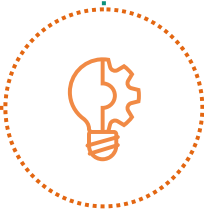




WHY THE STUDY?

Tuberculosis (TB) affects more men than women worldwide, and men are known to face greater exposure to the bacteria that cause TB – *Mycobacterium tuberculosis* (Mtb) – from adolescence onward. But it was not known when, or why, this gap between men and women begins, particularly in African cities where TB remains a major public health problem.



WHAT WE DID

Between January 2023 and March 2024, our team visited randomly selected households across 33 neighbourhoods of Blantyre City, Malawi, and invited adolescents and adults aged 10–40 years to take part. We collected a blood sample from 2,833 participants and tested it for signs of past exposure to Mtb bacteria, using a blood test called the QuantiFERON-TB Gold Plus (QFT-Plus) assay. QFT-Plus is a blood test that checks for signs of past TB exposure, known as ‘immunoreactivity’.



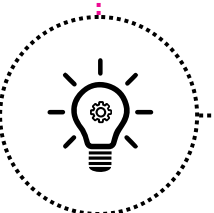
HOW WE ANALYSED

We used statistical models to estimate how the likelihood of a positive test changed with age and sex, and how quickly people were newly acquiring infection at each age. We also examined whether other factors – including HIV status, tobacco smoking, alcohol use, household circumstances, and neighbourhood crowding – were linked to test results.



WHAT WE FOUND

Overall, 18% of participants (503 of 2,833) showed signs of past TB infection. Teenage boys and girls (aged 10–19) had a similar chance of testing positive. But by their twenties, young men were substantially more likely to test positive than young women (26% versus 18%). The gap was widest around age 21, when men’s risk of newly acquiring infection was 58% higher than women’s, before narrowing again in later adulthood. Smoking and alcohol use – both markedly more common among men in our study – were associated with a higher chance of infection, as was living in more densely populated neighbourhoods.



WHAT THIS MEANS

Adolescence and early adulthood appear to be the period when men start facing substantially greater risk of TB infection than women, likely reflecting changing social contact patterns as young men move through school, work and social spaces. Reaching boys and young men with prevention tools – such as future TB vaccines or preventive treatment – during this window, and tackling shared risk factors like smoking and alcohol use, could help close the gap between men and women and reduce onward TB transmission in the wider community.



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