

Protecting Those Who Protect Us: Result Report

Findings From a Pilot Skin Cancer Screening Program for Washington Wildfire Firefighters

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6/29/2026

Some occupations carry hidden dangers. For wildfire firefighters, one such danger is skin cancer.

Firefighters have a **20% higher incidence of melanoma** than the general population.¹ And among specialized firefighters, including wildfire firefighters, melanoma risk may be **more than double (2.41-fold higher)**.² Yet despite these elevated risks, screening remains uncommon among this group. In a 2023 study, **80% of firefighters reported at least one prior blistering sunburn, yet only 13% had a regular dermatologist**.³ These gaps in prevention likely contribute to this sobering statistic: firefighters are **72% more likely to die from skin cancer** than other U.S. professionals.⁴

On June 20, 2026, we piloted a skin cancer screening initiative at the Washington State Firefighting Training Academy in collaboration with the Department of Natural Resources (DNR). A total of **41 wildfire firefighter trainees and instructors** had a full body skin check. Suspicious lesions were identified in **four participants**. Besides skin cancer screening, three skin conditions were identified frequently among participants: **folliculitis, tinea pedis, and erythrasma**.

Finding 1: skin cancer rates

- **22.0% (9/41)** reported a first-degree relative with skin cancer.
- At least **one-third of these family histories were of melanoma.**
- **One participant (2.4%) reported a personal history of melanoma at age 34.**

These findings appear elevated relative to available population estimates:

- Among individuals diagnosed with melanoma, approximately **8–12% report a first-degree relative with any type of skin cancer.**⁵
- Only **5.8–7.6% of all melanoma diagnoses occur before age 40,**⁶ making a personal history of melanoma at age 34 particularly notable.
- Among the 30–39 age group, melanoma incidence in the U.S. is roughly **0.01–0.018% a year.**⁷ In our cohort, 2.4% prevalence of personal melanoma history is roughly **100-fold higher** than the incidence expected for this age group in the general population.

Finding 2: Common Skin Conditions

- **Folliculitis:** Nearly all participants had patterned hair follicle inflammation along their backpack straps over the shoulders and on the back. (**Figure 1**) The most likely mechanism is occlusion of the follicular ostia by heavy PPE combined with friction and excessive sweating, which creates an ideal environment for bacterial overgrowth.⁸



Figure 1

- **Tinea pedis:** Majority of participants had skin breakdown between the toes and often on the soles, a common symptom of fungal infection. **(Figure 2)** Occlusive footwear, sweating, and shared facilities (showers) are likely the main risk factors.⁹

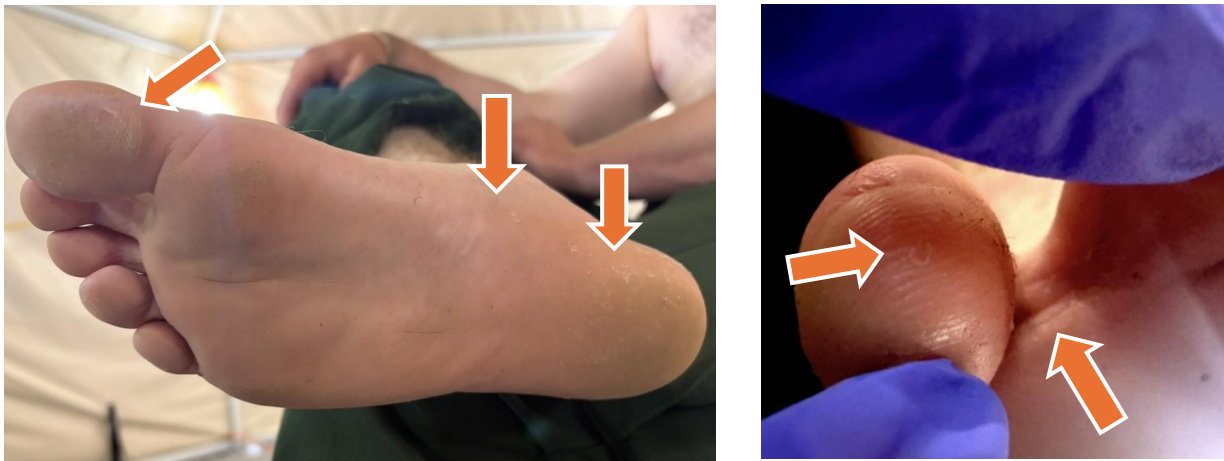


Figure 2

- **Erythrasma:** Many participants who had tinea pedis had concurrent rash between the toes that fluoresced under UV light dermoscopy. **(Figure 3)** Caused by *Corynebacterium minutissimum*, erythrasma thrives in occluded, warm, moist intertriginous areas. It frequently coexists with tinea pedis.¹⁰

