and that participants enrolling in a survey may be more affected by framing than real-world populations.

Counseling to anticipate application site discomfort and framing such discomfort as a sign of efficacy may be a potential tool to enhance AD topical medication adherence.

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Ambient ultraviolet radiation and major salivary gland cancer in the United States

To the Editor: Risk of major salivary gland cancer (SGC) increases after a diagnosis of skin cancers,[1,2] suggesting a shared risk factor such as exposure to ultraviolet radiation (UVR). However, the evidence supporting this association is limited.[3,4]

We examined the relationship between ambient UVR and risk of SGC by race/ethnicity and histologic subtype using data from the Surveillance, Epidemiology, and End Results (SEER) cancer registry program linked to US county-level, satellite-based ambient UVR. SEER counties were ranked by UVR and assigned quartiles 1 to 4 (lowest to highest) (Supplemental Fig 1; available via Mendeley at https://doi.org/10.17632/ccsywx9fgx.2). Incidence rate ratios and 95% confidence intervals were calculated by using mixed-effects Poisson regression, adjusting for sex, attained age, year, and race and including SEER registry as a random effect. Numbers of SGC cases by sex and more than 20 subtypes in 2000 through 2016 are shown in Supplemental Table I (available via Mendeley at https://doi.org/10.17632/ccsywx9fgx.2). Incidence of squamous cell carcinoma subtype (SCCSGC) in non-Hispanic white individuals was significantly higher than in those of other races/ethnicities (Supplemental Table II; available via Mendeley at https://doi.org/10.17632/ccsywx9fgx.2).

UVR was significantly associated with increased risks of SCCSGC in non-Hispanic white individuals (per 10 mW/m^2; UVR incidence rate ratios, 1.18; 95% confidence interval, 1.08-1.28; $P = .0002$). However, no association was found for other subtypes and in other races/ethnicities (Fig 1).

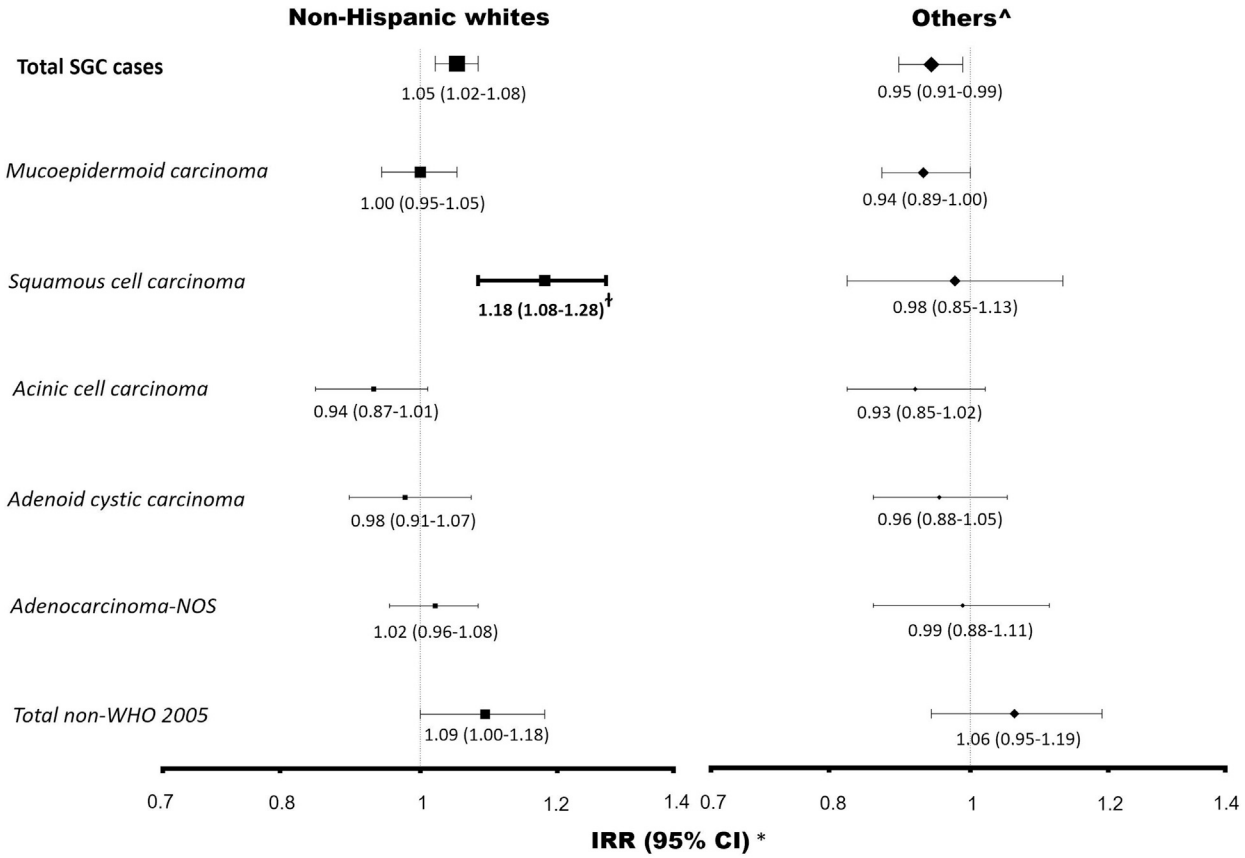

Fig 1. Major salivary gland cancer subtypes and ultraviolet radiation exposure.

