

### COMBINING MEDICINE AND RESEARCH TO TREAT CHILDREN WITH TUBERCULOSIS

DR JAMES SEDDON

#### TO MAKE THE MOST OUT OF THIS SCRIPT, YOU COULD:

- Stick it in your book as a record of watching James' animation
- Pause the animation and make notes as you go
- Add your own illustrations to the sheet
- Create your own animation to accompany it
- Add notes from classroom discussions
- Make notes of areas you will investigate further
- Make notes of key words and definitions
- Add questions you would like answered – you can message James through the comments box at the bottom of his article: [www.futurumcareers.com/combining-medicine-and-research-to-treat-children-with-tuberculosis](http://www.futurumcareers.com/combining-medicine-and-research-to-treat-children-with-tuberculosis)

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## SCRIPT:

In 2020, 1.1 million children were estimated to develop tuberculosis, also known as TB, a potentially fatal disease that primarily affects the lungs.

When someone with TB coughs, they release bacteria into the air. If someone else breathes them in, these bacteria enter that person's lungs, resulting in TB infection.

Many people with TB infection never become ill, as their immune system controls the bacteria in their body. But, if the number of bacteria increases, the person will develop TB disease and become unwell.

The good news is that doctors can test for TB infection, so patients can be treated before the onset of TB disease.

However, some forms of TB bacteria have evolved to become resistant to the standard anti-TB drugs, resulting in multidrug-resistant, or MDR, TB.

If someone is infected with MDR-TB, normal treatments are ineffective, and doctors cannot prevent them developing TB disease.

This is why Dr James Seddon hopes to establish whether a new drug, levofloxacin, can prevent children who have been exposed to MDR-TB from developing TB disease. James is a clinician scientist, working as both a paediatrician and researcher. He divides his time between Imperial College London in the UK, and Stellenbosch University in South Africa.

James and his colleagues are conducting a clinical trial in South Africa to test the effectiveness of levofloxacin. They must assess how many children exposed to MDR-TB progress to TB disease when taking levofloxacin, compared to how many progress to the disease without treatment.

Each child in the trial is randomly assigned to either receive levofloxacin tablets or a placebo tablet containing no treatment.

The medical team regularly examines each child for the six-month duration that the child is given treatment, and for a year afterwards.

Any children who develop TB disease will receive the best possible treatment, so even those receiving the placebo will be better off than children who are not in the trial.

If fewer children receiving levofloxacin progress to TB disease, compared to the children given the placebo, this will be good evidence that levofloxacin is effective at preventing TB disease in children exposed to MDR-TB.

James hopes that global health policies will then be updated so that, in future, all children who have been exposed to MDR-TB will be given levofloxacin, thereby reducing the number of children who die from TB every year.

What could you achieve as a clinician scientist?