions, spider veins, haemangiomas, nevus flammeus, and striae. Dr. Matteo Tretti Clementoni’s primary IPL treatments are for rosacea, photorejuvenation, and removal of pigmented

lesions. “I use several passes at different settings, from the deep to the surface in a single treatment,” says Dr. Tretti Clementoni. “Patients are so happy with the results that they frequently come for other treatments as well.” Dr. Tretti Clementoni is a plastic surgeon who practices in Milan, Italy.

**Dr. Gerd Kautz’s IPL applications are for rosacea, full-face photorejuvenation, hair removal, and ageing skin. “We use FotoFinder to evaluate a skin condition, pigments, and vascularisation, so patients can monitor progress with an objective tool as well as a mirror,” he says. “I am absolutely satisfied with the IPL results and have patients who have come for treatment for 19 years.” Dr. Kautz is a dermatologist who owns the Skin and Laser Clinic in Konz, Germany.**

Dr. Gauglitz uses IPL to treat erythema of rosacea and ageing spots and combines IPL with ResurFX™ for skin rejuvenation. “I am very impressed with the outcomes, which are much better than I would have expected,” he says.



Rosacea is Professor Fratila’s most frequent application of IPL, followed by haemangioma, spider veins, and nevus flammeus.

As for Dr. Ortiz Garcia, her applications include skin rejuvenation and striae (primarily red type). “IPL is also very effective against vascular and pigmented lesions,” she says. “I obtain fantastic results with only a single treatment. ResurFX™ also looks very promising, especially when combined with IPL for facial rejuvenation.”

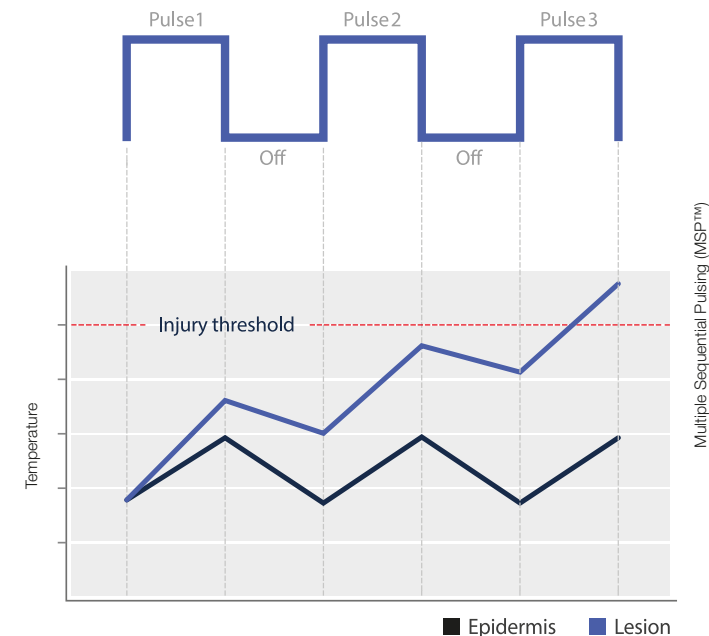
The M22™ IPL has a variety of advantages when compared to other systems. “The M22™ IPL can be adjusted perfectly to the skin lesion, its depth, and its diameter,” says Dr. Tretti Clementoni. “It can be customised to any patient,” says Dr. Kautz, “the Lumenis IPL is fast, stable, and costs are not so high.” Dr. Gauglitz likes the ease of changing filters. “Presets are efficient and they yield great results,” he says. “The M22™ is an ideal device for someone who is not familiar with IPL.”

Professor Fratila compares the M22™ IPL to the pulsed dye laser. “The M22™ IPL results are more uniform and without demarcation lines,” she says. “And there is no purpura. You can treat vascular and pigmented lesions at the same time and the rejuvenation effect is much better too.”

**Dr. Ortiz Garcia tried other systems before purchasing the M22™ IPL. “The M22™ feels much more powerful and offers a much wider variety of treatment possibilities,” she says. “You can choose the treatment and change the wavelength, number of pulses, and pulse duration. Other devices in the market have standard pre-sets that the operator cannot change.”**

## • Multiple Sequential Pulsing with Cooling

The physicians also commented on the Multiple Sequential Pulsing (MSP™) – feature of the Universal IPL and Nd:YAG modules. MSP™ controls the delivery of energy to the target tissue by splitting the pulse into 2 or 3 sub pulses, allowing to cool the epidermis in between the sub pulses. For example, with MSP™, 25 J/cm<sup>2</sup> of energy can be delivered as a single pulse or divided equally among multiple pulses (up to three sub pulses).



“MSP™ allows me to deliver a great amount of energy to deeper targets, and I’m very happy with the results,” says Dr. Tretti Clementoni. “And cooling between pulses is absolutely essential in 85% of the treatment situations.” Dr. Kautz agrees. “I can treat all skin types with minimal side effects,” he says. Dr. Gauglitz adds that with the Nd:YAG laser he can treat in a single session of 5 to 7 minutes without anaesthetic or any other medication. “MSP™ is great because my patients have no burns or blisters,” says Professor Fratila. Dr. Ortiz Garcia prefers single pulses for most patients but finds that MSP’s ability to also divide a given amount of energy equally among multiple pulses is important in patients with dark skin. “My dark-skinned patients feel more comfortable with double or triple pulses,” she says.

All five physicians cool the target area after treatment. “I cool dark skin to reduce inflammation and the risk of PIH,” says Dr. Tretti Clementoni. Dr. Kautz uses cooling with all skin types. “I use a cooling mask when I treat large areas and continue with the mask and cold water after the procedure,” he says. Professor Fratila uses an Ice Mask™ (Liquid Ice CosMedicals AG, Switzerland) on all skin types for 15 minutes after IPL treatment. “I don’t have to use steroid tablets because swelling disappears quickly with the Ice Mask,” she says.

