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Environmental dermatology: Skin health impacts of climate change and pollution

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Climate change and environmental pollution have emerged as major determinants of global skin health. This presentation examines their combined effects on inflammatory skin diseases, pigmentary disorders, infections, and premature aging. Rising temperatures, increased UV radiation, elevated humidity variability, and worsening air pollution are driving significant dermatologic consequences, especially in vulnerable populations.

The session will review evidence linking particulate matter and ozone exposure to exacerbations of eczema, acne, and chronic urticaria. The impact of heatwaves and humidity fluctuations on microbial imbalance and barrier dysfunction will also be explored. Additionally, climate-driven changes in vector ecology and pathogen distribution are accelerating the spread of skin infections, including leishmaniasis and fungal diseases, across new geographical areas.

Pathophysiological mechanisms—such as oxidative stress, DNA damage, pro-inflammatory cytokine activation, and impaired skin-barrier recovery—will be discussed to understand how environmental factors trigger and worsen dermatologic conditions. The presentation will further highlight global strategies for prevention and adaptation, including protective skincare routines, educational interventions, urban air-quality policies, and emerging antioxidant-based topical therapies.

By addressing environmental risk factors, dermatologists can play a critical role in both patient counseling and global public-health advocacy.

Biography

Aisha Al-Humaidi is a dermatologist and environmental health researcher at Qatar University College of Medicine. Her work focuses on the intersection of climate change, pollution, and skin disease epidemiology. She has conducted multinational studies on environmental triggers of inflammatory skin conditions and contributed to regional climate-health adaptation policies. Dr. Al-Humaidi is widely recognized for her research on environmental dermatology and regularly speaks at global conferences addressing climate-related health impacts.

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