

Top Stories in Research

By Dr. Jan Dutz

What's new on the research front? The articles from which these summaries of the latest in skin research are taken are so hot off the press the ink has barely dried.

Can tanning-bed use protect us from sun damage?

According to a recent survey published by Kevin Choi and colleagues in the *Archives of Dermatology*, 18 per cent of women and six per cent of men reported using a tanning bed within the past year. Among women, tanning-bed use was most common among the young (ages 18–24 years). One reason often given for using a tanning bed is to obtain a “base tan” to protect the skin from injury prior to sun exposure during an upcoming vacation.

A recent study by Yoshinori Miyamura et al from the National Institutes of Health, published in *Pigment Cell & Melanoma Research*, examined the potential for tanning beds to produce a protective base tan. Investigators exposed the skin of seven volunteers to repeated small doses of either UVB (tanning sunlight) or UVA (black light) radiation

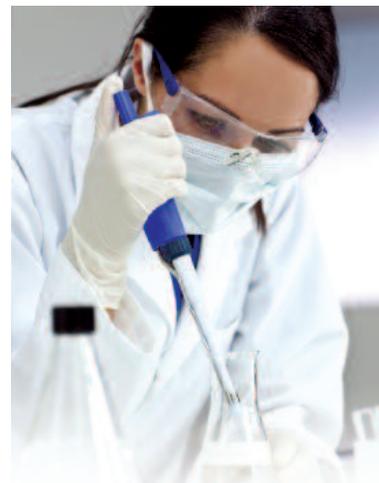
over two weeks. Both forms of radiation increased skin pigmentation equally. UVB resulted in some increased melanin (the pigment that naturally protects the skin) content in the skin. UVA, the form of light most prevalent in tanning beds, increased pigmentation by oxidizing pre-existing skin melanin but did not change the melanin content of the skin.

So, was the darker skin equally protected in both situations? To find out, the researchers next challenged the exposed areas with a higher dose of solar-simulated light and looked for evidence of DNA damage. While there was a mild decrease in DNA damage in skin previously exposed to UVB, the skin pre-treated with UVA showed no reduction in DNA damage.

The conclusion is that tanning beds, which emit light mainly in the UVA range, have little protective effect against subsequent sun-induced DNA damage, despite visible pigment change (tanning). It is important to dispel the idea that tanning beds can protect against sun damage. The use of tanning beds is associated with an increased risk of malignant melanoma, particularly in people younger than 35 years.

How steroids suppress skin inflammation

Systemic steroids are commonly used by dermatologists to suppress severe skin inflammation. While many of the effects of steroids upon the immune system are known, the details of how these drugs suppress skin inflammation are still unclear. Investigators from Europe recently examined skin specimens from 24 volunteers who had been treated with either a low dose (10 mg) of prednisone (a steroid formulation) by mouth for two weeks or a placebo, and then challenged by the application on the skin of nickel sulphate, a chemical to which they had previously been found to be allergic.



The use of prednisone decreased the inflammation in the skin. This was demonstrated by lower levels of immune cells (T cells, white blood cells and dendritic cells) within the skin and fewer visible signs of inflammation. The investigators found that the prednisone treatment improved the ability of a type of cell within the skin, called Langerhans cells, to promote the number and function of regulatory T cells, which dampen skin inflammation to allergy-producing chemicals.

This more detailed understanding of how prednisone reduces skin inflammation may eventually pave the way for the development of new medications. It is hoped that these will be more specific than prednisone, decreasing the potential for side effects. **CS**

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