TB study sheds light on disease development

A study has shown that certain immune systems react differently when exposed to the bacteria that cause tuberculosis (Mycobacterium tuberculosis or Mtb) than others.

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This research brings scientists one step closer to finding ways of preventing people from developing the disease. People living with HIV are at increased risk of TB, and it is particularly significant that the researchers also found this immune reaction in some people living with HIV.

The study challenges paradigms about what happens after people are infected with Mtb, said Professor Marlo Möller with the Division of Molecular Biology and Human Genetics at Stellenbosch University's Faculty of Medicine and Health Sciences.

"In the past we had a simpler view of what happens after Mtb infection, but the study changes this," says Möller.

Understanding the mechanisms

The tests commonly used to infer Mtb infection are not always able to detect infection in all people. "Not everyone will give a positive test when they've been in contact with the bacteria. Our study has shown some people who test negative have antibodies against the bacteria so they have been in contact with it and maybe the immune system is dealing with it in a different way," Möller says.

“It is important to understand all the processes that happen when you get infected with Mtb and this research assists with this. Understanding the mechanisms of resistance will enable us to develop TB prevention and treatment modalities," she says.

Möller saysit was also significant that the study looked at the two tests commonly used to infer Mtb infection. “They are not a direct test to say you definitely have the bacteria in you. Instead they test the immune system to see if it recognises the bacteria which determines if it has been in contact with the bacteria before.

"It is significant because these persons may have possible alternative mechanisms of clearing infection and preventing progression to TB disease.”

Source: Stellenbosch University