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Australian study indicates an increased risk of TB and COVID-19 in pre-diabetes individuals

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Research at Brisbane's Translational Research Institute found pre-diabetes worsens the impact of TB, causing more severe lung damage.



The laboratory research at Australia's Brisbane's Translational Research Institute found pre-diabetes worsens the impact of tuberculosis (TB), causing more severe lung damage. Pre-diabetic patients are those who have higher-than-normal blood sugar levels, but it's not high enough to be considered Type 2 diabetes.

Mater Researcher Associate Professor Katharina Ronacher said "Our study found that pre-diabetes increases the risk of more severe inflammation in the lungs after infection. Irregularities in blood sugar below the threshold of diabetes were associated with significant changes in the lungs which made it harder for them to ward off bacteria. Our team is now beginning to look at the effects of pre-diabetes in influenza and COVID-19 because we suspect blood sugar irregularities will lead to more severe cases of the diseases."

Pre-diabetes has no obvious symptoms and a third of those with the condition will develop type 2 diabetes unless they make lifestyle changes, such as increased activity and weight loss. However, the research found the immune system bounces back after a change in diet.

"This shows the importance of maintaining a healthy body weight to ward off pre-diabetes and, in turn, bacterial and viral infections. We have set up a model to better study the lung and will use this to test new drugs to improve respiratory infection outcomes, which can ultimately benefit people with and without metabolic diseases" Associate Professor Ronacher said.

The research was a collaboration between Mater Research, The University of Queensland, Australian Infectious Diseases Research Centre and the UQ Diamantina Institute, and can be accessed on the *Frontiers in Cellular and Infection Microbiology* website.