



redtouch

May 2023



redtouch

Bibliographic Atlas Rev. 1.0

Information gathered from
scientific research

By Clinical Research & Practice (CRP) Department





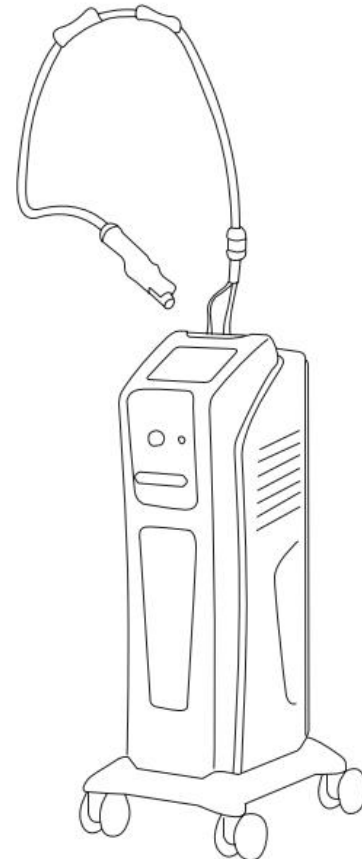
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Bibliographic Atlas



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- Hand Rejuvenation
- Facial Vascular Lesions
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- Is Red Touch safe and effective in Dark Skin Types?
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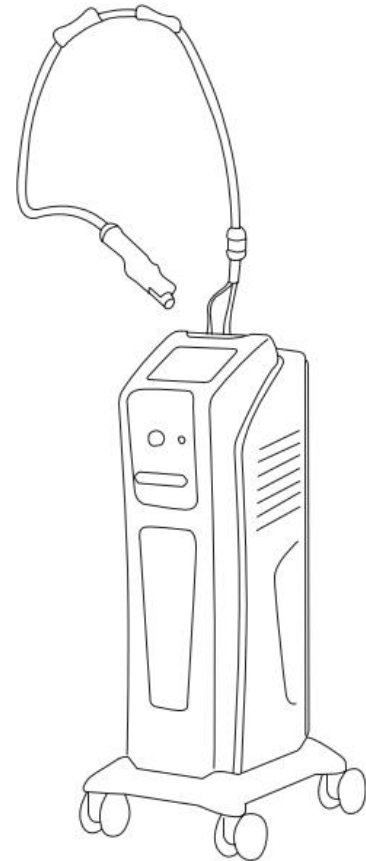


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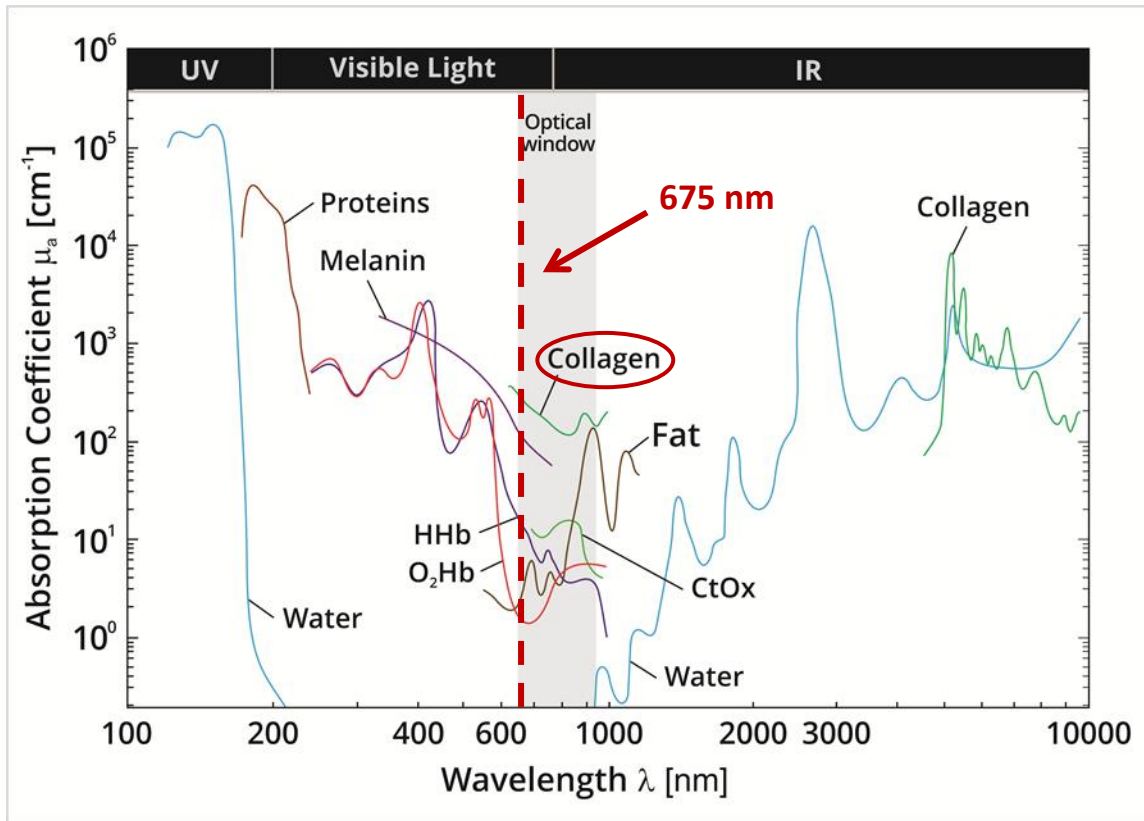
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Mechanism of Action



Mechanism of Action

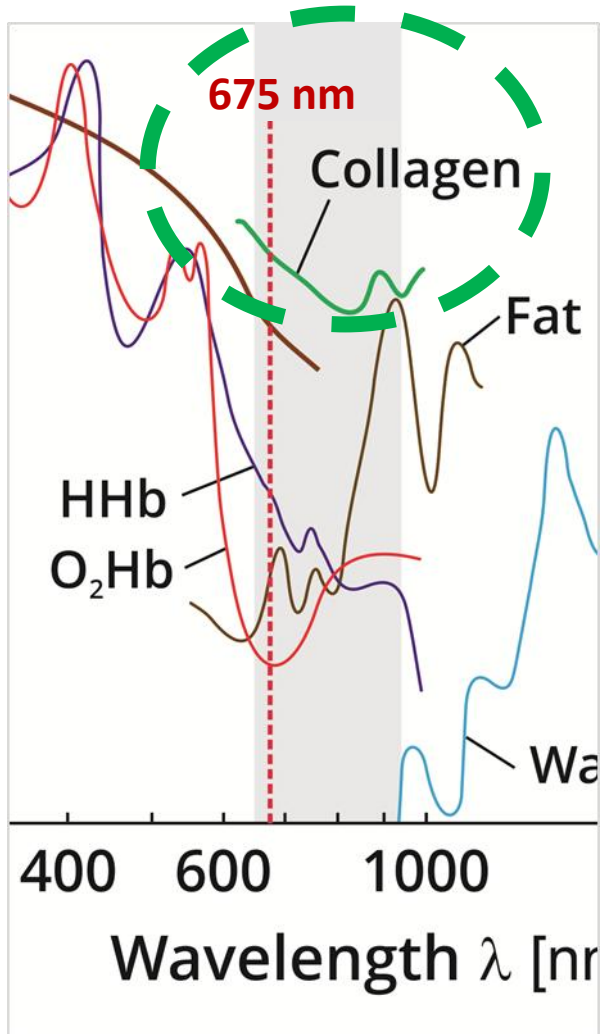


The first and only system that uses 675 nm wavelength: **never used before on the market and the most selective for collagen.** Compared to the systems currently on the market that target water present in the skin, **the Red Touch acts directly on the collagen contained in the dermal layer.**

Reference:

Alice Verdelli, Paolo Bonan, Irene Fusco, Francesca Madeddu and Domenico Piccolo «**Striae Distensae: Clinical Results and Evidence-Based Evaluation of a Novel 675 nm Laser Wavelength**» Medicina 2023, 59, 841.

Mechanism of Action

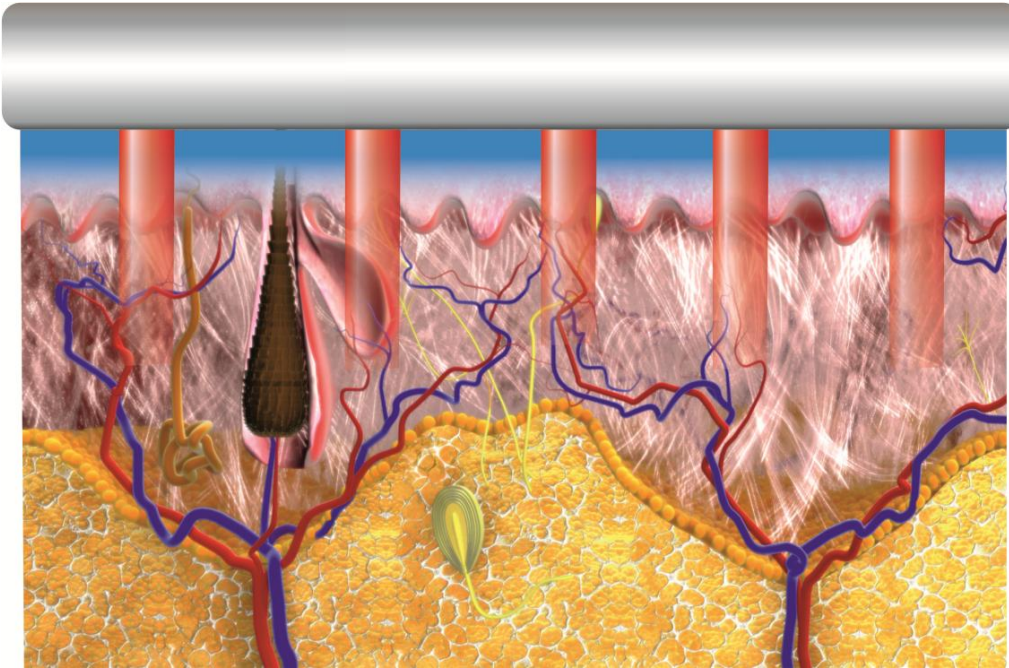


Focus on 675 nm:

- Full selectivity with collagen
- Collagen absorption greater than melanin
- Ensuring collagen fiber shrinkage
- Proper interaction with melanin
- Low absorption by water

Good results with less side effects!

Mechanism of Action



The **microzones of thermal damage** (about 1 mm diameter) induce an immediate consecutive **collagen fibers denaturation that leads to a neocollagenesis process.**

The 675 nm wavelength selectivity together with fractional laser emission and the integrated cooling system, assure that the **epidermal layer is not damaged.**

Less side effects and minimal downtime!

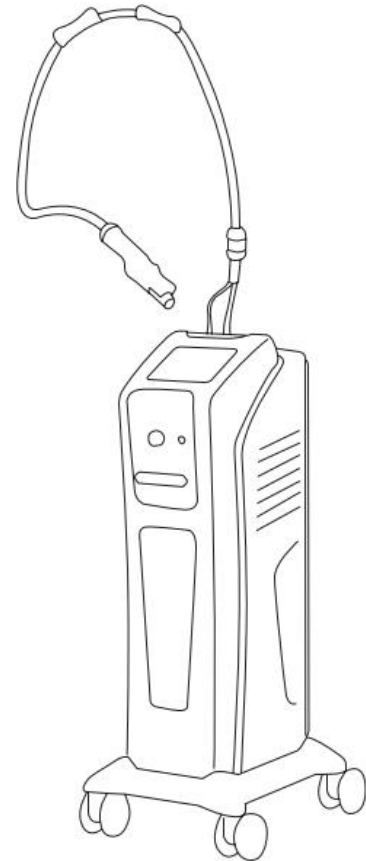
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Pre-Clinical Data





Histological Skin Changes After Treatment with 675 nm Laser

Giovanni Cannarozzo, MD,¹ Luigi Bennardo, MD,² Tiziano Zingoni, Bsc,¹ Laura Pieri, PhD,³
Ester Del Duca, MD,² and Steven Paul Nisticò, MD, PhD²

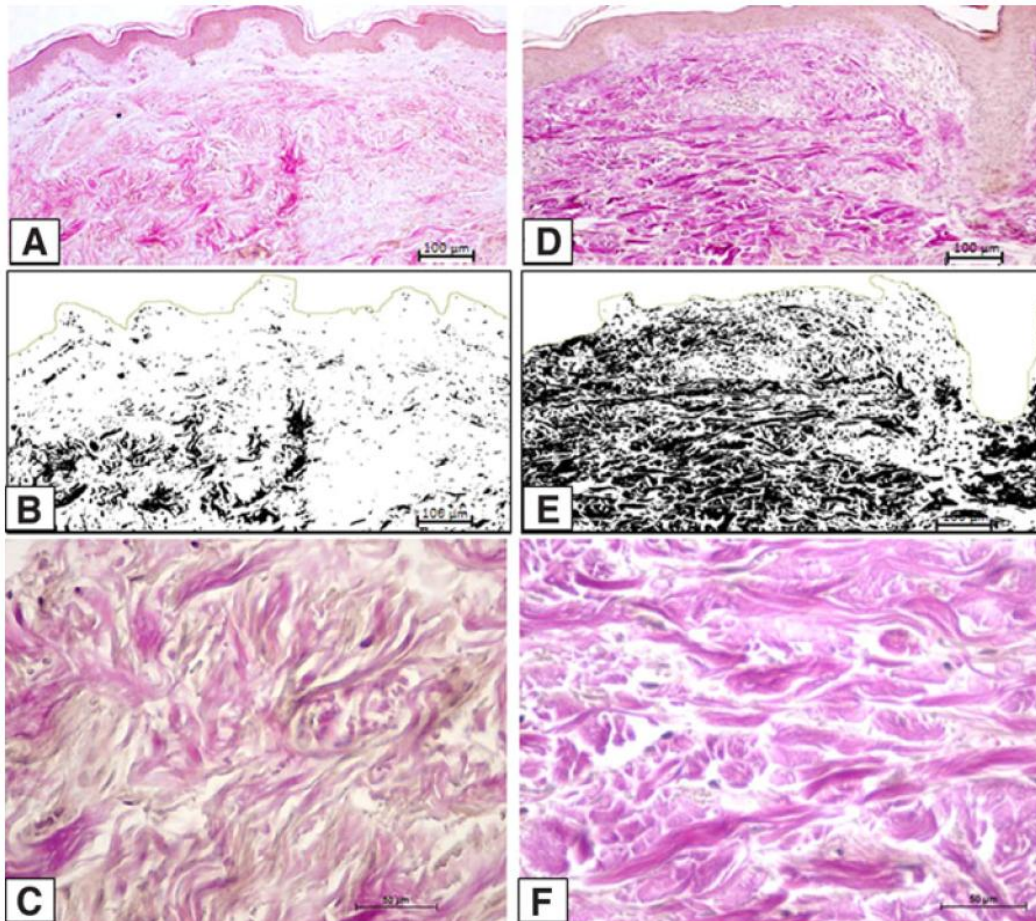


Figure2: Histology of skin biopsy of untreated (A-C) and treated (D-F) areas. Image B and E were obtained by binary segmentation (ImageJ; NIH) of originals image A and D. The reticular layer (deep dermis) shows a lower compactness of the collagen fibers after treatment; there are no collagen fiber bundles, but thinner fibers, more parallel and straighter (Van Gieson staining).

Skin was treated with Red Touch system.

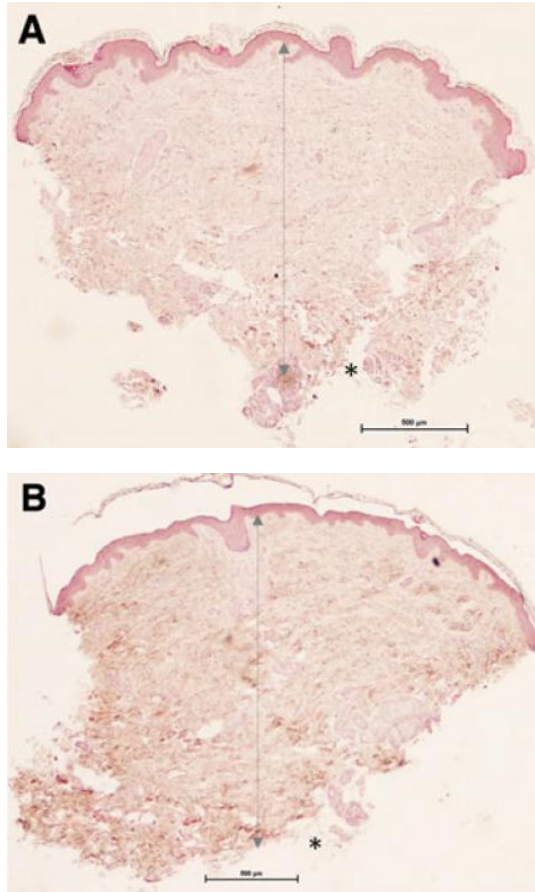
Histology of the treated and untreated skin biopsies showed substantial differences.

After the treatment, authors observed a **prominent increase in thin fibers; the percentage of fibers per unit area of connective tissue had tripled in the treated areas.**



Histological Skin Changes After Treatment with 675 nm Laser

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The increase in collagen fibers in the post-treatment dermis resulted in **increased dermal thickness**.

Dermal thickness of the untreated area was 1453 ± 86 versus 1740 ± 54 μm in the treated ones.

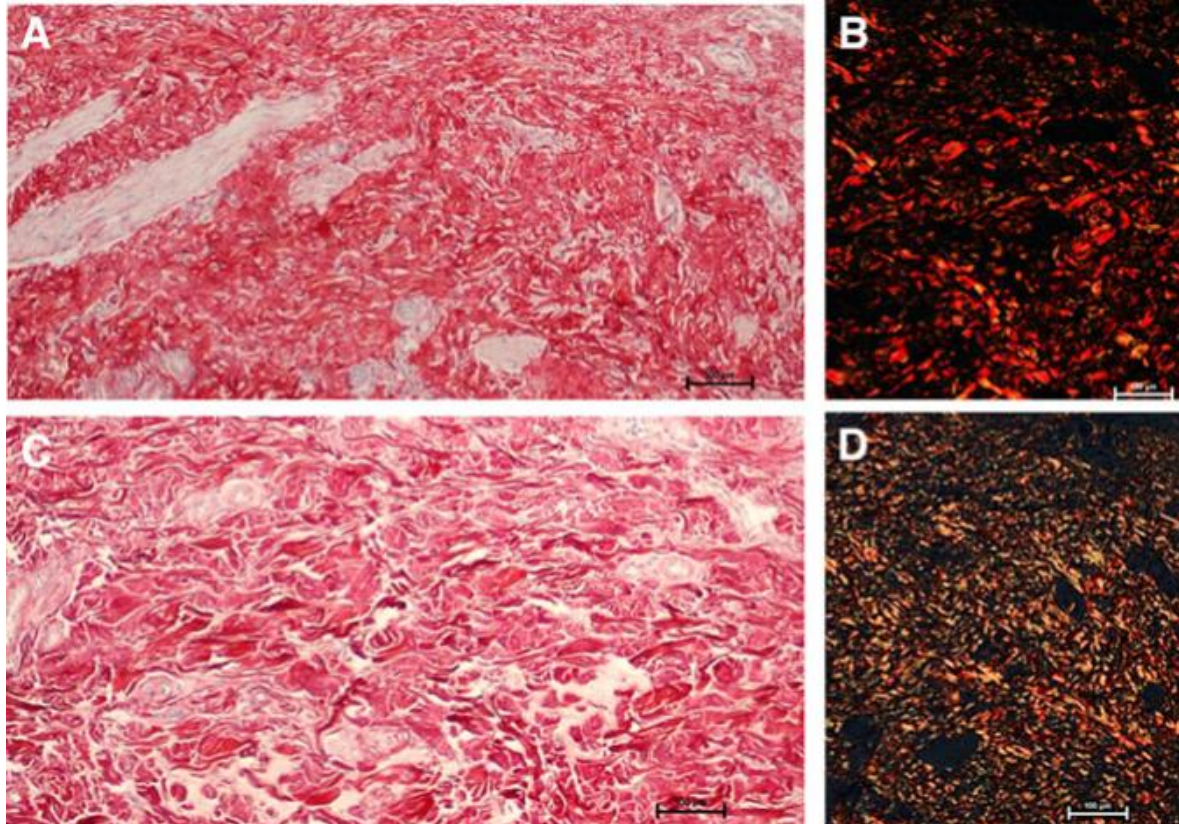
No inflammatory reactions or changes were noted in the epidermis after H&E staining.

