

WHY DAY & NIGHT
SKINCARE?

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INTRODUCTION

Physiological Benefits of Facial Skincare: From Perception to Neuromodulation¹



Facial skincare provides benefits beyond appearance- delivering **physiological and psychological well-being**. Regular cleansing, moisturizing, and massage activate **cutaneous mechanoreceptors**, enhancing hydration, barrier function, and tactile comfort.

Daytime skincare helps defend against external aggressors such as UV radiation, pollution, and oxidative stress. Cleansers and moisturizers combined with sunscreen protect barrier integrity and reduce environmental damage.

Night time skincare emphasizes recovery and repair. Increased skin permeability at night enhances the absorption of actives, while hydration and barrier-repairing formulations optimize skin renewal during rest.

Emotional perception is equally important. Daily skincare rituals reduce stress and promote relaxation via **dopaminergic and oxytocinergic pathways**. Neuroimaging confirms that pleasant touch and sensory experiences in skincare modulate brain regions linked to reward and social bonding. This neuromodulation also stimulates parasympathetic activity, lowering stress responses.

Thus, skincare-through both day and night routines-acts as a multidimensional intervention, combining protection, repair, and neuro-emotional well-being.

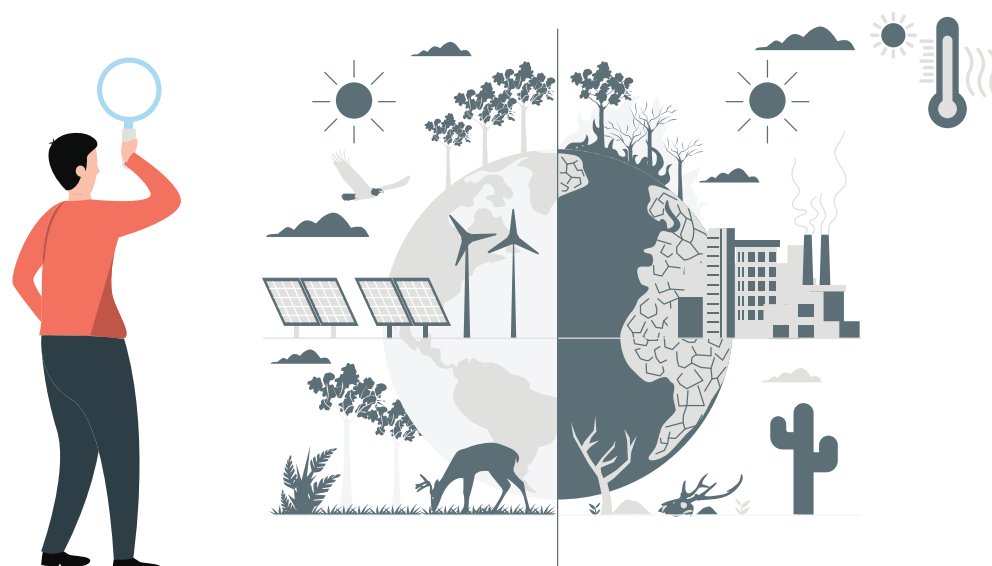
WHY DAY NIGHT SKINCARE?

The Influence of Circadian Rhythms on DNA Damage Repair in Skin Photoaging²

BACKGROUND

Photoaging is primarily driven by **chronic ultraviolet (UV) exposure**, which induces DNA damage, oxidative stress, and extracellular matrix degradation. DNA lesions such as **cyclobutane pyrimidine dimers (CPDs)** and 6-4 photoproducts interfere with transcription and genomic integrity, accelerating skin aging.

Emerging research highlights the role of circadian rhythms, the intrinsic 24-hour biological cycles governed by core clock genes (**CLOCK, BMAL1, PER, CRY**). These rhythms orchestrate cellular defense, repair, and regeneration processes, creating temporal windows during which skin is more vulnerable to UV damage or more efficient at DNA repair.