## • Long-Pulsed Nd:YAG for Vascular Treatments

The 1064 nm Nd:YAG Multi-Spot™ laser module features MSP™ and 4 sized light guides. MSP™ protects the epidermis and permits the safe use of higher fluences. Indications include leg veins and vascular lesions, as well as wrinkle reduction and hair removal.



Most of the interviewed physicians use the Nd:YAG laser to treat haemangioma and telangiectasia. Dr. Tretti Clementoni treats telangiectasia and haemangiomas at locations that include the face. “I am happy with my results,” he says. Professor Fratila believes that the Nd:YAG has lived up to its promises. “The Nd:YAG is an important part of my practice,” she says. “I often use 150 J/cm<sup>2</sup> double or triple pulses, and the maximum possible pulse length (to treat vascular conditions) and the results are great! Haemangiomas of the body are the perfect indication for the Nd:YAG. I use the Nd:YAG on the face also, but in the nasal area I use the IPL.” Dr. Ortiz Garcia adds that the Nd:YAG provides acceptable efficacy for leg veins. “It’s important to manage expectations and make sure that patients know that healing takes time,” she says.

Several physicians found other uses for the Nd:YAG laser. Professor Fratila has discovered she can use the Nd:YAG laser to treat spider veins on all body parts. “I established my vascular reputation with my Nd:YAG laser and lots of patients come to me because I perform Nd:YAG treatments. I have two long pulsed Nd:YAG devices from Lumenis in my office to cope with the great demand for the procedures,” she says. Dr. Ortiz Garcia treats leg veins, bigger veins on the nose, and nevus araneus. “Nevus araneus is hard to remove with the IPL, so I use the Nd:YAG,” she says.

## • ResurFX™ Alone and with Universal IPL

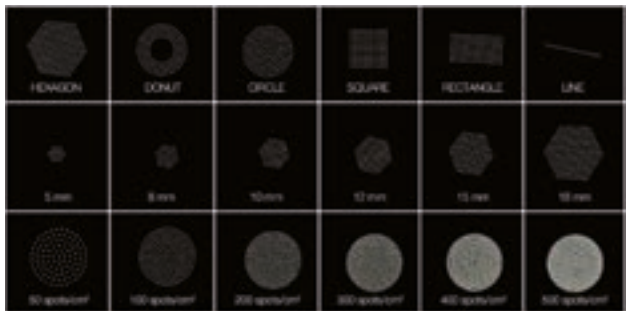
The ResurFX™ is a fractional laser designed for non-ablative skin resurfacing with a single pass. The laser’s CoolScan™ scanner permits the use of customised treatments with safe energy delivery and controlled, non-sequential pulsing. Scanning beams are available in different sizes and shapes which allows the user to treat “nooks and crannies” of the face, such as around the root of the nose and eye. The ResurFX™ requires no consumables which reduces costs to the practice. The ResurFX™



and Universal IPL are both on the M22™ platform so the physician does not need to change heads when changing from one module to the other, thus reducing time.

All the interviewed physicians have embraced the ResurFX™. “The ResurFX™ is currently the best fractional non-ablative system I know,” says Dr. Kautz. “I can change the spot size, density, and energy which allows me to work on a myriad of indications very successfully.”

Dr. de Angelis’ practice has grown enormously since she started using the ResurFX™. “My patients were concerned at first because the treatment produces oedema,” she says. “But just after 1 week the patients look so fabulous that the whole neighbourhood is queuing for the ResurFX™ procedure. ResurFX™ not only tightens skin, it also results in a refreshing look. If you combine it with IPL, oedema is more profound but the results are even better! Patients still look great a year after a single session. They are happy with the results and they are saving money. I get loads of referrals and the clinic is very busy. I treat face and neck, and there is a great demand for décolletage, hand treatments and striae. If the patient wants less oedema I use only the ResurFX™.”



M22™ Coolscan™ shapes, sizes and densities

Dr. Tretti Clementoni says: “Results with the ResurFX™ are superb on stretch marks and thin scars. As for rejuvenation, the ResurFX™ makes the skin brighter and may be combined with an IPL. The ResurFX™ targets water and the IPL targets melanin and haemoglobin. I believe there is a robust theoretical hypothesis behind this procedure combination.”

Although Dr. Ortiz Garcia had doubts at first, she now uses the ResurFX™ as a stand-alone treatment or she combines it with IPL. “The results are very satisfying,” she says. “Patients like the combination (PhotoFractional™) treatment since they get visible results similar to those of more aggressive techniques but without the downtime. In my mind, ResurFX™ improves the structure and quality of skin without the risk of side effects. It’s also a very good option for stretch marks, especially on the chest.”

Professor Fratila recommends that physicians choose the ResurFX™ as a first buy for the clinic. “It takes years to learn how to get good results with IPL,” she says. “With ResurFX™ the settings work well and the risks are low. It’s a great system to start with. In addition, combined with M22’s IPL in PhotoFractional™ treatment, the results are even greater and patients are extremely satisfied.”

## • When and Where to Use the ResurFX™

Physicians use the ResurFX™ to treat scars, aging skin, striae, wrinkles, dyschromia, and structural problems of the skin. Professor Fratila, Dr. Tretti Clementoni, Dr. de Angelis, and Dr. Gauglitz treat scars, including acne, atrophic, deep, and self-harm scars. Dr. de Angelis uses the ResurFX™ to rejuvenate the upper arms and uses the PhotoFractional™ for aging spots and scars. “For the face I use the PhotoFractional™ or resort to the AcuPulse™ CO<sub>2</sub> laser for more dramatic results,” says Dr. Ortiz Garcia. “Patients come to me from Southern Spain and they always have pigmented and vascular lesions to treat.” Dr. Ortiz Garcia treats the face, neck, and décolletage, often in combination with IPL.