FIG. 3. Histology of skin biopsy of untreated (A) and treated (B) areas; tissue samples were stained with H&E. Dermal thickness was also greater in treated areas. The asterisk indicates the presence of fat cells and so the measuring point from the epidermis; in fact, fat cells indicate the limit between reticular dermal layer and hypodermis (A and B scale bars 4). H&E, hematoxylin and eosin.



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The result of the treatment showed a significant **increase of thin and newly formed fibers in the treated areas**. In the treated sample (Fig. D), the collagen constituted of fibers that had a predominantly yellow-green colour upon observation, unlike the untreated sample (Fig. B) in which the fibers had a clear prevalence of red or red-orange colour.

This difference in colour represents collagen renewal, that is, post-treatment fibers mainly comprise newly synthesized collagen.

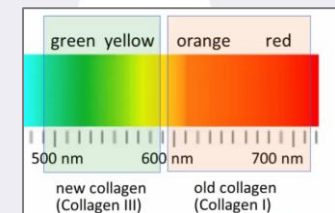
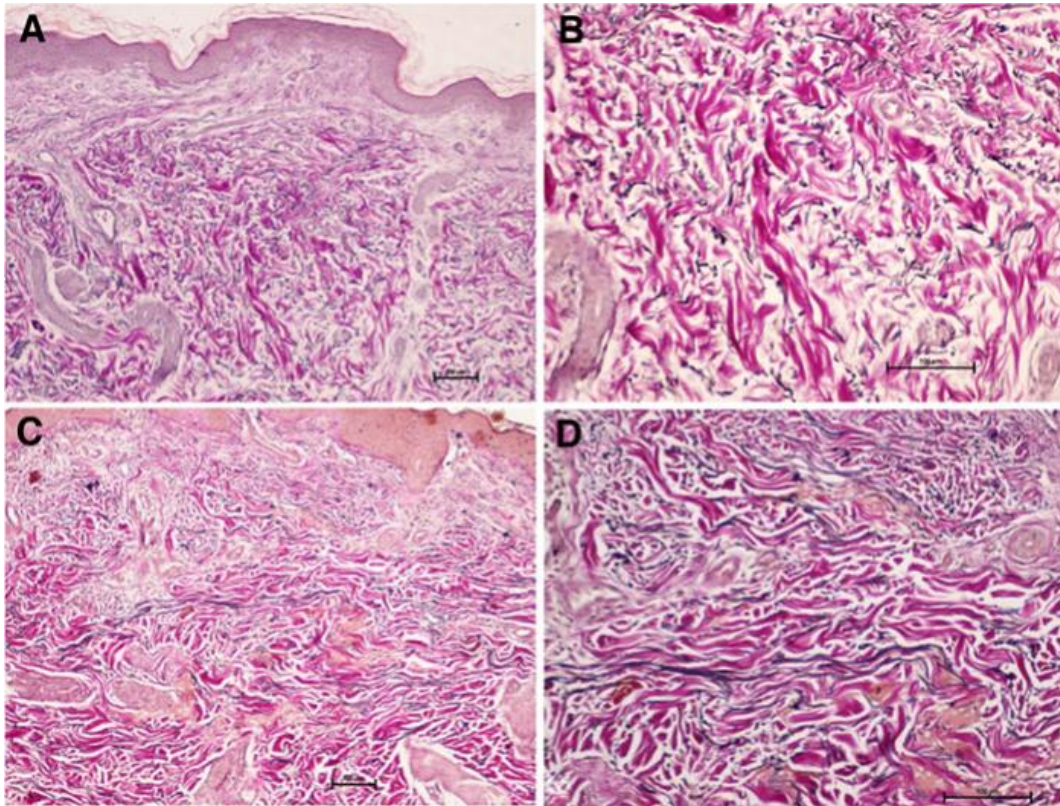


FIG. 4. Picrosirius red-stained sections of untreated (A, B) and treated (C, D) areas. Untreated (A) connective tissue of reticular dermis is intensely stained (bundles fibers). After treatment (C), connective tissue is mainly formed by thin fibrils. Part of the same sections, observed at the circularly polarized light microscope, are represented in (B) and (D), respectively. The visible colored structures are constituted by collagen fibers, which, without any additional filter, are showing different colors, appearing red, or orange (B), or green or yellow (D). This is due to different collagens and specific interactions with the Picrosirius red stain (A–D scale bars 10).



Histological Skin Changes After Treatment with 675 nm Laser

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The skin specimen collected from the treated area showed **more parallel and straighter reticular elastic fibers** in the dermis.

In addition, small aggregates of existing elastin, resulting from the oxidation processes (aging, stress, etc.), were only seen in the untreated skin sample. This contrasted with that after treatment, in which **elastic fibers were compact and clearly visible as longitudinally extended bundles**.

FIG. 5. Histology of skin biopsy of untreated (A, B) and treated (C, D) areas based on Weigert Van Gieson staining. Treated areas show that the elastic fibers (dark fibers) are more parallel and straighter in the dermis (A and C scale bars 10; B and D scale bars 20).



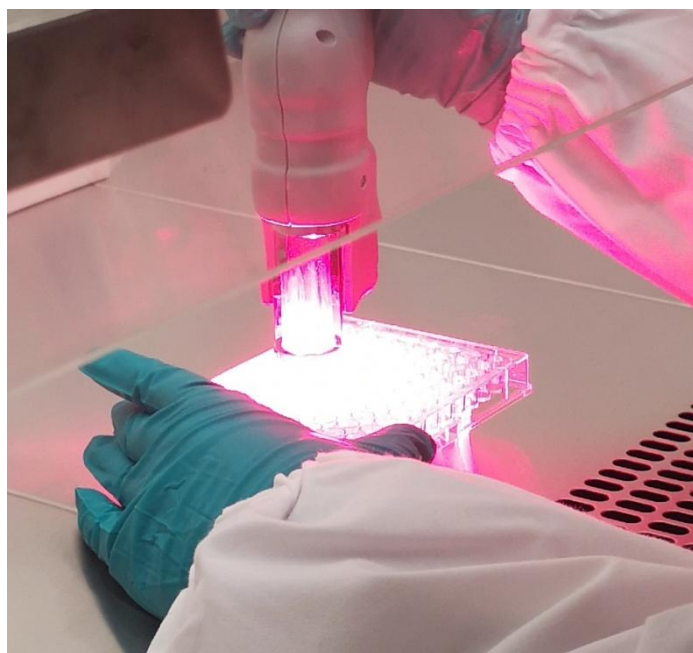
Original Article

Laser emission at 675 nm: In vitro study evidence of a promising role in skin rejuvenation

Giada Magni ^{a,*}, Laura Pieri ^b, Irene Fusco ^b, Francesca Madeddu ^b, Tiziano Zingoni ^b,
Francesca Rossi ^a

^a Istituto di Fisica Applicata "Nello Carrara", Consiglio Nazionale delle Ricerche (CNR - IFAC), Via Madonna del Piano, 10, Sesto Fiorentino, Firenze, 50019, Italy

^b ELEn. Group, Via Baldanzese, 17, 50041, Calenzano, Italy



Adult Human Dermal Fibroblast cells (HDFa) were irradiated with Red Touch system with follow parameters:

Fluence (J/cm ²)	DOT spacing (μm)	mJ@DOT
260	500	1000
390	500	1500
520	500	2000
650	500	2500



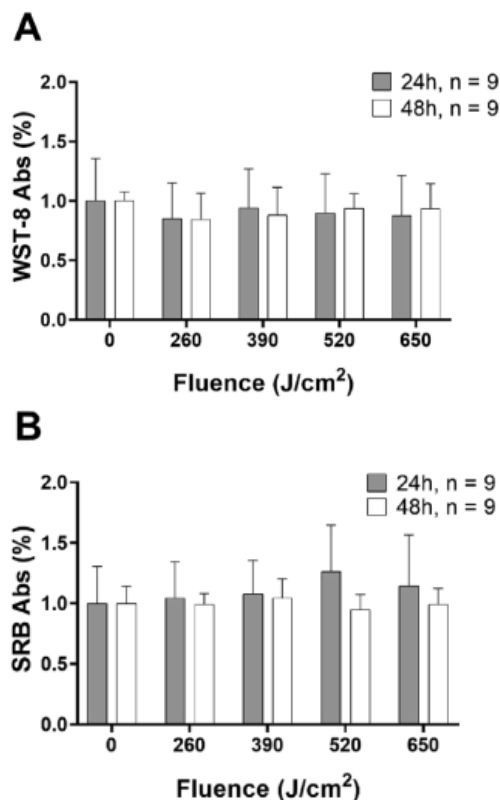
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Analyses of cytotoxicity and cell proliferation following cell Irradiation:

CCK-8 (Fig. A) and SRB (Fig. B) tests performed on HDFa cells show that all the applied fluences **did not affect cell viability and proliferation at 24 and 48 h post-treatment.**

Fig. 1. Cell viability (A) and proliferation (B) after 24 h (grey) and 48 h (white) from the irradiation. Data are expressed as mean $\pm$ SD, n =9. Statistical analysis: Kruskal-Wallis test followed by Dunn's multiple comparisons.



Original Article

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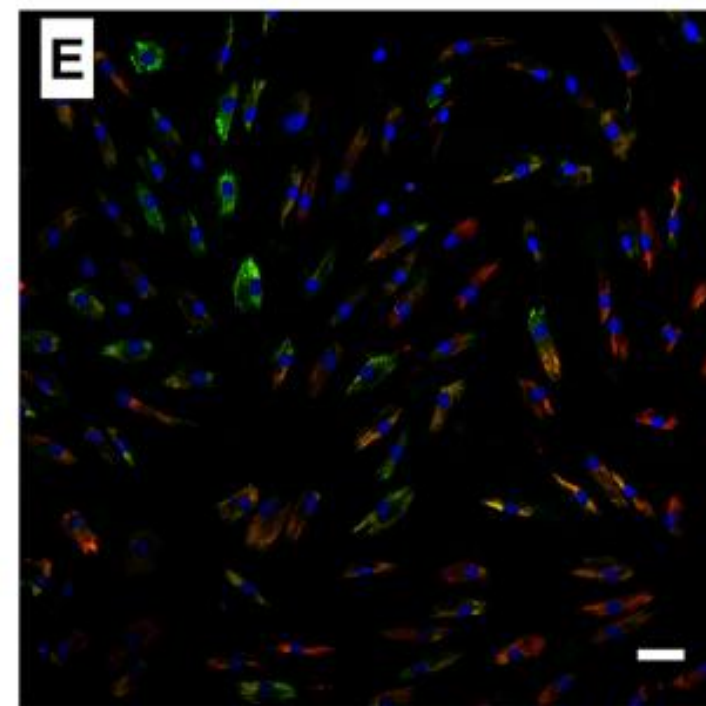
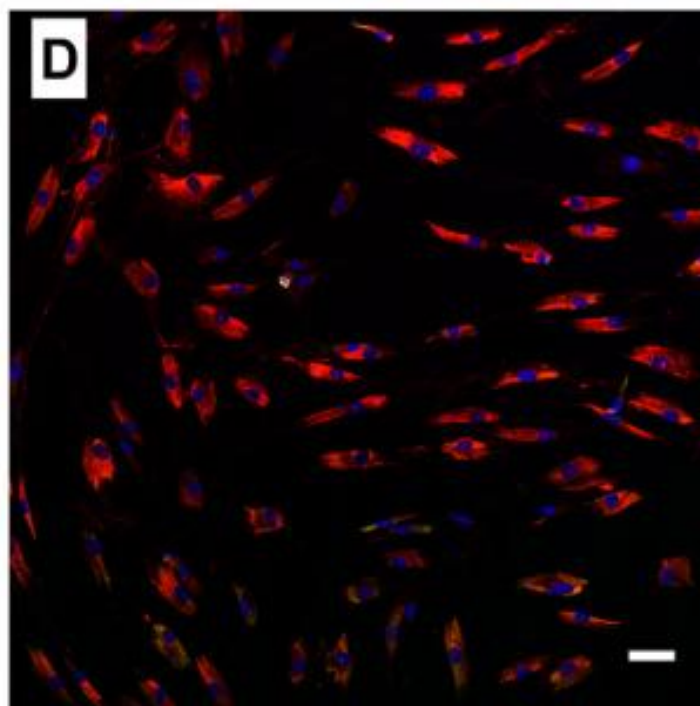
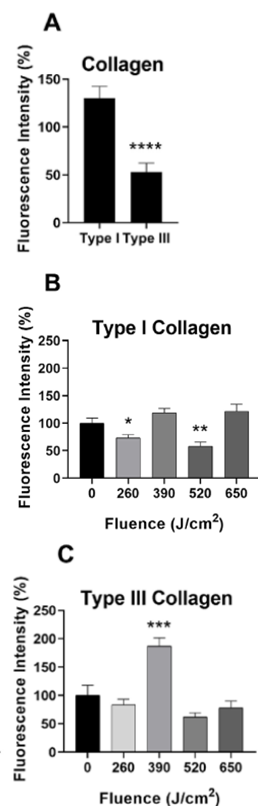
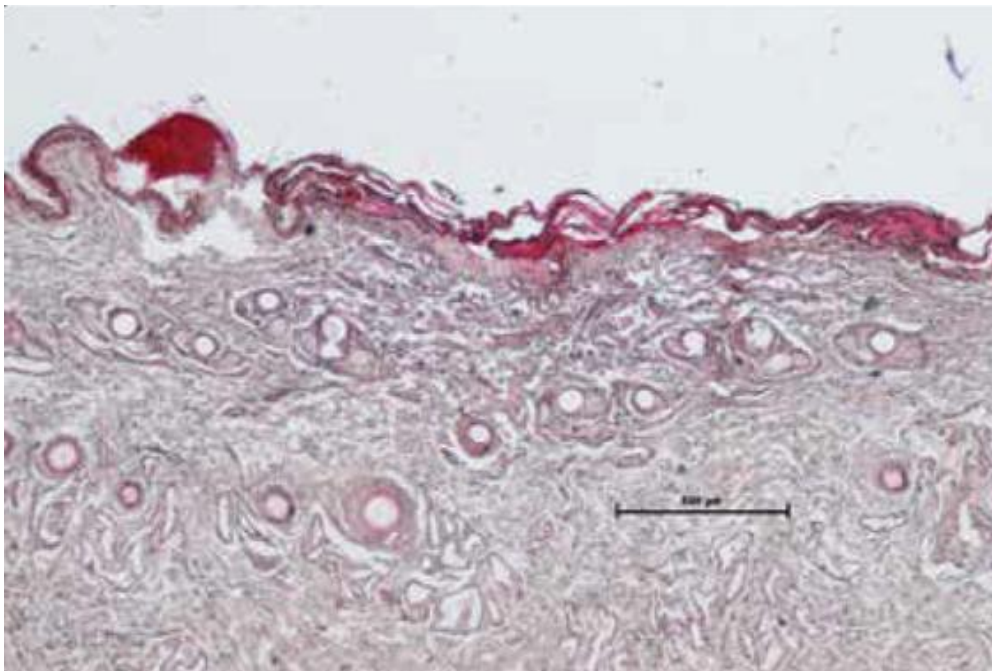


Fig. 2. Fluorescence intensity of type I and type III collagen in HDFa control cells, which are not subject to irradiation (A). Fluorescence intensity of type I collagen (B) and type III collagen (C). Data are expressed as the mean $\pm$ SEM, $n = 20$. Statistical analysis: Mann-Whitney test; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ vs. control cells (unirradiated HDFa cells). The control cells were normalized for the average value of the respective group. Representative images of confocal microscopy of untreated (D) and treated sample (E). Scale bar 50 μ m.



A New 675 nm Laser Device in the Treatment of Melasma: Results of a Prospective Observational Study

Steven Paul Nistico, MD, PhD,¹ Martina Tolone, MD,¹ Tiziano Zingoni, BSc,² Federica Tamburi, MD,¹
Elisabetta Scali, MD, PhD,¹ Luigi Bennardo, MD,¹ and Giovanni Cannarozzo, MD²



The skin was treated with the Red Touch device.

Preclinical histologic study shows **homogeneous damage of the pigment component** on the entire scan area in the pigmented tissue macroscopically attributable to a paradoxical blackening

Fig 1: Data show an induces injury of melanin-containin epidermal cells via photothermal effects due to the high absorption spectrum for melanin at 675 nm. The homogeneous damage of the pigmented component is developed in the entire scan area of 6 mm in the pigmented tissue that, macroscopically, can be attributable to a pardoxical blackeing.



New Insight in Non-Invasive Rejuvenation: the Role of a 675 nm Laser Source System

Prof. Giovanni Cannarozzo, M.D.

Dermatologist, University of Rome - Tor Vergata - Italy

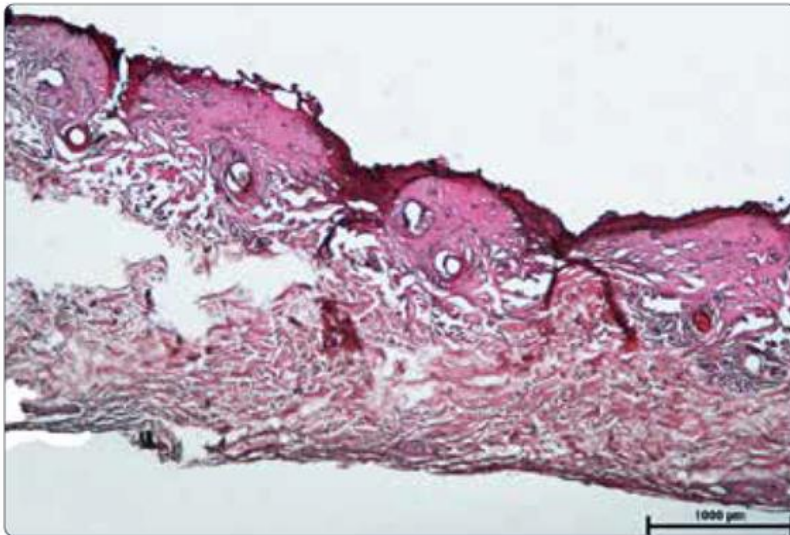


Figure 4. Non pigmented ex-vivo sheep sample. 15x15 mm rectangular scan shape with 500 µm of spacing for the fractional treatment of the collagen component. Micro thermal damaged zones with epidermal preservation.

