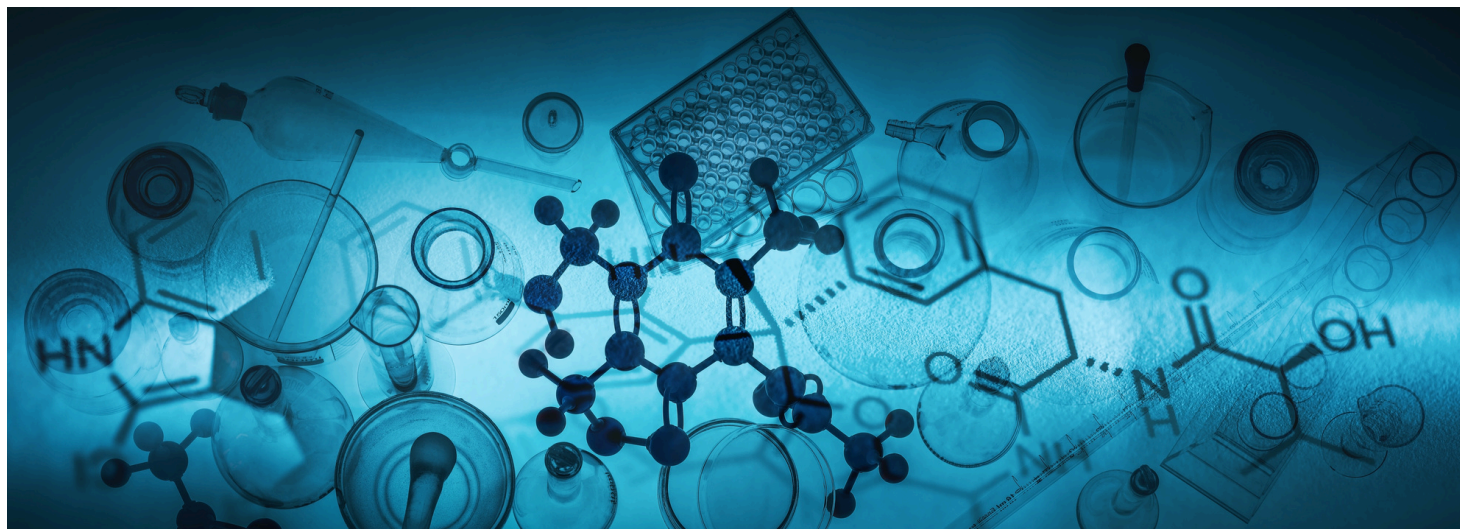


THE MONTHLY DOSE

Official Newsletter of The Mueller Health Foundation



WHAT'S NEW AT THE MUELLER HEALTH FOUNDATION:

On March 24th, we join the global community in recognizing World TB Day 2026 and renewing our shared commitment to end tuberculosis. We are excited about the newly announced theme, "Yes! We Can End TB. Led by [...]. Powered by [...]."

At the Mueller Health Foundation, this message resonates deeply with our work. We proudly embrace the spirit of the theme as: **"Yes! We Can End TB. Led by communities.**

Powered by MHF." We believe that sustainable progress begins with community voices, lived experience, and locally driven solutions. By investing in community-based care models and innovative diagnostics and research, we aim to strengthen efforts on the ground and help translate commitment into measurable impact.

This World TB Day, we celebrate the leadership of communities worldwide and reaffirm our role as a committed partner in working together to transform possibility into progress and progress into lasting change.

LATEST NEWS: SHOWCASING STORIES OF TB SURVIVORS

We at The Mueller Health Foundation remain deeply committed to sharing personal stories and giving a voice to TB patients, TB survivors, TB practitioners, and all the friends and family members affected by the disease. We are also proud to continue our support of our HeroRat Tamasha, who has been trained by APOPO, a charity focused on training rats to detect TB in sputum samples across Africa. APOPO has put together a wonderful collection of success stories from TB survivors, and this month, we would like to highlight Ally's story:

Ally Abdallah Malumbo is a 14-year-old student living with his mother and stepfather in Toangoma, Dar es Salaam. Although he initially remained active, he began experiencing weight loss, fatigue, night sweats, and a persistent cough that did not improve with home remedies. When he started coughing up blood, his mother quickly took him to a local clinic, and he was referred to Mbagala Zakhem Hospital for further testing. There, a sputum sample confirmed he had tuberculosis, after APOPO's HeroRat diagnostic program first identified his illness and laboratory testing verified the result. The diagnosis shocked his family, who knew little about TB and did not know anyone personally affected by the disease. Health workers provided counseling on how TB spreads and how to protect loved ones, helping them better understand the symptoms he had been experiencing. Despite the difficulty of taking large pills each day, Ally committed to completing the full six-month treatment course without missing a dose. Now four months into treatment, he has regained weight, his cough has resolved, and he is sleeping well again. After temporarily staying home from school, he has returned to class and is preparing for his national exams, determined to stay strong and healthy so he can one day achieve his dream of becoming a soldier. To read his full story, please follow the link: <https://apopo.org/what-we-do/detecting-tuberculosis/success-stories/ally/?v=0b3b97fa6688>

For more news, please also take a look at our top 3 picks for **March** in this newsletter, where we highlight novel research findings and news about the prevention and treatment of tuberculosis around the world.