ResurFX™ fractional non-ablative laser

## • PhotoFractional™

The PhotoFractional™ is a combination of the ResurFX™ and IPL.

All the physicians use the PhotoFractional™ and appreciate its advantages. Dr. Kautz says, “We see great results with IPL, but with PhotoFractional™ we improve pigmentation, skin texture, redness, blood vessels, pigments, and pores in a single combined session. Downtime is limited to feeling like sandpaper for a week but the feeling is not visually dramatic. Patients have a treatment on Friday and they go to work on Monday.” Dr. Tretti Clementoni prefers the PhotoFractional™ for the treatment of superficial photodamage and skin sallowness.

Dr. Gauglitz prefers the PhotoFractional™ because with this combination patients make only a single visit and they get “double results.” Downtime is not as prolonged and pain is less. “Results are good with the ResurFX™ alone, but with the combination skin texture is great and vascular improvement is great,” he says. “Theoretically IPL creates oedema in pigmented lesions and vessels and this creates a better target for ResurFX™. One would expect more downtime but I find that this is not the case. The effect is improved if I repeat the combined treatment 3 times at 4-week intervals. I also do a repeat treatment annually because patients keep on aging and every year they get more spots.”

Professor Fratila uses the PhotoFractional™ to treat rosacea on the face and nose. “You can’t treat the nasal area where the nostril meets the face with just IPL, so I use the ResurFX™ too and get much better results,” she says. “Red striae is another great indication for the PhotoFractional™.”

Dr. Ortiz Garcia uses the PhotoFractional™ for many indications, especially for wrinkles. “Results are especially good in the periorbital area and forehead,” she says. “Downtime with the PhotoFractional™ is minimal and results are visible and similar to those of more aggressive techniques. My patients appreciate the PhotoFractional™ a lot!”

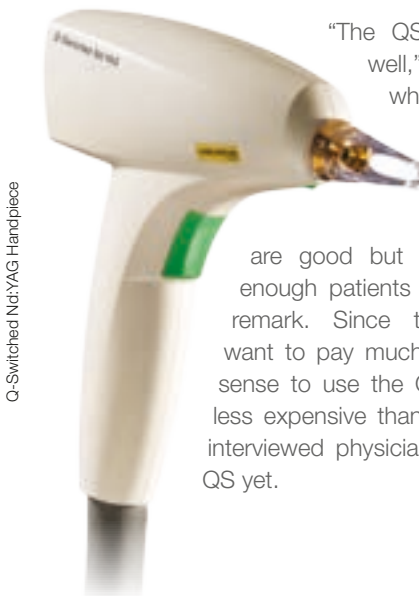
## • Inflammatory Acne

To treat inflammatory acne, the physicians start with topical medication and, if the condition persists, they perform a light-based treatment. Dr. de Angelis’s protocol depends on the severity of acne. “I am a plastic surgeon and acne patients come to me when they have failed dermatological treatments,” she says. “If the acne is mild I use topicals and antibiotics. After 3 months, on the basis of the patient’s response, I treat the patient with IPL. In more severe cases and if I see the potential for scarring, I prescribe retinoid for 6 months, stop the medication, and perform IPL and ResurFX™.”

Dr. Ortiz Garcia also starts with medication. “In Spain medical insurance covers only medication for acne so that is the first call to action,” she says. “If insurance were not an issue I think IPL and ResurFX™ would be a good treatment, or I would probably prefer to combine IPL and medication.” Dr. Kautz recently started using IPL and ResurFX™ to treat acne. “I give 4 to 5 treatment sessions at intervals of 4 to 6 weeks and the results are good,” he says.

## • Q-Switched Nd:YAG Laser for Combination Treatments

The 1064 nm Q-Switched Nd:YAG (QS) module is designed for skin toning by treatment of pigmented lesions, dark tattoo removal, and advanced combination treatments with other M22™ modules. The QS features a homogeneous distribution of energy and 7 spot sizes.



Q-Switched Nd:YAG Handpiece

“The QS module works very well,” says Dr. Kautz, who has started to use the QS to treat pigmentation and to remove tattoos. “So far the results are good but we have not treated enough patients to make a conclusive remark. Since tattoo patients don’t want to pay much for removal it makes sense to use the QS because it’s much less expensive than PicoSure.” The other interviewed physicians have not used the QS yet.

## • Treatment tips and tricks

### Leg Veins

To treat leg veins with the Nd:YAG laser, responding physicians use fluence of 90 to 150 J/cm<sup>2</sup>, 12-ms pulse duration (1 respondent), single to triple pulses, and a 2x4 mm spot size. “The settings depend on the thickness of the leg vein,” says Dr. Ortiz Garcia. Dr. Tretti Clementoni uses 100 J/cm<sup>2</sup>, 12-ms pulse duration, and a single pulse. “I use more than 90 J/cm<sup>2</sup> and a double pulse,” says Dr. Kautz. Professor Fratila prefers a double-triple pulse with 150 J/cm<sup>2</sup>. “I treat veins of a maximum diameter of 2 mm,” says Professor Fratila. “You have to evaluate the patient and, if necessary, remove a haematoma to avoid PIH. Patients with 4 mm veins will always have an intravascular thrombosis.”

