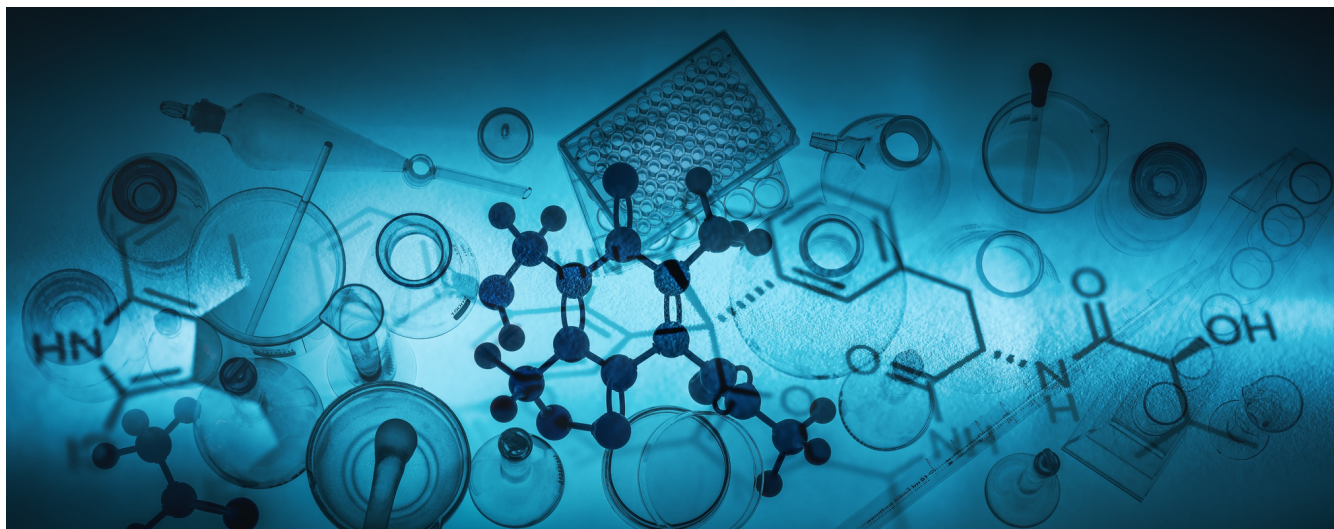


THE MONTHLY DOSE

Official Newsletter of The Mueller Health Foundation



WHAT'S NEW AT THE MUELLER HEALTH FOUNDATION:

We are excited to participate in the **"2023 New York City World TB Day Conference - A Future Free of TB: New Paths Forward."**

The conference seeks to educate, connect, and engage members of the NYC healthcare community about TB prevention efforts in NYC, as well as highlight the progress in the fight against TB.

The conference will be held on Friday, March 17 from 10:00 am – 4:00 pm ET at CUNY Law School and registration is free and open to all: <https://events.r20.constantcontact.com/register/eventReg?oeidk=a07ejmrjnr2449895af&oseq=&c=&ch=>

Stay tuned for more updates!

LATEST NEWS: SHOWCASING STORIES OF TB SURVIVORS

We at The Mueller Health Foundation continue to be deeply committed to sharing personal stories and giving a voice to TB patients, TB survivors, TB practitioners, and all the friends and family members of the people who have been affected by the disease. The Center for Disease Control and Prevention (CDC) has put together a wonderful collection of stories and this month we would like to highlight Tri's story. Tri found out he had tuberculosis (TB) shortly after beginning college in Georgia. Here is an excerpt from his journey:

Tri had been looking forward to going to college in the fall of 2011. After only 2 weeks of classes, he started coughing, and thought he had the flu. He went to a doctor for treatment, and was given antibiotics. But despite taking the medicine, he was still having fevers in the afternoon and other symptoms: a persistent cough, night sweats, and loss of appetite. Tri did not know that he had tuberculosis (TB) until his younger brother who was also sick was found to have TB. Once diagnosed, Tri and his brother began treatment for TB. Because Tri was so sick and needed to stay at home until he was no longer infectious, he ended up having to quit school and his job. He and his brother remained on home isolation for 4 months because of the severity of their illness. During this time, Tri and his brother motivated each other to stick with the treatment. Once cured of TB, Tri was able to resume normal activities, including doing what he loves, which is playing basketball. He hopes to possibly pursue a career in the field of health care. Tri offers advice for others who may receive a TB diagnosis. "Don't panic. Follow your doctor's advice about treatment and take your medicine every day. TB is a big word and a big disease, but it's curable and you can get through it. There is help out there." To read his full story please follow the link to the Center for Disease Control and Prevention's website here: <https://www.cdc.gov/tb/topic/basics/tristory.htm>

