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Smoking increases risk of TB infection, study finds

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People who smoke have a greater risk of becoming infected with tuberculosis (TB) and of having that infection turn into active TB disease, according to an analysis by researchers at the University of California, Berkeley.

The authors of the study, published in the Feb. 26 issue of the journal *Archives of Internal Medicine*, analyzed 24 studies that included details about smoking and TB outcomes. They found that smokers have a 73 percent greater chance of becoming infected than do non-smokers. For those who are infected, the chances of developing active TB disease are about 50 percent greater in smokers, compared with non-smokers. Overall, a smoker has about a 2.5 times greater risk of contracting active TB than does a non-smoker in the same population.

"Our study is the first systematic, quantitative assessment of TB risks from smoking," said lead author Michael Bates, adjunct professor of epidemiology at UC Berkeley's School of Public Health. "There have been mixed opinions on whether smoking has any relevance to TB. Our review and analysis of the research in this area indicates that there is a connection, and that smoking is a major risk factor for TB."

The results indicate that TB control policies should incorporate tobacco control as one of the preventive interventions, the researchers said.

According to the World Health Organization (WHO), nearly 2 billion people, or one-third of the world's population, are infected with

Mycobacterium tuberculosis, the bacteria responsible for TB. The bacteria can remain latent in the body for decades, kept in check by a normal immune system. However, if the immune system becomes compromised, the bacteria can multiply and cause active TB disease.

"Active TB is often fatal, particularly if left untreated," said Kirk Smith, UC Berkeley professor of environmental health sciences and senior author of the paper. "The risk factors that lead to latent TB infection becoming active are still not well understood, but this study shows that smoking is probably one of the most important. It could be that smoking suppresses the respiratory immune system, allowing latent infections to blossom. Smoking also seems to make people more susceptible to becoming infected in the first place."

In 2003, 8.8 million people worldwide developed active tuberculosis, and each year, an estimated 1.7 million people die from TB.

"Because it increases the number of active TB cases, we estimate that smoking is related to half a million of the 1.7 million TB deaths each year," said Smith.

The researchers noted that concern about TB is growing as the number of HIV infections, which often lead to TB, increases. The increase in multi-drug resistant TB strains is making it more difficult to treat active infections, the researchers added.

"TB is very difficult to deal with," said Smith. "There is a lot of worry about TB in the world. The standard methods of dealing with it - such as finding people who are infected and then treating them - are barely holding ground. Effective prevention measures are needed to help in the battle."

The researchers said that reducing smoking could be an important

element in efforts to control TB. "Currently, smoking cessation is not a part of TB control programs," said Bates. "The evidence from this study suggests that it should be."

Source: UC Berkeley

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