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The Alpha System 3D IPL 530nm: The Science of Tight & Bright Décolleté Care

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Case Study - The Alpha System 3D IPL 530nm: The Science of Tight & Bright Décolleté Care

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Background

The décolleté region - commonly referred to as the skin between the neck and the bust - has become a key focus in both aesthetic and clinical dermatology. Although frequently treated as a defined anatomical zone, its boundaries may vary between individuals due to personal preference, cultural influences, ethnicity, and patterns of lifetime skin exposure (e.g., clothing choices or degree of breast exposure).

These variations directly affect cumulative ultraviolet (UV) and environmental stress, which in turn influence the extent of visible skin aging. Because the décolleté is often exposed, it is particularly susceptible to photoaging. Clinical manifestations include wrinkles, loss of elasticity, pigmentary irregularities, and textural roughness. Chronic UV exposure is recognized as a primary driver of structural and pigmentary alterations, distinguishing extrinsic/photoaging from intrinsic/chronological aging. Research shows that photoaged skin demonstrates more pronounced biochemical, histological, and structural changes compared to intrinsically aged skin. (1)

From a mechanistic perspective, UVA radiation induces immediate pigment darkening (IPD) and persistent pigment darkening (PPD), primarily through the oxidation of existing melanin and its precursors.

This is distinct from UVB-induced delayed tanning, which stimulates melanocyte activity and increases melanin synthesis.

(2) These well-documented processes highlight the vulnerability of the décolleté to pigmentary and structural changes, driving clinical demand for effective non-invasive rejuvenation modalities beyond traditional facial treatments.

FormaTK ALPHA System 3D IPL Tight & Bright Protocol (530 nm)

The FormaTK ALPHA System's 3D IPL Tight & Bright protocol has been developed to address these concerns with high precision. By employing a 530 nm wavelength, the system delivers targeted efficacy for both vascular and pigment-related conditions, while simultaneously promoting dermal rejuvenation, making it especially well-suited for the delicate décolleté.

Key Clinical Benefits of 3D IPL 530 nm Wavelength

- Pigmentation & vascular correction – Reduces sunspots, age spots, freckles, redness, and telangiectasia associated with rosacea.
- Dermal rejuvenation – Stimulates collagen and elastin synthesis by reaching deeper dermal layers, resulting in firmer, smoother skin.
- Anti-aging benefits – Improves fine lines, enlarged pores, and overall skin texture for a more refined appearance.
- Multi-Dimensional Effects of 3D IPL
- Restores even skin tone by correcting discoloration and photo-damage.
- Supports long-term rejuvenation through natural collagen remodeling.
- Enhances overall radiance, firmness, and uniformity, leaving the décolleté visibly brighter and smoother.

Aims

Primary Aim

To evaluate the clinical efficacy of the Alpha/Spark Pro System with the 3D IPL 530 nm Tight & Bright protocol in improving photoaged skin, telangiectasia, and pigmentation irregularities in the décolleté region.

Secondary Aim

To assess the safety profile of the treatment, including the incidence and severity of any adverse events.

To measure patient-reported satisfaction and treatment tolerability, reflecting subjective improvements in skin appearance, comfort, and quality of life.

Methods

This study was designed as a prospective, observational, single-center case series and conducted at the FormaTK Systems Clinical Department (Tirat Carmel, Yozma 3, Carmelim Building, Israel). All treatments were performed as monotherapy using the Alpha System with a 530 nm IPL applicator, a modality approved for the intended clinical use of the device.

A total of five female patients, aged 41 to 76 years, with Fitzpatrick skin phototypes I–IV, were enrolled. All participants presented with clinical signs of skin aging, including wrinkles and pigmentary alterations. Recruitment occurred between July 2024 and August 2025.

Treatment Area and Ethical Considerations

All procedures were performed on the décolleté region. Before enrollment, patients underwent a comprehensive screening for contraindications, and a patch test was performed before the first treatment to confirm individual safety and tolerance. Treatments were conducted using Parker ultrasound gel as the coupling medium.
Written informed consent was obtained from all participants, covering both study participation and the use of standardized pre- and post-treatment clinical photographs for research and publication purposes.

During all treatment sessions, both patients and investigators wore protective safety goggles, in accordance with the clinical manual for the Alpha System IPL 530 nm applicator.

Treatment Protocol – 3D IPL Tight & Bright

The Tight & Bright monotherapy protocol consisted of a two-pass approach designed to activate melanin, stimulate dermal remodeling, and improve overall skin tone, texture, and radiance. Energy parameters were individualized based on objective melanin readings obtained directly from the treatment site using a melanin meter, ensuring safe and accurate adjustments across varying Fitzpatrick skin types and localized pigmentation.

