

# Using Space - Time Scan Statistics for High-risk Clusters of Tuberculosis (TB) Disease Incidence in Iran, 2009 - 2014

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## Abstract

Tuberculosis (TB) is a disease caused by bacteria that are spread through the air from person to person. If not treated properly, TB disease can be fatal. People infected with TB bacteria who are not sick may still need treatment to prevent TB disease from developing in the future. Tuberculosis (TB) is currently one of the greatest problems in public health. *Mycobacterium tuberculosis* infects about one third of the world's population, of whom more than 80% are living in developing countries. The incidence and prevalence of TB are very different in various parts of Iran and also throughout the world. Learn to recognize the symptoms of TB disease and find out if you are at risk.

**Keywords:** Tuberculosis; Space; Time scan statistics; Cluster identification; Mapping

## Materials and Methods

The present research is of descriptive type. The required data were gathered from the registered TB reports of Tuberculosis Control Office in the Center for Communicable Disease of the Ministry of Health (MOH). The data were extracted at province level in the time span of 2009-2014. saTScan software was used to analyze the data and to identify high risk clusters. ArcGIS10 was utilized to map the distribution of TB and to demonstrate high risk clusters.

## Results

The most likely clusters were found in Golestan, Sistan and Blochestan, Khorasan Razavi, Khozestan, provinces between 2004 and 2014. It was statistically significant at the p-value below 0.05.

## Conclusions

High risk regions included East and East-North and West-south provinces, particularly, Golestan, Sistan and Blochestan, Khorasan Razavi, Khozestan. More screening tests are suggested to be conducted in high risk regions along with more frequent epidemiological studies to enact Tuberculosis prevention programs.

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**Received** October 15, 2015; **Accepted** November 16, 2015; **Published** November 23, 2015

**Citation:** Shahreki BD, Abadi A, Bashiri Y, Molashahi NS (2015) Using Space - Time Scan Statistics for High-risk Clusters of Tuberculosis (TB) Disease Incidence in Iran, 2009 - 2014. J Biom Biostat 6: 261. doi:10.4172/2155-6180.1000261

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