

Skin in the Game: Inadequate Photoprotection Among Olympic Athletes

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PRACTICE POINTS

- Providers should further investigate how patients spend their time outside to assess cancer risk and appropriately guide patients.
- Many athletes typically train for hours outside; therefore, these patients should be educated on the importance of sunscreen reapplication and protective clothing.

The XXXIII Olympic Summer Games will take place in Paris, France, from July 26 to August 11, 2024, and a variety of outdoor sporting events (eg, surfing, cycling, beach volleyball) will be included. Participation in the Olympic Games is a distinct honor for athletes selected to compete at the highest level in their sports.

Because of their training regimens and lifestyles, Olympic athletes face unique health risks. One such risk appears to be skin cancer, a substantial contributor to the global burden of disease. Taken together, basal cell carcinoma, squamous cell carcinoma, and melanoma account for 6.7 million cases of skin cancer worldwide. Squamous cell carcinoma and malignant skin melanoma were attributed to 1.2 million and 1.7 million life-years lost to disability, respectively.¹

Olympic athletes are at increased risk for sunburn from UVA and UVB radiation, placing them at higher risk for both melanoma and nonmelanoma skin cancers.^{2,3} Sweating increases skin photosensitivity, sportswear often offers inadequate sun protection, and sustained high-intensity exercise itself has an immunosuppressive effect. Athletes competing in skiing and snowboarding events also receive radiation reflected off snow and ice at high altitudes.³ In fact, skiing without sunscreen at 11,000-feet above sea level can induce sunburn after only 6 minutes of exposure.⁴ Moreover, sweat, water immersion, and friction can decrease the effectiveness of topical sunscreens.⁵

World-class athletes appear to be exposed to UV radiation to a substantially higher degree than the general public. In an analysis of 144 events at the 2020 XXXII Olympic Summer Games in Tokyo, Japan, the highest exposure assessments were for women's tennis, men's golf, and men's road cycling.⁶ In a 2020 study (N=240), the rates of sunburn were as high as 76.7% among Olympic sailors, elite surfers, and windsurfers, with more than one-quarter of athletes reporting sunburn that lasted longer than 24 hours.⁷ An earlier study reported that professional cyclists were exposed to UV radiation during a single race that exceeded the personal exposure limit by 30 times.⁸

Regrettably, the high level of sun exposure experienced by elite athletes is compounded by their low rate of sunscreen use. In a 2020 survey of 95 Olympians and super sprint triathletes, approximately half rarely used

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sunscreen, with 1 in 5 athletes never using sunscreen during training.⁹ In another study of 246 elite athletes in surfing, windsurfing, and sailing, nearly half used inadequate sun protection and nearly one-quarter reported never using sunscreen.¹⁰ Surprisingly, as many as 90% of Olympic athletes and super sprint competitors understood the importance of using sunscreen.⁹

What can we learn from these findings?

First, elite athletes remain at high risk for skin cancer because of training regimens, occupational environmental hazards, and other requirements of their sport. Second, despite awareness of the risks of UV radiation exposure, Olympic athletes utilize inadequate photoprotection. Athletes with darker skin are still at risk for skin cancer, photoaging, and pigmentation disorders—indicating a need for photoprotective behaviors in athletes of all skin types.¹¹

Therefore, efforts to promote adequate sunscreen use and understanding of the consequences of UV radiation may need to be prioritized earlier in athletes' careers and implemented according to evidence-based guidelines. For example, the Stanford University Network for Sun Protection, Outreach, Research and Teamwork (SunSport) provided information about skin cancer risk and prevention by educating student-athletes, coaches, and trainers in the National Collegiate Athletic Association in the United States. The SunSport initiative led to a dramatic increase in sunscreen use by student-athletes as well as increased knowledge and discussion of skin cancer risk.¹²

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