First Pass – Melanin Activation & Skin Priming

Technique: Stamping, 10% pulse overlap for uniform coverage
Mode: Single (Stamping)
Frequency: 1 Hz
Fluence: 12–18 J/cm² (adjusted by skin type)
Pulse Duration: 10–15 ms
Cooling: 5°C sapphire tip for epidermal protection and comfort
This phase targeted dermal melanin, inducing gentle photothermal stimulation and priming the skin for regenerative effects.

Second Pass – Controlled Thermal Injury & Dermal Regeneration

Mode: Triple Continuous
Frequency: 3 Hz (nine pulses/second)
Fluence: 8–10 J/cm²
Pulse Duration: ~5 ms
Cooling: Off
Endpoint: Skin temperature raised to 40–42°C, verified with an infrared thermometer

This pass induced controlled subclinical dermal remodeling through:

- Neocollagenesis – stimulation of new collagen formation
- Elastogenesis – generation of new elastic fibers
- Angiogenesis – improved microvascular circulation

Outcomes included improvements in firmness, luminosity, and overall skin texture.

Treatment Course

The treatment was offered as a package of up to four sessions, administered at four-week intervals. During the second phase, the total number of passes was individualized based on the specific décolleté area treated and the patient's lifestyle preferences. Each pass in the second phase consisted of up to 25 continuous IPL pulses, adjusted according to the patient's skin condition and tolerance.

Patient #	Age	Signed informed consent	Fitzpatrick skin type	Anatomical area treated
1	46	yes	2	Decollete
2	41	yes	4	Decollete
3	47	yes	1	Decollete
4	72	yes	3	Decollete
5	76	yes	4	Decollete

Patient #	IPL applicator type	Total treatments	Overall, 4 point Scale Improvement	System used	Vas Score
1	S-530nm	3	90%	Alpha System	1
2	S-530nm	2	82%	Alpha System	2
3	S-530nm	3	84%	Alpha System	0
4	S-530nm	3	81%	Alpha System	1
5	S-530nm	3	79%	Alpha System	2

All five patients completed treatment, with no adverse events or side effects reported across Fitzpatrick skin types I through IV. Treatments were well tolerated (VAS 0–2), and no downtime was required.

Clinical Efficacy (Primary Aim)
Improvements on the validated grading scale ranged from 79% to 90%.
Younger patients (ages 41–47) achieved the most significant improvement (82–90%).
Older patients (ages 72–76) demonstrated clinically meaningful improvements (79–81%), reflecting the cumulative effects of aging.

Safety and Tolerability (Secondary Aim)
No burns, hyperpigmentation, or adverse skin reactions were observed.
Importantly, the use of a melanin meter to objectively measure pigmentation levels enabled personalized energy selection, ensuring high safety and minimizing downtime.

Patient Satisfaction (Secondary Aim)
All patients reported noticeable improvements in skin tone, texture, and luminosity.
Overall satisfaction was high across all skin types and age groups.

Thus, both the primary aim (efficacy) and the secondary aims (safety and satisfaction) were achieved.

Discussion

This study confirms that the Alpha System 530 nm Tight & Bright monotherapy protocol is a safe and effective solution for rejuvenating the décolleté.

Primary Aim – Efficacy

- Consistent clinical improvements were observed across all participants, validating the efficacy of 530 nm IPL in treating pigmentation, vascular irregularities, and textural changes in the décolleté.

Secondary Aims – Safety and Patient Satisfaction

- The absence of side effects across Fitzpatrick skin tones I–IV highlights the strong safety profile of the protocol.
- The thin, sensitive décolleté skin, which is usually prone to irritation, tolerated the treatment exceptionally well.
- High patient satisfaction supports the practical value of the protocol in aesthetic practice.

Clinical Advantage – Melanin Meter Integration

A key factor in achieving zero adverse events was the mandatory use of a melanin meter before each treatment. By objectively quantifying local pigmentation, parameters were tailored to each patient's exact skin condition. This feature offers a unique clinical advantage, as not all IPL/energy-based devices include melanin meters as a standard feature. This approach ensured predictable outcomes, enhanced safety, and no downtime, even in a high-risk area like the décolleté.

Preventive vs. Corrective Approach
Younger patients achieved the highest improvement, supporting the role of IPL as a preventive intervention to delay the onset of visible photoaging. Older patients still benefited significantly, confirming IPL's role as an effective corrective tool.

