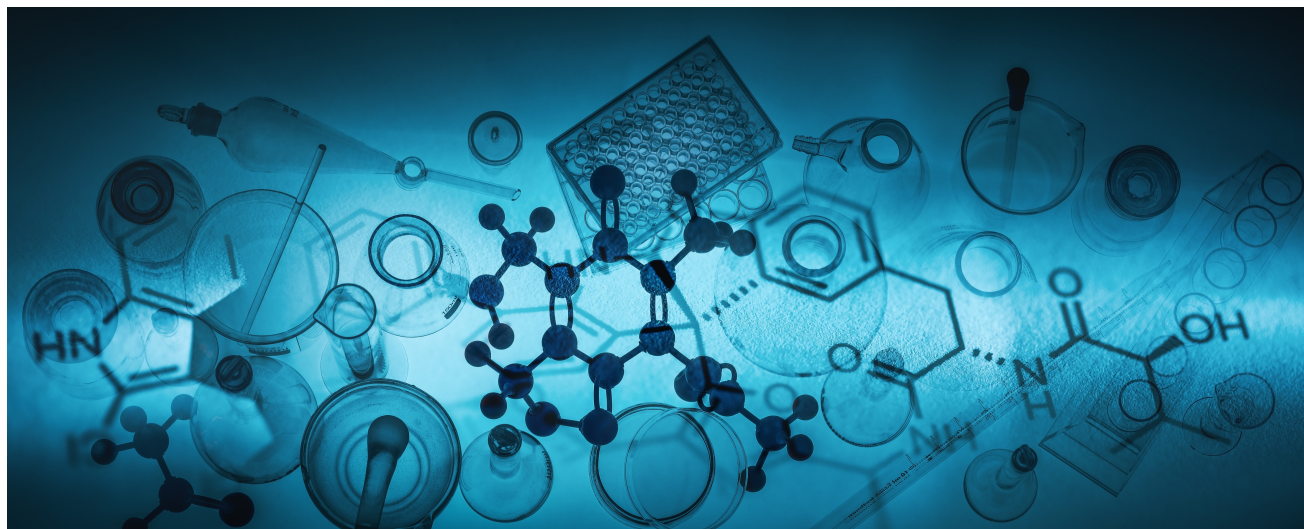


THE MONTHLY DOSE

Official Newsletter of The Mueller Health Foundation



WHAT'S NEW AT THE MUELLER HEALTH FOUNDATION:

We at The Mueller Health Foundation would like to encourage everyone to follow us on social media!

We are on Twitter with our handle @muellerhealth, on Instagram with the handle @muellerhealthfoundation and you can join our community on LinkedIn too!

Stay tuned for more updates!

LATEST NEWS: LOOKING AHEAD TO 2022

Our team at The Mueller Health Foundation would like to wish everyone a happy and healthy start to the New Year 2022!

As we begin the new year and embark on calendar year 3 of the COVID-19 pandemic, our team is working very hard to support new projects and initiatives that help us raise awareness for tuberculosis. We are truly looking forward to working with communities across the globe affected by this deadly disease and we are honored to hear and share their stories by giving them a voice through our Foundation. Concurrently, we are continuing to invest our time and resources into discovering new treatment regimens for all those affected by tuberculosis, particularly those patients who have been afflicted with resistant strains of TB.

It is our hope to encourage everyone to actively join the fight against TB around the globe in 2022 and to help us save as many lives as possible!

For more news, please also take a look at our top 3 picks for January 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 JANUARY

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 **January**:

1. Antibiotic Pre-Resistance Spotted in TB Bacteria for the First Time

In order to develop a better understanding of, and ultimately better treatments for, tuberculosis, this new research has identified how to pre-empt drug-resistant mutations before they occur. The researchers have termed this concept 'pre-resistance': when a disease-causing pathogen has a greater inherent risk of developing resistance to drugs in the future. To find out which strains of tuberculosis bacteria showed pre-resistance to antibiotics, the researchers, in collaboration with the Peruvian Tuberculosis Programme, sequenced the genomes of 3,135 tuberculosis samples taken from the suburbs of Lima, Peru, over a 17-year period. They then compared these samples to create a tuberculosis family tree to identify key changes in the genetic codes of the bacteria that went on to develop drug resistance. They described how variations in the tuberculosis genome predicted that a particular branch of the family tree would likely become drug resistant, and then validated their findings in an independent global tuberculosis data set.

To learn more, you can access the full journal article at: https://www.nature.com/articles/s41467-021-27616-7?utm_medium=affiliate&utm_source=commission_junction&utm_campaign=3_nsn6445_deeplink_PID100090912&utm_content=deeplink

2. The Relationship between Mental Health and Risk of Active TB: A Systematic Review

Tuberculosis (TB) and mental illnesses are highly prevalent globally and often coexist. While poor mental health is known to modulate immune function, whether mental disorders play a causal role in TB incidence is unknown. This systematic review examines the association between mental health and TB disease risk. Individuals with mental illnesses including depression and schizophrenia experience increased TB incidence and represent a high-risk population to target for screening and treatment. Integrated care for mental health and TB is needed, and interventions tackling mental illnesses and underlying drivers may help reduce TB incidence globally. To learn more, you can read the full article here: <https://pubmed.ncbi.nlm.nih.gov/34992103/>

3. Tuberculosis Vaccine Could Assist Future COVID-19 Vaccine Development

While clinical trials are ongoing to further investigate, a University of Houston computational biology researcher is reporting cross reaction between TB and COVID-19 that might help explain what could be driving immunity brought on by the BCG vaccination. The protection against SARS-CoV-2 induced by BCG vaccination may be mediated by cross-reactive T cell lymphocytes, which recognize peptides displayed by class I Human Leukocyte Antigens (HLA-I) on the surface of infected cells. The development of peptide-based vaccines targeting coronaviruses and presenting cross-reactivity with existing pools of memory T cells, could be an interesting strategy to complement and extend the protection conferred by existing COVID-19 vaccines. To learn more, you can access the full article here: <https://uh.edu/news-events/stories/2022-news-articles/january-2022/01132022-tuberculosis-vax-covid-vax-antunes.php>

DID YOU KNOW?

This month, we would like to highlight some surprising inventions that came out of the TB epidemic in the US in the early 1900s:

- **Ice Cream Cones:** A "penny lick" was a tiny portion of ice cream in a small glass container that vendors sold for only one penny. Customers licked the glasses clean and returned them; the vendor would then reuse the container for the next customer. Once word spread about the highly contagious nature of tuberculosis and several other diseases, vendors needed to find a different way of serving their ice cream to customers. An ice cream vendor in New York City named Italo Marchiony therefore developed a edible pastry cup to hold ice cream.
- **Shorter Dresses:** Around the turn of the century, most American women wore long dresses and skirts that reached the ground. But those skirts could be major carriers of germs found out in the streets. Once it became widely known that the TB bacteria from someone's saliva could survive for an entire day, women abandoned their long dresses and skirts in favor of shorter hemlines.
- **Reclining Chairs:** Sanatoriums often used various forms of reclining chairs or "cure chairs" to help treat patients with TB. Placed outside on porches, the chair backs could be adjusted to tilt at varying degrees, making it possible for patients to get fresh air while resting in comfortable semi-reclined positions. In the early 20th century, wealthier individuals began purchasing stylish versions of these reclining chairs so they could take advantage of the health benefits of sunbathing outside their private homes. Americans still use contemporary versions of the original reclining cure chairs in their living rooms today.

Source:

<https://www.pbs.org/wgbh/americanexperience/features/p-lague-know/>