

Effects of Pollution on Skin Aging

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Journal of Investigative Dermatology (2010) **130**, 2696. doi:10.1038/jid.2010.323

Every day, patients ask dermatologists for ways to prevent looking old because visible signs of aging are a major concern for many people. In support of such a notion, the current worldwide market for cosmetic and medical products devoted to the prevention and treatment of skin aging is \$15 billion (Yarosh, 2008). Discussions of the prevention of skin aging typically focus on the role of sunlight and smoking because solar radiation and tobacco play major roles, although the exact pathogenesis of extrinsic skin aging is not fully understood (Schroder *et al.*, 2006). Discussions about skin aging may change, however, based on work described by Vierkötter *et al.* in this issue. This article provides evidence that ambient particulate matter (PM) affects skin aging. The authors studied 400 elderly white, northern European women and, using a modified SCINEXA—a validated scoring system for intrinsic and extrinsic aging—found that air pollution exposure contributed to extrinsic aging, in particular, to pigment spot development.

Using a cross-sectional design, Vierkötter *et al.* (2010, this issue) assessed clinical signs of skin aging, including pigment spots, coarse wrinkles, solar elastosis, and telangiectasias, to determine the effects of exposure to PM on extrinsic skin aging. Controlling for potential confounding variables such as age, body mass index, use of hormone replacement therapy, smoking history, Fitzpatrick skin type, history of sunburns, and sun-bed usage, the investigators found that airborne particles contributed to signs of extrinsic aging. In addition, they observed a larger number of lentiginos in groups of patients with a higher level of PM exposure. These results suggest other approaches to the prevention of skin aging. Through the following questions, we examine this paper in greater detail. For brief answers, please refer to the supplementary information online <<http://www.nature.com/jid/journal/v130/n12/supinfo/jid2010323s1.html>>



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QUESTIONS

1. How does airborne particle exposure appear to affect skin and overall health?
2. What is SCINEXA?
3. How did the investigators carry out their study?
4. What were the study results and limitations?
5. What were the conclusions of the study, and what additional studies might be performed in the future?

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