

TUBERCULOSIS

Tuberculosis is slipping past quarantine and seeding U.S. research colonies, exposing workers and undermining science.



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Overview

Tuberculosis (TB), the world's deadliest infectious disease,¹ is an infection caused by organisms in the *Mycobacterium tuberculosis* complex. It can lie dormant for years before erupting into active disease,² spreading through airborne droplets when an infected individual coughs, sneezes, or even breathes. Despite decades of regulation, TB continues to enter U.S. research facilities through imported monkeys. Screening still relies primarily on the tuberculin skin test (TST), introduced in the 20th century, which often misses early or asymptomatic cases, making detection during the 31-day quarantine period highly unreliable.

Historical Context

Concerns about TB in laboratory primates are longstanding. Between 1938 and 1940, U.S. institutions documented more than 500 confirmed cases in research monkeys.³ That figure alone was alarming, but given the TST's well-known limitations, the true number of infected monkeys was almost certainly much higher. These early outbreaks underscored how easily the disease spreads among imported monkeys and confined colonies as well as how difficult it is to detect in monkeys. The same systemic weaknesses remain today.

Recent Findings

- TB continues to be detected in imported primates, both during Centers for Disease Control and Prevention (CDC) quarantine and after release into U.S. research colonies.
- The CDC has reported a rise in cases since 2021, including post-quarantine positives from shipments that had already produced TB cases in quarantine.⁴
- Infections have been identified in monkeys imported from every major supplier country, including Cambodia, Indonesia, Mauritius, the Philippines, and Vietnam.

Notable Examples

- In 2023, Charles River Laboratories, a major contract research organization, imported 540 macaques from Vietnam; 32 tested positive for *Mycobacterium orygis*, a TB strain never before recorded in U.S. imports.⁵ The strain persisted in colonies more than a year later.
- In 2019, 20 macaques imported for HIV research all cleared quarantine, yet chest X-rays revealed that one animal was carrying latent TB, rendering the shipment unusable.⁶
- One macaque at the Washington National Primate Research Center tested negative 16 times over six years before TB was confirmed at necropsy.⁷

Limitations of Current Testing

- The TST is the primary CDC-mandated screening tool but fails in animals recently vaccinated for measles⁸ or who are stressed or immunocompromised. The TST cannot reliably detect latent TB.
- Modern alternatives, such as interferon-gamma release assays, remain absent from U.S. import protocols.
- Facility records show that monkeys are often tested for tuberculosis only after they develop symptoms, allowing silent infections to spread undetected.

Despite decades of regulation, shipments of infected primates continue to enter the U.S., clear quarantine, and seed outbreaks in research colonies. The CDC's own data confirm that TB is an ongoing hazard in the primate import pipeline, yet the agency has chosen to leave the system unchanged.

Endnotes

¹ World Health Organization. Global Programme on Tuberculosis and Lung Health: TB Reports. Accessed July 2, 2025. <https://www.who.int/teams/global-programme-on-tuberculosis-and-lung-health/tb-reports>

² Diedrich CR, Mattila JT, Klein E, et al. Reactivation of latent tuberculosis in cynomolgus macaques infected with SIV is associated with early peripheral T cell depletion and not virus load. *PLoS One*. 2010;5(3):e9611. doi:10.1371/journal.pone.0009611

³ Kennard MA, Willner MD. Tuberculosis and tuberculin tests in subhuman primates. *Yale J Biol Med*. 1941;13(6):795-812.

⁴ Swisher SD, Taetzsch SJ, Laughlin ME, et al. Characteristics of tuberculosis tests performed during postimport quarantine of nonhuman primates, United States, 2021 to 2024 [published online July 1, 2025]. *J Am Assoc Lab Anim Sci*. doi:10.30802/AALAS-JAALAS-25-057

⁵ Swisher SD, Taetzsch SJ, Laughlin ME, et al. Outbreak of *Mycobacterium orygis* in a shipment of cynomolgus macaques imported from Southeast Asia–United States, February–May 2023. *MMWR* 2024;73(7):145-148. doi:10.15585/mmwr.mm7307a2

⁶ Conroy G. How wild monkeys 'laundered' for science could undermine research. *Nature*. 2023;623(7988):672-673. doi:10.1038/d41586-023-03533-1

⁷ Stockinger DE, Roellich KM, Vogel KW, et al. Primary hepatic *Mycobacterium tuberculosis* complex infection with terminal dissemination in a pig-tailed macaque (*Macaca nemestrina*). *JAALAS*. 2011;50(2):258-262.

⁸ Panarella M, Hursh S. A retrospective analysis of the tuberculin skin test reactions of a single source population of Mauritian *Macaca fascicularis* held in quarantine during 2017. *PLoS One*. 2022;17(4):e0265942. doi:10.1371/journal.pone.0265942