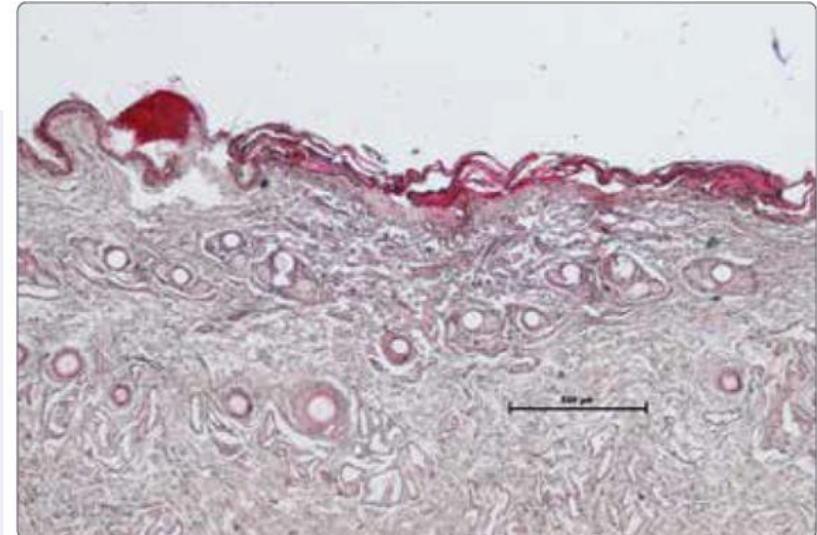


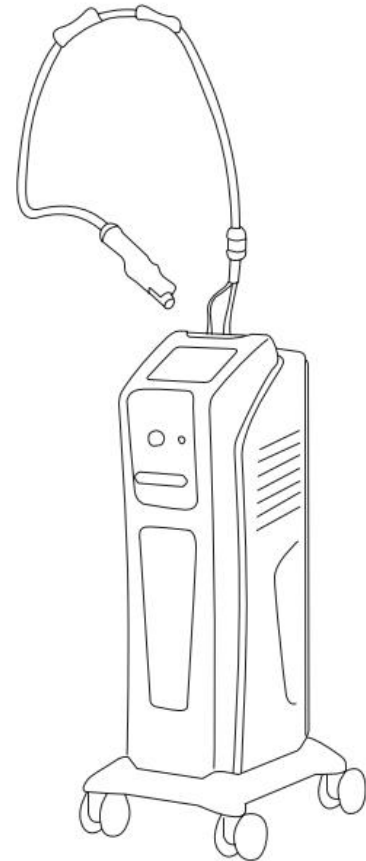
Figure 5. Pigmented ex-vivo sheep sample. Circular scan shape of 6 mm with 0 µm of spacing for the treatment of the pigmentary component (Paradoxical darkening).

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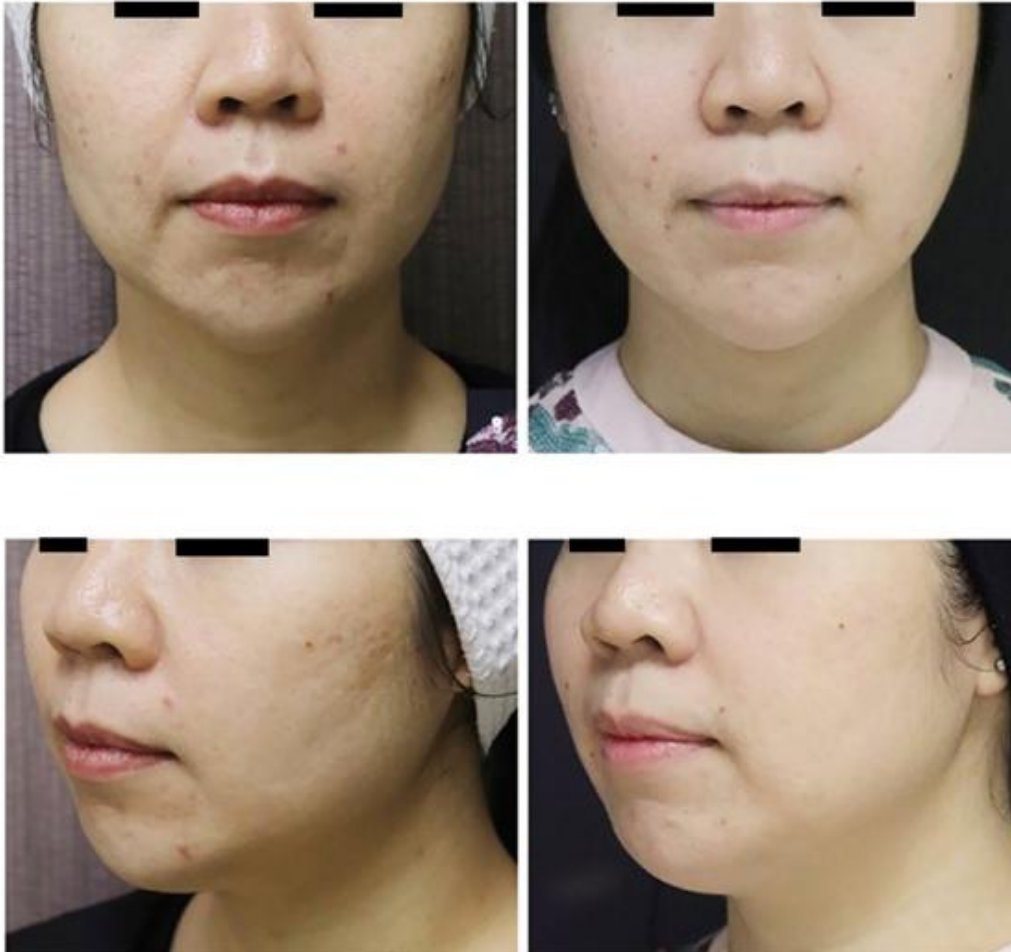


Skin Rejuvenation





Facial rejuvenation: A safe and effective treatment with a fractional non-ablative 675 nm laser in Asian population



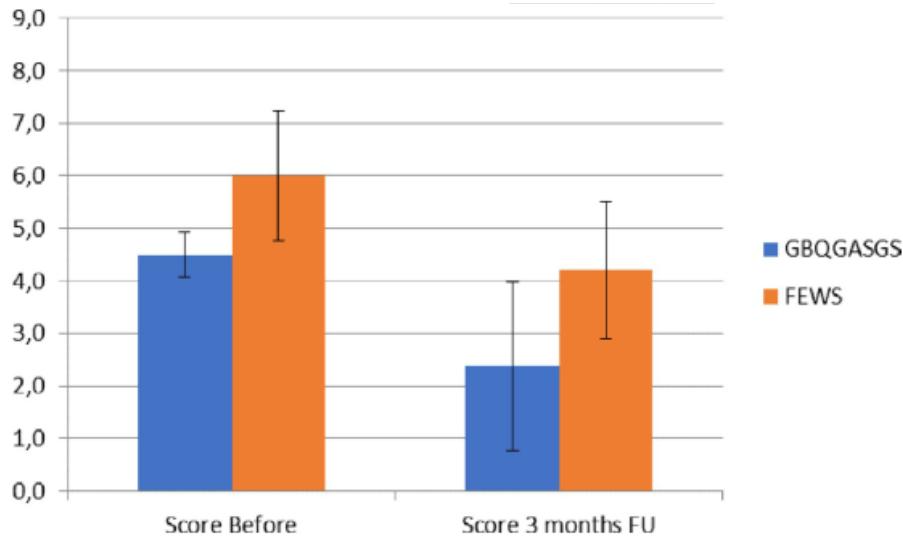
Patients underwent **3 sessions** with the Red Touch System **once monthly**

Topical anesthesia was applied throughout the treatment cycle in only 10% of cases.

Figure 2. A marked reduction of facial wrinkles and acne scars is shown in both frontal (upper panel) and lateral (lower panel) view of the patient 3 months after laser treatment

LETTERS TO THE EDITOR

Facial rejuvenation: A safe and effective treatment with a fractional non-ablative 675 nm laser in Asian population



Histogram: FEWS/GBQGASGS score histograms before treatment and 3 months FU



Figure 1: A marked reduction of facial wrinkles and acne scars is shown in lateral view of the patient 3 months after the last treatment

A New 675 nm Laser Device in the Treatment of Facial Aging: A Prospective Observational Study



Giovanni Cannarozzo, MD,¹ Gilda Fazia, MD,² Luigi Bennardo, MD,² Federica Tamburi, MD,²
Giuseppe Fabrizio Amoruso, MD,³ Ester Del Duca, MD,² and Steven Paul Nisticò, MD, PhD²

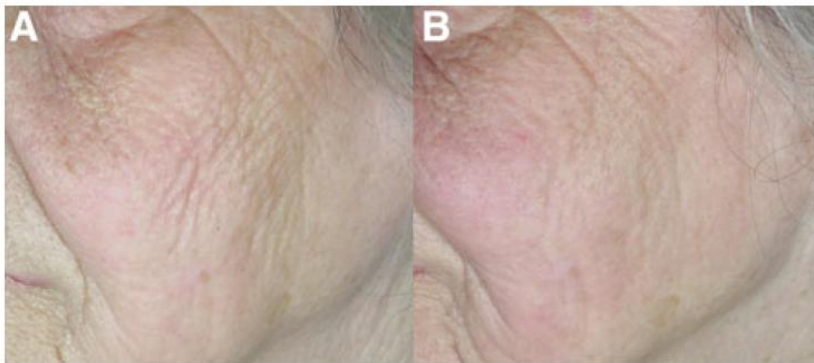


Figure 1: (A) Before treatment and (B) 3-month follow-up

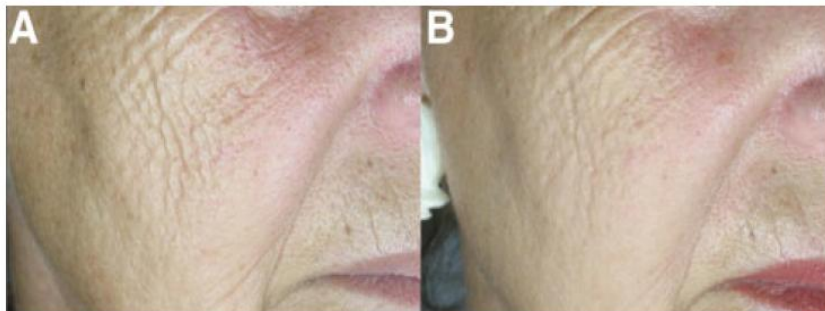


Figure 2: (A) Before treatment and (B) 3-month follow-up

Patients were treated with **three sessions** of the Red Touch laser. Sessions were performed with a **30-day interval**.

A **transparent conductive gel** was used in all procedures.

Application of **topical anaesthetics was optional**: it was used in only three patients and completely removed before treatment.

After treatment, skin was **cooled with cold water-soaked gauzes** and a **nonsteroidal antiinflammatory cream** was applied. Postoperative recommendations included the use of **total block mineral sunscreens** for the whole treatment and follow-up period.



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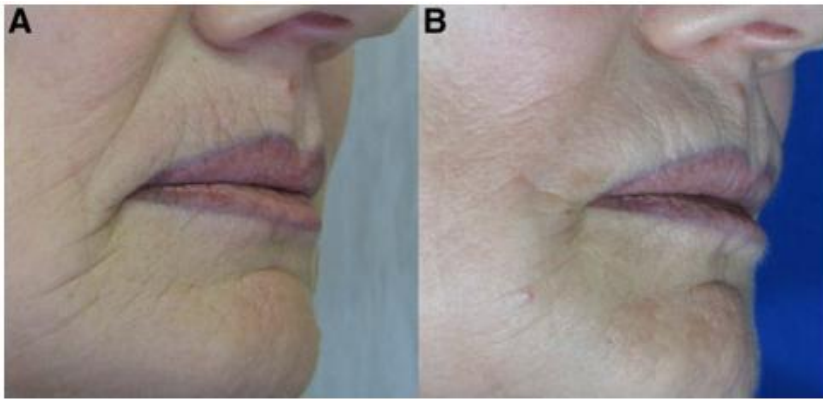


Figure 3: (A) Before treatment and (B) 3-month follow-up

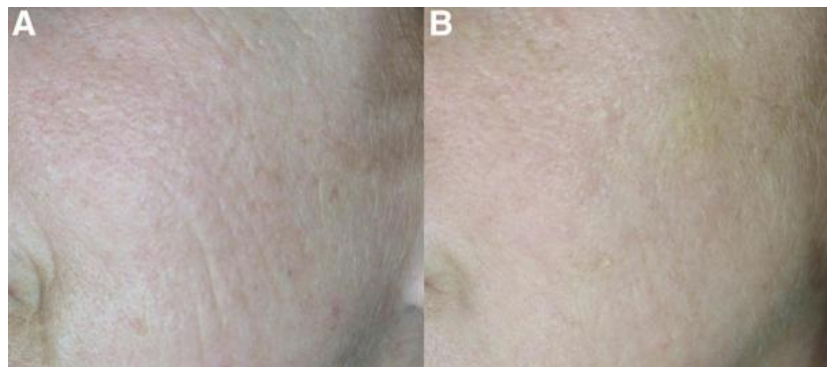


Figure 4: (A) Before treatment and (B) 3-month follow-up

Patients treated with the RedTouch laser had **significant improvement of facial wrinkles according to FWS and photographic evaluation.**

The scores decreased significantly from baseline (1.59 ± 0.80) to 3 months of follow-up (1 ± 0.64) after the last treatment.

Pain, measured using VAS, was minimum (Pain VAS: $1.32 - 1.09$) for the majority of subjects, with **good patient satisfaction.**

Resurfacing with a new 675-nm laser device: A case series



Fig. A,B: The **increased production of collagen is clearly visible** after the second session with improvement of **nasolabial folds and marionette lines**.

Fig. C,D: Frontal and lateral view of pre- and post-treatment, **skin texture is improved**, and **jawline areas have been redefined**.

Resurfacing with a new 675-nm laser device: A case series



Fig. A, Frontal view, after and before treatment with 675 nm laser B, detail if the **improvement if nasolabial folds and jawline area**

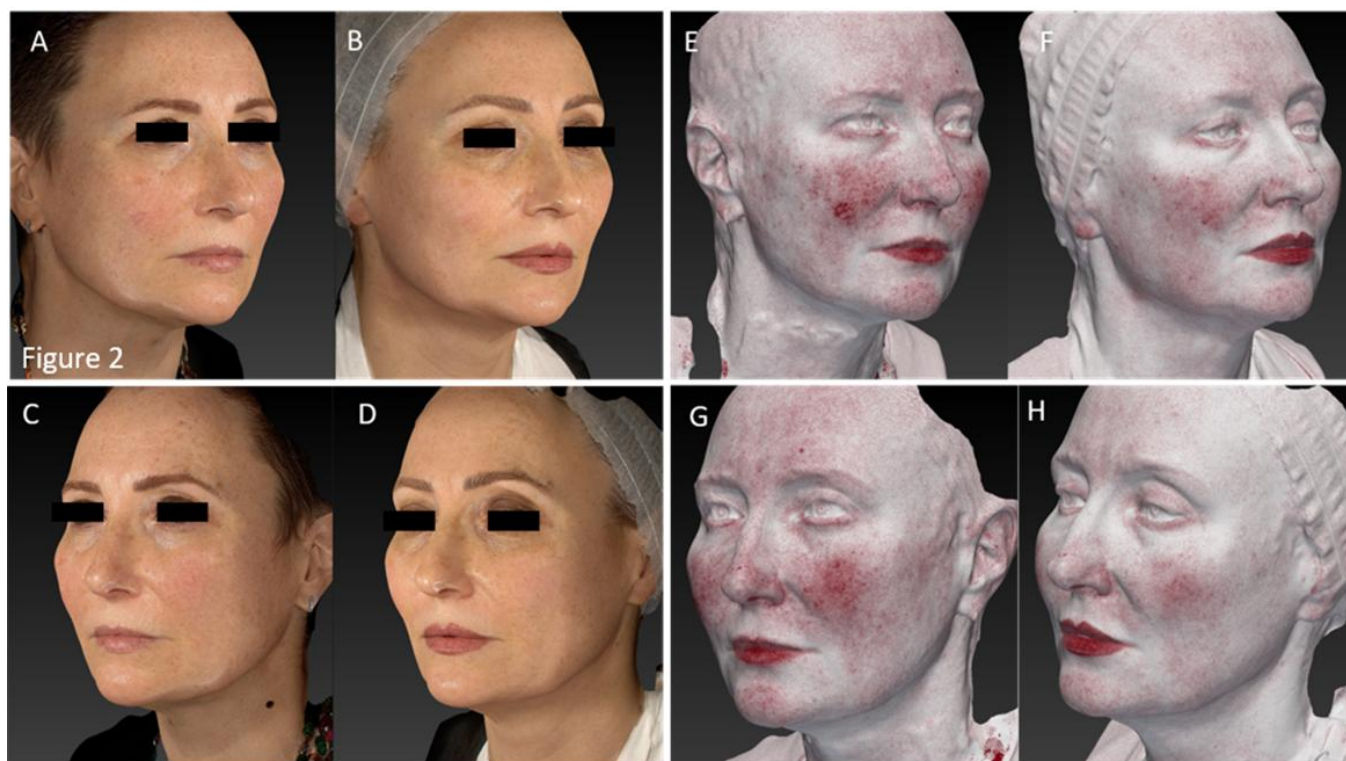
Fig. C,D, Frontal and lateral view, in the zygomatic area, **reduction of deep wrinkles** can be observed.



Type of the Paper (Communication)

New 675-nm laser device: the innovative and effective non-ablative resurfacing technique.

Domenico Piccolo¹, Giuliana Crisman¹, Caterina Dianzani², Iris Zalaudek³, Irene Fusco^{4*} and Claudio Conforti³



All images show an **evident vascular and skin texture improvement** in the whole patient's face area.

A tensor effect of the zygomatic region is obtained, due to the increase in collagen production, which also leads to a reduction of the nasolabial folds.

Figure 2. (A; B) Right lateral view of a female patient before and 6 MFU after laser treatment. (C; D) Left lateral view of a female patient before and 6 MFU after laser treatment. (E; F) Image of the right lateral view of the same female patient before and 6 MFU after laser treatment acquired with Vectra 3D software. (G; H) Image of the left lateral view of the same female patient before and 6 MFU after laser treatment acquired with Vectra 3D software.



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Figure 4. (A;B) Right lateral view of a female patient before and 6 MFU after laser treatment. **(C; D)** Left lateral view of a female patient before and 6 MFU after laser treatment.



Figure 5. (A;B) Image of right lateral view of female patient before and 6 MFU after laser treatment acquired with Vectra 3D software. **(B;C)** Image of left lateral view of female patient before and 6 MFU after laser treatment acquired with Vectra 3D software

All images show a visible **improvement in laxity, facial aging, vascular and skin texture, and a redefinition of the mandibular area** have been reached.

A tensor effect of the zygomatic region is obtained, due to the increase in collagen production, which also leads to a reduction of the nasolabial folds.



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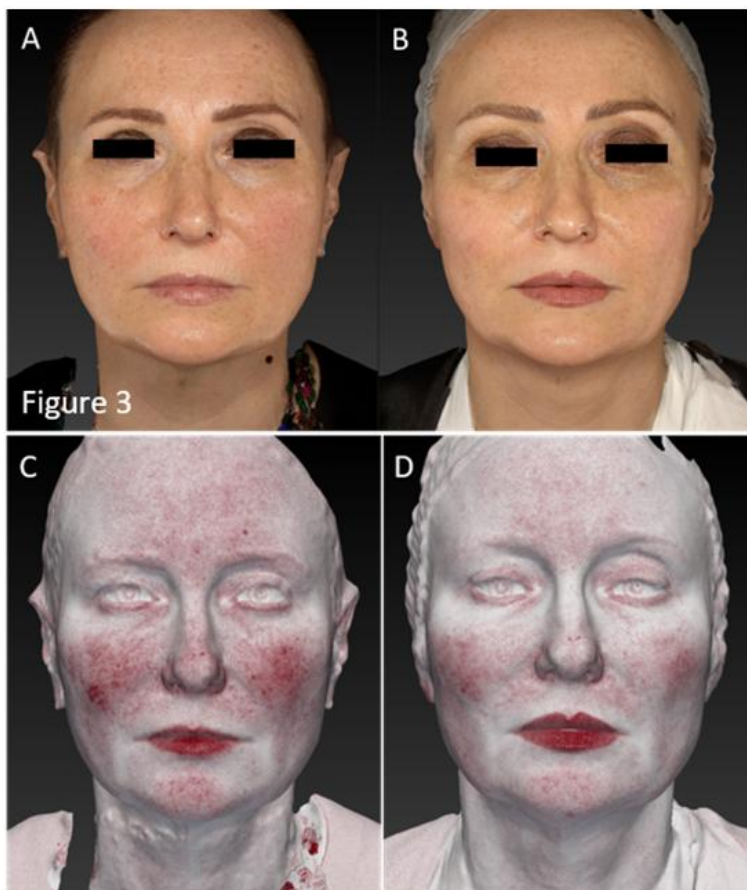


Figure 3. (A; B) Frontal view of a female patient before and 6 MFU after laser treatment. (C; D) Image of frontal view of the same female patient before and 6 MFU after laser treatment acquired with Vectra 3D software.