Our results strengthen the evidence[3] for UVR as a risk factor for the SCCSGC subtype, but there was little evidence to suggest associations between UVR and other subtypes. UVR may be related to increased risk of SCCSGC through immunosuppression. Another explanation for our UVR findings is that a subset of SCCSGC ascertained in our study included occult or metastatic cutaneous squamous cell carcinoma (cSCC). Previous clinical reports have indicated that distinguishing between primary SCCSGC and metastases of cSCC and other primary sites is difficult.[5] Primary SCCSGC can be difficult to distinguish from metastatic cSCC using immunohistochemistry alone. Furthermore, tumor misclassification has recently been shown with the identification of UV-signature mutations in salivary neuroendocrine carcinoma, suggesting that these tumors represent metastatic cutaneous Merkel cell carcinoma. One of the major strengths of this study is a sample size large enough to examine many SGC subtypes by race/ethnicity, including at least 4 times the number of cases as the previous largest study (4,250 vs 18,168),[4] with a broad range of ambient UVR. Our study has limitations, including a lack of data on personal UVR exposure. Second, misclassification of exposure may also have resulted because ambient UVR was linked to location of residence only at diagnosis. Third, residual confounding due to unmeasured putative risk factors may also affect our results.

In conclusion, UVR may not be a risk factor of overall SGC, except SCCSGC subtype. The presence of UV-signature mutations may be used in future studies to validate that a subset of SCCSGC represents metastatic cSCC. If confirmed, patients with SCCSGC may benefit from increased skin surveillance to search for an occult primary cSCC and to screen for additional skin cancers. Patients with high-risk cSCC (staging ≥ T3 by either American Joint Committee on Cancer eighth edition, or Brigham and Women's Hospital system) may also benefit from oral screening for symptoms (eg, dry mouth, pain) to enable early detection of salivary gland metastases.

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Opioid prescribing in adults with and without psoriasis

To the Editor: Opioids are generally not indicated for chronic pain from musculoskeletal and skin diseases[1]; however, there is emerging literature that patients with chronic rheumatologic and dermatologic diseases are receiving opioids at a higher rate than the general population.[2-4] The objective of this study was to examine the 1-year incidence of opioid prescriptions in opioid-naive adults with and without psoriasis.

We used data from the Optum electronic health records database (January 1, 2007, through June 30, 2017). Patients were classified as having psoriasis if they had 2 diagnosis codes for psoriasis on 2 separate days or 1 diagnosis for psoriasis plus a prescription for a systemic psoriasis therapy/phototherapy on a separate day. Patients were categorized as having moderate-severe psoriasis if they had a prescription for a systemic therapy or a claim code for phototherapy during the study period. All other patients were categorized as having mild disease. Control patients were those without a diagnosis code for psoriasis or psoriatic arthritis during the study period and at least 2 encounters on separate days. To select an opioid-naive population, study time began 1 year after the second qualifying event and was continued for 12 months. Patients with an opioid prescription during the 12-month baseline period were excluded. Only patients with the full 24 months of eligibility were included. The University of Pennsylvania institutional review board approved this study as exempt.

The outcome of interest was a prescription for an oral or transdermal opioid (excluding cough suppressants) from an ambulatory encounter. Measured covariates included sex; age; ethnicity; race; and a history of alcohol abuse, cancer, depression, and psoriatic arthritis. Descriptive statistics were used to examine age, sex, comorbidity distribution, and the number of opioid prescriptions during the study period. Logistic regression was used to examine the odds of receiving an opioid prescription in adults with psoriasis compared to those without psoriasis.

There were 99,830 individuals with psoriasis and 261,418 adults without psoriasis (Table I). Psoriasis patients were older and had higher rates of all comorbidities of interest. The demographics for patients with mild psoriasis were similar to those with moderate-severe psoriasis. During the 12-month study period, 1.9% of patients with psoriasis and 0.5% of control patients received an incident prescription for an opioid (chi-square test, $P < .001$). More patients with moderate-severe psoriasis received a prescription than those with mild disease (2.3% vs 1.7%, $P < .001$). In the adjusted analysis, patients with mild psoriasis and moderate-severe psoriasis had 2.64 (95% confidence interval, 2.43-2.87) and 3.78 (95% confidence interval, 3.35-4.26) odds of receiving an incident opioid prescription compared to adults without psoriasis, respectively (Table II).

In summary, using electronic health records from the United States, we determined that adults with psoriasis were more likely to receive an incident opioid prescription than those without psoriasis. Limitations to this analysis include the analysis of prescribed, not filled, opioids. Additionally, we did not have information about the indication, dose, or dispensed quantity. More research is needed to characterize opioid use among patients with psoriasis