

Red hair pigment might raise melanoma risk, study says

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Dermatologists say redheads must take extra care to check skin, avoid sun.

(HealthDay)—The red in redheads' hair is thought to put them at increased risk of the dangerous skin cancer melanoma, even if they don't spend a lot of time in the sun, according to a new study.

Study co-author Dr. David Fisher and his research team first uncovered the apparent link between [red hair](#) pigment and melanoma last fall. That study used genetically altered mice that had been given a [mutant gene](#) that increased their risk of contracting the skin cancer.

Now the researchers are taking the next step: asking why the body's creation of the red hair pigment—called pheomelanin—might prompt that risk.

Their new paper, published May 9 in the journal *BioEssays*, speculates that pheomelanin could increase skin [cancer risk](#) by leaving [skin cells](#)

more vulnerable to [DNA damage](#).

By determining the way pheomelanin increases cancer risk, the researchers hope to figure out a way to prevent future cases of melanoma.

"We are focusing on what the possibilities are, what the directions for new research are and how that could impact treatment," said Fisher, chief of [dermatology](#) at Massachusetts General Hospital in Boston.

The researchers had previously found that at least half of red-furred mice developed melanoma, even though none of them had been exposed to any ultraviolet (UV) radiation. By comparison, only about 10 percent of mice without red fur contracted melanoma.

"In the mouse studies, it was possible to completely remove UV and there was still a major incidence of melanoma that was attributable to the red pigment," Fisher said.

Scientists note, however, that animal studies often fail to produce similar results in humans.

Fisher speculated on two ways the red pigment might cause skin cells to be more vulnerable to melanoma.

It could be that the creation of pheomelanin in the body might also generate unstable oxygen-containing molecules that can damage cells. These molecules are known as reactive [oxygen species](#), or ROS.

On the other hand, synthesis of pheomelanin might rob skin cells of crucial stores of antioxidants that would otherwise be used to prevent ROS damage.

"We think a new prevention opportunity exists if we can block the form of reactive oxygen damage that the red pigment is producing," Fisher said.

Despite his research, Fisher does not downplay the role that UV rays have in skin cancer risk for everyone—particularly redheads.

"I want to emphasize that we strongly believe UV is a contributor to melanoma, and UV may actually amplify this red [pigment](#) phenomenon," he said. "It still is absolutely crucial for people to avoid sun exposure."

But the knowledge that sun exposure is only one factor in their increased risk of melanoma should prompt redheads to take additional precautions, said Dr. Jeanine Downie, a spokeswoman for the Skin Cancer Foundation.

"Redheads should get more frequent body checks," said Downie, a dermatologist based in Montclair, N.J. "If they have no family history of skin cancer, they should still be checked at least twice a year, rather than the annual check we recommend for everyone else. If they have a family history of [skin cancer](#), they should be checked every three months."

This is crucial since melanoma could form even on a part of the body that is never touched by sunlight.

"The location on one's skin of where a [melanoma](#) may occur is not necessarily confined to the sun-exposed parts of the skin," Fisher said. "It could occur elsewhere on the body."

Redheads also should practice vigilant sun avoidance, Downie said. They should use a sunscreen with at least SPF 30, and they should reapply it every hour.

They also should consider wearing broad-brimmed hats when outdoors, sticking to the shady side of the sidewalk and even vacationing in mountain areas rather than at the beach.

"Unfortunately with redheads, they have to practice some lifestyle alterations," Downie said. "They should practice even more strict sun avoidance than we originally thought they should."

More information: Visit the U.S. Centers for Disease Control and Prevention for tips on [skin cancer prevention](#).

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