The improvement in wrinkles was consistent,
The FWS Score decreased significantly

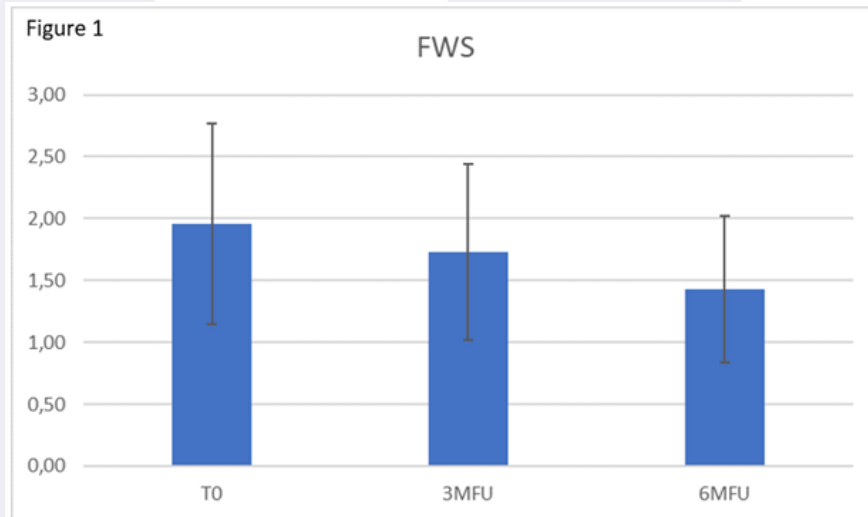


Figure 1. Graphical representation of Modified Fitzpatrick Wrinkles Scale (FWS) scores at baseline, 3 MFU and 6 MFU. An improvement in wrinkles is observed in all patients

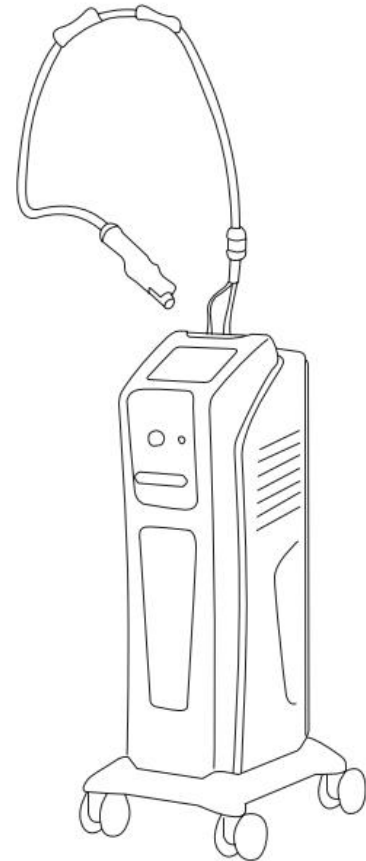
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Prejuvenation



Prejuvenation



6 STEPS OF PREJUVENATION

THE MIDDLE GROUND BETWEEN PREVENTION & REJUVENATION

1 - LIMIT SUN EXPOSURE



2 - ANTIOXIDANTS & RETINOIDS SERUMS



3 - INJECTIONS:
PREVENT & SOFTEN
WRINKLES



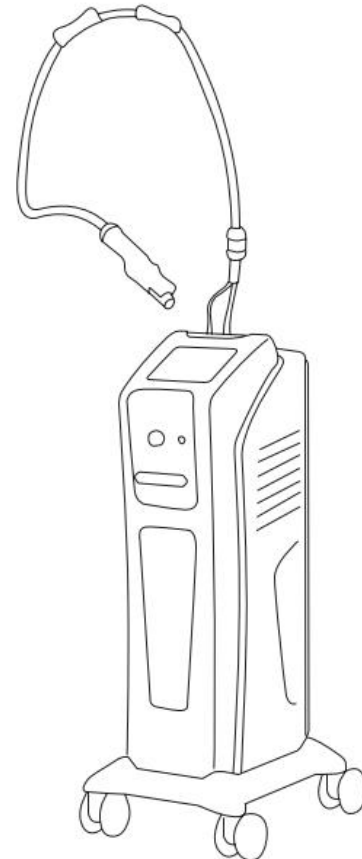
4 - RESURFACING: BUILD
COLLAGEN & TREAT SUN
DAMAGE



5 - SOFT TISSUE FILLERS



6 - SKIN
TIGHTENING
TREATMENTS



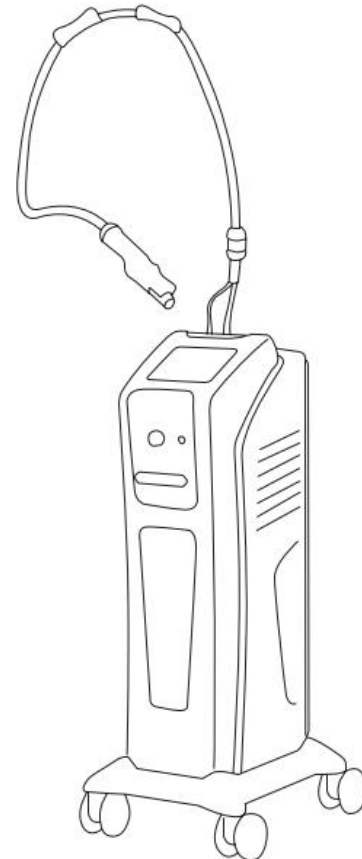
Prejuvenation

➤ *Dermatol Surg.* 2021 Jun 1;47(6):871-872. doi: 10.1097/DSS.0000000000002929.

Prejuvenation: Definition of the Term and Evolution of the Concept

Sara R Hogan ¹, Christopher B Zachary ², Kenneth A Arndt ³

- Ken Arndt in 2013 coined the term prejuvenation—“**to prevent the loss of youth**”—to put forth the concept that if one successfully prejuvenated early in life, then it would not be necessary in later years to seek rejuvenation.
- Ageing results from multiple factors, including **elastic fiber degeneration** from chronic sun exposure and cumulative mechanical stress from facial muscle movements.
- A retrospective study of 15 patients who had routine broadband light treatments at least once a year over 5–11 years estimated their post-treatment age to be an average 2 years younger than their actual age at study initiation—even though they aged a median 9 years.
- Light and laser technologies diminish photodamage by **stimulating collagen type I and III** formation increasing heat shock protein expression.
- The **cumulative effects of combined prejuvenation procedures are synergistic**, rather than additive.



Prejuvenation



Prejuvenation before Rejuvenation

- » Prevent and Protect before you Correct
- » Less is More
No Pain
Non-invasive
- » Rise of Regenerative Medicine
- » Customised Skincare
- » Growth in the Male Aesthetic Sector
- » Laser as Booster & Synergy



Prejuvenation

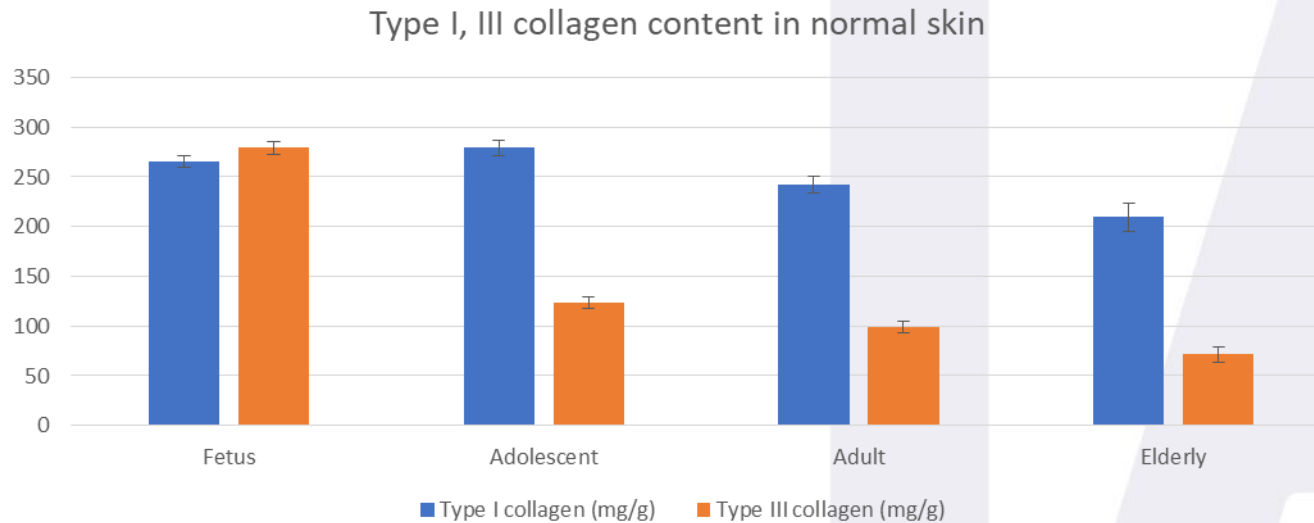
African Journal of Biotechnology Vol. 10(13), pp. 2524-2529, 28 March, 2011
Available online at <http://www.academicjournals.org/AJB>
DOI: 10.5897/AJB10.1999
ISSN 1684-5315 © 2011 Academic Journals

Full Length Research Paper

The content and ratio of type I and III collagen in skin differ with age and injury

Wang Cheng, Rong Yan-hua, Ning Fang-gang and Zhang Guo-an*

Department of Burns, Beijing JiShuiTan Hospital, Beijing, 100035, China.

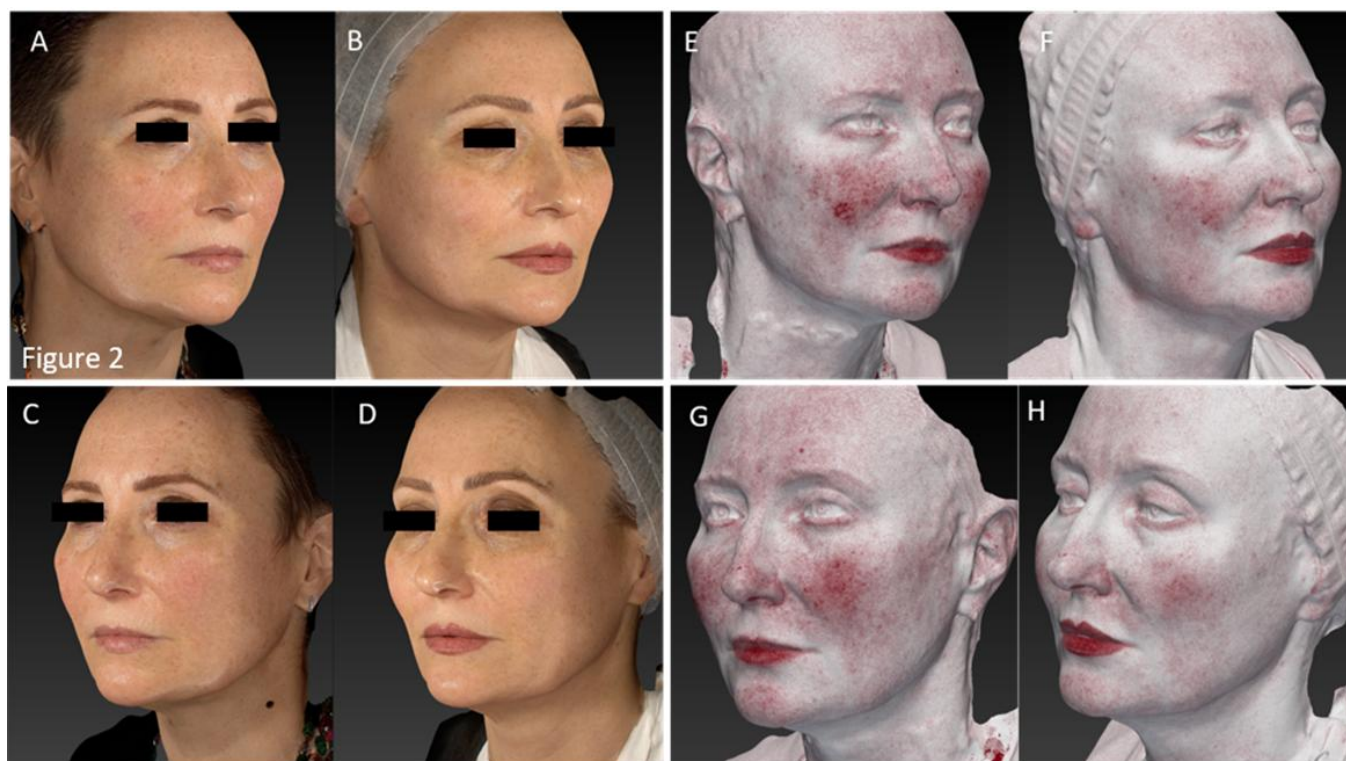




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Type of the Paper (Communication)

New 675-nm laser device: the innovative and effective non-ablative resurfacing technique.

Domenico Piccolo¹, Giuliana Crisman¹, Caterina Dianzani², Iris Zalaudek³, Irene Fusco^{4*} and Claudio Conforti³

All patients were separated into three age groups (35-44/45-54/55-64), and the FWS scale scores were calculated for each age group.

The improvement in wrinkles was more evident for the elderly population, being the scores decreased significantly from baseline 2.73 to 2.3 ($p < 0.01$) at the 3-month follow-up after the last treatment, up to a value of 1.9 ($p < 0.01$) at the last control.

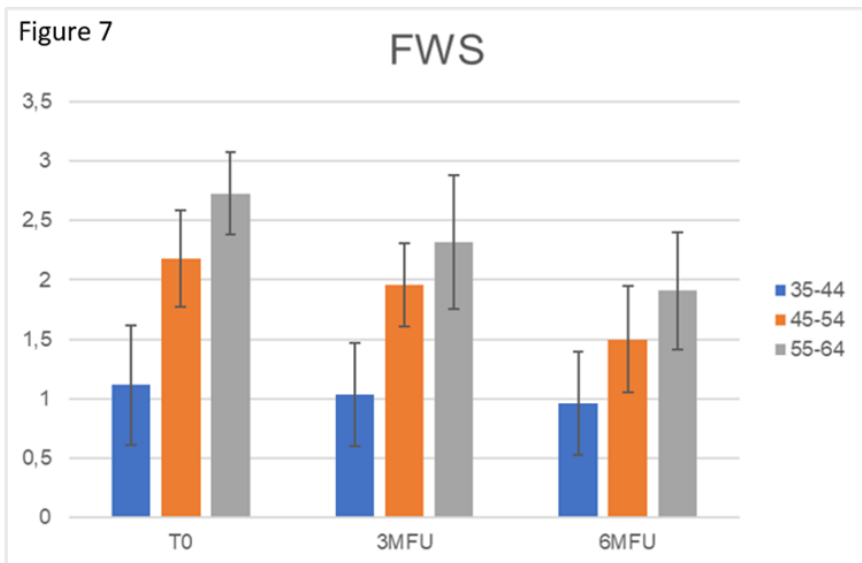


Figure 7. Histogram representation of FWS scale scores for each patient's age group at baseline, 3 MFU and 6 MFU. A more marked improvement in wrinkles is observed in the age group of older patients.

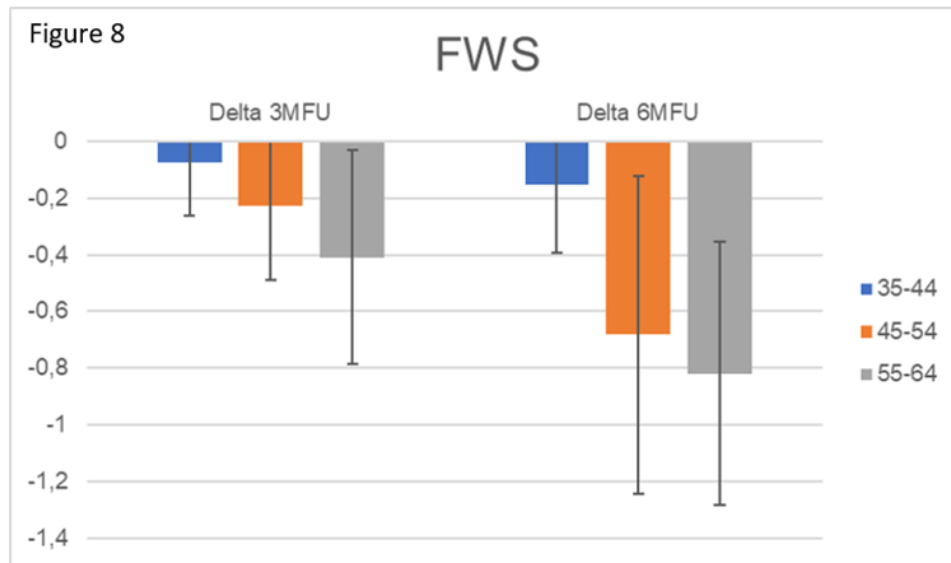


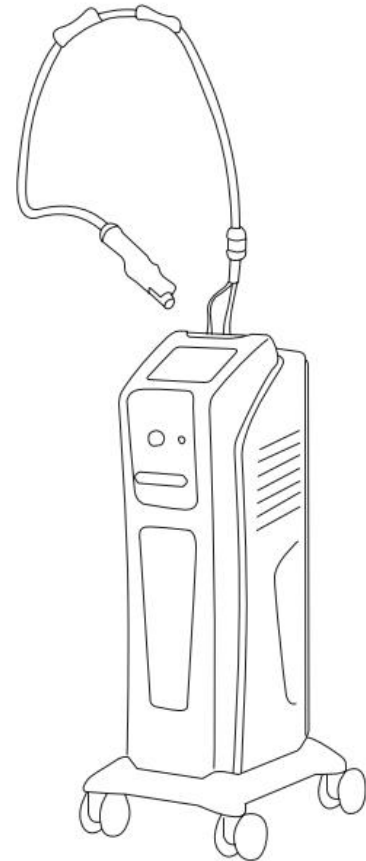
Figure 8. Histogram representation of Delta FWS scores calculated at 3 MFU and 6 MFU.

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Neck Laxity



Neck Laxity

White Paper

RedTouch

June 2020



Non-Ablative Rejuvenation with a 675 nm Laser Source for Improving Collagen

Dr Claudia Rastelli, M.D. – Rimini, Italy

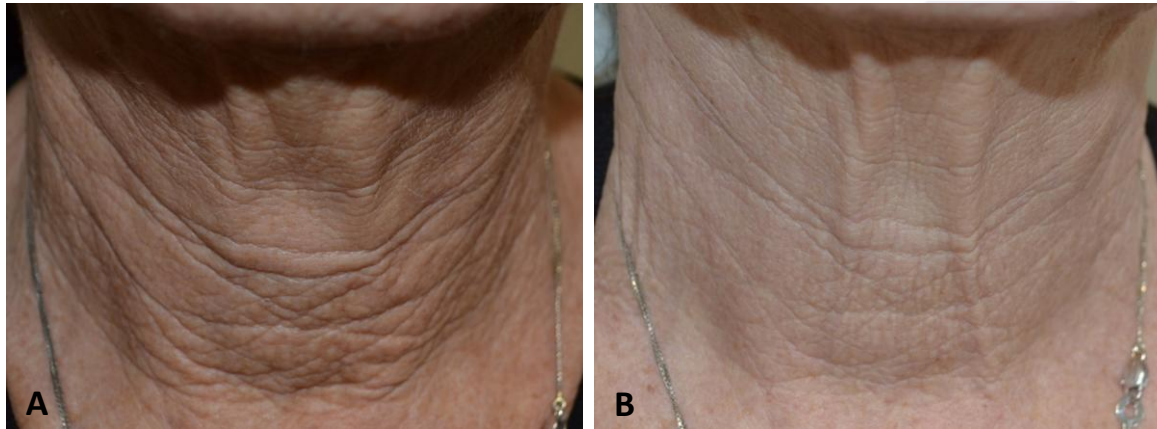


Figure 4. Photorejuvenation treatment of the neck. Images before (A) and after (B) – 3 Red Touch System treatment sessions.