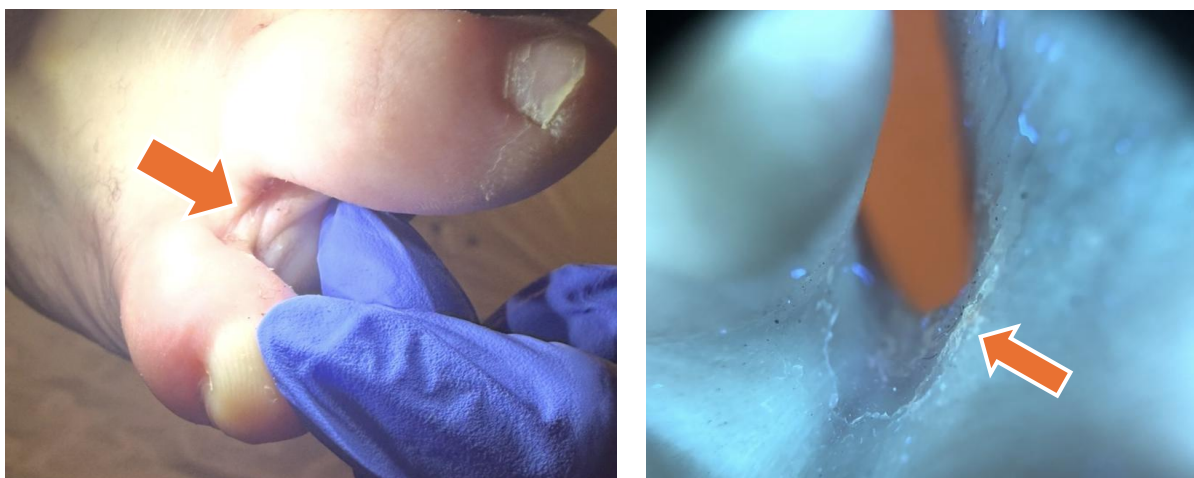


Figure 3

Discussion

This pilot project was not designed to estimate population prevalence, and the small sample size limits statistical inference. The elevated family history rate may also reflect multiple contributing factors, including shared environmental and sometimes occupational ultraviolet exposure, and the predominantly White demographic composition typical of many fire departments. Nevertheless, the observations are consistent with the growing body of evidence demonstrating that firefighters experience a disproportionate burden of skin cancer.

Wildfire firefighters routinely work in environments characterized by prolonged ultraviolet exposure, reflective terrain, heat, sweat, heavy protective equipment, and limited opportunities to reapply sunscreen. Yet skin cancer surveillance is rarely embedded into occupational health infrastructure. Our data indicates that **skin cancer screening should become routine occupational preventive care for wildfire firefighters, particularly for those with a positive family history or other risk factors.**

Additionally, though the commonly seen dermatoses such as folliculitis, tinea pedis, and erythrasma are not life-threatening like melanoma, they frequently cause itching, pain, malodor, and discomfort that can negatively affect quality of life and job performance. Importantly, **all three conditions have the potential to spread among trainees** living and training in shared environments.

Unlike melanoma, however, these dermatoses are **highly amenable to simple preventive measures and early treatment**, including improvements in hygiene practices, moisture control, proper-fitting equipment, antimicrobial washes when appropriate, topical antifungal therapy, and early recognition by clinicians.

Recommendations and Future Directions

Incorporate Dermatologic Care into Wildfire Training

- Incorporate annual skin cancer screening and skin health education into each wildfire firefighter training camp as part of orientation.
- Continue annual screening at both the May and June DNR wildfire training academies.

Personal Care

- Shower immediately after each training session with soap and water.
- Dry feet and skin folds (groin, axillae, toe webs) thoroughly after showering.
- Change socks, base layers, and undergarments daily (more often if wet).
- Do not share towels, razors, uniforms, socks, or personal equipment.

Prevention

- Wear moisture-wicking base layers and synthetic or wool-blend socks.
- Wear sandals in communal showers.

- Apply sunscreen daily and reapply throughout the day.
- Consider antifungal powder or spray for feet and boots, intermittent chlorhexidine body wash, and an OTC antifungal shampoo/body wash (selenium sulfide or ketoconazole) for high-risk areas 2–3 times per week.

Early Treatment

- Encourage early reporting and treatment of suspicious skin lesions and common skin infections (folliculitis, tinea pedis, and erythrasma).
- Establish pathways to early topical antifungal or antibacterial medications.

Conclusion:

This pilot project demonstrates that **onsite dermatologic screening is both feasible and well received** within the wildfire firefighter training environment.

Beyond facilitating early detection of skin cancer, screening provides an opportunity to identify and manage common occupational skin diseases, reinforce sun-protective behaviors, and deliver targeted education to a high-risk workforce. Integrating routine skin examinations, sunscreen availability, protective clothing, and timely access to dermatologic care into occupational health programs may reduce preventable morbidity while improving the long-term health and readiness of wildfire firefighters.

As wildfire seasons continue to lengthen and intensify, protecting the health of those who protect our communities should become an integral part of wildfire preparedness. Preventing disease, recognizing it early, and ensuring timely treatment are essential components of caring for this indispensable workforce.

Acknowledgments

This pilot project was made possible through the generosity, enthusiasm, and collaboration of many individuals and organizations committed to protecting the health of Washington's wildfire firefighters.

We extend our sincere gratitude to the **Washington State Department of Natural Resources**, especially **Sean Kibbe, Ross Avichouser, Tim Sampson, Kari Otto, Sam Layne, Russ Lane, and Dena Howe**, for welcoming our volunteer medical team to the Wildfire Firefighter Training Academy. Their partnership, hospitality, and commitment to firefighter health were instrumental in making this project possible.

We are deeply grateful to our volunteer clinicians **Joeun Gilland, Michael Jach, Elly McEachern, and Ruby Aguilar**; our clinical support staff **Yulitsa Bueno** and **Sam Coria**; and volunteer team member **Kathy Tierney**, who generously donated their time and expertise to provide skin cancer screenings, logistical support, and firefighter education. Their willingness to serve exemplifies the very spirit of community medicine.

Special recognition goes to the **University of Washington School of Medicine** students **Catherine Chia, Alice Sohn, and Briana Martin-Villa**, whose curiosity, professionalism, and heart for service contributed tremendously to the event.

We also thank **DermLite** for providing dermoscopy equipment and **TiZO** for donating sunscreen samples that supported both clinician education and firefighter sun protection.

Finally, we thank the **wildfire firefighter trainees and instructors** who participated in the screenings and openly shared their experiences. Their trust and engagement made this pilot project meaningful and will help guide future efforts to improve occupational skin health for this essential workforce.



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