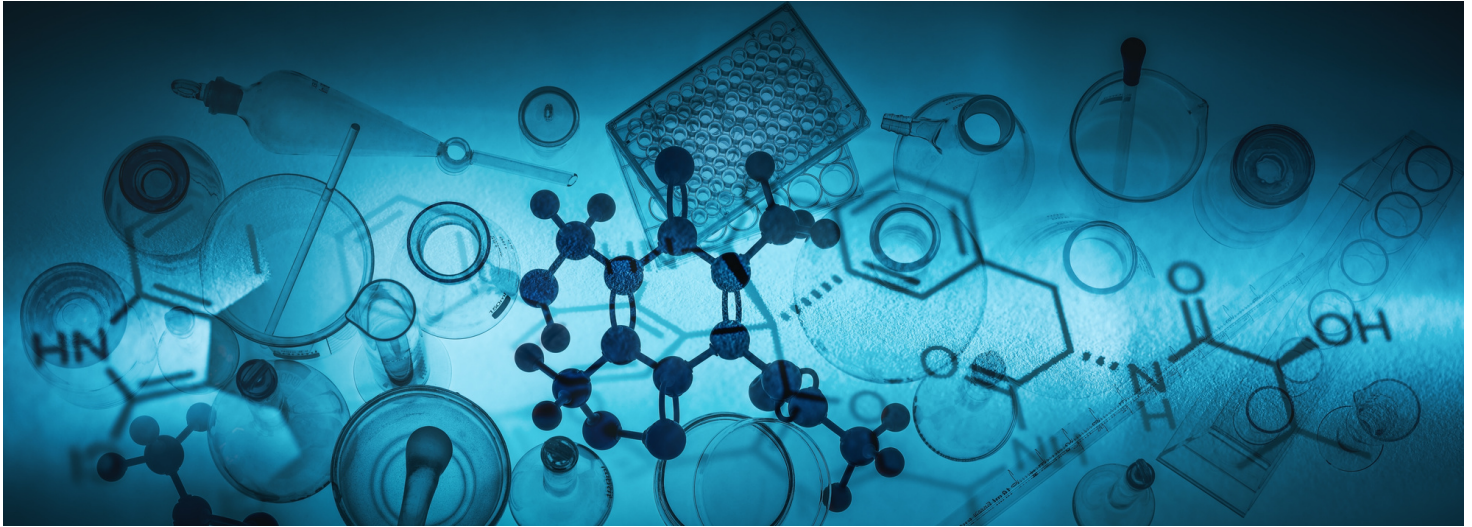


THE MONTHLY DOSE

Official Newsletter of The Mueller Health Foundation



WHAT'S NEW AT THE MUELLER HEALTH FOUNDATION:

At the Mueller Health Foundation, we are proud to continue supporting our partnership with REACH in India, where innovative community-centered approaches are helping raise awareness about tuberculosis and reduce stigma surrounding the disease.

Last month, REACH conducted a series of engaging TB awareness activities across Nakshatra centers, including a short educational play that walked viewers through the history of tuberculosis and highlighted the importance of early diagnosis and treatment. The team also organized photo stand displays featuring key public health messages such as covering your cough, avoiding spitting in public spaces, seeking testing for coughs lasting more than 2-3 weeks, and supporting people living with TB. These creative, community-based initiatives play an important role in increasing awareness, encouraging health-seeking behavior, and fostering more supportive environments for individuals affected by TB.

We look forward to continuing to support impactful programs that bring education, compassion, and innovation to TB care and prevention.

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, and this month, we would like to highlight Tamirat's story, who is a TB sputum sample collector for APOPO:

Although Tamirat has not personally experienced tuberculosis, he plays an integral role in helping others receive a diagnosis and begin treatment. At 27 years old, he has worked with APOPO in Addis Ababa, Ethiopia, for more than four years as part of the sample collection team, transporting sputum samples from health centers to the laboratory where TB detection begins. After leaving school following his father's death, Tamirat took on various jobs to support his mother and sisters before joining APOPO. Today, he visits up to 15 health centers a day, often traveling for hours through traffic and rain, collecting around 30 samples daily using strict safety protocols. Though the work is demanding, he remains motivated by the knowledge that each sample represents someone with a chance to be diagnosed and treated. He often recalls seeing patients at the health centers who appeared visibly unwell, which reinforces the importance of his work and strengthens his commitment to the job. Tamirat also takes pride in explaining APOPO's innovative rat detection program to curious community members who recognize the organization's logo on his motorbike. Outside of work, he helps care for a small garden at the center, bringing fresh vegetables home to his family. For Tamirat, the job is not only a source of income, but also a meaningful way to support both his community and the fight against TB. To read Tamirat's full story, please follow the link: <https://apopo.org/tb-sample-collection-ethiopia-tamirat-apopo-story/>

For more news, please also take a look at our top 3 picks for **May** 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 MAY

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 **May**:

1. Common TB Screening Test May Help Predict Long-Term Survival

A recent study suggests that a commonly used tuberculosis screening tool may also help predict long-term patient survival. Researchers found that individuals with stronger immune responses on interferon-gamma release assays (IGRAs), a blood test often used to detect TB infection, were more likely to survive over time compared to those with weaker responses. The findings indicate that beyond identifying TB exposure, the test may provide insight into overall immune system health and future health outcomes. The study highlights the potential for existing TB diagnostics to serve a broader role in patient assessment and risk stratification, particularly among vulnerable populations. Researchers also noted that understanding immune response patterns may help inform more personalized approaches to follow-up care and clinical decision-making. Researchers believe this could help clinicians better identify patients at higher risk of poor outcomes and improve long-term monitoring and care strategies for individuals affected by TB. To learn more, you can access the paper here: <https://link.springer.com/article/10.1007/s11357-026-02221-y>.