Before starting treatment, **areas targeted by the procedure were cleaned** with a delicate soap rinsed off plenty of water.

Patients underwent **3 sessions** with Red Touch System **once monthly**. Topical Anaesthesia was applied throughout the treatment cycle in only 10% of cases.

All treatments were performed with the use of transparent gel.

After the procedure the treated area was cleaned with **cold water**, **dried with wadding** and a **non-cortisol local anti-inflammatory cream** and a **non-cortisol local anti-inflammatory cream** was applied. Use of **sun protection** was recommended.

Neck Laxity

White Paper

RedTouch

June 2020



Non-Ablative Rejuvenation with a 675 nm Laser Source for Improving Collagen

Dr Claudia Rastelli, M.D. – Rimini, Italy

Patients showed **significant improvements** as measured by FEWS score and patient self assessment:

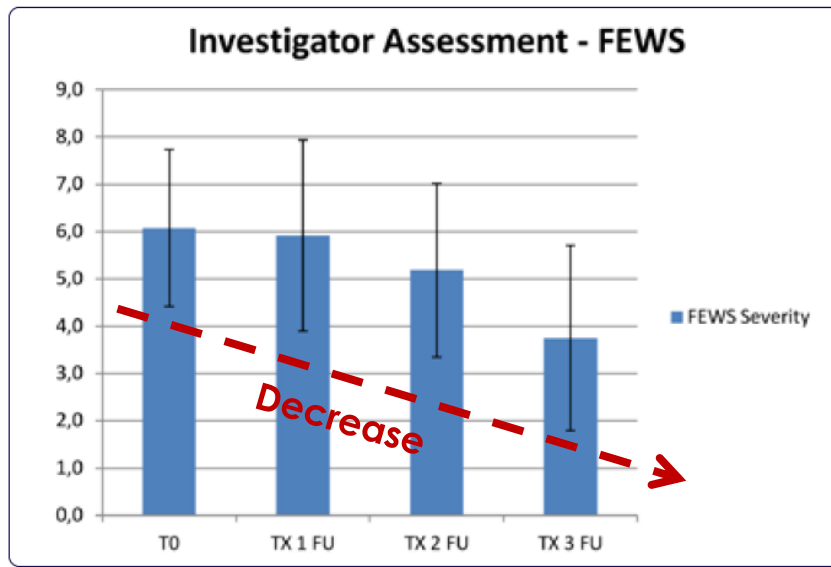


Figure 2. 9-point FEWS recorded at the various assessment steps. A decreased score was observed compared to baseline (T0)

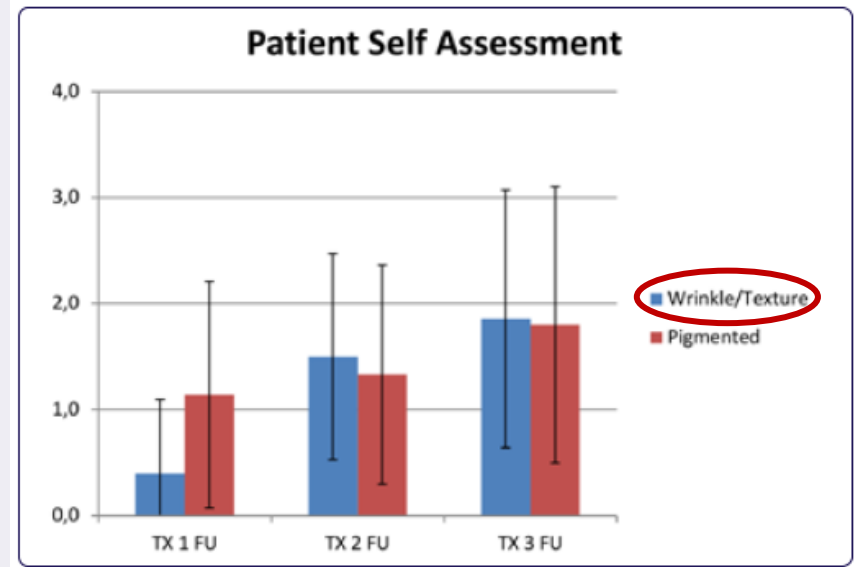


Figure 3. Patient's perceived subjective improvement at various assessment steps.

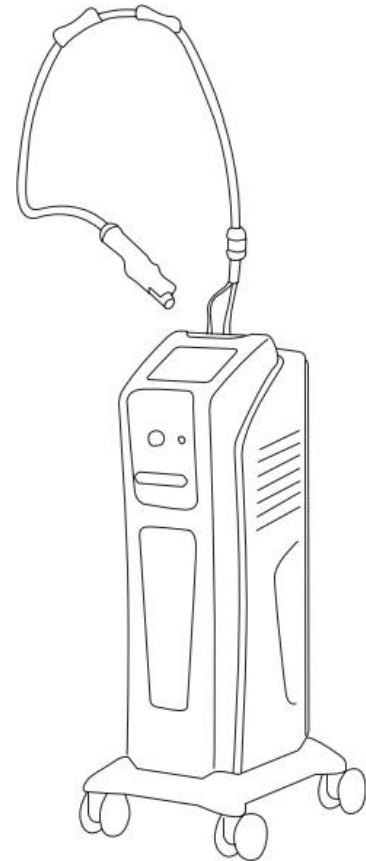
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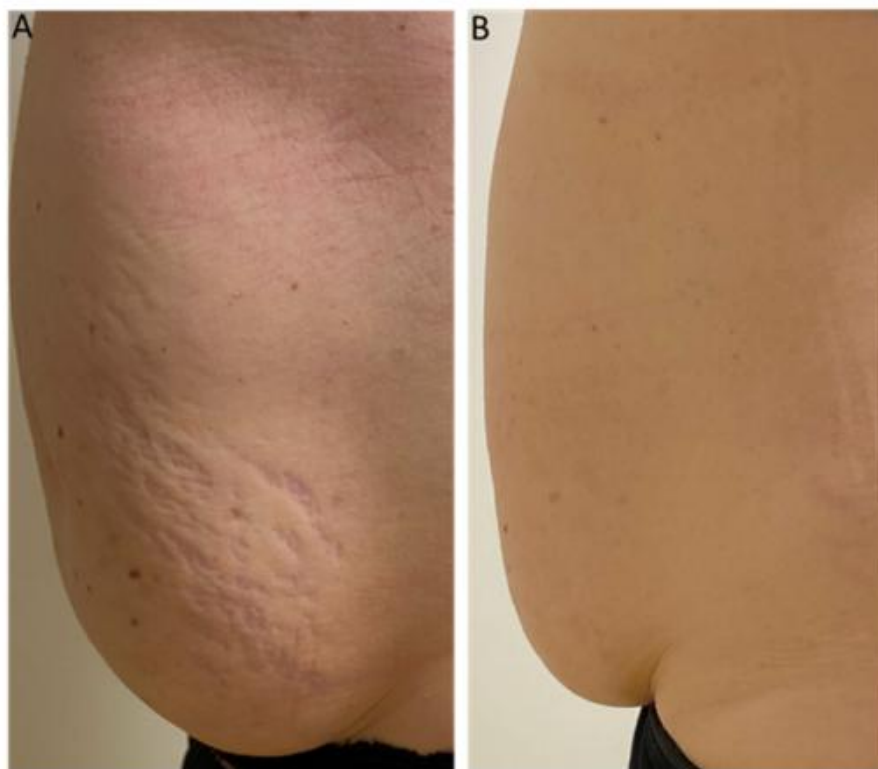
Striae Distensae



Brief Report

Striae Distensae: Clinical Results and Evidence-Based Evaluation of a Novel 675 nm Laser Wavelength

Alice Verdelli ¹, Paolo Bonan ¹, Irene Fusco ^{2,*} , Francesca Madeddu ² and Domenico Piccolo ³ 



Areas to be treated were **cleaned** with a **mild soap**, **rinsed with water**, and **topical anaesthetic** was applied before the session started.

Based on the subject's skin type and level of tolerance, the energy treatment assessment was performed for each patient on a specific area "**test.**". **Mild erythema** was recognized as the **endpoint**.

Patients were treated with **3 sessions** of the 675 nm laser using a conductive gel with a **1-month interval between sessions**.

Following treatment **gauzes soaked in cold water** were used to **cool the skin**.

Figure 3. Analysis of 2D photographs of patient's striae affecting abdominal zone from baseline (A) to 6MU FU (B) revealed an average reduction in the striae volume, texture, redness and color following 675 nm laser treatment.

Brief Report

Striae Distensae: Clinical Results and Evidence-Based Evaluation of a Novel 675 nm Laser Wavelength

Alice Verdelli ¹, Paolo Bonan ¹, Irene Fusco ^{2,*} , Francesca Madeddu ² and Domenico Piccolo ³ 

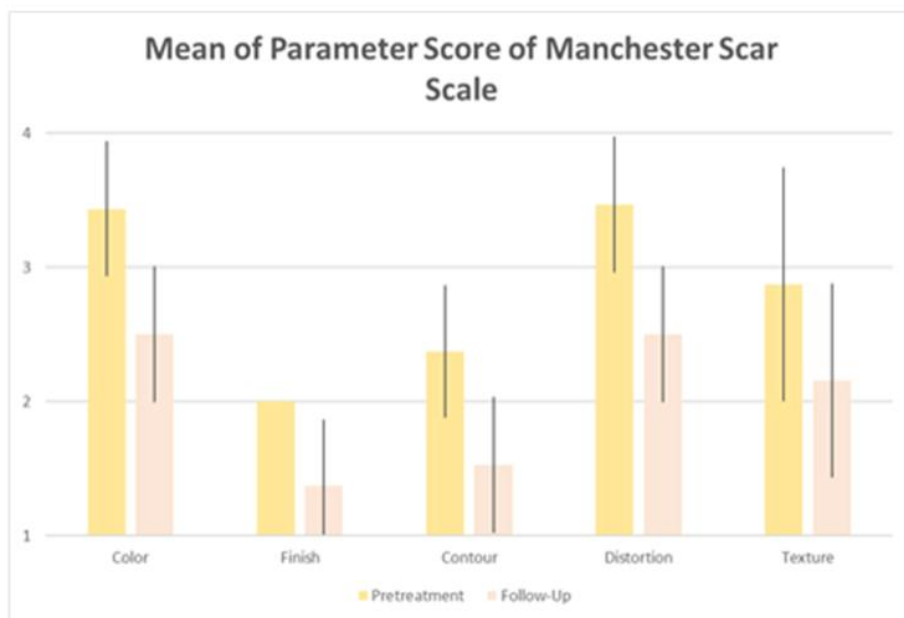


Figure 1. Histogram of patient's mean of each parameter score of the Manchester Scar Scale.

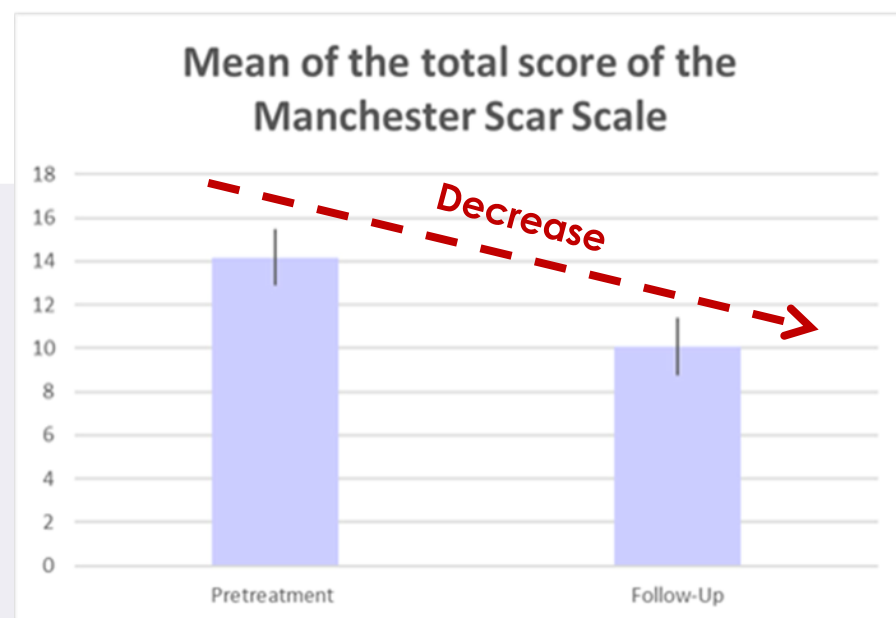


Figure 2. Histogram of patient's total mean score of the Manchester Scar Scale.

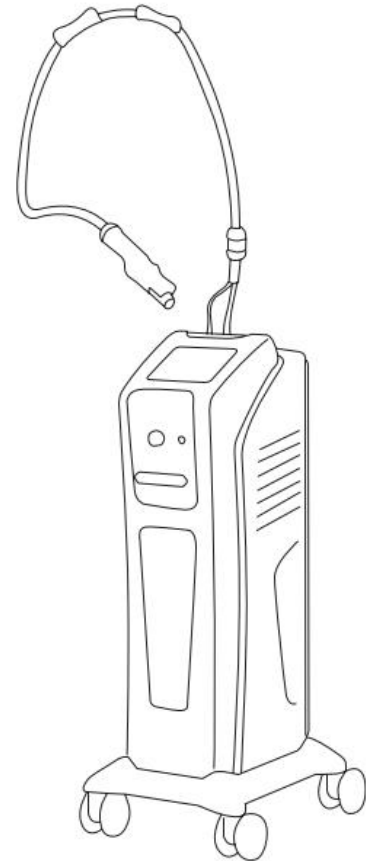
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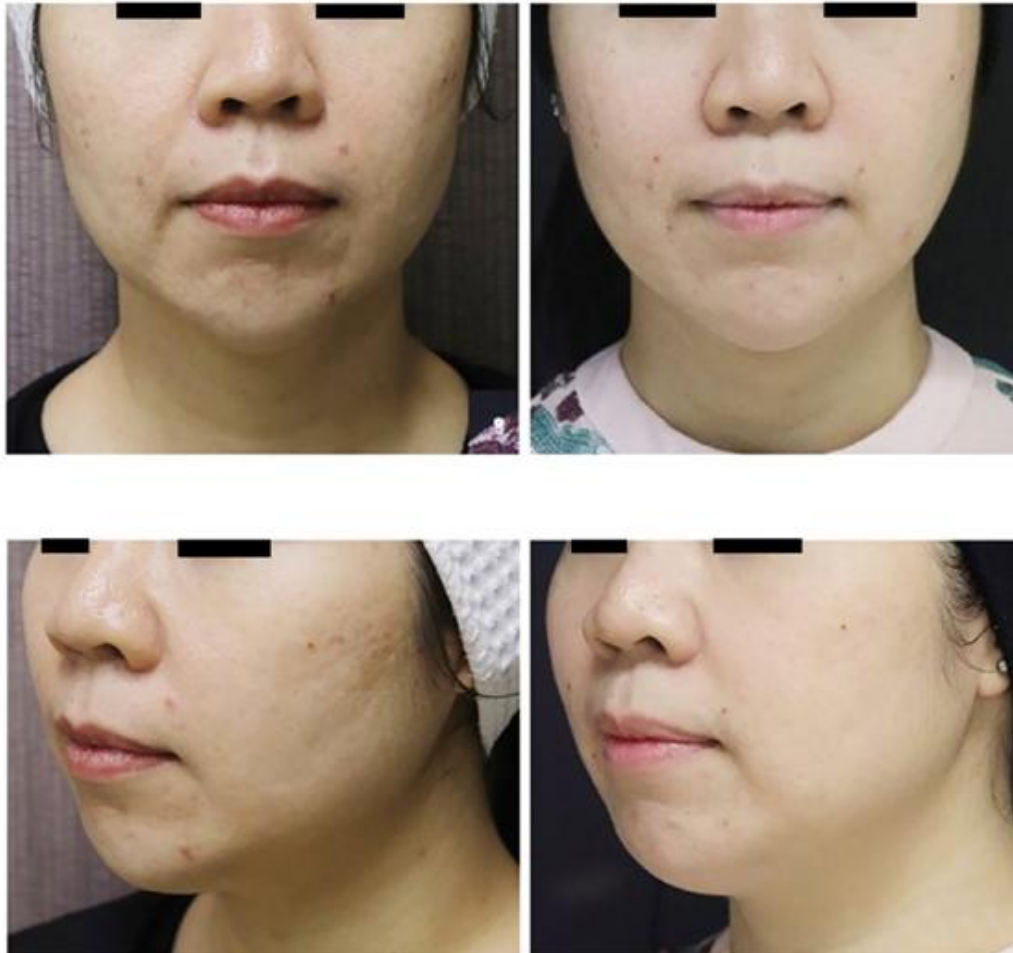


Acne Scars





Facial rejuvenation: A safe and effective treatment with a fractional non-ablative 675 nm laser in Asian population



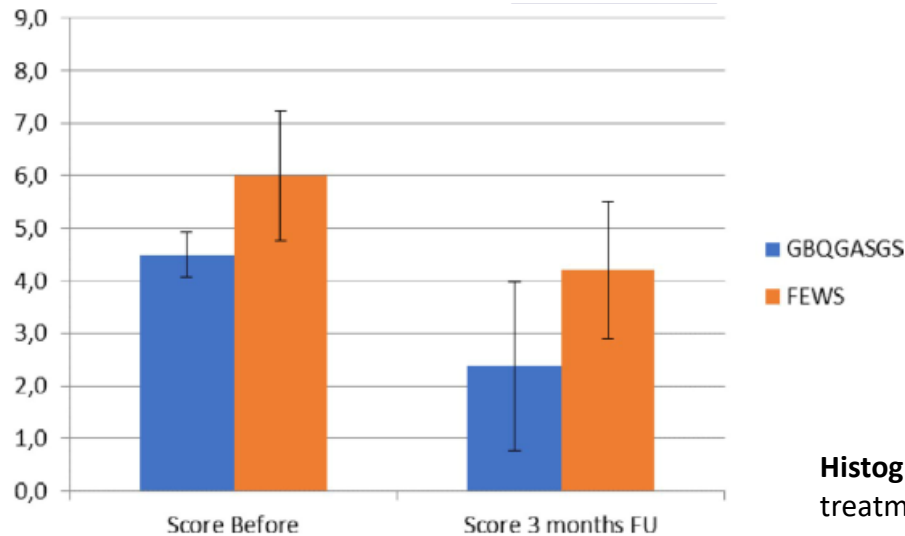
Patients underwent **3 sessions** with the Red Touch System **once monthly**

Topical anesthesia was applied throughout the treatment cycle in only 10% of cases.

Figure 2. A marked reduction of facial wrinkles and acne scars is shown in both frontal (upper panel) and lateral (lower panel) view of the patient 3 months after laser treatment

LETTERS TO THE EDITOR

Facial rejuvenation: A safe and effective treatment with a fractional non-ablative 675 nm laser in Asian population



Histogram: FEWS/GBQGASGS score histograms before treatment and 3 months FU



Figure 1: A marked reduction of facial wrinkles and acne scars is shown in lateral view of the patient 3 months after the last treatment



A new 675-nm laser device in the treatment of acne scars: an observational study

Giovanni Cannarozzo¹ • Martina Silvestri² • Federica Tamburi² • Claudia Sicilia² • Ester Del Duca³ • Elisabetta Scali² • Luigi Bennardo² • Steven Paul Nisticò²



Figure 1: **a** Patient at baseline left side; **b** Patient at baseline right side; **c** 3-month follow-up left side; **d** 3-month follow-up right side.

Patients were treated with **3 sessions** of the Red Touch laser with a **1-month interval between sessions**.

Application of **topical anesthetics** was optional: the patient started the procedure without topical anesthetics. If pain was severe, procedure was stopped, and a 7% lidocaine/7% tetracaine anesthetic cream was applied. Treatment was then resumed after 40 min.