MHF TOP PICKS FOR MARCH

Every month, we at the Mueller Health Foundation like to showcase interesting news and updates in the field of tuberculosis (TB). Below are our top **3** picks for **March**:

1. New Study Reveals How TB Bacteria “Hide” from the Immune System

Scientists have uncovered a novel stealth mechanism used by *Mycobacterium tuberculosis* to survive inside human immune cells by altering cell membranes. The researchers found that TB bacteria release tiny extracellular vesicles loaded with specialized lipids that fuse with immune cell membranes, making them more rigid and preventing the normal fusion of bacterial containers (phagosomes) with destructive lysosomes. Without this fusion, immune cells cannot break down and kill the bacteria, allowing TB to persist inside the host. Surprisingly, these lipid-rich vesicles can also affect nearby immune cells, weakening their ability to respond even before encountering the bacteria. The discovery not only reveals a previously unrecognized immune-evasion strategy but also points to possible new therapeutic targets, either by blocking vesicle production or counteracting membrane stiffening, to help the body more effectively fight tuberculosis. To learn more, you can access the paper here: <https://www.biorxiv.org/content/10.64898/2025.12.17.694930v2.full>

2. New MIT Research Identifies Select TB Vaccine Targets

A large new study from researchers at the Massachusetts Institute of Technology has narrowed down potential targets for next-generation tuberculosis vaccines by screening the bacterium’s full proteome of over 4,000 proteins. By infecting human immune cells and analyzing which TB protein fragments (peptides) are presented on the cell surface, the team identified 27 immunogenic peptides from 13 different TB proteins that frequently trigger T-cell responses, an essential component of protective immunity. Scientists tested these peptides with T cells from people with prior TB exposure and found that many stimulated immune reactions, supporting the idea that vaccines combining several of these targets could offer broader protection than the century-old BCG vaccine. These findings provide a more focused set of antigen candidates to guide the development of stronger TB vaccines that could better protect adolescents and adults worldwide. To learn more, you can access the article here: <https://news.mit.edu/2025/mit-study-finds-targets-new-tuberculosis-vaccine-1105>

3. TB Outbreak at San Francisco High School Results in Hundreds of Latent Cases

Health officials in San Francisco are responding to a tuberculosis outbreak at Archbishop Riordan High School. Expanded testing identified 219 of approximately 1,261 students and staff (about 17%) with TB infection, the vast majority in its latent form. Of those who tested positive, 204 individuals were confirmed to have latent TB, which cannot spread to others but can progress to active disease if left untreated. Active TB cases remain limited, with three confirmed cases and three additional suspected cases currently under investigation. Through extensive testing and contact tracing, the San Francisco Department of Public Health (SFPDH) has determined that 99% of students and all faculty and staff have no evidence of active TB, allowing in-person learning to continue. Officials emphasize that the risk to the broader public remains low, and those with latent infection are being encouraged to pursue preventive treatment to reduce the chance of developing active TB. You can read the article here: <https://www.sfgate.com/bayarea/article/san-francisco-school-tuberculosis-21369817.php>

DID YOU KNOW?

A new modeling analysis published in PLOS Medicine estimates that major reductions in international tuberculosis funding could shift an enormous financial burden onto families in low- and middle-income countries. The study examined 79 high-burden countries, representing approximately 91% of global TB cases, and modeled the economic consequences of substantial donor funding cuts between 2025 and 2050. Key findings of the analysis include:

- Under a scenario in which USAID funding alone is terminated starting in 2025, TB-affected households would incur an estimated \$7.5 billion in additional patient costs over 25 years. This would push an additional 3.9 million households into catastrophic costs, defined by WHO as TB-related expenses exceeding 20% of annual household income.
- If the United States were to terminate both USAID support and all Global Fund contributions, additional patient-incurred costs would rise to \$24 billion.
- In the most extreme scenario, elimination of all external TB funding, households would face \$79.7 billion in added costs between 2025 and 2050. An estimated 40.5 million additional households would then experience catastrophic costs, a 32% increase over baseline projections.

The study shows that sustained international investment in TB control not only saves lives but also protects vulnerable households from severe financial hardship. Without stable funding, progress made in global TB reduction could be reversed, shifting both health and economic costs onto families least able to afford it.