

## WHO: 92% of the world's population breathe polluted air



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The latest air quality estimates from WHO show that 92% of the world's population breathes air which does not meet minimum standards.

The model used represents the most detailed outdoor air pollution-related health data, by country, ever reported by WHO, and combines satellite data, ground station monitors, and transport modelling. It shows where air pollution danger spots are in different countries, and provides a baseline to monitor progress in combating air pollution.

Some 3 million deaths each year are caused by outdoor air pollution (and a further 3.5 million by indoor air pollution). Around two thirds of these deaths occur in the WHO western Pacific and southeast Asia regions, which contain China and India, respectively. "More cities are monitoring air pollution now, satellite data is more comprehensive,

and we are getting better at refining the related health estimates", says Maria Neira, WHO Director at the Department of Public Health, Environmental and Social Determinants of Health in Geneva, Switzerland.

The least polluted air was found primarily in the USA and Canada—both high-income countries. This is probably due to lower dependence on polluting diesel fuel and farming practices that create ammonia and methane. Country-by-country data showed that the countries with the highest death rate connected to air pollution were Turkmenistan, Tajikistan, Uzbekistan, Afghanistan, and Egypt.

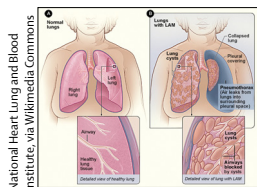
"92% is not a surprising figure given that air pollution is such a problem in the populous megacities of the poorer and developing countries. However, the extent

of pollution and the disparities between rich and poor [countries] should cause great concern and lead to action", says Matthew Peters, associate professor in Respiratory Medicine at the University of Sydney, Australia. "Reducing traffic pollution, burning cleaner fuels, and globally distributing new and improved renewable energy solutions will all contribute, as will reducing population accumulation in megacities and action to stop the annual Asian forest fires."

"Fast action to tackle air pollution can't come soon enough", adds Neira. "Solutions exist with sustainable transport in cities, solid waste management, access to clean household fuels and cook stoves, as well as renewable energies and industrial emissions reductions."

Tony Kirby

## New guidelines for LAM diagnosis and treatment



National Heart Lung and Blood Institute, via Wikimedia Commons

The macrolide sirolimus as opposed to the previous strategy of clinical observation should be used to treat patients with abnormal or declining lung function, according to new guidelines for lymphangioleiomyomatosis (LAM) published in September this year. These guidelines also recommend that patients with both LAM and chylous effusions are treated with sirolimus, patients whose CT scans show cystic abnormalities characteristic of LAM undergo vascular endothelial growth factor D testing before consideration of lung biopsy, and recommend against doxycycline and hormonal therapy treatment for LAM.

The guidelines were a collaborative effort between the American Thoracic Society and the Japanese Respiratory Society, developed by a panel of experts in LAM and methodologists who assessed the quality of the evidence for

each recommendation. Panellists used the available evidence to weigh up the benefits, harms, and cost-effectiveness of each recommendation.

Stephen Ruoss (Stanford University Medical School, CA, USA) welcomed the guidelines: "This work represents an excellent step forward for the management of this rare but important disease. We have a growing set of care options, and these guidelines will serve the patients and providers in the LAM clinical community very well." This optimism was shared by Daniel Dilling (Loyola University Chicago, Chicago, IL, USA) who hoped the guidelines would result in improved care for LAM, which predominantly affects women. He noted that "women too often undergo unnecessary lung biopsies or go untreated for some years even after sirolimus becomes indicated".

Patient perspectives on the research questions to be addressed were

provided through questionnaires distributed to the LAM community by the LAM Foundation (Cincinnati, OH, USA). "These guidelines are a testament to patients with LAM and families who have donated money to fund pivotal LAM research, selflessly assumed risk to participate in randomised trials, and informed the Committee during the development of the recommendations", said lead author and panellist co-chair Frank McCormack (University of Cincinnati, OH, USA), acknowledging the patients' contribution. "The pace of discovery in LAM rivals any in medicine", said McCormack. "Our hope is that these guidelines will help clinicians and patients take full advantage of the new diagnostic and therapeutic tools that have resulted from two decades of purpose-driven research."

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For the LAM guidelines see

<http://www.thoracic.org/about/newsroom/press-releases/resources/lam-guidelines.pdf>