

## Incidence and public health burden of sunburn among beachgoers in the United States

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### ABSTRACT

The beach environment creates many barriers to effective sun protection, putting beachgoers at risk for sunburn, a well-established risk factor for skin cancer. Our objective was to estimate incidence of sunburn among beachgoers and evaluate the relationship between sunburn incidence and sun-protective behaviors. A secondary analysis, of prospective cohorts at 12 locations within the U.S. from 2003 to 2009 (n = 75,614), were pooled to evaluate sunburn incidence 10–12 days after the beach visit. Behavioral and environmental conditions were cross-tabulated with sunburn incidence. Multivariable logistic regression was used to estimate the association between new sunburn and sun-protective behaviors. Overall, 13.1% of beachgoers reported sunburn. Those aged 13–18 years (16.5%), whites (16.0%), and those at beach locations along the Eastern Seaboard (16.1%), had the highest incidence of sunburn. For those spending  $\geq 5$  h in the sun, the use of multiple types of sun protection reduced odds of sunburn by 55% relative to those who used no sun protection (Odds Ratio = 0.45 (95% Confidence Interval: 0.27–0.77)) after adjusting for skin type, age, and race. Acute health effects of sunburn tend to be mild and self-limiting, but potential long-term health consequences are more serious and costly. Efforts to encourage and support proper sun-protective behaviors, and increase access to shade, protective clothing, and sunscreen, can help prevent sunburn and reduce skin cancer risk among beachgoers.

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