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 around 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. Below are our top 3 picks for **March**:

1. New Smartphone App Could Help Diagnose TB and Monitor Treatment

The latest app advancement under investigation in clinical trials is a cough monitoring system called Hyfe AI. This smartphone-based app runs specialized software that calculates a person's cough rate hourly. With this information, healthcare providers could have the data they need to diagnose TB and determine if TB treatment is effective. To investigate the usefulness of Hyfe AI, researchers recently conducted a study using the new app technology to monitor coughing in people presumed to have TB in Uganda, South Africa, the Philippines, Vietnam, and India. The scientists then compared the cough patterns between people with microbiologically confirmed TB, clinical TB, and other respiratory diseases (ORD). Although more research is needed, scientists suggest that cough-based TB screening may help reduce the overtreatment of people without TB and improve the detection of the condition. To learn more about the research, you can access the full paper at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9983626/#i1815-7920-27-3-221-b1>

2. A New Community-Based Diagnostic Technique for Tuberculosis

A new, low-cost, scalable package for diagnosing tuberculosis (TB) onsite in resource-poor community settings is feasible and effective, according to a new trial. A portable, battery-operated, molecular diagnostic tool, Xpert, was able to detect almost all likely infectious cases of the disease in a community trial of almost 600 participants in South Africa. The XACT mobile clinic model is a relatively low-cost package comprising a vehicle operated by two healthcare workers that contains newer portable battery-operated DNA-based diagnostics, and equipment to obtain sputum samples even when patients cannot produce a sample. Overall, although Xpert only picked up about 52% of the case burden of TB in the community, the device detected almost all the likely infectious cases (94.1% compared to 23.5% for smear microscopy). These infectious cases, often called 'super spreaders' are associated with disease transmission and amplification of TB. This scalable approach could help to reduce amplification of the TB epidemic by early diagnosis and rapid treatment initiation of the most infectious cases. To learn more, you can read the paper here: <https://www.nature.com/articles/s41591-023-02247-1>

3. Temperature-Stable TB Vaccine Safe, Prompts Immune Response in NIH-Supported Study

A clinical trial testing a freeze-dried, temperature-stable experimental tuberculosis (TB) vaccine in healthy adults found that it was safe and stimulated both antibodies and responses from the cellular arm of the immune system. The experimental vaccine, ID93+GLA-SE, is a recombinant subunit vaccine made from four proteins of Mycobacterium tuberculosis bacteria combined with GLA-SE, an immune-stimulating adjuvant. The freeze-dried formulation does not require refrigeration and is mixed with sterile water just prior to injection. Thermostable vaccines are desirable in settings where maintaining cold or frozen vaccines for long periods can be costly and difficult. The trial does have limitations as it is not possible to say whether the enhanced immune responses seen in the thermostable vaccine formulation would translate to improved protective vaccine efficacy. Nevertheless, results of this trial demonstrate a proof-of-concept that adjuvant-containing vaccines can be formulated in a freeze-dried single-vial presentation without detrimentally impacting clinical immunogenicity or safety characteristics. You can learn more and access the full paper here: <https://www.nature.com/articles/s41467-023-36789-2>

DID YOU KNOW?

The mysterious death of an Egyptian woman, whose mummy became a public spectacle in Georgian Britain, has been solved by a team of researchers in London. Forensic analysis of tissues taken from the 2,600-year-old corpse has revealed signs of tuberculosis, a disease that was widespread in Egypt.

The mummy of Irtyersenu or "lady of the house" became the first to go under the surgeon's knife in an autopsy in 1825, when England was in the grip of mummy mania. The remains were unveiled to a large crowd in a macabre lecture by Dr. Augustus Granville who, in a theatrical flourish, lit the room at the Royal Society with candles made from wax scraped from the shrivelled corpse. Her body was so well preserved, Granville said he could identify the cause of death as ovarian cancer.

However, in 2009, researchers led by Helen Donoghue, analyzed tissue from Irtyersenu's thigh bones and hand, and also from her lungs, gall bladder and other organs. The tests revealed that Dr. Granville had misdiagnosed the cause of death given the presence of DNA from Mycobacterium tuberculosis, the pathogen that causes TB, in the lungs and gall bladder, and in other tissues that are thought to have come from her diaphragm. Further signs of the disease were detected in her thigh bones.



Information and Picture Source:
<https://www.theguardian.com/science/2009/sep/30/autopsy-egyptian-mummy-tb-cancer>