### Rosacea

The responding physicians treat rosacea with the M22’s IPL module. Dr. Tretti Clementoni, for a given patient, typically uses 2 passes, 2 different filters, and different settings from session to session. “For the first pass I often use the 590 nm filter, 18 J/cm<sup>2</sup> fluence and double pulses at 5 ms with a 20 to 25 msec delay. For the second pass I typically use 560 nm, double pulse of 3 and 5 msec, 18-19 J/cm<sup>2</sup> and a delay time from 15 to 30 msec,” he says. Dr. Ortiz Garcia makes several passes to the deeper and upper layers of skin. She uses 560 to 590 nm filters, 14 to 22 J/cm<sup>2</sup> fluence (depending on pulse duration), and a single pulse at 6 to 10 ms.

For darker skin types, Dr. Tretti Clementoni, Dr. Kautz, and Dr. Ortiz Garcia increase the IPL’s pulse duration and delay time. “I also use a longer pulse and delay time with people who are afraid of pain,” says Dr. Kautz. “IPL is perfect for the erythema of rosacea,” adds Dr. Gauglitz. For skin types II to III, Professor Fratila starts with 16 to 18 J/cm<sup>2</sup> fluence and plans on at least 3 to 5 treatment sessions followed by one or two sessions per year for maintenance. “Patients are very happy with their rosacea treatment results,” she says.

For safety use, Indications and Contraindications refer to the Operator Manuals and Instructions for Use of Lumenis Laser system and accessories and other cosmeceuticals or drugs used.



## ➤ CO<sub>2</sub> Lasers

The CO<sub>2</sub> laser is the Gold Standard for full and fractional ablative skin resurfacing. It is also predictably effective on a variety of conditions such as warts, acne scars, wrinkles, and syringomas. The Lumenis UltraPulse® and AcuPulse™ are powerful, versatile, and user-friendly.

### • UltraPulse®

The UltraPulse's DeepFX™ fractional configuration is designed for wrinkles, acne scars, and other deep conditions. To reach even deeper conditions in a single pulse, SCAAR FX™ has been added, enabling penetration of up to 4 mm to treat deep, hypertrophic and contracted lesions. For dyschromia and other superficial skin conditions, the ActiveFX™ configuration provides different energy levels and a different beam size. The UltraPulse's best ablation/coagulation ratio and shortest dwell time added to the CoolScan™ technology, leads to optimal clinical outcomes with the largest safety margin.



UltraPulse® fractional CO<sub>2</sub> laser

### • AcuPulse™

With more than 30 FDA-cleared aesthetic indications, the AcuPulse™ deploys a wide range of patterns, spot sizes, and dwell times. The versatile laser delivers a continuous wave at low power for long durations, or a real SuperPulse™, a high-power burst of energy that penetrates up to 1 mm in 0.3 ms to minimise residual thermal damage. The AcuPulse™ can be used with the SurgiTouch™ scanner for full ablative resurfacing or along with the AcuScan120™ for fractional ablative resurfacing.



AcuPulse™ fractional CO<sub>2</sub> laser

### • The “Workhorse”

The CO<sub>2</sub> laser is the “workhorse” in the dermatology and plastic surgery settings, according to Dr. Gauglitz. “You can use the CO<sub>2</sub> laser in both the fractional and full ablative modes,” he says. “You can tighten the skin and resurface at the same time.” Professor Fratila agrees. “You can achieve fantastic skin tightening that is long lasting,” she says. “Vaporisation is uniform which is important for intra-epidermal lesions such as warts and lentigos.”

Dr. de Angelis considers the CO<sub>2</sub> laser a “must device” in her surgical clinic. “I use the CO<sub>2</sub> laser to treat scars, especially

post-surgical scars of all kinds,” she says. “As a surgical tool, the CO<sub>2</sub> laser enables the surgeon to remove small imperfections and lentigos effectively and in one second.” According to Dr. Ortiz Garcia, the CO<sub>2</sub> laser causes “the most dramatic change in the quality of skin.” “The CO<sub>2</sub> laser can penetrate much deeper into the skin than any other technology and can promote renewal of the skin and production of collagen fibers,” she says.

When asked to name the indication that stands out for the CO<sub>2</sub> laser, most of the interviewed physicians replied that it is the treatment of scars. “You can treat scars much better than with any other technology,” says Dr. Ortiz Garcia. Dr. Kautz adds, “CO<sub>2</sub> brings profound changing in skin structure. With only a single UltraPulse® treatment I see a big change in acne scars and results on both hypertrophic and hypotrophic scars are unbelievable.” Dr. Kautz also sees big changes in aging skin, adenoma, and rhinophyma after a single CO<sub>2</sub> laser treatment. “Scar results and skin resurfacing are amazing,” says Dr. Gauglitz. In Professor Fratila's practice, skin resurfacing and treatment of severe sun damage are the stand-out indications for the CO<sub>2</sub> laser.

The “most wanted” CO<sub>2</sub> procedures among the 6 physicians are removal of skin lesions (Dr. Tretti Clementoni, Dr. Ortiz Garcia); all kinds of scars (Dr. de Angelis); treatment of sun damage and scars (Dr. Kautz); rejuvenation around the eyes without causing scars (Professor Fratila); and skin resurfacing, scars, and combinations with photodynamic therapy (Dr. Gauglitz).

### • CO<sub>2</sub> Fables. Ablate or Not Ablate

The use of CO<sub>2</sub> lasers is surrounded by myths. “One is that you will look 20 years younger,” says Dr. Tretti Clementoni. “Well, we can do 10 years.” Side effects, pain and downtime are other myths, according to Dr. Gauglitz. “It's amazing to see how happy and surprised patients are after AcuPulse™ treatments,” says Dr. de Angelis. “They expect to see heavy crust and to look like babies after a single session.” Professor Fratila says that patients expect scars and burning with long erythema. “I never had a scar in any of my patients in 20 years of using the UltraPulse®,” she says. “Since I treat these patients with IPL three weeks later, there is no erythema left either.”

