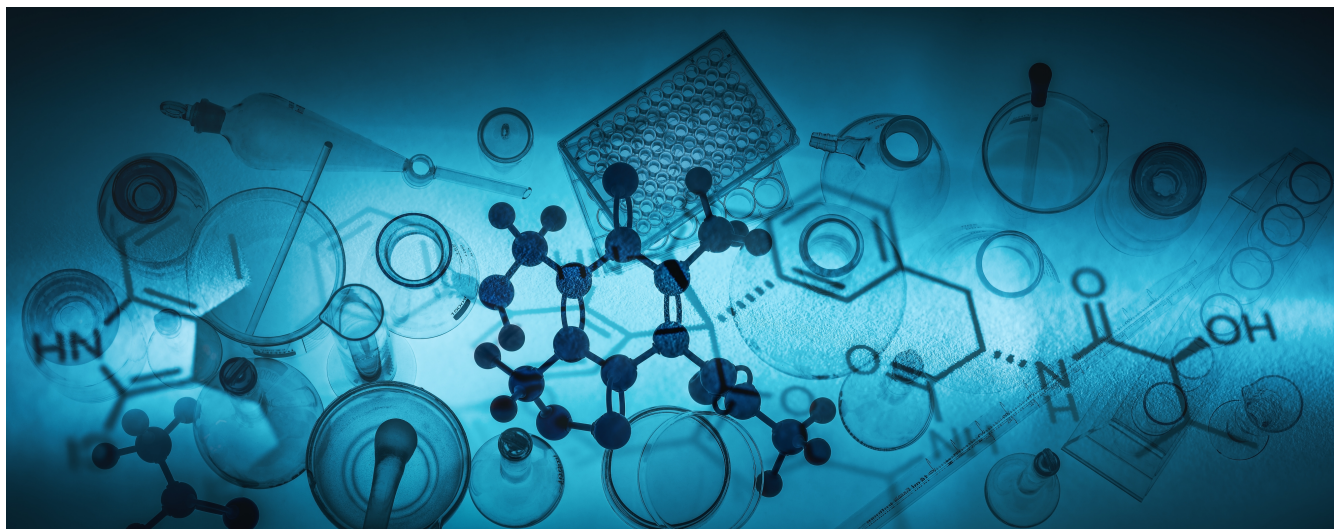


THE MONTHLY DOSE

Official Newsletter of The Mueller Health Foundation



WHAT'S NEW AT THE MUELLER HEALTH FOUNDATION:

During last month's World TB Day 2023, the Mueller Health Foundation, together with our grantee REACH in India was proud to premiere a short film featuring DR-TB survivors from Bihar. Throughout the short film, the DR-TB survivors are able to draw on their own experiences to identify the different kinds of support people with DR-TB need.

We are absolutely thrilled to be able to give a voice and platform to these brave DR-TB survivors and want to thank the team at REACH for putting together this great movie.

You can watch the short film here:
youtu.be/v5YaLlPPqal

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 Jerry's story. Here is an excerpt from his journey:

Jerry was not concerned when his TB skin test was positive. He had been going to the same homeless shelter in Texas for years and was familiar with the routine TB skin test they required. His TB skin test results had been positive in the past, and the follow-up chest x-ray had always ruled out TB disease. However, this time was different. The results of his chest x-ray indicated he had active TB disease. His case manager at Veterans Affairs was trying to get in touch with Jerry to get him started on TB medications and make sure he did not spread TB to others. It was during this time that Jerry began to really think about making changes in his life. He knew he had to contact the VA and begin the process of recovery. He was soon admitted to the Texas Center for Infectious Disease. While being treated for TB at the hospital, Jerry began to get help from hospital staff for other health problems, and legal issues from his past. He was able to get a driver's license and was able to renew his electrician's license. He was even able to get a job at the hospital as an electrician. When Jerry reflects on his journey with TB he is amazed at where it led. He now is a TB advocate and wants those with TB now to know that they too will get better. He says, "My biggest message would be, you're going to have to be patient because it is a lengthy process to be cured, but you are going to be cured." 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/jerrystory.htm>

For more news, please also take a look at our top 3 picks for April 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 APRIL

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 April:

