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## **UV lights decrease infectious TB in hospital room air**

The simple intervention of using ultraviolet (UV) lights near the ceiling together with fans may reduce the spread of tuberculosis (TB) in hospitals, and air treatment with negative ionizers may also be effective, according to research published in *PLoS Medicine*.

TB transmission in overcrowded health care facilities is an important public health problem, especially in low resource settings, populations affected by HIV, and locations where drug-resistant TB occurs frequently.

Rod Escombe of Imperial College London and colleagues used guinea pigs housed on the roof of a hospital in Lima, Peru to test whether simple approaches to disinfecting air could reduce transmission of TB. With results from more than 900 guinea pigs, the researchers found that 35% of those exposed to untreated air from patient rooms developed TB infection, compared to 14% in the negative air-ionizer group, and only 9.5% of those breathing air vented from rooms during treatment with upper-room UV lights and mixing fans.

Guinea pigs are susceptible to airborne infection with *M. tuberculosis*, the bacterium that causes TB, and they can therefore be used as a sensitive detection system for infectious particles. By venting air from the rooms of patients with active TB through the guinea pig enclosures, the researchers were able to compare guinea pigs exposed on days when UV lights and air mixing fans were turned on in the patient rooms to other guinea pigs exposed when UV lights were off. The enclosure of a third group of guinea pigs contained the negative air ionizers.

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Citation: Escombe AR, Moore DAJ, Gilman RH, Navincopa M, Ticona E, et al. (2009) Upper-room ultraviolet light and negative air ionization to prevent tuberculosis transmission. *PLoS Med* 6(3): e1000043. doi: 10.1371/journal.pmed.1000043

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