Full-face fractional treatments are in demand, but patients are starting to choose the gentler ResurFX™ at times. “I treat 15 to 20 patients a month,” says Dr. Kautz. “That number is dropping because we are doing many ResurFX™ treatments and many patients prefer the less aggressive procedure.” Dr. de Angelis treats about 10 patients a month with a fractional CO<sub>2</sub> laser, and much higher number with the ResurFX™. Dr. Gauglitz says, “I do about 80 full-face fractional resurfacing treatments each month during the September-May season and fewer during the summer. We use the ResurFX™ all year round.” Professor Fratila performs 30 to 40 full-face fractional treatments each month. “I often combine this procedure with photodynamic therapy,” she adds. Dr. de Angelis,

Dr. Gauglitz, and Professor Fratila don't use the CO<sub>2</sub> laser during the summer months. “I don't use the CO<sub>2</sub> laser in the summer time to avoid hyperpigmentation,” says Professor Fratila.

Two physicians limit their use of fully ablative CO<sub>2</sub> treatments to excision while others prefer fractional treatments. “I live in the south of Spain so I always treat with the fractional laser to minimise side effects,” says Dr. Ortiz Garcia. Professor Fratila does not hesitate to treat patients with the fully ablative CO<sub>2</sub> laser. “I treat with 2 passes, the first with 125 mJ energy and density 5% or 6% and the second at 100 mJ and 4% or 5% density to remove the entire epidermis,” she says. “Downtime is 1 week and redness persists for about 3 weeks. I treat around the eyes and mouth with fully ablative and the full face with fractional to avoid pseudo hyperpigmentation.”

**The decision of whether to treat a patient with a powerful CO<sub>2</sub> laser is based on the physician's impression of the patient, the season of the year, the skin type, and the presence of melasma. “There are people who cannot endure side effects, even if they are mild,” says Dr. de Angelis. “Their anxiety pushes them to remove crust, so it's important to understand if the patient is “designed” for the CO<sub>2</sub> after-protocol. I would start with a non-ablative laser, observe the patient's behaviour, and then decide if he or she is fit for CO<sub>2</sub> treatment. I practice in Napoli, Italy, so I don't use the CO<sub>2</sub> laser in the summer because of the side effects. I never treat patients with skin type IV and up, although I may treat a patient in this category who has applied hydroquinone for 3 months before the AcuPulse™ procedure.”**

Dr. Tretti Clementoni does not treat patients with the CO<sub>2</sub> laser in the summer either. “Patients have to avoid the sun for several months after the procedure, so summer is not a good time,” he says. Dr. Kautz considers the status of wound healing. “If the patient uses Accutane, wound healing is diminished,” he says. “I am also careful with darker skin types who have a history of poor healing.”

Dr. de Angelis, Dr. Ortiz Garcia, and Dr. Gauglitz do not recommend CO<sub>2</sub> treatment in patients with melasma. “Even if the condition improves after treatment, the long-term results are in question,” says Dr. Gauglitz. Dr. de Angelis is currently testing the ResurFX™ for the treatment of melasma.

Two physicians recommend treating only skin types I through III with the CO<sub>2</sub> laser. Another two suggest limiting CO<sub>2</sub> laser treatment to types I through IV, the fifth has no dark skin types, and the sixth treats patients of all skin types with the CO<sub>2</sub> laser.

### • Combinations

The physicians combine CO<sub>2</sub> treatment with fillers, botulinum toxin, and IPL. “I use IPL to treat patients left with pigmentary abnormalities after CO<sub>2</sub> treatment,” says Dr. Kautz. “The combination reduces downtime and improves results.

We also combine CO<sub>2</sub> treatment with botulinum toxin and dermal fillers. Hyaluronic acid dermal filler (Juvederm) works very well.” Dr. de Angelis also combines CO<sub>2</sub> and IPL. “I treat with IPL first, wait at least 1 hour, apply Pliaglis (topical anaesthetic; generic name lidocaine and tetracaine), and then treat with the CO<sub>2</sub> laser,” she says. “As for botulinum toxin or fillers, I treat with the CO<sub>2</sub> laser 1 month before or after using these injectable products. I also apply skin boosters 3 weeks before laser treatment.”

Dr. Gauglitz pre-treats with botulinum toxin, followed by CO<sub>2</sub> laser 4 weeks later, and hyaluronic acid fillers thereafter. “In order to reduce the post-operative redness patients usually receive an IPL treatment 2 to 3 weeks after the CO<sub>2</sub> procedure.”

Professor Fratila treats with botulinum toxin, waits for 2 weeks, and then uses either the fully ablative or fractional CO<sub>2</sub> laser, depending on skin damage.

Dr. Ortiz Garcia uses IPL and CO<sub>2</sub> in a single session or separately. “For wrinkles or full-face rejuvenation, I start with IPL to improve skin colour and then treat with the CO<sub>2</sub> laser 2 weeks later,” she says. “If the patient has both pigment and benign lesions I combine IPL and AcuPulse™ in a single treatment session. I give botulinum toxin 2 weeks before AcuPulse™ treatment and fillers 2 to 3 weeks after AcuPulse™ treatment.”

### • Downtime

Downtime depends on the aggressiveness of the treatment, according to Dr. Tretti Clementoni. “For fractional lasers, the minimum downtime is 48 hours and the maximum is 5 to 6 days,” he says. With the CO<sub>2</sub> laser, Dr. Kautz's downtime is 1 to 2 weeks and redness takes longer to fade. “I start to remove redness with IPL 2 weeks after UltraPulse® CO<sub>2</sub> treatment,” he says. In Dr. de Angelis practice, downtime is 10 days for the AcuPulse™ CO<sub>2</sub> laser. “I prefer to tell patients 10 days and they are happy to resume their usual life after 5 days,” she says. “With the ResurFX™, downtime depends on the patient. If we decide to do more treatments we alter the settings to reduce the downtime between treatments.” Dr. Gauglitz's downtime is also 10 days for the UltraPulse® laser and 4 days for the PhotoFractional™ (combination of IPL and ResurFX™). Professor Fratila's downtime is 2 weeks for fully ablative treatment and 10 days for fractional treatment. In Dr. Ortiz Garcia's practice, downtime for wrinkle treatment is 3 to 5 days. “If wrinkles are very deep the settings are more aggressive and the downtime increases to 10 days,” she says. “Redness may persist for several weeks.”

