Sun protection program increases hat use among 4th-graders

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A sun protection intervention program that encouraged fourth-graders to wear hats outdoors as a skin cancer prevention measure significantly increased hat use at school, a study by researchers at the University of South Florida College of Medicine found. The program, however, had no effect on self-reported hat use at home or on measures of skin pigmentation.

The study is published online this month in the Journal of the National Cancer Institute. The researchers report outcomes through the first year of a two-year follow-up from the Sun Protection of Florida's Children program, a cluster randomized trial.

"This study shows it is possible to successfully put into place an educational program that leads to sustained use of hats for sun protection at school - an intervention that may limit sun damage early in life," said principal investigator Richard Roetzheim, MD, MSPH, a professor in the USF Department of Family Medicine.

Getting children to wear hats and protective clothing to shade their skin is important, because people receive as much as 80 percent of lifetime sun exposure before age 18, Dr. Roetzheim said. "There is no such thing as a healthy tan. Tanning is the skin's attempt to protect itself from damage done by the sun, and many skin cancers that adults develop are from exposures during childhood."

USF researchers followed nearly 2,500 fourth-graders at 22 elementary

schools in Hillsborough County, FL. Half of the schools (1,115 students) were assigned to the sun protection program and provided lightweight, tightly-woven hats with wide brims designed to shade the most vulnerable parts of the head, face and neck. The hats are worn while playing outside; one remains at school and another goes home with each student. Half of the schools (1,376 students) were in the control group and did not receive hats.

Students in the intervention schools received information about the importance of sunscreen, but educational sessions throughout the school year emphasized the added benefits of hats for sun protection. Researchers measured voluntary hat use at school by direct observation, and hat use at home was monitored by student self-report. A subgroup of 378 students (178 in the intervention group and 200 in the control group) were examined for any changes in skin pigment melanin and in number of moles on the skin. More melanin, or more or larger moles, indicates sun damage.

At control schools, the percentage of students observed wearing hats while playing outside (activities like recess, physical education and lunch) essentially did not change during the school year. At the intervention schools, overall hat use increased by 42 percent during the school year - ranging from little change at a few schools to a high of 75 percent.

"We're trying to make wearing hats a cool and popular thing to do as well as an acceptable health behavior, so it was encouraging to see that hat use didn't decline after the initial spike at the beginning. It actually increased as the school year wore on." Dr. Roetzheim said.

When teachers and principals more fully embraced sun protection as a way to prevent skin damage and modeled this behavior by wearing hats themselves, their students were more likely to comply with hat use, the

researchers suggested. Several highly-motivated schools had been touched by skin cancer - the faculty knew someone who suffered the disease, including another teacher or a coach, Dr. Roetzheim said.

While getting students to wear hats at school was largely a success, this preventive behavior did not carry over to home and other places outside school. Dr. Roetzheim explains that the program was primarily geared toward students and teachers at school, and future sun protection projects should more intensely target family members and peers. "To improve the likelihood of children wearing hats in other settings, like during sporting events, at the beach, or when they are with friends," he said, "you have to persuade parents and siblings to be role models and reinforce the health behavior."

The study found no measurable differences in skin pigment melanin between the small sample of students in the intervention and control groups. Researchers may get a better picture of the effect of hat use on skin health once the second-year results of the program are analyzed, Dr. Roetzheim said. That's because the appearance or growth of moles, which happens more slowly, may be a more precise a measure of sun damage than changes in skin pigment, he said.

Future projects should integrate the sun protection program across all grades, Dr. Roetzheim added. "The next step is changing the attitudes and behavior of children so wearing hats outside becomes part of the schoolwide culture - and that's more challenging, especially with older students."

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