

**Cover illustration**

Haematoxylin and eosin stain of normal human skin showing morphology of dermis and epidermis. (Image courtesy of S. R. Granter, Brigham and Women's Hospital, Massachusetts.)

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SKIN BIOLOGY

Not only is skin the largest organ of the body, it is also one of the most multifaceted. It senses our surroundings and forms a protective barrier against many different environmental insults, including ultraviolet radiation and pathogens.

As our interface with the outside world, skin — through its ability to sense touch and temperature — can be the source of much delight. But where there is pleasure, there is pain. For example, skin senses extreme temperatures and, as a result, its nerve endings perceive pain. Its intricate structure and biological functions are associated with various afflictions, including developmental defects, autoimmune disorders, allergies and cancer. Skin (and the hairs that grow from it) also forms a central aspect of our appearance that can bring about much anxiety and prejudice.

Although the development of skin and hair is a sophisticated, finely tuned process, it is now possible to generate artificial skin as a model system for research and for the treatment of burns patients. Constant progress is being made to improve this approach to tissue engineering.

This Insight brings together review articles that explore the complex molecular processes that underlie skin and hair development and pigmentation, the mechanisms of sensory transduction that originate in the skin, and the cellular and molecular changes responsible for skin cancer and psoriasis. It also includes discussion about how this knowledge could guide researchers to develop better therapies for diseases that affect the skin.

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Barbara Marte, Joshua Finkelstein and Lesley Anson,
Senior Editors

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