After treatment, skin was **cooled with gauzes soaked in cold water**, and a **non-steroidal anti-inflammatory cream** based on beta glucan and sodium hyaluronate was applied **twice a day for 2 weeks**.

Post-operative recommendations included the use of **total block mineral sunscreens**.



A new 675-nm laser device in the treatment of acne scars: an observational study

Giovanni Cannarozzo¹ • Martina Silvestri² • Federica Tamburi² • Claudia Sicilia² • Ester Del Duca³ • Elisabetta Scali² • Luigi Bennardo² • Steven Paul Nisticò²

Treatment was carried out by passing the handpiece in contact with the skin surface, without excessive pressure, with spots that follow one another **without overlapping, but without leaving untreated areas**.

The same area underwent two laser passes in order to avoid minor burns and/or hyperpigmentation.

Areas close to the bone surface (forehead, cheekbone, etc.) were treated with **only one passage**, in order to avoid burns as they have a thinner dermis.

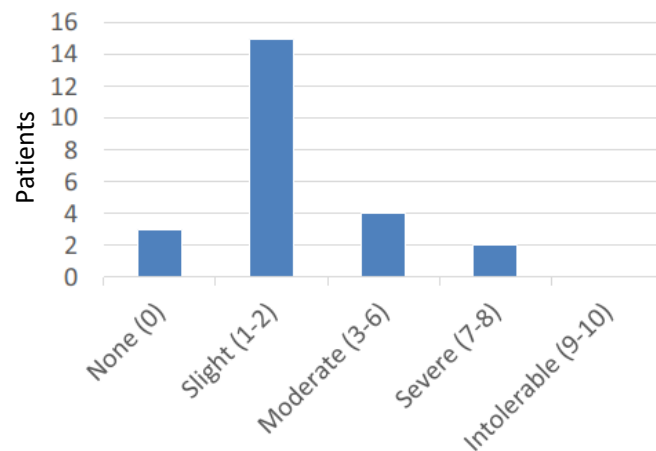


Figure 3: Pain VAS during treatment

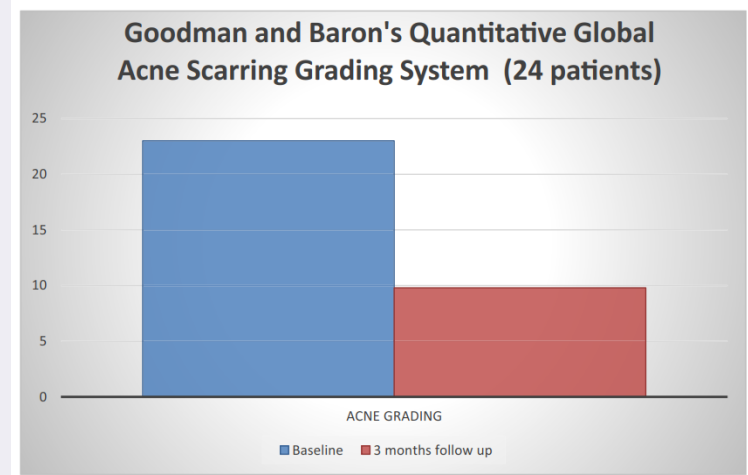


Figure 2: Goodman and Baron's Quantitative Global Acne Scarring Grading System.

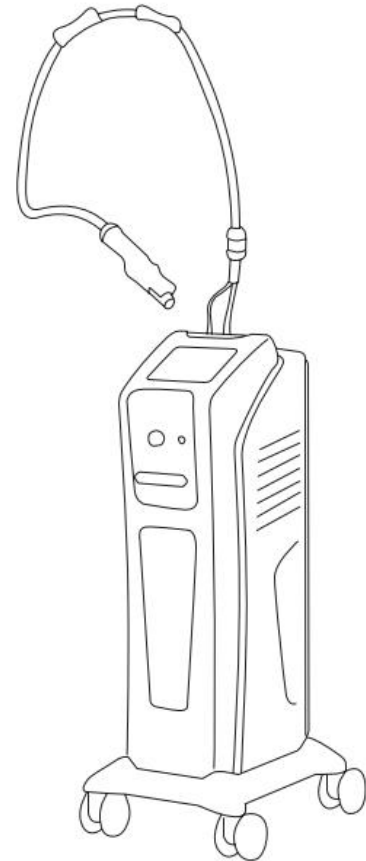
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Pigmented Lesions



New Insight in Non-Invasive Rejuvenation: the Role of a 675 nm Laser Source System

Prof. Giovanni Cannarozzo, M.D.

Dermatologist, University of Rome - Tor Vergata - Italy



Patients were treated with Red Touch **every month** for a maximum of **4 sessions** (mean of 2.5 ± 1.0 treatments)

Photografic evaluation proved **relevant improvement (on both pigmented and texture)** of photodamaged and scared skin.

The treatment was **well tolerated**.



Figure: Before and 3 months after the last treatment (3-monthly sessions).

Non-Ablative Rejuvenation with a 675 nm Laser Source for Improving Collagen

Dr Claudia Rastelli, M.D. – Rimini, Italy



The blotch was treated with a **single session** of Red Touch device.

The central photo shows the typical **darkening- endpoint** for blotch removal.



Figure 7. Treatment of a blotch on the shoulder. Images before (**A**), of darkening-endpoint of the lesion after the treatment (**B**) and the result obtained 3 months after (**C**) a single Red Touch System treatment session.

Non-Ablative Rejuvenation with a 675 nm Laser Source for Improving Collagen

Dr Claudia Rastelli, M.D. – Rimini, Italy



Patients showed **significant improvements** as measured by patient self assessment:

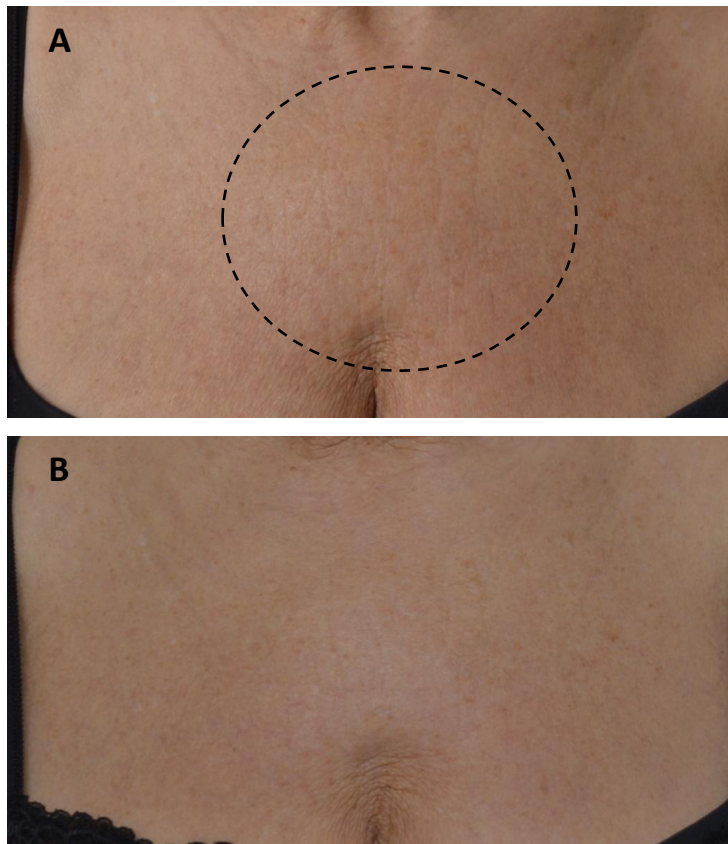


Figure 6. Chrono-ageing treatment of blotches and wrinkles of the décolleté (the middle part was treated, above the crease between the breast). Image before (**A**) and 1 month after (**B**) a single RedTouch System treatment session.



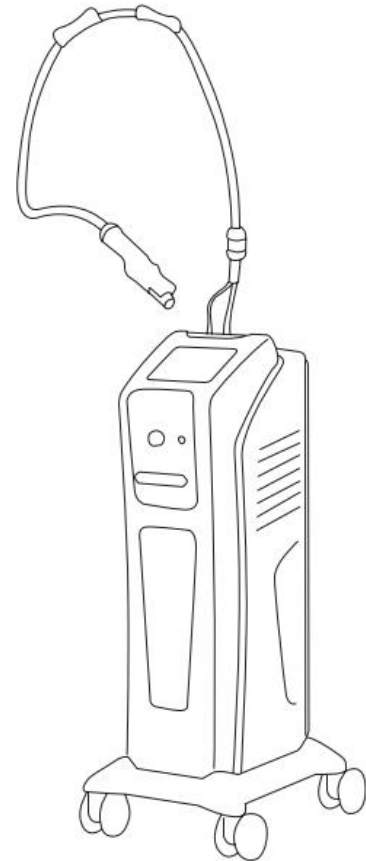
Figure 3. Patient's perceived subjective improvement at various assessment steps.

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Hand Rejuvenation



Non-Ablative Rejuvenation with a 675 nm Laser Source for Improving Collagen

Dr Claudia Rastelli, M.D. – Rimini, Italy



Figure 8. Chrono-ageing treatment of hand blotches. Images before (A), and after (B) 2 Red Touch system treatment sessions.

Patients were treated with **2 sessions** of Red Touch .

Photografic evaluation proved **relevant improvement in hand rejuvenation.**

The treatment was **well tolerated:**

« The opinion of the subjects with regards to pain and discomfort during the treatment remained **constant for all sessions** and a value was **between Slight pain and Moderate pain.**»

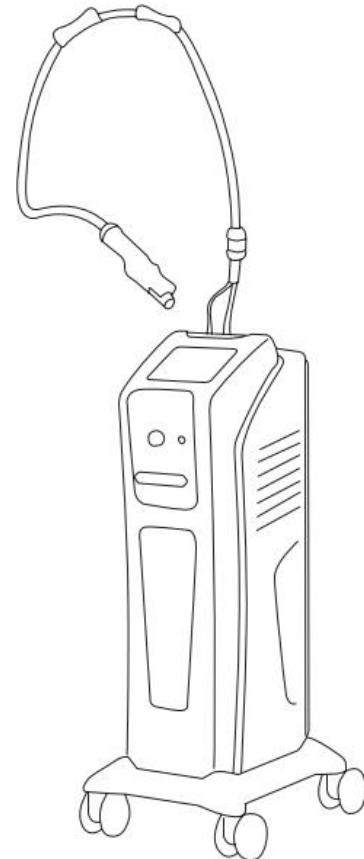
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Facial Vascular lesions

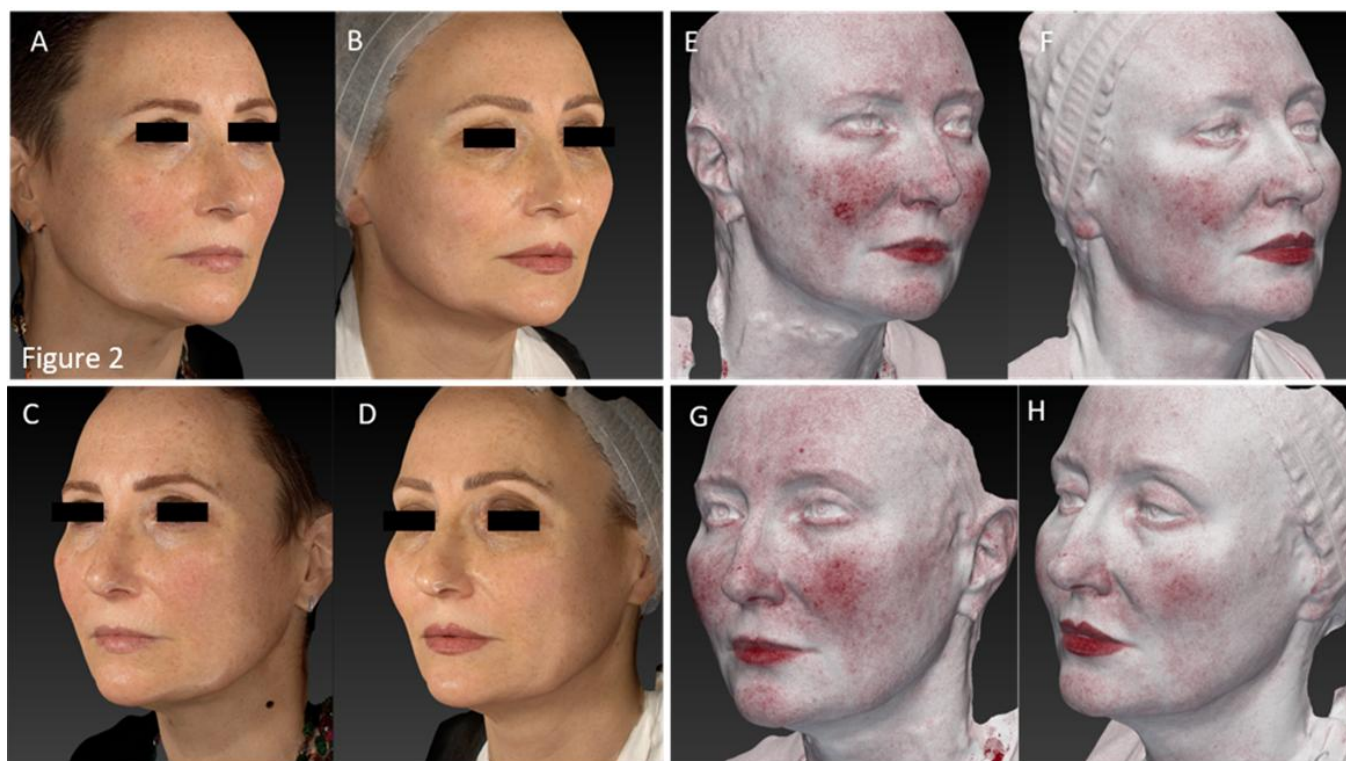




Type of the Paper (Communication)

New 675-nm laser device: the innovative and effective non-ablative resurfacing technique.

Domenico Piccolo¹, Giuliana Crisman¹, Caterina Dianzani², Iris Zalaudek³, Irene Fusco^{4*} and Claudio Conforti³



All images show an **evident vascular and skin texture improvement** in the whole patient's face area.

A tensor effect of the zygomatic region is obtained, due to the increase in collagen production, which also leads to a reduction of the nasolabial folds.

Figure 2. (A; B) Right lateral view of a female patient before and 6 MFU after laser treatment. (C; D) Left lateral view of a female patient before and 6 MFU after laser treatment. (E; F) Image of the right lateral view of the same female patient before and 6 MFU after laser treatment acquired with Vectra 3D software. (G; H) Image of the left lateral view of the same female patient before and 6 MFU after laser treatment acquired with Vectra 3D software.



Type of the Paper (Communication)

New 675-nm laser device: the innovative and effective non-ablative resurfacing technique.

Domenico Piccolo¹, Giuliana Crisman¹, Caterina Dianzani², Iris Zalaudek³, Irene Fusco^{4*} and Claudio Conforti³



Figure 4. (A;B) Right lateral view of a female patient before and 6 MFU after laser treatment. **(C; D)** Left lateral view of a female patient before and 6 MFU after laser treatment.



Figure 5. (A;B) Image of right lateral view of female patient before and 6 MFU after laser treatment acquired with Vectra 3D software. **(B;C)** Image of left lateral view of female patient before and 6 MFU after laser treatment acquired with Vectra 3D software

All images show a visible **improvement in laxity, facial aging, vascular and skin texture, and a redefinition of the mandibular area** have been reached.

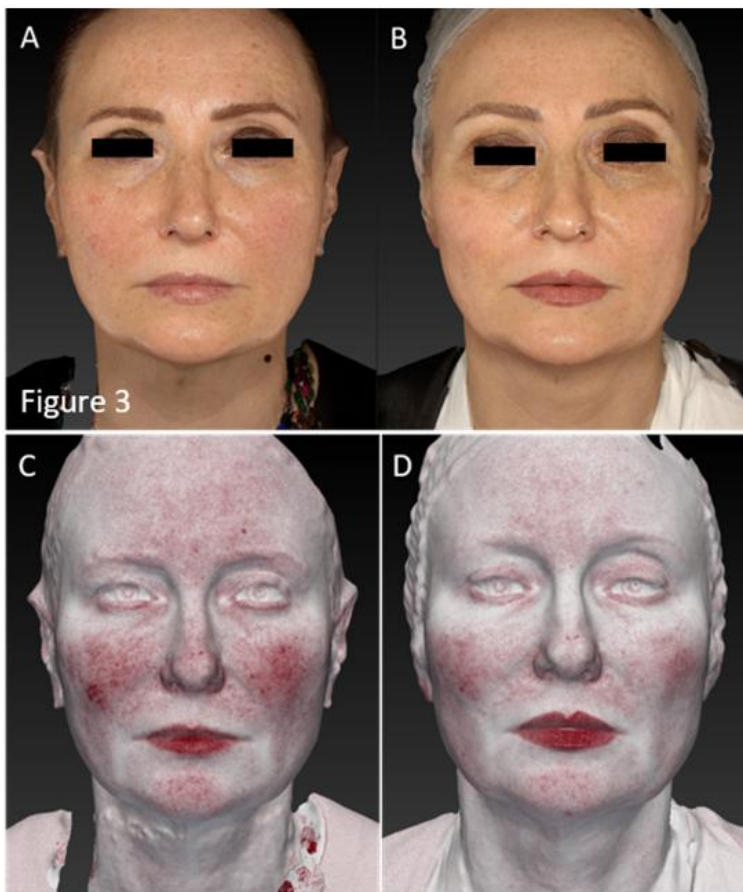
A tensor effect of the zygomatic region is obtained, due to the increase in collagen production, which also leads to a reduction of the nasolabial folds.



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New 675-nm laser device: the innovative and effective non-ablative resurfacing technique.

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Some patients examined with the Vectra 3D software and who presented with wide-spread redness were evaluated for vascular improvement, which revealed that **44% of them showed a moderate improvement** and **13% a marked improvement** after treatment.

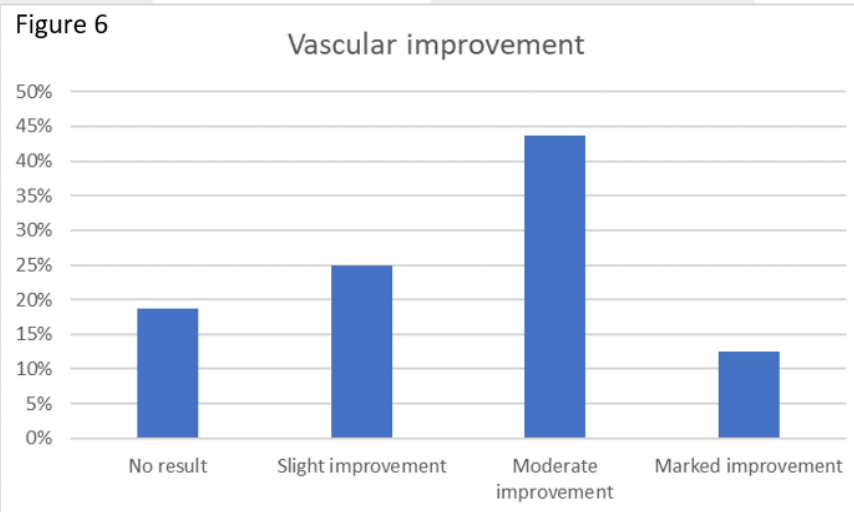


Figure 6. Graphical representation of vascular patient's improvement.

Figure 3. (A; B) Frontal view of a female patient before and 6 MFU after laser treatment. (C; D) Image of frontal view of the same female patient before and 6 MFU after laser treatment acquired with Vectra 3D software.