2. Non-Invasive Swab Test Could Transform TB Diagnosis

Researchers have developed a rapid, non-invasive tuberculosis test called the MiniDock MTB, a portable molecular diagnostic device that uses simple tongue swab samples instead of traditional sputum collection. The test was evaluated across seven high-burden countries, including India, South Africa, Nigeria, Uganda, Vietnam, Zambia, and the Philippines, in a study involving nearly 1,400 participants with suspected pulmonary TB. Initial results showed strong diagnostic performance, with the test correctly identifying approximately 86% of TB cases using sputum samples and 80% using tongue swabs, while maintaining specificity rates of around 98%. The MiniDock MTB also outperformed traditional smear microscopy and delivered results in as little as 12–25 minutes without requiring sophisticated laboratory infrastructure. Because the device is battery-powered, low-cost, and easy to operate with minimal training, researchers believe it could significantly expand access to rapid TB testing in community clinics and rural settings. The innovation may be especially valuable for children, older adults, and people living with HIV, who often struggle to produce sputum samples for conventional testing. To learn more, you can access the study here: <https://www.nejm.org/doi/full/10.1056/NEJMoa2509761>

3. Johns Hopkins Researchers Develop Nasal DNA Vaccine for Tuberculosis

Researchers at Johns Hopkins Medicine and the Johns Hopkins Bloomberg School of Public Health have developed a therapeutic intranasal DNA vaccine designed to work alongside existing tuberculosis drug treatment. Unlike traditional vaccines aimed at preventing infection, this experimental vaccine is intended to help the immune system target persistent TB bacteria that can survive antibiotic treatment and contribute to relapse. The vaccine combines two genes, *relMtb* and *Mip3α*, to strengthen immune responses directly in the lungs through nasal delivery. Initial studies in mice showed promising results, with the vaccine helping clear TB bacteria faster, reducing lung inflammation, and preventing disease relapse after treatment ended. Researchers also found that the vaccine enhanced the effectiveness of drug-resistant TB treatment regimens, including the combination of bedaquiline, pretomanid, and linezolid. In rhesus macaques, the vaccine generated durable TB-specific immune responses in both the blood and airways that persisted for at least six months, suggesting potential long-term protection. While additional studies are still needed before human clinical trials can begin, researchers believe the vaccine could eventually help shorten TB treatment duration and improve outcomes for patients with both drug-susceptible and drug-resistant TB. You can read the article here: <https://www.jci.org/articles/view/196648>

DID YOU KNOW?

Tuberculosis not only affects humans, but also nonhuman primates, such as monkeys and apes, are also highly susceptible to the disease. In fact, primates can develop TB in ways that closely resemble human infection, making them important both in scientific research and conservation efforts. Some interesting facts about TB and primates include:

- Certain species of monkeys and apes, including macaques, chimpanzees, and gorillas, can contract *Mycobacterium tuberculosis* from humans, a phenomenon known as “reverse zoonotic transmission,” where humans spread disease to animals.
- Wild mountain gorillas in Central Africa are considered especially vulnerable to human respiratory diseases, including TB, due to increasing human contact through tourism and conservation activities.
- Because primates develop TB similarly to humans, rhesus macaques are often used in TB vaccine and treatment research to better understand immune responses and test new therapies before human clinical trials.
- TB in captive primate populations, such as zoos and research colonies, can spread rapidly if undetected, which is why routine TB screening and strict infection control measures are commonly required.
- Some studies suggest that latent TB infection can also occur in nonhuman primates, meaning animals may carry the bacteria without immediately showing symptoms, similar to humans.
- Primates diagnosed with TB can sometimes be treated with long courses of antibiotics similar to those used in humans, although treatment can be challenging and requires careful monitoring to prevent transmission and manage side effects.
- Researchers have used advanced imaging technologies, including PET/CT scans in macaques, to study how TB progresses in the lungs and how granulomas, the hallmark lesions of TB, form and respond to treatment.

The relationship between TB and primates highlights how interconnected human, animal, and environmental health truly are. It also reinforces the importance of a One Health approach to infectious disease prevention, surveillance, and research.

Information Source:
<https://www.aazv.org/search/all.asp?c=&bst=tuberculosis+primates>
<https://pmc.ncbi.nlm.nih.gov/articles/PMC4292094/>
<https://pmc.ncbi.nlm.nih.gov/articles/PMC4160956/>
<https://oacu.oir.nih.gov/system/files/media/file/2023-06/D3-NHP-TB-Prevention.pdf>