



COUNTY OF SAN LUIS OBISPO HEALTH AGENCY
PUBLIC HEALTH DEPARTMENT
PROVIDER HEALTH ADVISORY

Date: July 9, 2024

Contact: Rick Rosen, MD, MPH, frosen@co.slo.ca.us, 805-781-5500

Reports of Rare, Severe Dermatophyte Infections Associated with Sexual Contact in the United States

The California Department of Public Health (CDPH) is informing health care providers of the first case of sexually transmitted *Trichophyton mentagrophytes* genotype VII (TMVII) reported in the United States. This patient had traveled to California prior to diagnosis.

Health care providers should have a high suspicion for TMVII in patients presenting for inflammatory, painful, or persistent skin lesions affecting the genitals, buttocks, or face. TMVII has been associated with recent travel to Europe or Southeast Asia. Diagnosis should be confirmed with in-clinic microscopy of KOH prep of skin scraping and fungal culture of skin scraping. If treatment failure is noted with first-line topical antifungals, then oral Terbinafine 250 mg daily is recommended.

Diagnosis with potassium hydroxide (KOH) preparation and fungal culture of skin scrapings should be attempted in all suspected cases of TMVII.

When to submit samples to the Public Health Laboratory for additional testing:

Trichophyton species isolates from skin lesions of the genitals, buttocks, or face, where the lesions are inflammatory, painful, or persistent in nature and resistant to topical treatment should be submitted.

To submit sample(s): Submit a pure culture of the mold on any medium that supports fungal growth. All culture containers should be securely taped and double bagged when submitting. Transport at ambient temperature. Submit to the County of San Luis Obispo Public Health Laboratory.

Please see more information in the attached [advisory from CDPH](#).

Note: This advisory contains medical images of a patient's groin and perianal area.

Public Health Department

2191 Johnson Avenue | San Luis Obispo, CA 93401 | (P) 805-781-5500 | (F) 805-781-5543

www.slopublichealth.org



TOMÁS J. ARAGÓN, M.D., Dr.P.H.
State Public Health Officer & Director

State of California—Health and Human
Services Agency
**California Department of Public
Health**



GAVIN NEWSOM
Governor

Health Advisory

TO: Healthcare Providers

Reports of Rare, Severe Dermatophyte Infections Associated with Sexual Contact in the United States

6/19/2024

Key Messages

- The first case of sexually transmitted *Trichophyton mentagrophytes* genotype VII (TMVII) was reported in the United States. This patient had traveled to California prior to diagnosis.
- Health care providers should have a high suspicion for TMVII in patients presenting for inflammatory, painful, or persistent skin lesions affecting the genitals, buttocks, or face. Empiric treatment should be initiated if TMVII is suspected based on clinical presentation, such as in cases of topical treatment failure, highly inflammatory appearance, and anogenital lesions.
- Diagnosis with potassium hydroxide (KOH) preparation and fungal culture of skin scrapings should be attempted in all suspected cases of TMVII. Fungal isolates should be submitted to select laboratories (listed below) for genetic sequencing and species identification.
- For assistance in testing or clinical management of suspected TMVII or other sexually transmitted dermatophyte infection, providers can contact the Sexually Transmitted Diseases Clinical Consultation Network (STDCCN), your local health department, CDPH STD Control Branch at (510) 620-3400 or stdcb@cdph.ca.gov, or U.S. Centers for Disease Control and Prevention (CDC) at fungaloutbreaks@cdc.gov.

Background

The California Department of Public Health (CDPH) would like to inform health care providers that the first known United States (U.S.) case of sexually transmitted *Trichophyton mentagrophytes* genotype VII (TMVII) was reported in June 2024 [1]. TMVII is a rare dermatophyte (e.g., ringworm or tinea) infection that causes highly inflammatory, painful, and persistent lesions, often affecting the anogenital or perioral areas. Prior to this case, sexual

transmission of TMVII had been reported in France [2], primarily among men who have sex with men (MSM), and among other persons in European countries returning from Southeast Asia who had engaged in sex tourism [3]. TMVII is reported to be spreading locally in Europe and other global regions [4].

This U.S. case of TMVII occurred in an HIV-negative man living in New York City who had reported recent travel to Europe and California. The patient had multiple male sexual partners while traveling, prior to developing a scaly, erythematous, and pruritic rash affecting the groin, genitals, and legs. After diagnosis, the patient was successfully treated with a prolonged antifungal regimen including oral terbinafine and itraconazole [1]. In addition to this case, a separate case of sexually transmitted *Trichophyton indotineae* was recently reported in Pennsylvania in a woman after travel to South Asia – unlike TMVII, *T. indotineae* is often resistant to terbinafine, a first-line antifungal medication [5]. Patients with TMVII and *T. indotineae* are often initially treated with topical regimens, but usually fail such treatments.

Given the novelty of sexually transmitted dermatophyte infections and the potential for local spread in the United States, it is important that California providers be aware of TMVII and other sexually transmitted dermatophytes as an emerging public health concern and understand steps to diagnosis and management.

