

Smoking and Skin Aging in Pakistani Skin

Smoking accelerates skin aging in South Asian skin by damaging collagen, disturbing microcirculation, and worsening pollution- and heat-related oxidative stress, leading to earlier wrinkles, dullness, and uneven pigmentation compared with non-smokers.

The Problem Statement

In Pakistan's current climate - hotter summers, high UV index, and heavy urban pollution - smoking acts as a "second hit" to the skin, especially in Fitzpatrick IV–V tones common in Pakistani populations. Active and passive smoking both speed up extrinsic aging (environment-driven aging) beyond what is expected from genetics and normal chronological aging.

For urban residents in Lahore, Karachi, and Islamabad, the combination of cigarette smoke, traffic smog, and increasing Urban Heat Island effects creates a continuous exposure to particulate matter and oxidative stress that targets the face and neck. This is especially important for South Asian patients who may not see classic "fine lines" early but instead notice pigmentation changes, textural roughness, and loss of glow.

The Facts of the Matter

1. Microcirculation and Vasodilation:

Smoking causes Vasoconstriction (narrowing of blood vessels, the opposite of vasodilation) in the skin, which means less blood and oxygen reach the dermis and epidermis. In simple terms, the tiny pipes that feed your skin clamp down, so the skin is slightly "starved" of nutrients and oxygen.

In hot Pakistani summers, the body naturally uses Vasodilation (widening of blood vessels, a heat-release mechanism) to cool the skin, but chronic nicotine exposure blunts this response and makes microcirculation more irregular. The result is a dull, grey-yellow tone, slower wound healing, and earlier appearance of etched lines around the mouth and eyes in smokers of South Asian descent.

2. Transepidermal Water Loss (TEWL) and Barrier Damage:

Transepidermal Water Loss means how much water passively escapes from the skin surface into the air; in lay terms, it is how quickly your skin "leaks" moisture.

Cigarette smoke increases TEWL by damaging the stratum corneum lipids and proteins, leading to a weaker barrier, more dryness, and rough texture.

In Pakistani climates with alternating extremes—very hot, dry winds in some regions and humid coastal air in others—compromised barrier function from smoking makes the skin less able to adapt to these swings. Patients often describe “tight, dehydrated but still oily” skin, micro-scaling, and makeup sitting poorly on the surface, all signs of subclinical barrier disruption.

3. Collagen Breakdown and Elastosis

Cigarette smoke increases matrix metalloproteinases (MMPs), enzymes that break down collagen and elastin, and reduces new collagen synthesis. In simple language, smoking turns on the “destruction mode” for your skin’s scaffolding and turns down the “repair mode. In Fitzpatrick IV–V, where intrinsic wrinkling can appear later than in lighter tones, these collagen changes first present as:

- Deepening of nasolabial folds
- Vertical lip lines (“smoker’s lines”)
- Creasing at the lower eyelids and upper cheeks

These changes are often more visible after weight loss or during peri-menopause when estrogen-related collagen support is also declining.

4. Melanogenesis and Uneven Pigmentation

Melanogenesis is the process by which melanocytes produce melanin pigment; in simple terms, it is how your skin makes color. Smoking-generated reactive oxygen species (ROS) and chronic low-grade inflammation can upregulate melanogenesis pathways, leading to mottled hyperpigmentation, especially on the lateral cheeks and temples. In Pakistani skin (IV–V), this shows as:

- Smoky brown patches on the malar area (cheeks)
- Periorbital darkening
- More obvious post-inflammatory hyperpigmentation after acne or eczema Because UV index has been trending higher during extended summer months in South Asia, the combination of UV, heat, and smoke-driven ROS amplifies this pigment response

Myth or Reality: “Darker Skin Is Protected from Smoking Damage”

A common belief among South Asians is: “Our skin is dark, so we don’t age from smoking the way Westerners do.” The visible delay in fine wrinkling in Fitzpatrick IV–V compared with lighter types feeds this myth, because many Pakistani smokers do not see classic crow’s feet until later decades.

Why the Myth Exists

- Higher baseline melanin provides better photoprotection against UV-induced DNA damage and some aspects of photoaging, so early sun-related fine lines are less obvious in South Asian skin.
- Cultural focus is often on pigment (“rang”) rather than texture, so patients notice tanning or patchy dark areas but not subtle collagen loss.
- Air pollution and climate stress are so normalized in Pakistani cities that smoke-related dullness is blamed on “weather,” “water quality,” or “stress” rather than cigarettes.

