

## 'Genetic Barcode' for Identifying TB Strains



Researchers at the London School of Hygiene and Tropical Medicine in the UK have developed a 'genetic barcode' for easy identification of the different types of tuberculosis (TB), according to a *Medical News Today* report.

"There is increasing interest in new technologies that can assist those treating tuberculosis patients," said lead author Dr. Taane Clark, Reader in the School's Genetic Epidemiology and Statistical Genomics. "This new barcode can be easily implemented and used to determine the strain-type that is a surrogate for virulence." Results of the study have been published in *Nature Communications* journal.

TB, a deadly respiratory disease caused by various strains of *Mycobacterium tuberculosis*, usually involves the lungs although it can affect any part of the body. Antibiotics are used to treat the disease, and treatment usually lasts about six months.

The disease ranks second only to HIV/AIDS as the greatest killer worldwide due to a single pathogen, according to the World Health Organization (WHO). TB causes illness in more than eight million people each year and kills over one million, with most of the deaths recorded in low- and middle-income countries, the WHO reported.

TB bacteria have been evolving alongside humans over the past 70,000 years. These bacteria, experts say, diversify into families of strains that affect different people in different ways. TB is spread from person to person by the germs being sent through the air by carriers sneezing, coughing, or spitting.

In healthy people infected with TB, experts explain, the immune system keeps it at bay. People who are not aware they are infected can carry the pathogen around the world.

### Over 90,000 Genetic Mutations

To track the origins and map how TB spreads around the globe, Dr. Clark and colleagues examined over 90,000 genetic mutations across a global collection of 1,600 *M. tuberculosis* genomes. Their analysis showed that about 7,000 of the more than 90,000 mutations are strain-specific. However, the research team found that only 62 of such mutations were all they needed to code the entire known global family of circulating TB bacteria strains.

The TB barcode is the first to cover all main lineages, and "classifies a greater number of sublineages than current alternatives," the researchers explained.

The research team is making their findings "available to the doctors and scientists working with tuberculosis so that they can more easily know what strains they are dealing with," Dr. Clark said.

In July 2014, *Medical News Today* reported about the WHO's plan to eradicate TB in 33 countries and territories where there are less than 100 cases per million in the population, including the United States.

In the preliminary phase of the plan, the goal is to have fewer than 10 new TB cases per million people per year in the target countries by 2035.

The Centers for Disease Control and Prevention (CDC) report that in 2010, there were 11,182 cases of TB in the United States, a rate of 3.6 cases per 100,000 people.

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