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Program on Breast Cancer and Environmental Risk Factors

SPRECHER
INSTITUTE
for Comparative
Cancer Research

Household and Cosmetic Products

Frequently Asked Questions

■ Question

Do chemicals in sunscreen affect breast cancer risk?

■ Answer

Exposure to UV (ultraviolet) light may increase the risk of skin cancer. Sunscreen products contain chemicals that absorb light of certain wavelengths that help protect the skin from harmful effects of UV radiation. These "UV screens" are added to sunscreens and other products including cosmetics.

Environmental Estrogens?

Researchers from Switzerland tested UV screens to see if they had another, undesirable effect — the ability to mimic the effects of the hormone estrogen (1). Most breast tumors depend on estrogen for growth. Chemicals that mimic the effect of estrogen are called environmental estrogens or xenoestrogens. Several UV screens tested positive as weak environmental estrogens. More recently, researchers from Germany, Japan and the Netherlands confirmed these results (2, 3, 4).

The UV-screens that were estrogenic included several benzophenones: benzophenone-2, benzophenone-3 and its metabolite benzophenone-1; and two other commonly used UV screens called 4-methyl-benzyldeine camphor, and octyl methoxy cinnamate (1-4).

Researchers have studied whether UV screens can penetrate the skin and be absorbed by the body. Benzophenone-3 has been studied the most. It does penetrate the skin, and has been detected in the urine of people after it has been applied to the skin (5, 6, 7).

More Research Needed

Many other kinds of data that would help evaluate whether UV screens affect breast cancer risk is not yet available. There are no studies on whether women who use sunscreens or cosmetics containing estrogenic UV screens have a higher breast cancer risk. Because several researchers have identified several UV screens as environmental estrogens, we can expect these findings to encourage other researchers to more fully investigate the health risks of these chemicals.

References:

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