### • Lumenis Lasers

**Physicians like their Lumenis CO<sub>2</sub> lasers for a variety of reasons. “The UltraPulse® provides controlled thermal damage around a very clean channel of ablation,” says**

**Dr. Tretti Clementoni. Dr. Gauglitz uses the UltraPulse® to treat burn scars. “The UltraPulse® SCAAR FX™ is the only laser in the world that is so effective for burn scars,” he says. “I find the AcuPulse™ effective as well for many other indications.”**

Dr. de Angelis, who uses the AcuPulse™, says: “I have compared the AcuPulse™ to other CO<sub>2</sub> systems and the AcuPulse™ provides the deeper and cleanest penetration. For me the AcuPulse™ is the gold standard.” AcuPulse™ provides deepest level of penetration compared to the other CO<sub>2</sub> lasers of its category, but UltraPulse® SCAAR FX™ has undoubtedly the deepest penetration rate in a single exposure.

Professor Fratila has used the UltraPulse® for years. “The UltraPulse® causes less erythema than other systems and provides a better tightening effect,” she says. “I know many doctors who have purchased cheaper CO<sub>2</sub> systems and they simply don’t use them. My patients keep coming for the last 23 years and bring their families and friends.” Dr. Kautz has also worked with the UltraPulse® for years and is very happy with the results. “I have tried 22 lasers in my clinic and I am not interested in any other CO<sub>2</sub> system,” he says.

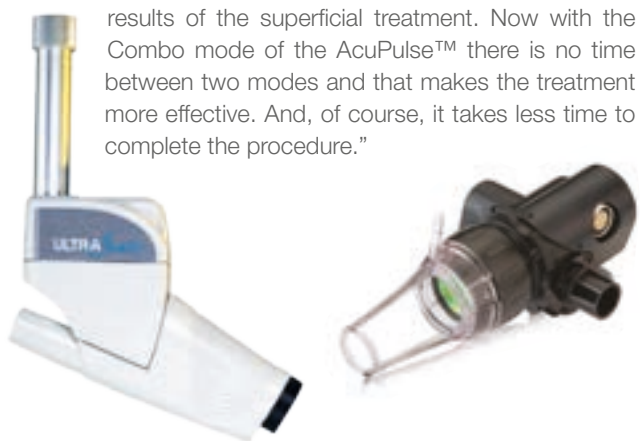
Patients of all the physicians are happy with the results of their CO<sub>2</sub> laser treatment. “Patients want results without suffering and minimal downtime,” says Dr. Ortiz Garcia. “The correct use of the AcuPulse™ is a nice solution. Patients witness impressive results and they forget about the hardship. The CO<sub>2</sub> works especially well for older women who know what they want and are ready to do what it takes.”

Dr. Gauglitz prefer non-ablative lasers for younger patients. “The ResurFX™ makes more sense for younger patients because the results are good and there is no downtime,” says Professor Fratila, who also prefers the ResurFX™ in patients without pigmented or epidermal lesions.

## • Using the Superficial and Deep Modes Together

The capability to treat in both superficial and deep modes simultaneously provides synergistic clinical outcomes for most physicians. “There are different targets for superficial and deep penetration and the UltraPulse® and AcuPulse™ hit both levels,” says Dr. Tretti Clementoni. Dr. Ortiz Garcia adds, “You can treat more aggressively and effectively in a short time. Before we had this option, we used Deep mode first, which caused oedema, and this diminished the results of the superficial treatment. Now with the Combo mode of the AcuPulse™ there is no time between two modes and that makes the treatment more effective. And, of course, it takes less time to complete the procedure.”

UltraPulse® CPG scanner



AcuPulse™ AcuScan120™ fractional scanner

## • Scars

All the physicians have treated traumatic scars with their CO<sub>2</sub> lasers and all have found the results rewarding for both patient and physician. “Range of motion and contraction both improve immediately after the first procedure,” says Dr. Tretti Clementoni. “Since new collagen deposition has started, results continue to improve over time. We experience both immediate and long-term improvement. The percentage of improvement varies but all the patients are extremely happy and grateful; and it’s a most gratifying procedure for us.”

Dr. Kautz’s experience with the UltraPulse® has been similar. “For years we believed nothing could be done for heavy traumatic scars, but seeing them now with such improved mobility and texture after treatment with the UltraPulse® is the happiest thing a doctor could wish for,” he says.

Dr. de Angelis treats traumatic scars with the AcuPulse™. “The scar improves very quickly and then in 3 months, 1 year, and 2 years the scars improve more, both in texture and range of motion,” she says. “Many patients call me when they hear about the miracles of AcuPulse™. Normally after suturing a wound, I lase both deeply and superficially with

the AcuPulse™ and then pass with ResurFX™ to reduce the risk of pathological scar formation.”

Dr. Ortiz Garcia also uses the AcuPulse™. “Skin improves inside and on the surface of the scar,” she says. “Patients are very aware of their appearance and the AcuPulse™ treatment definitely helps to improve their quality of life and self-esteem. Although it takes time to see the final effect and we have to manage expectations, in the end patients are very happy - without exception.”

