

# “SUPER SOPRANO”

## Results you can **rely on**

A new clinical study from *Lasers in Medical Science* makes headlines in the aesthetic industry:

“Super Soprano ... The results show efficacy without hair re-growth ... being a safe, convenient therapeutic resource for patients of high skin phototypes”

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# Super SOPRANO

We examine the results of a study published in *Lasers in Medical Science* on the efficacy of the Soprano laser in treating phototypes III to V for hair removal

In October 2010 a study was published in *Lasers in Medical Science* showing the efficacy of hair removal using the Soprano laser. The study was authored by Josefina Royo, Fernando Urdiales, Javier Moreno, Marwan Al-Zarouni, Paloma Cornejo and Mario A. Trelles and was entitled 'Six-month follow-up multicenter prospective study of 368 patients, phototypes III to V, on epilation efficacy using an 810nm diode laser at low fluence'. Here we summarise its results...

## MATERIALS AND METHODS

### Patients

A study was carried out on 368 patients treated at three centers in Madrid, Malaga and Dubai. Patients' ages ranged from 19 to 58 years of age (mean age 32.4). Patients were scheduled to receive a maximum of five treatments in total at a fixed interval of two months between each epilation session. Then, six months after the fifth session, the patients were evaluated. Results were assessed at the fifth session and at the follow-up six months after the last session (in total a follow-up of 14 months). Patients were advised to stop treatment if they were satisfied with the results of the sessions already carried out, even if they had not completed the five treatments. In any case, patients were asked to attend the follow-up six months after the last epilation session.

Exclusion criteria included:

- Patients under 18 years of age
- Pregnancy
- Lactation
- Scars or infection in the treatment area
- A history of scarring
- Repeated herpes infections

Criteria for admission permitted the enrolment of patients with medium and thick hair, with phototypes III to V, and even those who were tanned. Patients were distributed as follows: phototype III (102); phototype IV (211); phototype V (55). Age: 18–30 years (299); 31–40

“Results obtained a high degree of patient satisfaction and a low index of adverse events (and) laser epilation was well accepted”

years (47); 41–60 years (22). Of the total number of patients, 31 were male (8.42%) and 337 female (91.58%). Treated areas were 206 axillae, 93 bikini line, 11 lower abdomen, 55 pubis, and three thorax.

### Laser system and treatment

The laser system used was the Soprano™ XL laser (Alma™ Lasers). This device operates a conventional 810nm diode laser system, which, although designed for a traditional form of medical epilation, can also be tuned for emission in the so-called SHR or 'super hair removal' mode.

In this mode, the 810nm diode laser uses low-fluence pulse emission. This technology proposes an increased profile of heat in tissue,

### ABSTRACT

Laser hair removal is currently a popular cosmetic procedure. Traditional high-fluence laser treatment for hair elimination is associated with discomfort and adverse events and it is restricted to low phototype skins. A multicenter study of hair epilation with low fluences and high repetition pulse rate using an 810nm diode laser was carried out on 368 patients (phototypes III to V) to test its efficacy in a six-month follow-up after five treatments on the face and various body areas. Objective and subjective assessment as well as histologies show a high index of patient satisfaction due to high efficacy of hair elimination, also proved histologically by the damage observed at hair structure level. Results obtained a high degree of patient satisfaction and a low index of adverse events. Laser epilation was well accepted regarding discomfort and was also complication-free for dark and tanned skins. Treatment was easy to conduct and requires adapting the movement of the hand-piece to a constant speed in order to achieve highenergy deposit on tissue avoiding risks of burning.

or accumulative epilation. The thermal energy is deposited in the dermis by constant movement of the hand-piece over the target area of skin.

Treatment technique was always and in all cases similar, involving the lateral movement of the hand-piece in a constant sweeping mode. The skin surface for treatment was divided into 10°-10 cm squares and each received a total of 9.6 kJ. Thus, each 1cm<sup>2</sup> of skin received on average 9.6 J/cm<sup>2</sup> (9600J/100cm<sup>2</sup>=96 J/cm<sup>2</sup>). The reason for dividing the treatment area into 100cm<sup>2</sup> areas was to provide homogenous exposure to laser pulses and to carry out systematic epilation.

## RESULTS

### Efficacy

Two different therapists unfamiliar with the study gave their opinion regarding the percentage of clearance of hair density at the follow-up six months after the fifth session. The results of the 368 epilated areas treated were as follows: 0–24% (29 patients); 25–49% (102 patients); 50–74% (219 patients); 75–100% (18 patients). No paradoxical effects were observed.



**PATIENT SATISFACTION AND PAIN EVALUATION AND DOCTOR'S OBJECTIVE EVALUATION**

Area	PATIENT ASSESSMENT (PAIN)NPIS					PATIENT SATISFACTION (GAIS)				PHYSICIAN'S OPINION			
	No of Sessions	Very High	High	Average	Low	Very Good 75-100%	Good 50-74%	Average 25-49%	Poor 0-24%	Very Good	Good	Average	Poor
Armpit (206)	1,030	6	4	48	148	9	145	31	21	18	140	39	9
Bikini (93)	465	3	2	1	87	16	62	11	4	19	66	6	2
Pubis (55)	275	12	4	9	30	6	44	5	0	19	33	2	1
Pectorals (3)	15	0	0	1	2	0	3	0	0	0	0	3	0
Lower abdomen (11)	55	0	0	1	10	0	4	6	1	0	1	7	3
<b>Total</b>	<b>1,840</b>	<b>21</b>	<b>10</b>	<b>60</b>	<b>227</b>	<b>31</b>	<b>258</b>	<b>53</b>	<b>26</b>	<b>56</b>	<b>240</b>	<b>57</b>	<b>15</b>

**HISTOLOGIES**

Prior to and immediately post-treatment, the configuration of the epidermis was normal and the stratum corneum present as well as the keratin were intact with no identifiable changes. In nine of the 15 patients biopsied, cytopathic and vacuole changes at the basal layer were present. There was also focal epidermolysis at this level. Edema was mild and more prevalent in the superficial dermis and hair shafts presented architectural changes with some inflammatory infiltration.