The Academic Reality

Climate, Pollution, and the “Smoker’s Skin” Phenotype in Pakistan Recent climate and dermatology work from 2025–2026 in the Global South shows that rising temperatures, higher ambient UV, and severe particulate pollution drive oxidative stress and inflammatory dermatoses. In WHO South-East Asia reports, urban heat islands and air pollution are highlighted as major environmental health threats, with the skin recognized as a primary contact organ.

In this context, smoking adds:

- Additional particulate burden (tar, carbon) depositing on facial skin
- Extra ROS, depleting antioxidants like vitamin C in the dermis
- Synergistic damage with PM2.5 and ozone from traffic and industry In South Asian urban populations

This triad (heat–UV–smoke) accelerates extrinsic aging, with earlier onset of pigmentary change, texture irregularity, and laxity compared with non-smokers exposed to the same climate.

What This Means

- Stopping smoking is the primary anti-aging intervention; no cream or procedure can fully counteract ongoing collagen and microvascular damage from cigarettes.
- Daily broad-spectrum sunscreen, antioxidant serums, and barrier-supportive moisturizers are more effective when smoking is stopped, because TEWL and microcirculation gradually improve.

- From a public health perspective, smoking cessation campaigns in South Asia should explicitly include skin aging and pigmentary outcomes, as these are highly visible and culturally relevant motivators, especially for younger adults.

Conclusion

In summary, darker South Asian skin is not protected from the aging effects of smoking; it simply “shows” the damage differently, with pigment and texture changes appearing years before deep wrinkles. In a warming, more polluted Pakistan, smoking is a powerful accelerator of visible skin aging, and addressing it is central to any serious anti-aging or skin-health strategy in Fitzpatrick IV–V populations.

References

1. Climate change, global South, and skin aging / extrinsic aging context
 - Enbiale W. *Climate Change and Dermatologic Diseases in the Global South*. 2026. PubMed: <https://pubmed.ncbi.nlm.nih.gov/41207776/>[pubmed.ncbi.nlm.nih]
 - Belzer A. *Climate Change, Skin Health, and Dermatologic Disease*. 2023. PubMed: <https://pubmed.ncbi.nlm.nih.gov/37336870/>[pubmed.ncbi.nlm.nih]
 - Belzer A. *Climate Change and Infectious Diseases in Dermatology*. 2025. PubMed: <https://pubmed.ncbi.nlm.nih.gov/41207775/>[pubmed.ncbi.nlm.nih]
2. Barrier function, TEWL, pediatric and vulnerable skin in changing climate
 - Mahé E, et al. *Climate Change and Pediatric Skin Health: Emerging Threats, Innovations, and Equity Gaps*. 2025. Full text (PMC): <https://pmc.ncbi.nlm.nih.gov/articles/PMC12486683/>pubmed.ncbi.nlm.nih+1
 - Belzer A. *Climate Change and its Influence on the Cutaneous Health of Children*. 2025. PubMed: <https://pubmed.ncbi.nlm.nih.gov/41207777/>[pubmed.ncbi.nlm.nih]
3. South Asian / skin-of-colour photodermatology, Fitzpatrick IV–V
 - Srinivas CR, et al. *Photodermatoses in India*. Indian J Dermatol Venereol Leprol. 2012. IJDVL: <https://ijdv.com/photodermatoses-in-india/>[ijdv]
 - Narayanapillai J, et al. *Clinical Characteristics of Photodermatoses in Indian Patients and Phototesting Findings*. JCDR. JCDR abstract: https://www.jcdr.net/article_abstract.asp?issn=0973-709x&year=2023&month=January&volume=17&issue=1&page=WC01-WC05&id=17295[jcd]
 - “Newer Trends of Photodermatoses in Patients Attending a Tertiary Care Centre in Kerala.” *Annals of Medical and Health Sciences (AMMS)*, 2025.

Article: <https://ammspub.com/index.php/amms/article/view/160>[ammspub]

4. Climate, UV, and skin damage overview articles (supporting UV index / pollution / oxidative stress narrative)
 - “How a Warming Climate Wears on the Skin.” Harvard Medical School Magazine, 2024.
Article:
<https://magazine.hms.harvard.edu/articles/how-warming-climate-wears-skin>[magazine.hms.harvard]
 - WHO South-East Asia Regional Office. *Call for Experts – WHO South-East Asia Regional Expert Network on Climate Change and Health*. 2025.
WHO SEA:
[https://www.who.int/india/news-room/articles-detail/call-for-experts-\(2025-june-209\)---who-south-east-asia-\(sea\)-regional-expert-network-on-climate-change-and-health](https://www.who.int/india/news-room/articles-detail/call-for-experts-(2025-june-209)---who-south-east-asia-(sea)-regional-expert-network-on-climate-change-and-health)[11]