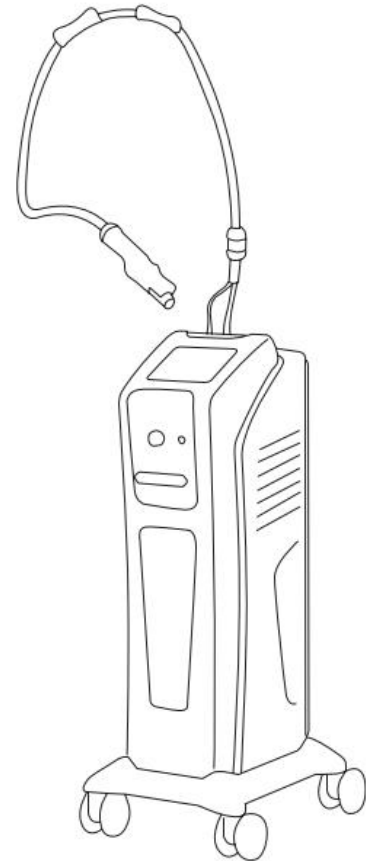
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Melasma





Could 675-nm Laser Treatment Be Effective for Facial Melasma Even in Darker Phototype?

Paolo Bonan, MD,¹ Alice Verdelli, MD, PhD,¹ Laura Pieri, PhD,² and Irene Fusco, PhD^{3,i}

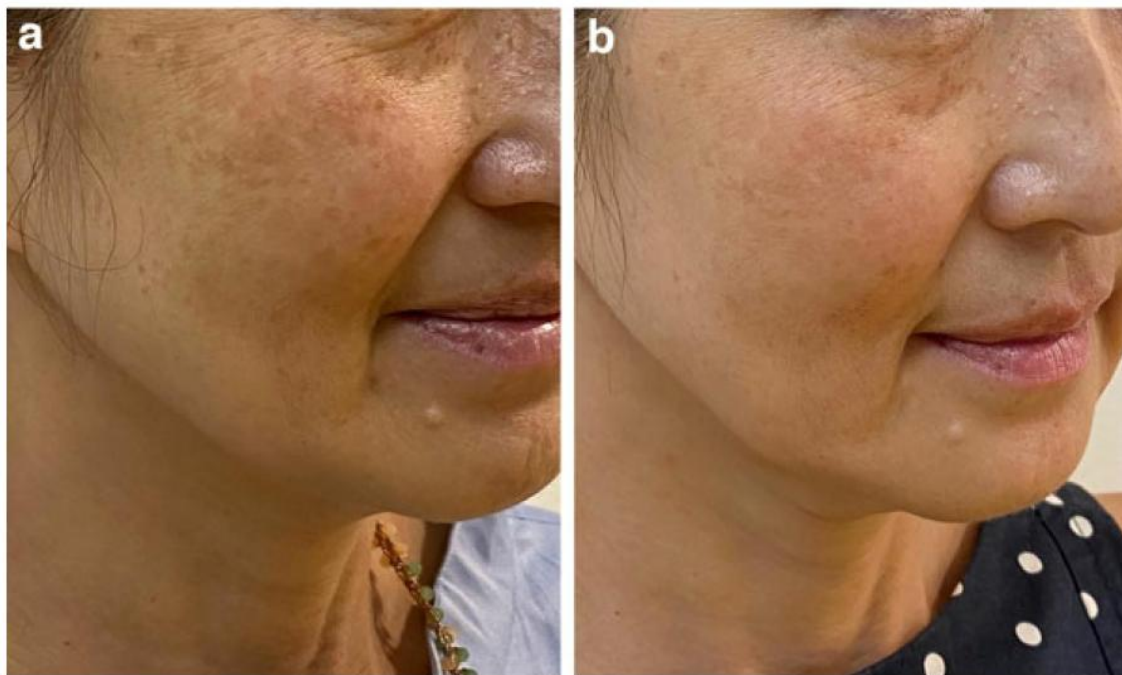


Figure 1: A 56-year old Asiatic patient with facial melasma (a) improved after three sessions (3 months follow-up) of 675 nm laser treatment (b)

The study protocol included up to **three sessions with a 30-day interval** between treatments.

Parameters were adapted to phototype with a reduction in energy to reduce the risk of post-inflammatory hyperpigmentation.

After treatment, skin was **cooled with cold water-soaked gauzes**, and **nonsteroidal anti-inflammatory cream** based on B12 vitamin was applied twice a day for 2 weeks.

All subjects were also asked to take **oral tranexamic acid** (250 mg) after each treatment, three times 1 day for 1 week, and to use **SPF 50 sunscreen** during the day.



A New 675 nm Laser Device in the Treatment of Melasma: Results of a Prospective Observational Study

Steven Paul Nistico, MD, PhD,¹ Martina Tolone, MD,¹ Tiziano Zingoni, BSc,² Federica Tamburi, MD,¹
Elisabetta Scali, MD, PhD,¹ Luigi Bennardo, MD,¹ and Giovanni Cannarozzo, MD²

Before treatment, face was **cleaned** with **mild soap** and **rinsed with water**.

Assessment of the energy to treat each patient was carried out on a “**test**” area based on the subject's skin type and degree of tolerability. The **end point** was considered a **mild erythema and some associated edema**.

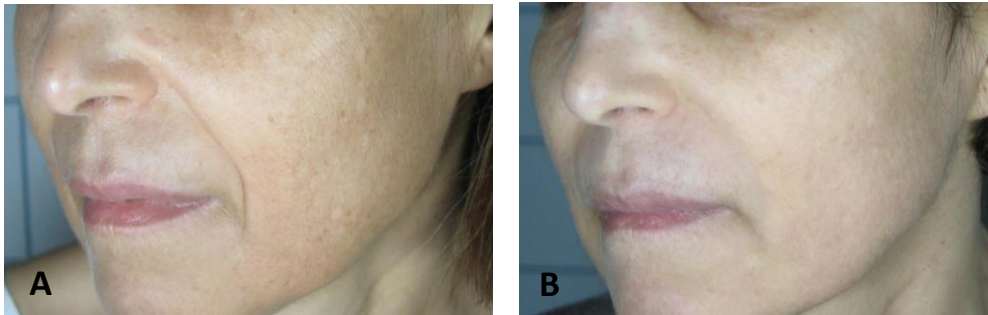


Fig.3: (A) Patient at baseline; **(B)** Patient at 3-month follow-up



Fig.2: (A) Patient at baseline. **(B)** Patient right after treatment, **(C)** Patient at 3-month follow-up

Patients were treated with **three sessions** of Red Touch. Sessions were performed with a **30-day interval**.

All treatments were performed using a transparent conductive gel.

Application of topical anaesthetics was optional.

After treatment, skin was **cooled with cold water-soaked gauzes** and **nonsteroidal anti-inflammatory cream** based on B12 vitamin was applied **twice a day for 2 weeks**.

Postoperative recommendations included the use of **total block mineral sunscreens** for the all treatments and the whole follow-up period.

The 675nm wavelength for treating facial melasma

Luigi Coricciati , Maddalena Gabellone , Pantalea Delle Donne ,
Beatrice Marina Pennati , Tiziano Zingoni

The patient's face **was washed** with **gentle soap and water** prior to treatment.

Each patient underwent an energy therapy assessment on a particular area "**test**" based on their skin type and level of tolerance.

A total of **3 sessions** at **30-day intervals** were performed with Red Touch device.

After the treatment, **cold water-soaked gauzes** were used to **cool down the skin**.

A hydrating, soothing and protective water-based solution (URIAGE - Eau Thermal) was daily applied to the treated area to help to rebuild the skin barrier and maintain an optimum moisturization level.



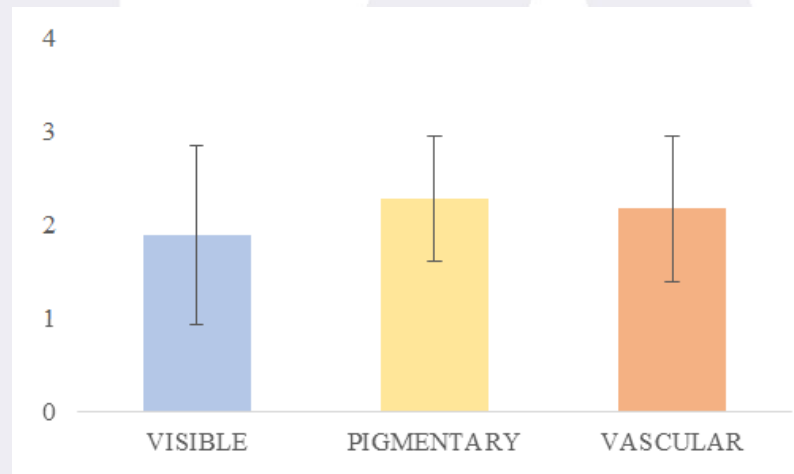


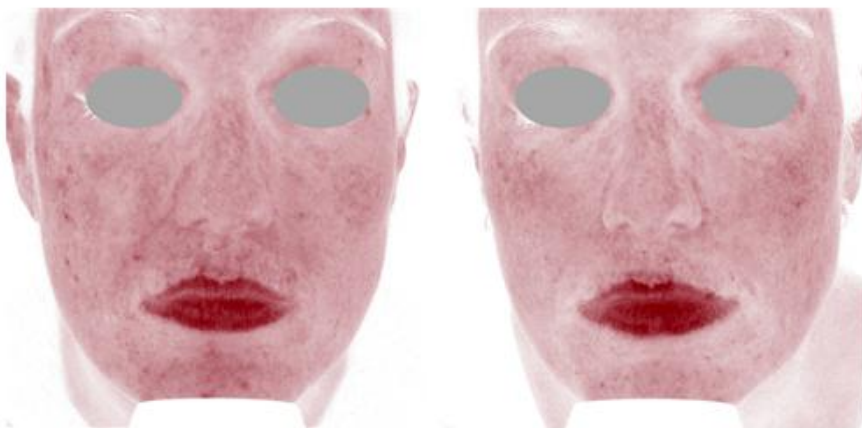
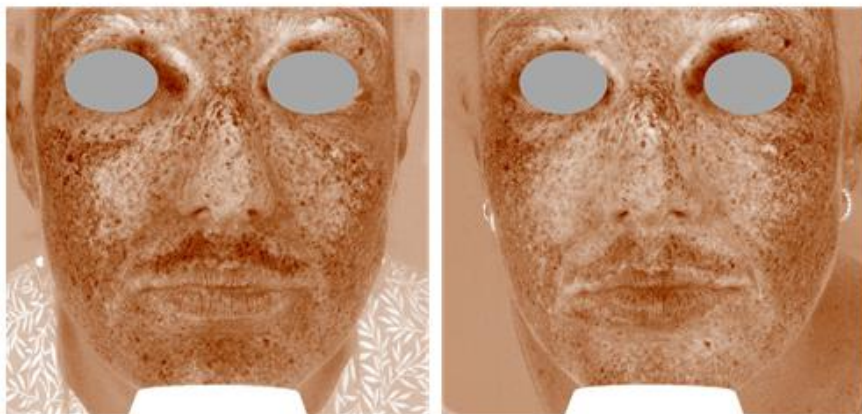
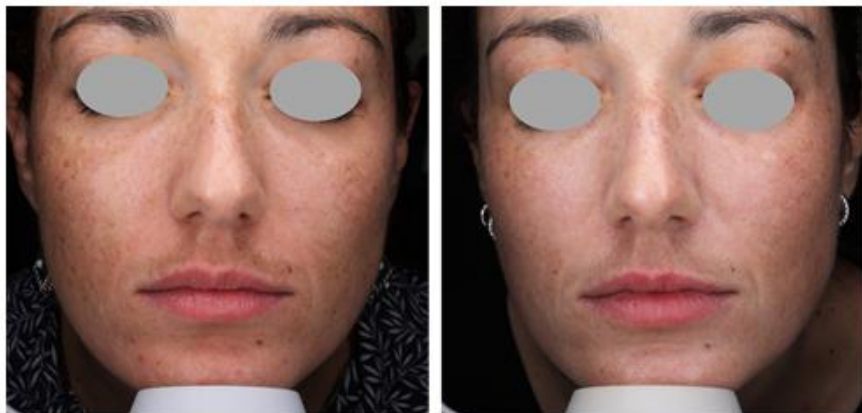
The 675nm wavelength for treating facial melasma

Luigi Coricciati, Maddalena Gabellone, Pantalea Delle Donne,
Beatrice Marina Pennati, Tiziano Zingoni

A 5-point Global Aesthetic Improvement Scale (GAIS) (None=0, mild/25%=1, moderate/50%=2, good/75%=3, excellent/100%=4) was used to evaluate the patients' skin improvement before and 3 months after the last treatment (T1) with RedTouch.

The clinical pictures in **visible light** (blue column), with the **pigmentary brown filter** (yellow column) and with the **vascular red filter** (orange column) were considered.



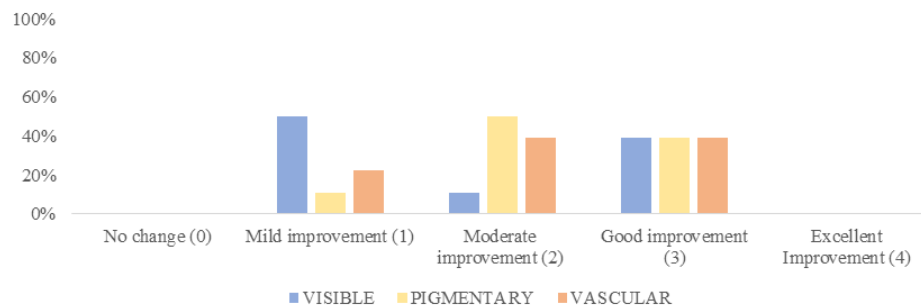


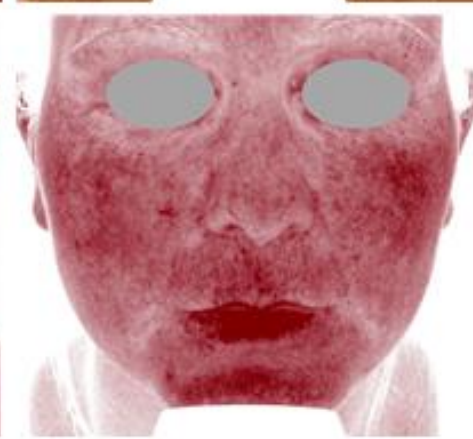
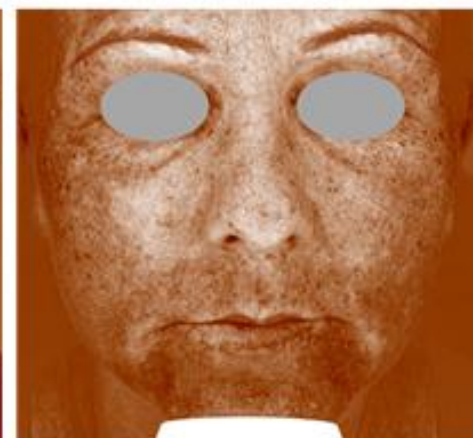
The 675nm wavelength for treating facial melasma

Luigi Coricciati, Maddalena Gabellone, Pantalea Delle Donne,
Beatrice Marina Pennati, Tiziano Zingoni

In general, there was apparently more consistent improvement in the pigmentary and vascular components compared to the visible result (moderate to good).

The clinical pictures in **visible light** (blue column), with the **pigmentary brown filter** (yellow column) and with the **vascular red filter** (orange column) were considered





Melasma - Mechanism of Action

Different mechanisms of action have been hypothesised:

- ...The wavelength between 650 and 850 nm is the better one to **selectively target melanin**, as light absorption coefficient for hemoglobin is lower, and for water, it is higher. An optimal wavelength of 650–700 nm targets melanin, as melanin absorbance continues to decrease with the increase of wavelength...
...Preclinical study showed a **selective damage to melanin component**, sparing other skin structures...
[Nisticò SP, Tolone M, Zingoni T, Tamburi F, Scali E, Bennardo L, Cannaroz G. **A New 675 nm Laser Device in the Treatment of Melasma: Results of a Prospective Observational Study**. Photobiomodul Photomed Laser Surg. 2020 Sep;38(9):560-564]
- ... In addition, the patient's vascular improvement was observed. Although haemoglobin is not the primary target, **the capacity of 675 nm to interact with collagen of blood vessels results in the increase in dermal tone and turgor as well as a higher continuity of the vascular system**, as shown by the high percentage of patients with a moderate vascular improvement...
[**"New 675-nm laser device: the innovative and effective non-ablative resurfacing technique** "Domenico Piccolo, Giuliana Crisman, Caterina Dianzani, Iris Zalaudek, Irene Fusco and Claudio Conforti]
- ...We hypothesise that the vascular improvement effect reported after the treatment with the study device on the face area could be due to the presence of a **collagen component in the capillary basal membrane**. Indeed, even if the collagen type is different compared to bigger vessels (type IV vs type I/III) it is still a target of the device wavelength. **For this reason, the capillary collagen, when hit by the laser, undergoes a shrinkage effect, reducing the vessel lumen and so the blood flux.** Moreover, Mathew-Steiner et al. (2021) reported that **types IV and XVIII of collagen show anti-angiogenic properties inhibiting the proliferation and migration of endothelial cells and inducing endothelial cell apoptosis**. Probably, **these effects are influenced and amplified by the presence of collagen in the surrounding environment** (connective tissue)...
[**"The 675nm wavelength for treating facial melasma"** Luigi Coricciati, Maddalena Gabellone, Pantalea Delle Donne, Beatrice Marina Pennati, Tiziano Zingoni]

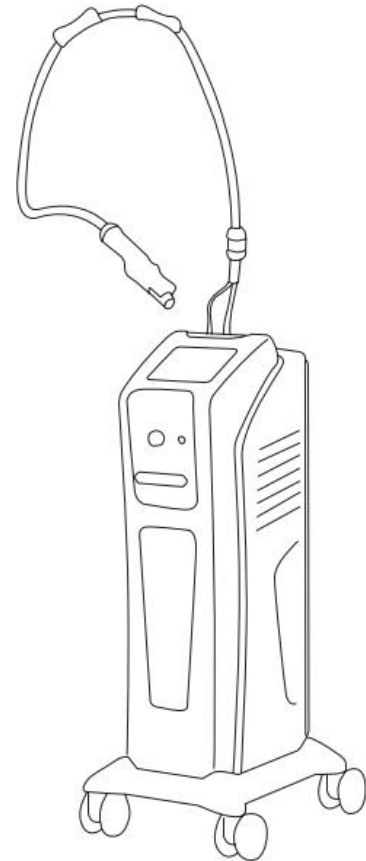
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Androgenetic Alopecia (AGA)



The Experience of Novelty laser therapy emission with 675 nm wavelength for the treatment of androgenetic alopecia in male and female patients. A Case series study.

Elisabetta Sorbellini , Irene Fusco, Francesca Madeddu, Michela Libra

ACCEPTED

Mechanism of Action

Red light laser (630-700 nm) is able to reach derma reticular up to 2-3 mm of deep penetration...

...It also has been effectively used in the **stimulation of the Anagen phase** that represents the active growth phase of hair follicles. In vitro studies show how **red light can delay the transition in Catagen and extend the Anagen phase.**

In particular, near-infrared light has been used to **stimulate cell proliferation and differentiation of stem cells.**

This effect has been demonstrated in vitro by the level of expression of KI67, a typical marker of cell proliferation in the hair matrix.

The Experience of Novelty laser therapy emission with 675 nm wavelength for the treatment of androgenetic alopecia in male and female patients. A Case series study.

Elisabetta Sorbellini , Irene Fusco, Francesca Madeddu, Michela Libra

ACCEPTED



Patients with AGA grade scores range from I-III for men according to the Norwood-Hamilton scale and I-II for women according to the Ludwig scale were treated.

Before proceeding the treatment, the **patient's skin and hair** were **moistened with water** to evenly distribute the handpiece's cooling temperature and avoid light reflections.

The use of hair gel was avoided to provide greater comfort to the patient and to accelerate and facilitate the patient's release following treatment session.

All patients underwent to **one single pass of 675 nm laser in AGA area twice a week for a total 10 of sessions of 20 minutes each.**

The Experience of Novelty laser therapy emission with 675 nm wavelength for the treatment of androgenetic alopecia in male and female patients. A Case series study.