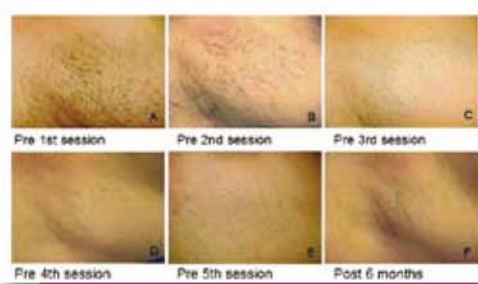
**SAFETY**

Intense erythema and perifollicular edema were noticed in most patients at each of the sessions but these signs were transient. Pseudofolliculitis was observed mostly in the perineum. First-degree burns occurred in three axillae, two bikini-line, two perineum, and two lower abdomen. Second-degree burns occurred in three sessions (one axilla, one bikini line, and one perineum). Hyperpigmentation was observed in one axilla and one bikini line, and hypopigmentation in three axillae, two bikini line, three perineum, and three lower abdomen. However, no long-term adverse effects (six months after the fifth session) were noticed.

The appearance of short-term adverse effects was minimal (appearing in 13 out of 1,840 sessions: 0.7%). This observation differed from other papers regarding statistics of adverse effects appearing in the short-term, which reflect a higher percentage of transitory and postinflammatory hyperpigmentation (10%) and postinflammatory hypopigmentation (2%) (1, 2).

**DISCUSSION**

The authors noted that the degree of clearance of hair density was similar in their experience to that obtained with conventional epilation (1). The areas that reacted most favorably were the bikini-line, the perineum, and the axillae, which coincide with the observations of epilation using other laser systems. Hair loss per session



Laser epilation of the axillae. Progressive hair loss is notable in the before images prior to each laser session and at the six-month follow-up



Laser epilation of the axillae. Progressive hair loss is notable in the before images prior to each laser session and at the six-month follow-up

was gradual and proportional to the number of sessions carried out. Clearance at six months after the fifth session was greater than that observed in the prior assessment at the fifth session. Residual hair was similar at the follow-up prior to the fifth session and six months after the last session, even in those dark-haired patients of phototypes IV and V.

Patients reported that hair was gradually falling off after the laser session, which differs from conventional laser epilation, which immediately eliminates hair after the laser pulse. In fact, according to patients, two or three weeks following treatment with the 810nm SHR depilation mode, hair will be seen to reappear but will fall when rubbed. Patients were satisfied, presenting fewer and some finer residual hairs in all treated areas.

Of the 1,840 sessions carried out in total, 82 patients with residual tanning showed no

differences compared with untanned patients, either with regard to efficacy or adverse events.

Efficacy of treatment, as judged by patients, was very high with a range of between 75 and 100%. The degree of discomfort during the sessions on successive days was low, and treatment was well accepted.

Skin phototype III patients with fairer hair were noticed to respond slightly less to epilation than dark-haired patients. However, these patients were also satisfied with the results of epilation and none presented any long-term adverse effects.

**CONCLUSIONS**

This six-month study on epilation using an 810nm diode laser pulsed at 10 Hz at low fluence provides efficacy, safety, and comfort with a high degree of patient satisfaction.

The 368 areas epilated in patients phototypes III to V over a total of five sessions, every two months, at the final follow-up six months no longer presented any adverse signs.

The results show an absence of significant lesions in the epidermis and no permanent adverse events. Treatment is easily implemented and comfortable, but requires adapting the movement of the hand-piece to avoid such risks as burning. The results show efficacy without hair re-growth for a longer period than that of hair growth, being a safe, convenient therapeutic resource for patients of high skin phototypes.

**REFERENCES**

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2. Eremia S, Li CY, Umar SH, Newman N (2001) Laser hair removal: long-term results with 755-nm alexandrite laser. *Dermatol Surg* 27(11):920-924



The Soprano<sup>XLi</sup> has revolutionized the medical aesthetic industry with permanent hair reduction that is safe, reliable, easy to use – and virtually painless. Read what two of the distinguished luminaries who conducted the study have to say about their experience with the Soprano<sup>XLi</sup>:



“Soprano<sup>XLi</sup> SHR has revolutionized medical photoepilation, contributing longer lasting and better results compared to conventional technologies. ‘IN-Motion’ treatment, applying low fluences at high repetition rates, enables us to provide customized photoepilation for each patient. Soprano<sup>XLi</sup> works with all skin and hair types, all year round, with consistent, safe, reliable results. Today Soprano<sup>XLi</sup> SHR is an essential tool for aesthetic practices, providing more patient advantages than any of its competitors”

**Dr. Fernando Urdiales, MD**

*Director of Miramar Medical Institute, Malaga, Spain.*



“In a multicentre study on epilation efficacy using an 810 nm diode laser at low fluence conducted on patients phototype III to V. Treatment was easily implemented and comfortable with no adverse signs, and patients expressed a high degree of satisfaction with the results. Hair removal was of high efficacy and comparable to common photoepilation. These achievements make the Soprano<sup>XLi</sup> recommendable for the treatment of unwanted hair in dark skinned patients.”

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