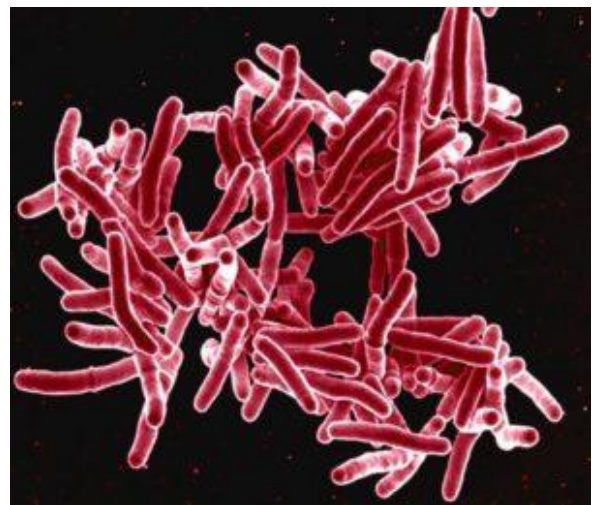


# Mycobacterium tuberculosis tricks body into autoimmunity



Mycobacterium tuberculosis  
(Public Health Image  
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*Mycobacterium tuberculosis* is responsible for causing tuberculosis (TB) disease, a disease which killed over 1.5 million people in 2014 according to the CDC. The bacteria usually affects the lungs but can invade other organs such as the bones, skin and joints causing extra-pulmonary TB disease.

Although there is a childhood vaccine against TB known as BCG, its efficacy decreases with age and by an adolescent age the vaccine is no longer protective. There is no adult vaccine for TB and although there are effective anti-TB drugs, the course of treatment takes several months and drug-resistance is

common. Therefore, there is a need to find novel treatments and an adult vaccine to stop the TB pandemic.

Paul Elkington at the University of Southampton and his team believe that one of the fundamental mechanisms that *M.tuberculosis* uses to exert its pathogenicity on the body has been overlooked. This mechanism is the bacteria triggering an autoimmune response in the body. They reviewed scientific literature on both clinical and experimental models to better understand what role the bacteria plays in causing the body to fight itself.

The researchers believe that TB triggers the body to fight against its own lung cells. The damaged lung coughs up more *M.tuberculosis* and this causes the bacteria to survive as it spreads to other people. The researchers found that patients with TB develop symptoms related to autoimmune diseases such as rheumatoid arthritis. These symptoms are not a direct result of the *M.tuberculosis* itself but are due to the bacteria causing an autoimmune response in the body.

To validate this hypothesis further, the researchers plan to look at cells from participants infected with TB and look into how the bacteria damages the lung tissues. This research may provide better insights into how best to treat the disease and how current methods are lacking.

Journal Article: [Elkington et al., 2016. Tuberculosis: An Infection-Initiated Autoimmune Disease? Trends in Immunology](#)

Article by Thandeka Moyo