Recommendations

To prevent local spread and expedite clinical recognition, diagnosis, and treatment of patients with suspected TMVII, CDPH recommends the following:

- Suspect TMVII in people with highly inflammatory, painful, or persistent skin lesions affecting the genitals, buttocks, or face (see Figures A-D below). Unlike other dermatophyte infection affecting the groin (e.g., jock itch), TMVII may affect the shaft of the penis and usually fails to clear with topical antifungal regimens. Lesion appearance is variable, but may include sharply demarcated, erythematous, scaling plaques or pustules. Co-infections with other sexually transmitted infections (STIs) have been reported. Sexual activity during recent travel to Europe or Southeast Asia or partners who have traveled to these locations may heighten suspicion for TMVII, but absence of such risk factors should not be used to rule out the infection.
- TMVII infection may be strongly suspected based on clinical presentation, but clinicians should attempt to confirm diagnosis with both in-clinic microscopy and fungal culture.
 - Microscopy with potassium hydroxide (KOH) preparation of skin scrapings can be used to visualize segmented hyphae to confirm fungal infection [6]. See KOH Procedure from the CDC for more information on performing this assay [7]. Given the relatively low sensitivity of KOH preparation for the detection of dermatophyte infections [8], negative results should not preclude patients from treatment in highly suspicious cases.
 - Fungal culture of skin scrapings can be used to identify fungal infection. Providers should request the isolate be speciated and saved for further testing.
 - While diagnostic testing should be attempted, lack of in-clinic microscopy or fungal culture results should not delay treatment.
- Microscopy and culture do not differentiate TMVII from other *Trichophyton* species (e.g., *T. mentagrophytes* or *T. interdigitale*). If a *Trichophyton* species is identified by fungal culture, the sample should be sent for genomic sequencing to differentiate species. There are select laboratories that can provide this service:
 - Wadsworth Mycology Laboratory of the New York State Department of Health (Albany, NY, USA)
 - Fungus Testing Laboratory of the University of Texas Health (San Antonio, TX, USA)

- Center for Medical Mycology of the University Hospitals Cleveland Medical Center (Cleveland, OH, USA)
- Most tinea infections affecting the skin can be empirically treated with first-line topical antifungals such as clotrimazole or topical terbinafine. If TMVII is suspected due to topical treatment failure, highly inflammatory appearance, and anogenital lesions, empiric treatment with oral Terbinafine 250 mg once daily should be started. Treatment should be continued until the infection has resolved which may take ≥ 6 weeks. If there is no clinical improvement with terbinafine after 2-4 weeks of treatment, consider referring the patient to an infectious disease specialist or dermatologist and switching to oral Itraconazole 200mg once daily.
- Providers should share the following practices to prevent transmission or reinfection with suspect or confirmed dermatophyte (including TMVII or *T. indotineae* infection):
 - Avoid sexual skin-to-skin contact if there is a rash affecting the genitalia or in the perianal or perioral areas.
 - Avoid sharing personal items and clothing
 - Wash and dry clothing on high heat to kill fungal spores.
 - Avoid use of topical steroids.
 - Need for prolonged therapy to prevent relapse and reinfection for TMVII or *T. indotineae* infection.

Resources

For assistance in testing or clinical management of suspected TMVII or other sexually transmitted dermatophyte infection, providers can contact the Sexually Transmitted Diseases Clinical Consultation Network (STDCCN), your local health department, CDPH STD Control Branch at (510) 620-3400 or stdcb@cdph.ca.gov, or CDC at fungaloutbreaks@cdc.gov.

Figures



Figure: *Trichophyton mentagrophytes* genotype VII infection affecting the perioral area (A & B), groin (C), and perianal area (D) [2].

References

- [1]Caplan, Avrom S., et al. "Potential Sexual Transmission of Tinea Pubogenitalis From TMVII." *JAMA dermatology* (2024).
- [2]Jabet, Arnaud, et al. "Sexually transmitted *Trichophyton mentagrophytes* genotype VII infection among men who have sex with men." *Emerging Infectious Diseases* 29.7 (2023): 1411.
- [3] Nenoff, Pietro, et al. "*Trichophyton mentagrophytes* ITS Genotype VII from Thailand." *Dermatophytes and Dermatophytoses*. Cham: Springer International Publishing, 2021. 231-256.

[4] Kupsch, Christiane, et al. "Trichophyton mentagrophytes—a new genotype of zoophilic dermatophyte causes sexually transmitted infections." *JDDG: Journal der Deutschen Dermatologischen Gesellschaft* 17.5 (2019): 493-501.

[5] Spivack, Stephanie, et al. "Potential Sexual Transmission of Antifungal-Resistant Trichophyton indotineae." *Emerging Infectious Diseases* 30.4 (2024): 807.

[6] Video: Watch and Learn KOH Preparation. Youtube (2015).

[7] Handout: KOH Procedure. CDC.

[8] Levitt, J. O., Levitt, B. H., Akhavan, A., & Yanofsky, H. (2010). The sensitivity and specificity of potassium hydroxide smear and fungal culture relative to clinical assessment in the evaluation of tinea pedis: a pooled analysis. *Dermatology research and practice*, 2010, 764843. <https://doi.org/10.1155/2010/764843>

California Department of Public Health
PO Box, 997377, MS 0500, Sacramento, CA 95899-7377
Department Website (cdph.ca.gov)

