

Sun-Exposure Habits and Sun Protection Practices of Collegiate Athletes

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Abstract

Collegiate athletes participating in predominantly outdoor sporting events such as soccer, football, baseball, and lacrosse may be outside for up to 4 hours daily per National Collegiate Athletic Association (NCAA) guidelines. An investigation into the skin protection practices of students and the resources provided by universities was conducted by direct anonymous polling of Ohio Division 1 athletes. Seventy-one percent of students reported sun exposure to be longer than 4 hours, 64% of students reported sunburns, 63% of students were not advised to wear protective attire, and 73% reported they were not instructed or reminded by their university to wear sunscreen with an SPF of ≥ 30 while outdoors. A strict adherence to NCAA guidelines, increased use of adequate sunscreen protection (≥ 30 SPF), and sun-protective attire with sufficient ultraviolet protection factor (>15) is needed to protect the long-term health of this population with extremely high levels of sun exposure annually.

Key words: college athletics, sunscreen, skin cancer, sun protection

Collegiate athletes involved in sports such as soccer, football, baseball, and lacrosse spend up to 4 hours outside daily per NCAA guidelines daily during their competitive athletic season.² With this high level of repeated sun exposure during outdoor training, athletes are predisposed to the development of skin disease as they age. This population has been strongly encouraged to take protective measures, such as wearing long sleeves, headwear,

and attire made from dark, tightly woven fabric with an ultraviolet protective factor (UPF) of >15 , and use of sunscreen with a sun protective factor (SPF) of ≥ 30 has been broadly recommended; however, individual athlete adherence to these advocations at the university level has been questioned.² This study aimed to assess the level of university involvement in skin protection for their outdoor student athletes and the student population's level of compliance.

METHODS

An anonymous online survey platform, SurveyMonkey, was used to directly contact student-athletes participating in athletics during the 2021 fall semester. Included in study were Division 1 athletes in Ohio participating in outdoor sports, including football, baseball, softball, lacrosse, soccer, field hockey, track & field, and tennis. Predominantly indoor sports were excluded; these include but are not limited to hockey, basketball, gymnastics, and dance. Participants were sent a survey link directly to their cell phones. The primary outcomes were patient demographic characteristics, volume of sun exposure, sunburn frequency, protective measures, and university involvement in protective measures.

RESULTS

The study population consisted of 83 Division 1 student athletes from Ohio schools, of whom 54 (65%) were male and 29 (35%) female. Of these, 43 respondents (52%) reported they practiced outdoor >90 days per year, and 59 (71%) stated the length of

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Table. Respondent Characteristics (N=83)

VARIABLE	N (%)
Sex	
Male	54 (65%)
Female	29 (35%)
TIME SPENT OUTDOORS FOR >2 HOURS ANNUALLY	
>30 days	16 (19%)
60-90 days	24 (29%)
90-180 days	21 (25%)
>180 days	22 (27%)
AVERAGE TIME SPENT OUTDOORS DURING ACTIVITY	
<1 hour	2 (2%)
2 hours	22 (27%)
3 hours	23 (28%)
>4 hours	36 (43%)

exposure during those periods was ≥ 4 hours (Table). A total of 53 respondents (64%) reported sunburns following practices with only 6 of the 53 (11%) wearing sunscreen. Of those who sustained sunburns, 96% reported the burns resolved within 1 week. Fifty-two of the student athletes surveyed (63%) reported they were not instructed or reminded by their university to wear sun-protective attire while outdoors, and 61 of respondents (73%) reported they were not instructed or reminded by their university to wear sunscreen with an SPF of ≥ 30 while outdoors (Figure). More than one-third of the student athlete respondents ($n=33$; 39%) reported permanent sunburn-induced freckling on their sun-exposure areas.

DISCUSSION

Of greatest concern is the lack of reported university advocacy for skin protection during the extended practice periods. With 71% of respondents reporting a length of exposure greater than 4 hours, ensuring university adherence to NCAA guidelines is crucial. The American Academy of Dermatology recommends broad-spectrum sunscreen of ≥ 30 SPF to be applied 15 to 30 minutes before sun exposure and reapplied every 2 hours.³ For those who reported sunscreen application before practice, a practice length of >4 hours would require reapplication for adequate protection, making adherence difficult. While 64% of respondents

reported sustaining sunburns, the vast majority (96%) reported a healing time of <1 week, indicating likely erythema but a lack of blistering lesions.⁴ Low-grade sunburns remain significant given the cumulative skin damage typically does not become apparent until age 40.² Reducing the cumulative sun damage over time with frequent sunscreen protection has repeatedly displayed a protective effect against melanomatous and non-melanomatous skin cancers.²

STUDY LIMITATIONS

There are several limitations for the generalizability of the results including the geographically limited polling that was conducted and smaller sample size that may not be representative nationwide. The study exclusively included Division 1 athletes participating is predominantly outdoor sports, further reducing the generalizability of the outcomes to all collegiate athletics divisions and sports.

CONCLUSION

The cumulative effect of repeated sun exposure without adequate protection may predispose student athletes to skin disease. The authors support the need for increased university advocacy for skin protection and a more involved skin disease education system for student athletes. Increased use of adequate sunscreen protection (≥ 30 SPF) or sun-protective attire with sufficient UPF (>15) is needed to protect the long-term health of this population with extremely high levels of sun exposure annually.²

Additional investigation is needed to ascertain sun exposure and sun protection efforts for student athletes in junior and senior high school due to the trends observed in collegiate athletes and the observed correlation between sun exposure and future skin disease.⁴ Long-term health outcomes of student athletes due to current exposures should be discussed by the NCAA, participating universities, and other student athlete governing bodies.

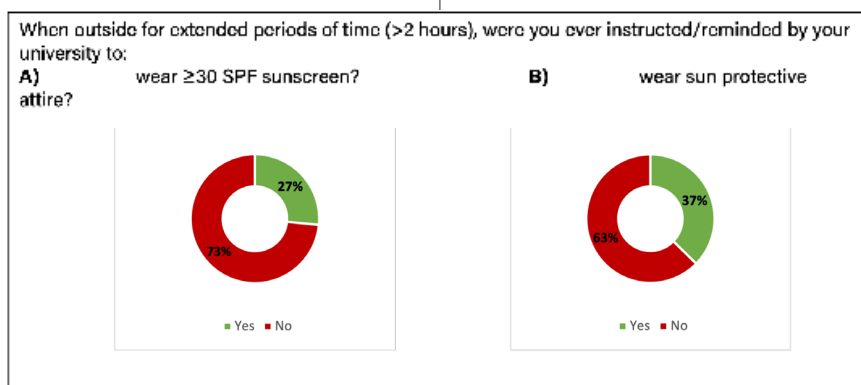


Figure. University Driven Skin Protection Practices.

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