CIRCADIAN REGULATION OF DNA DAMAGE REPAIR

Skin’s ability to respond to UV stress is time-of-day dependent:

- Daytime:** Cells prioritize protection. Antioxidant enzymes and barrier functions are elevated to limit immediate UV-induced damage. However, DNA repair activity is relatively low, meaning unrepaired lesions can accumulate if protection is inadequate.
- Nighttime:** DNA repair processes, especially nucleotide excision repair (NER), peak. Proteins such as XPA show circadian oscillations with higher nighttime expression, accelerating removal of CPDs and promoting genomic stability. Keratinocyte proliferation and barrier recovery also increase, enhancing tissue renewal.
- Animal and human studies confirm that UV exposure in the morning leads to more persistent DNA damage and higher mutagenic risk compared to evening exposure, underscoring circadian gating of DNA repair.

DAYTIME SKINCARE – PROTECTION & PREVENTION

- Broad-spectrum sunscreens (SPF ≥30)** remain the cornerstone, reducing UV-induced DNA lesions.
- Topical antioxidants** (Vitamin C, ferulic acid, niacinamide) neutralize reactive oxygen species and reduce oxidative stress during peak exposure hours.
- Barrier-supporting moisturizers** (ceramides, glycerin) limit pollutant penetration and maintain hydration under environmental stressors.

NIGHTTIME SKINCARE – REPAIR & REGENERATION

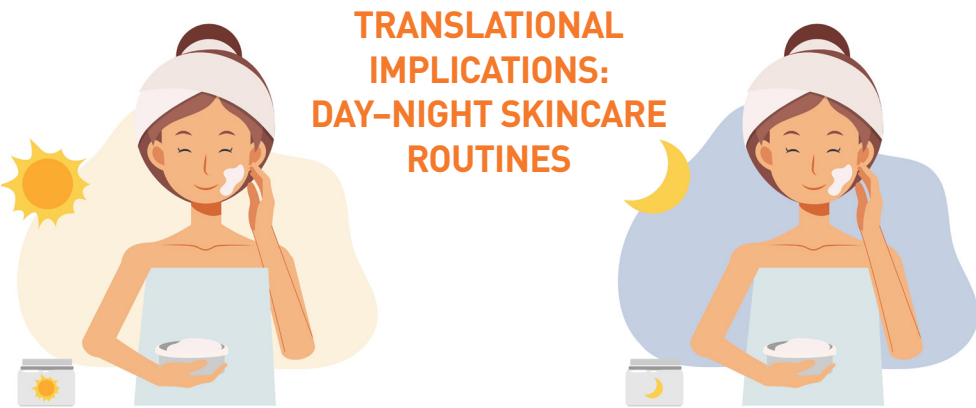
- Retinoids** enhance DNA repair, stimulate collagen synthesis, and synchronize with nocturnal cell turnover.
- Peptides and growth factors** promote dermal remodeling and barrier restoration.
- DNA repair enzymes** and **melatonin-based formulations** act synergistically with peak nighttime NER activity, improving genomic stability.
- Hydrating formulations** with hyaluronic acid restore water balance, compensating for increased transepidermal water loss at night.

IMPACT OF CIRCADIAN DISRUPTION

- Disruption of circadian rhythms through **shift work, sleep deprivation, jet lag, or chronic stress** weakens synchronization between environmental UV exposure and DNA repair pathways. This desynchrony results in:
- Cumulative DNA damage and genomic instability
 - Increased oxidative burden
 - Accelerated collagen breakdown and loss of elasticity
 - Early onset of wrinkles, pigmentation, and photoaging

CLINICAL PERSPECTIVE

- Harnessing circadian biology allows for **time-targeted interventions** that maximize efficacy:
- Day:** focus on shielding the skin from UV and environmental aggressors.
- Night:** emphasize repair, hydration, and renewal when intrinsic repair pathways are most active.
- Such chrono-optimized strategies not only reduce DNA damage accumulation but also help slow visible signs of photoaging, offering a science-backed rationale for structured skincare routines.



The alignment of skincare with circadian biology - **termed chrono-cosmetology** - is a practical approach to mitigate photoaging:

CONCLUSION

Circadian rhythms exert profound control over **DNA damage repair efficiency** in skin and directly influence the trajectory of photoaging. Recognizing the day-night differences in **skin biology** underscores the importance of tailored skincare routines. Integrating protection during the day and repair at night represents a holistic, evidence-based approach to enhance skin resilience, reduce photoaging, and maintain long-term dermal health.

