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Ferris professor sounds warning to spring break sun worshipers

BIG RAPIDS – Ferris State University Professor Jim Hoerter is not only concerned for college students spending their spring breaks in the sun at a Florida beach or a Texas island. He also worries about the preparation for their trips in northern tanning salons.

Dr. Hoerter, biological sciences department head and recipient of more than $1 million in research grants, has spent many years studying skin cancer and the reaction of human skin cells to solar radiation. And his warning to college students headed south for spring break is twofold – sunscreen and moderation.

He recently received a three- year, $225,000 cancer research award from the National Institute of Environmental Health Sciences to investigate the impact of normal solar radiation exposure on healthy skin cells that have been previously subjected to the ultraviolet radiation of tanning beds. "We are very interested in determining how the normal defense and repair mechanisms operating in human skin cells are affected when these cells have also been exposed to increased levels of radiation normally found in tanning beds," said Hoerter.

Skin cancer is the most common form of cancer in the United States, with more than one million new cases diagnosed each year. Dermatologists are now diagnosing skin cancer in a younger range of patients, even those 30 to 40 years old. The findings of Hoerter and several of his undergraduate students involved in the project may lay the foundation for a whole new avenue of research into sunscreens that will protect against damaging ultraviolet light by increasing the cell's normal defense and repair mechanisms.

"We are trying to unravel the complex cellular mechanisms caused by exposure to sunlight, which leads to the formation of free radicals that damage DNA, defense enzymes and membranes," he added. "The cell has evolved some very elaborate ways to cope with stress resulting from increased exposure to solar radiation. We are now looking for ways to heighten these responses to improve protection."

On an average day, more than one million Americans visit tanning salons and expose themselves to radiation three to four times higher than certain wavelengths of normal sunlight – a fact that concerns Hoerter. "People use tanning beds and then expose themselves to full sunlight thinking they're protected," he said. "It's just a false sense of security. If you believe you're protected by a tanning bed 'tan,' it's false. That's just not happening.

"Studies show a connection between the increased use of tanning beds and a higher incidence of skin cancer," he said. "The high intensity of radiation from tanning beds actually shuts down the protective mechanisms in skin cells. Our lab is now focusing on how the combination of sunlight and tanning bed radiation interact and impact repair and defense pathways."

What can people do to prevent skin cancer? "Wear ample amounts of sunscreen, and avoid excessive exposure to the sun," said Hoerter. "However, recent data suggests that unprotected skin needs at least 10 minutes of normal solar exposure to make vitamin D, which is now showing to be very important in reducing the risk of all types of cancer. So being out in the sun is not all bad, but moderation is the key."

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