

THE RISE OF NEUROCOSMETICS

Steven Dayan, MD, explains how a new era in aesthetics is emerging—one that blends neuroscience and dermatology to restore not just skin, but confidence, connection, and emotional vitality



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ABSTRACT

The field of aesthetic medicine is undergoing a paradigm shift. Beyond symmetry, ratios, and collagen density, a new frontier has emerged: neurocosmetics. These are topical and procedural innovations that act through the skin-brain axis to influence both appearance and social well-being. Rooted in psychodermatology and social neuroscience, neurocosmetics recognize the skin as a neuroendocrine organ capable of producing

and responding to neurotransmitters that affect mood, confidence, and connection. In a post-pandemic world marked by isolation and disconnection, this evolution aligns aesthetic medicine with its deeper purpose: to restore not only how patients look, but how they feel and relate. This essay explores the biological foundations, clinical implications, and cultural significance of the Neo-Romantic era of neurocosmetics, an era defined by the fusion of skin, science, and soul.

IF YOU HAVEN'T HEARD OF NEUROCOSMETICS, YOU MIGHT WANT TO. They're not a fleeting trend; they represent the next evolution in aesthetic medicine, merging neuroscience, dermatology, and well-being into one unified framework.

For decades, beauty in medicine was defined by mathematical ratios, geometric balance, and measurable collagen or elastin density. Yet patients never request elastin or hyaluronic acid; they ask to look better, feel better, and appear subtly improved.

The new romantic era of aesthetics marks a turn from metrics to meaning. It emphasizes passion, confidence, and connection, the psychosocial foundations of attraction. It meets patients where they are emotionally, not just where our devices can take them.

The COVID-19 era underscored this need. Isolation dulled our sensory and social fluency. Loneliness soared; intimacy declined. And the social hangover continues today, with nearly 45% of young men admitting they have not romantically approached a woman in the past year. And both sexes express longing for real-world connection, to converse, flirt, and touch again.

As patients re-emerge into social spaces, our aesthetic mission must expand. The skin is no longer a surface to perfect, it's an instrument of emotional communication and social vitality.

The skin as a neuroendocrine organ

The skin, our largest organ, shares its embryological origin with the brain and functions as a dynamic neuroendocrine interface. It produces and responds to neurotransmitters and neuropeptides that regulate inflammation, pigmentation, wound healing, and mood.

Up to 60% of dermatologic conditions have psychological roots, and one in four dermatology patients presents with psychiatric comorbidities.^{1,2} The link is reciprocal: the brain shapes skin function, and the skin sends continuous feedback to the brain.³

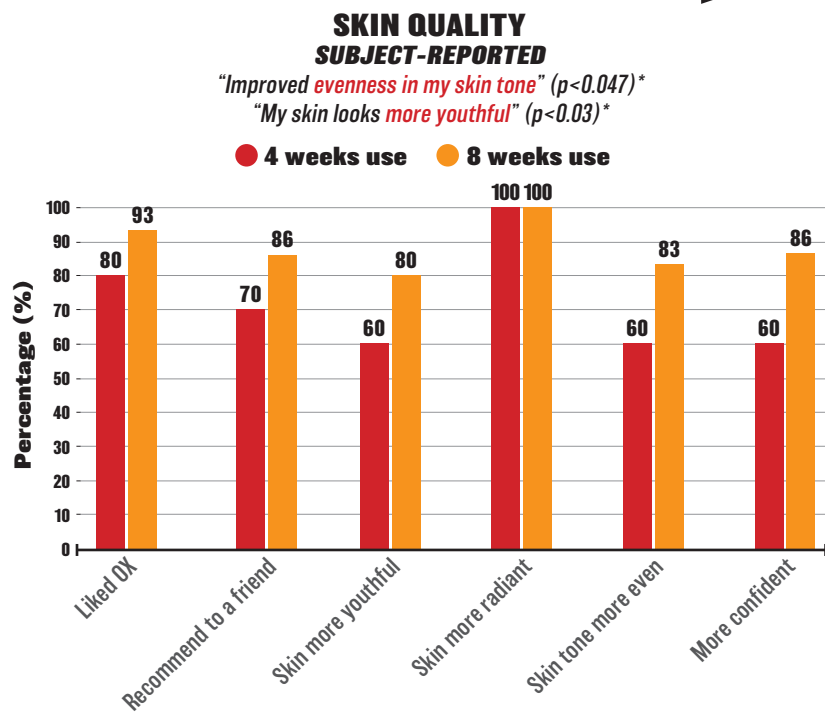
Beyond biology, the skin serves as a phylogenetically preserved surveillance system. It senses temperature, humidity, and danger, translating environmental signals into neurochemical responses long before conscious awareness.

Our 'gut feelings' and 'energy' metaphors are grounded in physiology. The skin contains over five million sensory nerve endings densely packed with neurotransmitters such as >

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Figure 1 Patient reported skin quality improvement at 4 and 8 weeks of use of a jasmine extract topical for oxytocin upregulation



psychodermatologic tools designed for an era when patients seek confidence and connection as much as correction.