Dr. Gauglitz was trained several years at Shriners Burn Hospital in Texas, USA. “Scar tissue becoming less noticeable has a great impact on patients,” he says. “It’s impressive how much you can do for patient’s quality of life. Scar treatment is a medical indication that I appreciate a lot!”

## • Keloids

Dr. de Angelis stresses the importance of correct identification before treating a keloid. “My current protocol is to inject Cortisone and then treat with a fractional non-ablative laser,” she says. Dr. de Angelis also prevents keloid recurrence by multiple ResurFX™ treatments, which are performed at the time of suture removal, which significantly reduces the rate of scar formation. “So far, keloids have not recurred with this approach,” she says. Professor Fratila treats keloids with the UltraPulse® SCAAR FX™ (or DeepFX™) and then steroid injection. Dr. Ortiz Garcia removes ear keloids with the incisional handpiece of the AcuPulse™ and then treats with corticosteroid. “There is no international consensus to remove keloids, so we keep on researching,” adds Dr. Kautz.

## • Dyschromia

Dr. Kautz prefers to treat dyschromia with the Photo-Fractional™. “If the patient needs real structural changes, I go to TotalFX™ (combination of ActiveFX™ and DeepFX™ modes),” he says. “For just pigmentation, I prefer IPL and the Q-Switched Nd: YAG.” Dr. Kautz compares his approach to dyschromia with a builder who comes to fix his house. “The builder comes with different tools to address all the problems of my house,” he says. “I do the same — I mix and fix.”

For mild dyschromia and for rejuvenation, Dr. de Angelis normally treats with the IPL of her M22™ system. “If the dyschromia is severe and keratosis is present, I use IPL and the AcuPulse™ CO<sub>2</sub> laser in a single session,” she says. “After that, if the patient needs resurfacing, I go to the ResurFX™.” Dr. Ortiz Garcia bases her treatment decision on the type of dyschromia. “If the patient has pigmented keratotic lesions, I use the AcuPulse™ in traditional or fractional superficial mode to remove them from the skin surface,” she says.

Professor Fratila uses her UltraPulse® with DeepFX™ followed by photodynamic therapy with a photosensitising agent under occlusion for 3 hours.

## • Consultation

Dr. de Angelis stresses the importance of consultation before CO<sub>2</sub> treatment. “I always speak a lot to patients before the treatment,” she says. “The patients (especially those 50 to 60 years of age) expect a “lifting” result and you have to tell them that the result won’t be the same as a face lift. If I prepare them well, they are happy with the result.” Dr. Kautz agrees. “Patient consultation and setting expectations are most important,” he says. “Otherwise you get into trouble.”



## • How Lumenis Stacks Up

**The physicians agree that results are better and downtime is shorter with both the UltraPulse® and the AcuPulse™ when compared with other continuous wave and fractional ablative systems. They attribute this to the unique UltraPulse® and SuperPulse™ technologies. “You cannot compare the UltraPulse® with any other laser,” says Dr. Tretti Clementoni. “If you compare the AcuPulse™ with its SuperPulse™ technology with other lasers, you might achieve the same penetration but have more control on the damage. The procedure is more precise, yielding better and safer results. The UltraPulse® is another universe, which no other laser can reach.” Professor Fratila agrees. “Of course, you cannot compare the UltraPulse® with any other systems,” she says. “The continuous wave that most systems use burn the skin and it takes weeks and weeks to heal. With the UltraPulse®, you do just one pass of ablation with amazing results.”**

Dr. de Angelis has used other CO<sub>2</sub> lasers. “With the AcuPulse™, the downtime is 4 to 5 days shorter,” she says. “Coverage is greater, side effects are fewer, results are better, and the process is safer. You can always buy a cheaper laser, but patient safety will be jeopardised. Having a safe laser is very important, especially for beginners.” Dr. Gauglitz adds, “The Lumenis systems create less pain, deeper penetration, shorter downtime, and they are more precise.”

Compared to other systems, the AcuPulse™ with SuperPulse™ technology provides more control, greater precision,



shorter pulses, and deeper penetration, according to Dr. Ortiz Garcia. "UltraPulse® penetrates 4 mm with 1 pulse, and no other laser in medicine can do that," she says.

## • Anaesthesia

Most of the interviewed physicians prefer Pliaglis topical anaesthetic with CO<sub>2</sub> treatments.

## • Antiviral, Antibiotics and Steroids

Dr. Tretti Clementoni prescribes antiviral (valacyclovir 200 mg/day), antibacterial (cephalosporin 400 mg/day), and antifungal (ketoconazole 100 mg/day) drugs before CO<sub>2</sub> treatment. If Dr. Kautz treats a large area of the face, he prescribes an antiviral drug for herpes. Dr. de Angelis prescribes antiviral and antibiotic drugs for 3 days before CO<sub>2</sub> treatment and for 5 days after treatment. "I never use an antifungal drug because I use an antifungal cream immediately after laser treatment," she says. "Then patients apply antibiotic and fungal cream until there is no redness, and after that only fungal cream until healing is complete. I use Cefotaxime antibiotic and Canesten (clotrimazole) antifungal."

Dr. Gauglitz prescribes an antiviral (acyclovir 400 mg, 3 times daily) and antibiotic (Cefuroxime [cephalosporin antibiotic] 500 mg 2 times daily), both for 2 days before and 2 days after CO<sub>2</sub> treatment. Professor Fratila prescribes an antiviral (acyclovir) around the mouth but no antibiotics before CO<sub>2</sub> treatment. "I use antibiotics only after full-face CO<sub>2</sub> treatments," she says. Dr. Ortiz Garcia always prescribes antibiotic and antivirals routinely and antifungals only if she believes it's appropriate for the specific patient.

Most of the physicians use only topical steroids on skin after resurfacing.