Advanced Hydration DAY Cream

AQUASOFT® DAY
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Moisturization

Sun Protection

Demelanization

Available in 75g

Available in 150g

India's 1st DAY CARE CREAM

SPF 50

Advanced Night Repair Cream

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Cream

Repairs

Replenishes

Rejuvenates

Available in 50g

ROVISOME® Delivery Technology

Advanced intelligent delivery system, retinol directly reaching the active layers of the skin

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2

HyaClear Solution: A Novel Approach to Skin Smoothness and Hydration



BACKGROUND

Adequate hydration of the stratum corneum is vital for maintaining **skin smoothness, elasticity, and barrier function**.³ Loss of moisture leads to **rough texture, fine lines, and impaired barrier integrity**. Traditional moisturizers and humectants, while effective, often provide only short-lived benefits.⁴ To overcome these limitations, advanced hyaluronic acid complexes such as **HyaClear Solution** have been developed.⁵

WHAT IS HYACLEAR SOLUTION?

HyaClear Solution is a **novel hyaluronic acid-based active**, engineered to provide multilevel **hydration and textural improvement**. Unlike traditional hyaluronic acid (HA), which primarily hydrates the skin surface, HyaClear is designed with optimized molecular weight distribution and enhanced bioavailability, targeting both superficial and deeper layers of the stratum corneum.⁵

Mechanism of Action

The efficacy of HyaClear Solution is attributed to its ability to:

Enhance Water Retention: Acts as a humectant, binding and retaining water molecules, thereby improving stratum corneum hydration.³

Improve Skin Barrier Integrity: By supporting intercellular lipid organization, it helps reduce transepidermal water loss (TEWL).⁴

Promote Surface Smoothness: Hydration-induced plumping reduces micro-roughness and fine lines, leading to a visibly smoother texture.⁵

Stimulate Endogenous HA Synthesis: In vitro studies suggest that HyaClear may upregulate hyaluronan synthase activity, complementing its topical effects.⁵

CLINICAL BENEFITS⁵



Improved Skin Hydration: Significant increase in skin moisture levels within days of use, sustained over time.



Smoother Texture: Reduction in skin roughness indices, with noticeable improvements in softness and suppleness.



Anti-Aging Support: Decreased visibility of fine lines and wrinkles due to improved dermal hydration and elasticity.



Enhanced Consumer Perception: Subjects report immediate comfort, smoother feel, and fresher appearance after application.

TRANSLATIONAL RELEVANCE

In the context of modern **skin health and aesthetic dermatology**, HyaClear Solution represents a **shift from surface hydration to multilevel skin care**. By delivering both **immediate moisturization** and **long-term barrier reinforcement**, it provides a dual benefit: **instant smoothness and progressive anti-aging support**.^{3,5}

CONCLUSION

HyaClear Solution introduces a **novel, science-backed approach** to skin hydration and smoothness. Its unique formulation goes beyond conventional hyaluronic acid by enhancing water binding, improving barrier integrity, and supporting long-term dermal health.^{3,4} Integration of HyaClear into cosmeceutical formulations offers clinicians and formulators a versatile tool to address **dehydration, roughness, and early signs of aging**, ultimately contributing to improved skin quality and patient satisfaction.

SK-INFLUX V MB: Mimicking Natural Lipids to Support Skin Health

MECHANISM OF ACTION

Mechanism	Description
Barrier Restoration	Integrates into stratum corneum, replenishing ceramides, cholesterol, and fatty acids ⁴
Enhanced Hydration	Reduces TEWL, locks in moisture, improves skin softness ⁵
Skin Comfort & Protection	Reinforces barrier to reduce irritation, sensitivity, and environmental stress.
Biomimetic Lipid Composition	Mirrors natural lipid ratios to optimize barrier repair and skin physiology ^[4,5] .

KEY BENEFITS

- Immediate and long-term hydration
- Strengthened skin barrier and reduced TEWL
- Smoother, softer, and more comfortable skin
- Suitable for all skin types, including sensitive and dry skin

TAKE THE AAD QUIZ⁶

A What type of moisturizer should someone with acne-prone skin use?

1. Oil-free 2. Non-comedogenic 3. Both

B When should someone with acne use moisturizer?

1. Every day when skin feels dry 2. Only after face wash 3. Once in a week

C When should moisturizer be applied to skin after wash?

1. After drying 2. Leave some water on skin 3. After 15 mins

Answers: A. 1 B. 1 C. 2

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