Conclusion

The primary aim of evaluating clinical efficacy was achieved, with documented improvements of 79–90% across the study group. The secondary aims -safety and patient satisfaction, were also achieved, with no downtime, no adverse events, and high patient-reported satisfaction.

Crucially, the integration of a melanin meter in the Alpha System represents a clinical milestone. By enabling precise, individualized parameter selection, it ensures treatment safety across a broad spectrum of skin types (Fitzpatrick I–IV) and minimizes the risk of complications. This distinguishes the Alpha System from many other devices that lack melanin meter integration.

Overall, the 530 nm IPL Tight & Bright protocol is a safe, effective, and versatile monotherapy for décolleté rejuvenation, with clear roles in both corrective and preventive aesthetic care.

Key Take-Home Message

- Primary and secondary aims achieved: High efficacy (79–90%), excellent safety, and intense patient satisfaction.
- Clinical milestone: Safe results across Fitzpatrick I–IV, an area usually prone to side effects.
- No downtime: Patients resumed regular activity immediately.
- Melanin meter advantage:
  - Objective, patient-specific energy settings.
  - Prevention of burns, PIH, or complications.
  - Not all devices offer this built-in safety feature.
- High patient satisfaction: Noticeable improvements in tone, firmness, and radiance.
- Dual role: Both preventive (delaying onset of photoaging) and corrective (improving existing signs).
- Practice differentiation: Expands treatment offerings to the décolleté, a growing patient demand.

Reference

1.Berneburg M, Plettenberg H, Krutmann J. Photoaging of human skin. Photodermatology, Photoimmunology & Photomedicine. 2000 Dec;16(6):239-44

2.Wolber R, Schlenz K, Wakamatsu K, et al. Pigmentation effects of solar-simulated radiation as compared with UVA and UVB radiation. Pigment Cell & Melanoma Research. 2008 Aug;21(4):487-91.

3.Ping C, Xueliang D, Yongxuan L, Lin D, Bilai L, Shaoming L, Gold MH. A retrospective study on the clinical efficacy of the intense pulsed light source for photodamage and skin rejuvenation. J Cosmet Laser Ther. 2016 Aug;18(4):217-24.

4.Fares C, Shahla WA, El Hawa M, Saade D. Nonfacial Skin Rejuvenation of the Neck, Chest, and Hands. Part Two: Using Laser Techniques. J Cosmet Dermatol. 2025 Feb;24(2):e16671.

Before & After Results

Patient #1

BEFORE

AFTER 3TX

Patient #2

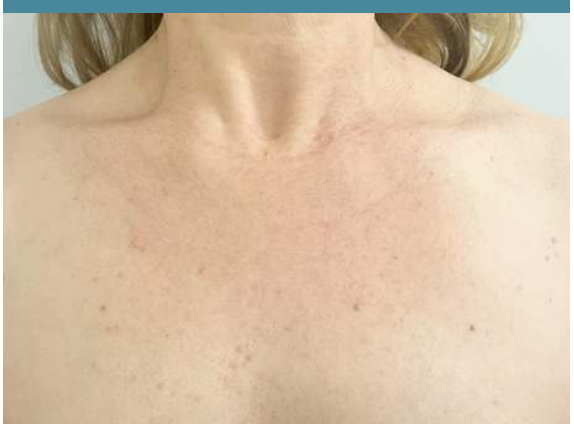
BEFORE

AFTER 2TX

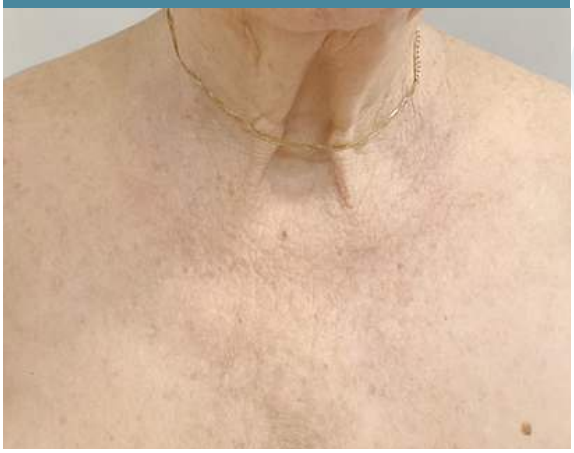
Patient #3

BEFORE

AFTER 3TX



Patient #4

BEFORE	AFTER 3TX
	

Patient #5

BEFORE	AFTER 3TX
	

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Taking care of you