## • Should You Buy a CO<sub>2</sub> Laser?

When asked what advice they would give to other doctors considering the purchase of a CO<sub>2</sub> laser, the physicians said to choose a system with (1) a track record and solid technical support, (2) high peak power, (3) a modern scanner, (4) deep penetration, and (5) a strong, stable, time-honoured technology. "It's important that the system has a lot of scientific studies," says Dr. Kautz. "The pulse should have high power and the system should have a sophisticated scanner. I have it all in my UltraPulse®."

Dr. de Angelis stressed the importance of the CO<sub>2</sub> laser's deep penetration mode. "As a plastic surgeon, the CO<sub>2</sub> is perfect for me since I can offer effective treatment of scars," she says. "Many patients come to me because I treat with both CO<sub>2</sub>

and ResurFX™ lasers soon after surgical procedures. They are confident they won't have scars and they don't."

Dr. Gauglitz's clinic has an UltraPulse®. "The UltraPulse® is my "golden goose". The CO<sub>2</sub> technology is stable and can serve you for many years. I don't believe many changes can be made and the UltraPulse® has been the one and only for a few decades," he says. According to Professor Fratila, physicians should take the time to learn from other physicians who operate the laser they intend to buy. "The settings are not transferable from one machine to the other, especially with UltraPulse®," she says. "There is no laser on the market that is similar to the UltraPulse®."

Dr. Ortiz Garcia advises physicians to buy a CO<sub>2</sub> laser only if they are willing to acquire in-depth knowledge of laser-skin interactions so they can control side effects. "You have to be prepared to address patient concerns about such a strong technology," she says. "They have to wait longer for results and side effects may come. I live in southern Spain and the IPL may be the best pick for this region, but I am groomed on UltraPulse® and I like the strong technology and its effectiveness. So, when buying a laser, one should look for the laser with the option to be fractional, with the shortest pulse duration (SuperPulse™ or UltraPulse®), the possibility to choose the spot size and spot form, and the capability to deliver the beam in a random or controlled manner."

For safety use, Indications and Contraindications refer to the Operator Manuals and Instructions for Use of Lumenis Laser system and accessories and other cosmeceuticals or drugs used.

## • Interviewed Doctors

These interviews were conducted with renowned dermatologists and plastic surgeons from Europe. All the interviewed are well versed with Lumenis® M22™ multi-application platform and UltraPulse® and AcuPulse™ CO<sub>2</sub> lasers and they rely heavily on these systems in their daily practices.

**Francesca de Angelis, MD, PhD**, plastic surgeon and the owner of DEA Centre (laser and plastic surgery clinic) in Napoli, Italy. An active member of medical societies, Dr. de Angelis has participated in clinical trials on new laser technologies for international laser societies and is an invited speaker in many Italian and International conferences. Dr. de Angelis is known for being highly experienced in many technologies and as an innovative practitioner. Dr. de Angelis operates the Lumenis® AcuPulse™, M22™, and ResurFX™.



**Matteo Tretti Clementoni, MD**, is a board-certified plastic surgeon who practices in Milan, Italy. A member of numerous Regional and International Societies, Dr. Tretti took part in voluntary missions to Asia and Africa, treating paediatric malformations and severe burn scars. He is a widely recognised physician and speaker at worldwide conferences, author and instructor in the use of lasers in medicine. Dr. Tretti works with the Lumenis® UltraPulse®, AcuPulse™, M22™, ResurFX™ and LightSheer® systems.



**Gerd Gauglitz, MD, PhD, MMS**, serves as Assistant Professor and Department Head in the Department of Aesthetic Dermatology and Laser Medicine at Ludwig Maximilian University of Munich. Dr. Gauglitz completed his post-doctoral research in the Department of Surgery and Burns at Shriners Burn Hospital for Children at the University of Texas Medical Branch, Galveston, TX, USA. He continues to treat patients and research new technologies to manage burn scars. Dr. Gauglitz uses the Lumenis® UltraPulse®, M22™, and ResurFX™.



**Gerd Kautz, MD**, is a renowned dermatologist who owns Skin and Laser Clinic in Konz, Germany. After specialising in dermatology and venereology, allergology, phlebology, and environmental medicine at the University of Saarland, Dr. Kautz trained physicians in laser medicine at the University of Kaiserslautern and organised the German Annual Laser Therapy Congress. A respected author, speaker, and educator, Dr. Kautz is President of the German Society of Laser Dermatology (DDL). Dr. Kautz uses the Lumenis® UltraPulse®, M22™, ResurFX™, and LightSheer® systems.



**Alina Fratila, MD**, is a well-known expert in dermatology, phlebology and aesthetic laser therapy. After serving as Chief of Dermatologic Surgery at the University of Bonn, Dr. Fratila became medical director of Klinik Am Kurpark and then established the Jungbrunnen-Klinik in Bonn. Dr. Fratila has worked with lasers for more than 20 years. A respected and well known author, speaker, and educator, Dr. Fratila has received an ISDS presidency and many awards. Professor Fratila has been using the Lumenis® UltraPulse®, M22™, ResurFX™, and LightSheer® devices for many years.



**Patricia Ortiz Garcia, MD, PhD**, is a dermatologist-venereologist at her Plasderma clinic in Almeria, Spain. Dr. Ortiz Garcia has practiced and conducted research at Bispebjerg hospital, University of Copenhagen, Denmark, with Dr. Merete Haedersdal, where she was first introduced and experienced the UltraPulse® CO<sub>2</sub> laser. She has developed various treatments with laser technology, treated children with lasers, and trained resident physicians and nurses in the use of lasers and light-based treatments. Dr. Ortiz Garcia works on the Lumenis® AcuPulse™, M22™, and ResurFX™ in her practice.





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