A personal evolution

My own journey toward neurocosmetics began during COVID-19. The absence of in-person contact underscored the loss of warmth and nuance in digital interaction. With a background in evolutionary biology and 20 years in practice, I recognised a gap; our treatments addressed structure but ignored sensation.

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Then, when my partner, dermatologist Dr. Sabrina Fabi, became pregnant, I saw the phenomenon firsthand: the unmistakable glow. It wasn't merely hormonal. Her radiance reflected an oxytocin-driven appearance balanced by an elevated affection and emotional connection.

As a long-time researcher of attraction science, I knew oxytocin's prosocial effects, trust, bonding, and calm, but I had underestimated its visible cutaneous impact. That realisation inspired a study exploring whether oxytocin's skin pathways could be topically modulated.

The study

We conducted a double-blind, placebo-controlled clinical trial using a jasmine extract reported to upregulate oxytocin activity in the skin.⁶

The hypothesis: if oxytocin influences emotional connection, could activating it topically enhance not just skin appearance, but psychosocial well-being?

Results exceeded expectations. Participants demonstrated profoundly significant improvement in self-confidence, attractiveness, first-impression likability, and sexual satisfaction, alongside visible skin quality benefits in many categories (p < .0001).

We theorised that the psychosocial effects, in part, may stem from a unique positive feedback mechanism inherent to oxytocin. When upregulated in the skin, it stimulates further pituitary secretion, amplifying prosocial well-being and bonding responses.

Despite scepticism that skin biology can directly impact mood, others are also publishing similar outcomes. A recent study echoed our findings that skin microbiology can

▷ dopamine, serotonin, acetylcholine, substance P, and oxytocin. These molecules act locally as antioxidants and anti-inflammatories while influencing mood, attraction, and trust systemically.⁴

The human body constantly communicates beneath awareness, subconsciously, transmitting subtle cues of safety, stress, and emotional state through the skin's biochemical language.

Neurocosmetics: Beauty you can feel

This scientific reality forms the foundation of neurocosmetics, topical or procedural treatments that modulate the skin's neuromediators to improve both appearance and social well-being.

Coined in 2002 by Laurent Misery,⁵ the term was ahead of its time. Two decades later, in an age of digital fatigue and emotional burnout, the concept finds resonance. Neurocosmetics act through the skin-brain axis to enhance the experience of beauty, not merely its appearance.

By activating pathways involving oxytocin, dopamine, and endorphins, these interventions reduce inflammation, rebalance stress hormones, and elevate well-being.⁴ They are





influence mood. A *British Journal of Dermatology* paper linked the skin microbiome, particularly Cutibacterium species to emotional pleasantness and overall wellness, reinforcing the skin's influence on mood and stress relief.⁷

Redefining aesthetic purpose

Recognising the skin as a neuroendocrine organ challenges us to expand aesthetic goals. We are not only restoring volume or tone, but we are also restoring vitality, presence, and emotional resonance.

Patients express their aims in affective terms: to appear more vibrant, confident, approachable, or youthful. These are psychosocial outcomes. Treatments that help patients reconnect with others, through subtle changes in expression, texture, or glow, carry meaning beyond metrics.

Neuropeptides such as β -endorphin, calcitonin gene-related peptide, and substance P regulate vascular tone and pigmentation, but they also modulate stress resilience and pleasure.⁸ Targeting these networks through topical or procedural means redefines aesthetic medicine as social neuroscience.

The Neo-Romantic paradigm

The Enlightenment era gave us measurement, ratios, and histologic precision. The Neo-Romantic era restores emotion and purpose. It asks: Why do we beautify?

Patients don't seek perfection, they seek belonging. They want to feel confident, desired, and reconnected. In this context, the aesthetic provider becomes both scientist and empath, using the skin as an interface for human connection.

When we address sensory, emotional, and social needs alongside structural concerns, aesthetic medicine transcends correction. It becomes an act of restoration of confidence, of self, of humanity.

Looking ahead

Clinical trials in aesthetics should measure not only beauty metrics, proportions, elasticity or wrinkle depth, but also confidence, intimacy, and perceived attractiveness

Key points

- 1. The skin is biologically active, communicating with the brain through neurotransmitters and neuropeptides. It plays a role in mood, stress, and social perception, making it more than just a surface to treat—it's a dynamic part of human connection and emotional health.
- 2. Neurocosmetics are treatments—topical or procedural—that engage the skin-brain axis to positively affect both appearance and social well-being.
- 3. Aesthetic medicine is entering a Neo-Romantic era where success is defined by human connection and psychosocial resonance—not metrics alone.

and even sexual satisfaction using validated tools. As emotional and social benefits are documented alongside biological ones, neurocosmetics will take their rightful place as a cornerstone of modern aesthetics.

Conclusion

The skin is not a shell; it is a sensory organ of emotion, communication, and connection. To ignore its neurobiological intelligence is to overlook much of what makes us human.

The Neo-Romantic era of neurocosmetics invites us to reverse engineer from what patients truly want: not perfection, but presence; not symmetry, but confidence; not youth, but connection.

When our treatments restore that, we are no longer merely improving appearances; we are elevating the human experience itself.

► **Declaration of interest** None

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