1. Study Finds that One Immune Cell Directs Another to Aid Tuberculosis Control

A new study in mice and non-human primates (NHP) by scientists at the University of Chicago (UChicago), and Washington University in St. Louis, has now shown how B cells in the lung granulomas, that are characteristic of tuberculosis, direct a population of T cells to help control the infection. As the lead scientist and her team narrowed down the potential functions of the B cells, they found that the helper T cells express transcription factors that in turn generate T-cell subtypes, including T follicular helper (TFH)-like cells that localize within the granuloma tissue. They discovered that it is these TFH-like cells that activate macrophages to keep the TB infection in check by surrounding and killing infected cells, but that it is the B cells that tell them where to go and localize within the granulomas. In effect, rather than directly controlling TB themselves, the B cells are pointing the TFH-like cells in the right direction to do the job. The findings could potentially help in the future development of a vaccine against TB that triggers the right kind of immune response to stop the infection from taking hold. To learn more about the research, you can access the full paper at: <http://dx.doi.org/10.1038/s41590-023-01476-3>

2. Systematic Review of Prevalence and Types of Anemia among People with Tuberculosis in Africa

Anemia is frequently manifested among people with TB in Africa, with prevalence ranging from 25% to 99%. The presence of anemia is associated with an increase in an individuals' susceptibility to TB and poor treatment outcomes. This systematic review aimed to estimate the prevalence of anemia among newly diagnosed people with TB in Africa. A total of 1408 studies were initially identified and seventeen studies with 4555 people with TB were included in the analysis. The finding indicates that anemia is a common co-morbidity present among people with TB, especially among females. Mild anemia and normocytic normochromic anemia were more common at TB diagnosis. Given the finding that anemia is a common co-morbidity present among people with TB in the Africa region, it is recommended to instigate a routine anemia screening at TB diagnosis to improve treatment outcomes. To learn more, you can read the paper here: <https://www.nature.com/articles/s41598-023-32609-1>

3. New Algorithms Could Improve Pediatric Tuberculosis Diagnosis

Many children with pulmonary tuberculosis remain undiagnosed and untreated with related high morbidity and mortality. Researchers at Yale University have aimed to evaluate the performance of currently used diagnostic algorithms and to use prediction modelling to develop evidence-based algorithms to assist in tuberculosis treatment decision making for children presenting to primary health-care centres. The researchers adopted an evidence-based approach to develop pragmatic algorithms to guide tuberculosis treatment decisions in children, irrespective of the resources locally available. This approach may empower health workers in primary health-care settings with high tuberculosis incidence and limited resources to initiate tuberculosis treatment in children to improve access to care and reduce tuberculosis-related mortality. Future prospective evaluation of algorithms, including those developed in this work, is necessary to investigate clinical performance. You can learn more and access the full paper here: [https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642\(23\)00004-4/fulltext](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(23)00004-4/fulltext)

DID YOU KNOW?

TB disease in children under 15 years of age (also called pediatric tuberculosis) is a public health problem of special significance because it is a marker for recent transmission of TB. Furthermore, infants and young children are more likely than older children and adults to develop life-threatening forms of TB disease, such as disseminated TB and TB meningitis. Among children, the greatest numbers of TB cases are seen in children younger than 5 years of age, and in adolescents older than 10 years of age. Below is a brief overview of data related to pediatric tuberculosis in the United States:

- In 2021, U.S. state, local, and territorial health agencies reported a total of 7,882 TB cases to the CDC. Of those cases, there were 317 cases of TB disease among children ages 14 years or younger in the United States.
- Overall, in 2021, 4% of U.S. TB cases occurred among children less than 15 years of age.
- Approximately 20% of children with TB are born outside the US, with about 43% being of Hispanic origins and 20% are Asian.
- Children over 2 years of age can be treated for latent TB infection with once-weekly isoniazid-rifapentine for 12 weeks. Alternative treatments for latent TB infection in children include 4 months of daily rifampin or 9 months of daily isoniazid.
- TB disease in children is treated by taking several anti-TB medicines for 4, 6, or 9 months, depending on the treatment regimen.

Information Source:
<https://www.cdc.gov/tb/topic/populations/tbinchildren/default.htm>