

New vaccines targeting adults and teens are best chance to eliminate tuberculosis by 2050

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Targets to eliminate tuberculosis (TB) by 2050 are more likely to be met if new vaccines are developed for adults and adolescents instead of for infants, according to new research published in the journal *Proceedings of the National Academy of Sciences*.

Researchers at the London School of Hygiene & Tropical Medicine and the Stop TB Department at the World Health Organization found that a vaccine given to [adolescents](#) and adults in low- and middle-income countries could have a much larger impact on the burden of TB worldwide and is more likely to be cost-effective, even if the vaccine has low efficacy and short duration or carries a high price.

TB mostly affects young adults and kills more than one million people every year, 95% of whom are in low- and middle-income countries. The World Health Organization has set the goal of eliminating TB by the year 2050.

The researchers used a mathematical model to estimate the impact and cost-effectiveness of a range of vaccination strategies in low- and middle-income countries. Assuming these vaccines become available in 2024, they identified which strategy would have the greatest impact on TB worldwide over the years 2024 to 2050.

Lead author Gwen Knight, research fellow in infectious disease modelling at the London School of Hygiene & Tropical Medicine, said: "Dramatic levels of control are needed to eliminate TB and new vaccines

need to be developed now. But because trials of TB vaccines are hugely expensive, their development needs very clear guidance. If elimination by 2050 is the goal, our study provides evidence that new vaccines should focus on targeting adolescents and adults rather than children."

The current TB [vaccine](#), bacille Calmette–Guérin (BCG), is widely given to [infants](#). But despite this, TB cases and deaths remain extremely high. Previous studies have suggested that TB elimination can only be achieved through the use of new vaccines.

The authors note the limitations of the study include large levels of uncertainty for their estimates and these should be interpreted as magnitudes of difference rather than precise predictions.

More information: Gwenan M. Knight, Ulla K. Griffiths, Tom Sumner, Yoko V. Laurence, Adrian Gheorghe, Anna Vassall, Philippe Glaziou, Richard G. White. Impact and cost-effectiveness of new tuberculosis vaccines in low- and middle-income countries. *Proceedings of the National Academy of Sciences*. [DOI: 10.1073/pnas.1404386111](https://doi.org/10.1073/pnas.1404386111)

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