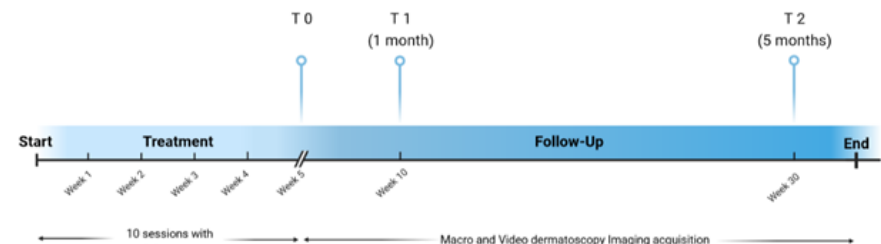
Elisabetta Sorbellini , Irene Fusco, Francesca Madeddu, Michela Libra

ACCEPTED



Figure 4. Video and Macro dermatoscopy Imaging of male patient. A clinical improvement and restoration of scalp from baseline (T0) to 1 (T1) and 5 (T2) months follow up was observed.

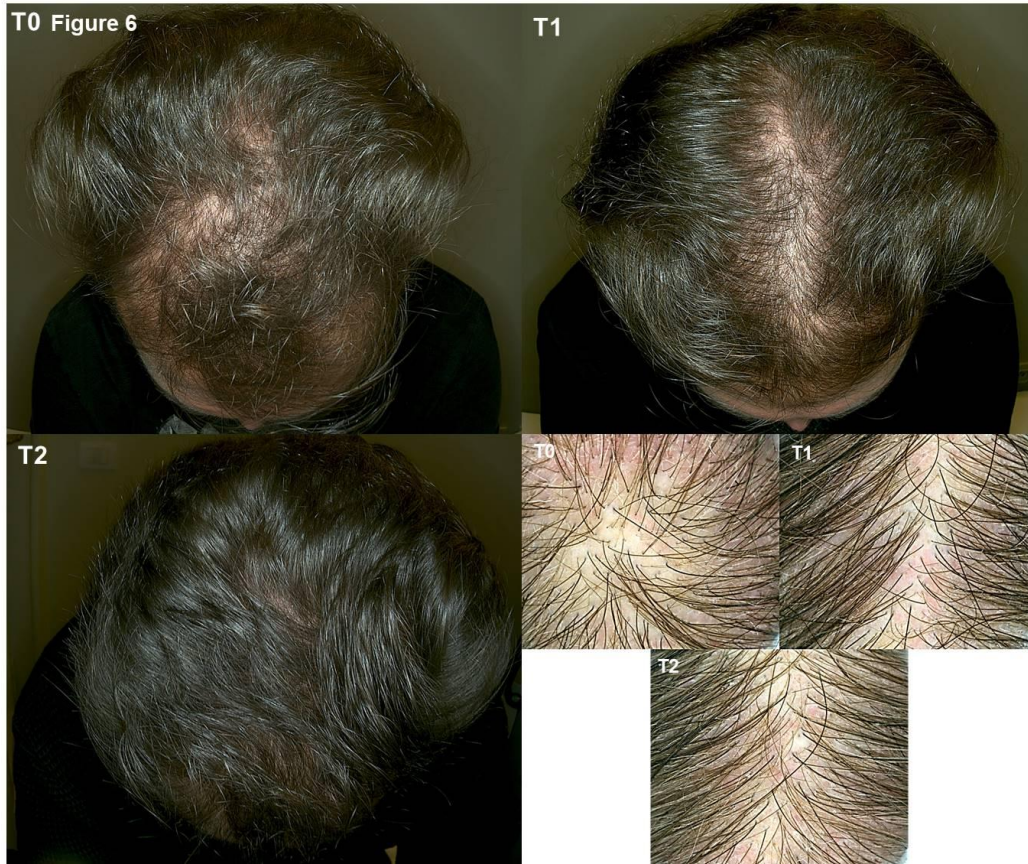
After comparison with Dermoscan (Vidix, Canfield, Italy) of data at T0, T1 and T2, with qualitative/quantitative evaluation, a **significant increase of hair number and density was observed in all patients examined.**



The Experience of Novelty laser therapy emission with 675 nm wavelength for the treatment of androgenetic alopecia in male and female patients. A Case series study.

Elisabetta Sorbellini , Irene Fusco, Francesca Madeddu, Michela Libra

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At 1 month greater increase of number of vellus hairs compared to the terminal hairs was observed.

However, **after 5 months** of follow-up, the results are reversed showing an **increase in the number of terminals compared to vellus hairs**.

Figure 6. Video and Macro dermatoscopy Imaging of male patient. A clinical improvement and restoration of scalp's crown hairs from baseline (T0) to 1 (T1) and 5 (T2) months follow up was observed.

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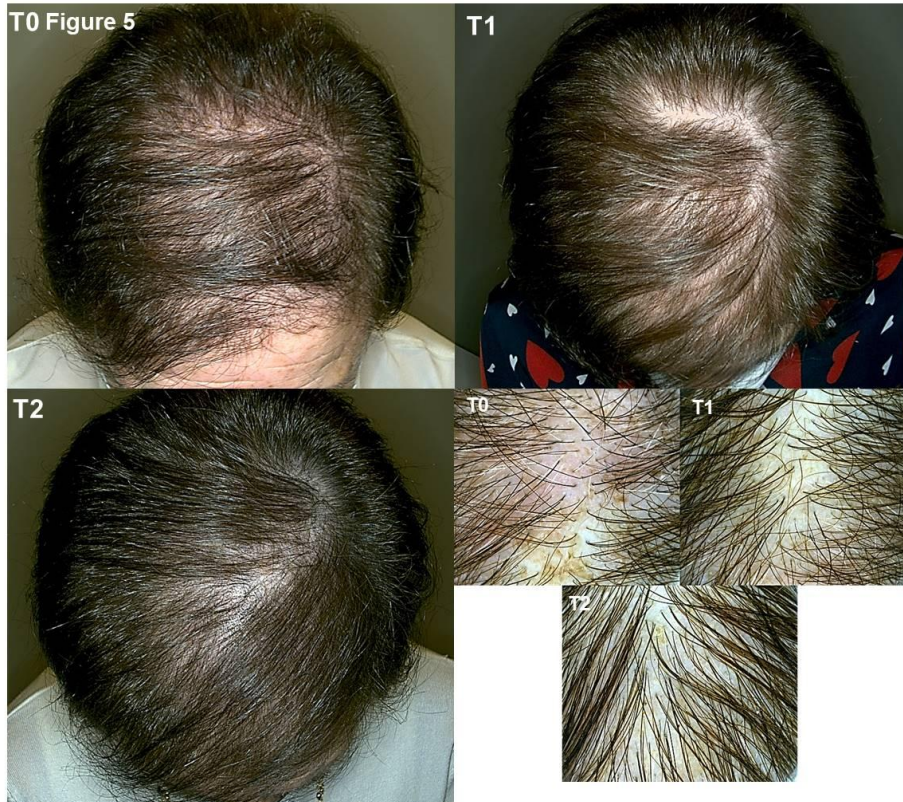
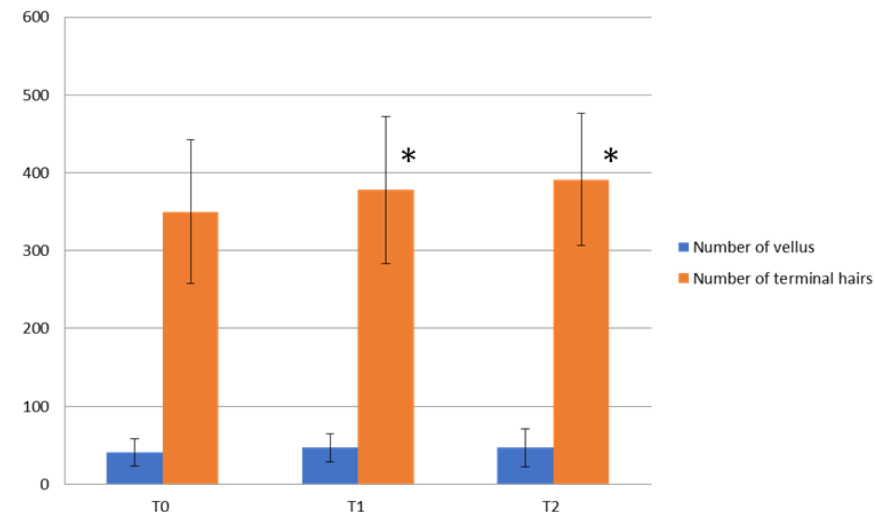


Figure 5. Video and Macro dermatoscopy Imaging of female patient. A clinical improvement and restoration of scalp's crown hairs from baseline (T0) to 1 (T1) and 5 (T2) months follow up was observed.

From the graph, it can be seen that the number of **terminal hairs increases with increasing follow-up** and the vellus hairs remain more or less constant.



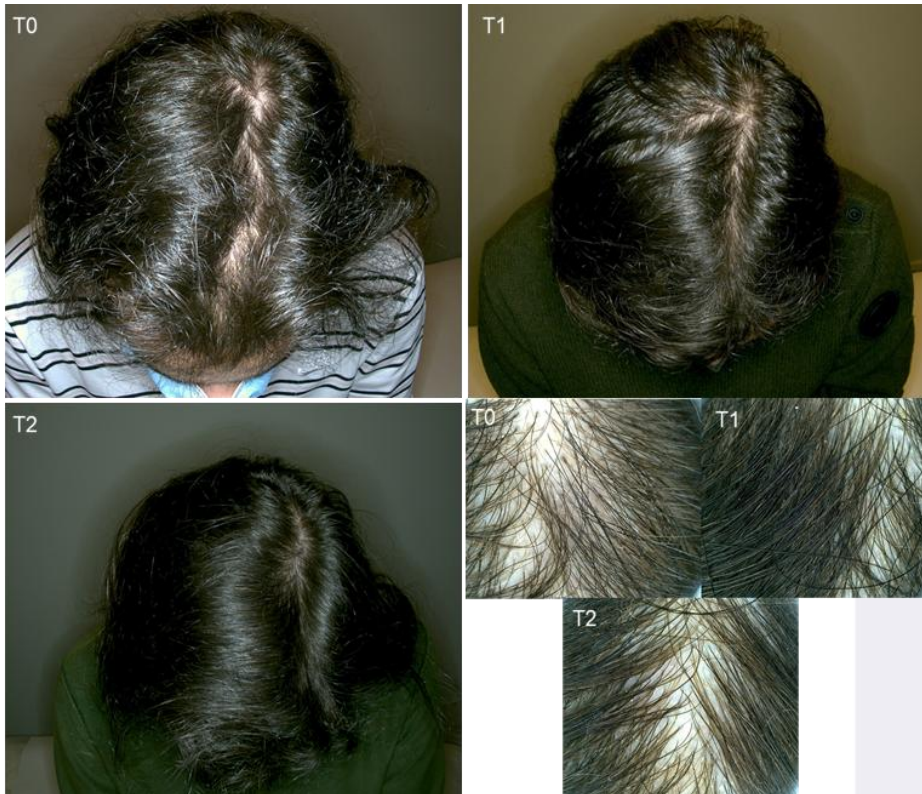
* Statistically significant results ($p < 0.05$)

Figure 3. Histogram representation of number of vellus and terminal hairs at T0, T1 and T2 follow up.

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Clinical photographic evaluation clearly show a patient's improvement of AGA conditions with a **complete restoration of hairs scalp**.

In addition, also a **decrease in yellow dots and teleangiectasia** (pathological characteristics of the advanced state of AGA condition) were observed.

Moreover, a **reduction of miniaturization process in all treated sites** was demonstrated.

Figure 7. Video and Macro dermoscopy Imaging of female patient. A clinical improvement and restoration of scalp's crown hairs from baseline (T0) to 1 (T1) and 5 (T2) months follow up was observed.

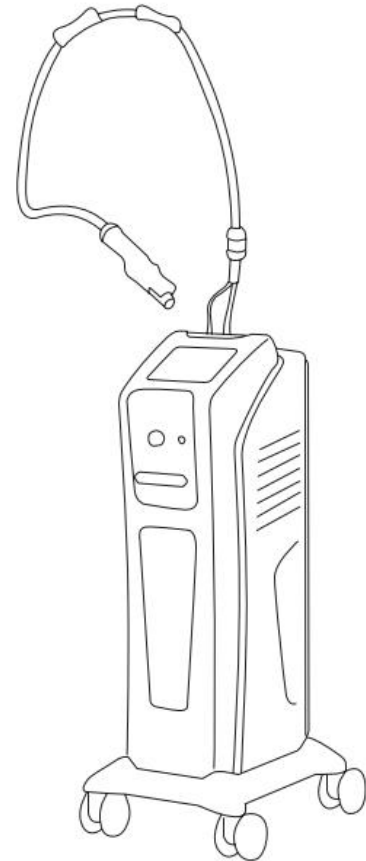
redtouch

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Bibliographic Atlas



**Is Red Touch safe and
effective in Dark Skin
Types?**





Could 675-nm Laser Treatment Be Effective for Facial Melasma Even in Darker Phototype?

Paolo Bonan, MD,¹ Alice Verdelli, MD, PhD,¹ Laura Pieri, PhD,² and Irene Fusco, PhD^{3,i}



Figure 1: A 56-year old Asiatic patient with facial melasma (a) improved after three sessions (3 months follow-up) of 675 nm laser treatment (b)

The study protocol included up to **three sessions with a 30-day interval** between treatments.

Parameters were adapted to phototype with a reduction in energy to reduce the risk of post-inflammatory hyperpigmentation.

After treatment, skin was **cooled with cold water-soaked gauzes**, and **nonsteroidal anti-inflammatory cream** based on B12 vitamin was applied twice a day for 2 weeks.

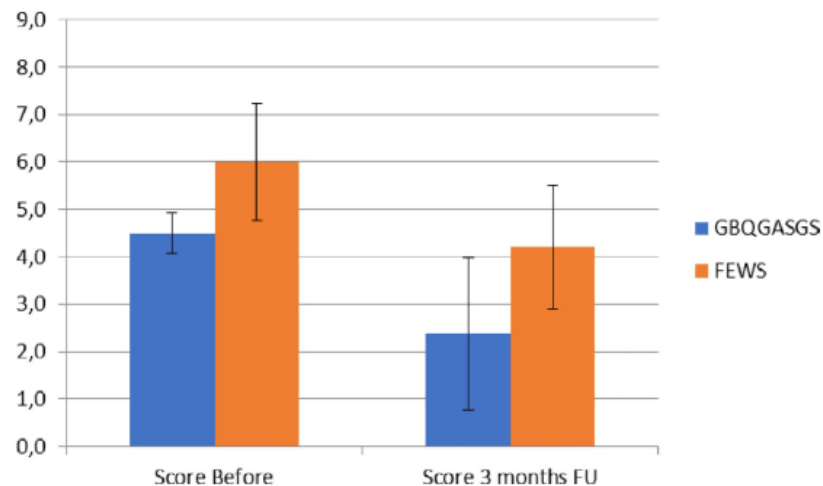
All subjects were also asked to take **oral tranexamic acid** (250 mg) after each treatment, three times 1 day for 1 week, and to use **SPF 50 sunscreen** during the day.



Facial rejuvenation: A safe and effective treatment with a fractional non-ablative 675 nm laser in Asian population



Figure 1: A marked reduction of facial wrinkles and acne scars is shown in lateral view of the patient **3 months** after the last treatment



Patients underwent **3 sessions** with the Red Touch System **once monthly**

Topical anesthesia was applied throughout the treatment cycle in only 10% of cases.

Histogram: FEWS/GBQGASGS score histograms before treatment and 3 months FU



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**Comparison with IPL
and Q-Switched devices**



Targets and Depth of action with the tissue

Devices	Targets	Depth
Q-Switched Devices	Melanin	Deep Action
IPL Device	Melanin and Haemoglobin	Superficial Action
	Melanin and Vessel Collagen	Deep Action

New

Red Touch, like Q-Switched lasers, allows you to **act in depth** but manages to act on **multiple targets**

Deep Action

Possibility to treat deep lesions

Multiple Targets

More Versatile



References:

Zoccali G, Piccolo D, Allegra P, Giuliani M. **Melasma treated with intense pulsed light**. Aesthetic Plast Surg. 2010 Aug;34(4):486-93.

Lee YS, Lee YJ, Lee JM, Han TY, Lee JH, Choi JE. **The Low-Fluence Q-Switched Nd:YAG Laser Treatment for Melasma: A Systematic Review**. Medicina (Kaunas). 2022 Jul 14;58(7):936.

"The 675nm wavelength for treating facial melasma" Luigi Coricciati, Maddalena Gabellone, Pantalea Delle Donne, Beatrice Marina Pennati, Tiziano Zingoni

Fluence and Peak Power

Devices	Fluence* [J/cm2]	Peak Power [W]
Q-Switched Devices	10^0	10^9
IPL Device	10^1	10^4
redtouch	10^2	10^1

*Order of magnitude of the Fluence that can be obtained with these devices

Red Touch allows you to use **higher fluences** than other devices while maintaining a **lower peak power**

Lower Peak Power



Less pain

Greater Fluence



Greater effectiveness

References:

Zoccali G, Piccolo D, Allegra P, Giuliani M. **Melasma treated with intense pulsed light**. Aesthetic Plast Surg. 2010 Aug;34(4):486-93.

Lee YS, Lee YJ, Lee JM, Han TY, Lee JH, Choi JE. **The Low-Fluence Q-Switched Nd:YAG Laser Treatment for Melasma: A Systematic Review**. Medicina (Kaunas). 2022 Jul 14;58(7):936.

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Scan Area and Number of Passages

Devices	Scan Area [cm2]	N° Passages
Q-Switched Devices	0.7	1-2 @ 755nm Up to 8 @ 1064nm
IPL Device	4-6	1-2
redtouch	2.5	1

Red Touch has an **intermediate scanning area** compared to the other devices, but achieves **excellent results in fewer passages**.

Greater Scan Area



Fast Treatment

Fewer Passages



Fast Treatment

References:

Zoccali G, Piccolo D, Allegra P, Giuliani M. **Melasma treated with intense pulsed light**. Aesthetic Plast Surg. 2010 Aug;34(4):486-93.

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Number of Sessions and Efficacy

Devices	Number of Sessions	Efficacy
Q-Switched Devices	5–15 sessions (usually 9–10)	Favorable outcomes not only in subjective measures but also in objective measures
IPL Device	3-5 sessions at intervals of 40–45 days.	Results were excellent in 18 patients (47.37%), good in 11 (28.95%), moderate in 5 (13.16%), and poor in 4 cases (10.52%) in which a recurrence of hyperpigmented areas occurred within 2 and 4 months.
	3 sessions at intervals of 30 days	Favorable outcomes not only in subjective measures but also in objective measures at 3 months of follow-up.

Great results are obtained with the **minimum number of sessions** foreseen also for other types of devices.

References:

Zoccali G, Piccolo D, Allegra P, Giuliani M. **Melasma treated with intense pulsed light**. Aesthetic Plast Surg. 2010 Aug;34(4):486-93.

Lee YS, Lee YJ, Lee JM, Han TY, Lee JH, Choi JE. **The Low-Fluence Q-Switched Nd:YAG Laser Treatment for Melasma: A Systematic Review**. Medicina (Kaunas). 2022 Jul 14;58(7):936.

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Downtime and Side Effects

Devices	Downtime	Side effects
Q-Switched Devices	Transient erythema and edema were most reported immediately after treatment	Rare, but serious adverse events included pigmentary side effects, such as mottled hypopigmentation (MH) and rebound hyperpigmentation (RH), which were more frequent in darker skin (Fitzpatrick skin type IV, V). However, some authors have reported aggravation or relapse of melasma three months after cessation of treatment. PIH were more frequently observed in the 532 nm QS.
IPL Device	The biophysical interaction between light and melanin triggers a transient hyperpigmentation.	-
	Transient erythema were most reported immediately after treatment and disappear after 1 hour	No side effect reported

References:

Zoccali G, Piccolo D, Allegra P, Giuliani M. **Melasma treated with intense pulsed light**. Aesthetic Plast Surg. 2010 Aug;34(4):486-93.

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**THANK YOU FOR
YOUR ATTENTION**