

# BCG vaccine more effective than previously thought

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The BCG vaccine has been found to be more effective against the most common form of tuberculosis than previously thought, according to a new study in *Clinical Infectious Diseases*.

Bacillus Calmette Guérin (BCG) [vaccine](#) is included in the childhood vaccination programme of many countries, and is the only licensed vaccine against [tuberculosis](#) (TB). However, it has previously been thought to only be effective against the less common forms of the disease that occur away from the lungs. Its efficacy against pulmonary TB, found in the lungs and by far the greatest burden of TB, has varied widely depending on location, ranging from 0% in South India to 80% in the UK.

In order to better understand the reason behind this variability, researchers led by the London School of Hygiene & Tropical Medicine conducted a systematic review of global literature on all reported BCG trials across 10 medical electronic databases, looking at the factors affecting its level of protection against pulmonary TB.

The research shows for the first time that the BCG vaccine is actually highly protective against pulmonary TB in all parts of the world, including significant protection when administered in the tropics.

The main reason for the apparent variation in protection against disease seen in previous studies was found to be due to prior infection reducing the efficacy of the vaccine. BCG vaccination for those with no history of

prior TB infection, including young infants, showed a much higher efficacy against pulmonary TB.

The study therefore highlights a new role for BCG in fighting pulmonary TB, a need for early vaccination, and further suggests that any new TB vaccine based on BCG will also need to be administered before infection has occurred.

Lead author Dr Punam Mangtani, Clinical Senior Lecturer in Epidemiology at the London School of Hygiene & Tropical Medicine, said: "This research corrects a longstanding misconception that BCG is ineffective against pulmonary disease, and confirms its importance in controlling the major burden from TB and main source of transmission in all settings. Now that we know previous infection can lower the protection provided by the vaccine, it is important that BCG is given as early as possible in a person's life, and ideally immediately after birth."

Provided by London School of Hygiene & Tropical Medicine

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