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Tuberculosis prevention in children: a prospective community-based study in South Africa

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In high TB burden communities, preventive therapy substantially reduces risk of TB among child contacts, especially those who are <5 years of age, living with HIV, recently TB exposed or have a positive *M. tuberculosis*-specific immune response <https://bit.ly/3dKHpUc>

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ABSTRACT Tuberculosis (TB) preventive therapy reduces TB risk in children. However, the effectiveness of TB preventive therapy in children living in high TB burden settings is unclear.

In a prospective observational community-based cohort study in Cape Town, South Africa, we assessed the effectiveness of routine TB preventive therapy in children ≤15 years of age in a high TB and HIV prevalence setting.

Among 966 children (median (interquartile range) age 5.07 (2.52–8.72) years), 676 (70%) reported exposure to an adult with TB in the past 3 months and 240 out of 326 (74%) eligible children initiated isoniazid preventive therapy under programmatic guidelines. Prevalent (n=73) and incident (n=27) TB were diagnosed among 100 out of 966 (10%) children. Children who initiated isoniazid preventive therapy were 82% less likely to develop incident TB than children who did not (adjusted OR 0.18, 95% CI 0.06–0.52; p=0.0014). Risk of incident TB increased if children were <5 years of age, living with HIV, had a positive *Mycobacterium tuberculosis*-specific immune response or recent TB exposure. The risk of incident TB was not associated with sex or *Mycobacterium bovis* bacille Calmette–Guérin vaccination status. Number needed to treat (NNT) was lowest in children living with HIV (NNT=15) and children <5 years of age (NNT=19) compared with children of all ages (NNT=82).

In communities with high TB prevalence, TB preventive therapy substantially reduces the risk of TB among children who are <5 years of age or living with HIV, especially those with recent TB exposure or a positive *M. tuberculosis*-specific immune response in the absence of disease.