

Scientists discover important beauty secret for balanced skin color and tone

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In the timeless quest for healthier, younger looking skin, scientists from the University of Cincinnati and Tokyo Medical University have made an important discovery toward manipulating skin tone and color.

The implications of this research range from helping doctors develop more natural looking bioengineered skin grafts to helping cosmetics companies develop new products for achieving the “perfect” sunless tan.

The research study, published in the September print issue of *The FASEB Journal*, shows for the first time how to manipulate skin color and tone using cells previously thought to play no significant role in this function.

“Most immediately, this study should lead to bioengineered skin grafts that more closely resemble the natural tone and color of recipients, which may help reduce the appearance of scarring,” said Gerald Weissmann, MD, Editor-in-Chief of *The FASEB Journal*. “Down the road, however, this study opens doors to new types of cosmetics based on our understanding of how and why ‘skin deep’ differences in appearance evolved over millions of years.”

In the article, researchers describe how cells responsible for pigmentation, called melanocytes, can be controlled by the most commonly occurring skin cells, called keratinocytes, which produce no pigment of their own. Working with bioengineered skin, which is used for some types of skin grafts, the researchers juggled various mixtures of keratinocytes from people with different types of skin colors.

In turn, the keratinocytes produced chemical signals to “tell” melanocytes to produce more or less pigment, called melanin, as well as how to distribute that pigment. The researchers found that using keratinocytes from light-skinned individuals

had a lightening effect on the bioengineered skin graft material, while keratinocytes from dark-skinned individuals had a darkening effect. This is a significant finding as it shows a conclusive link between keratinocytes and melanocytes and because keratinocytes are much easier to manipulate than melanocytes.

Medical conditions that sometimes require the use of bioengineered skin grafts include severe burns, scleroderma, epidermis bullosa, diabetes, and venous leg ulcers. In addition, the study’s senior researcher, Raymond Boissy, says this study also could “help the quality of life for people with pigment diseases such as vitiligo, melasma and age spotting by making their skin more healthy looking.”

Source: Federation of American Societies for Experimental Biology

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