

**COMMUNICATING AIR POLLUTION EXPOSURE: A NOVEL AIR POLLUTION INDEX  
SYSTEM BASED ON THE RELATIVE RISK OF MORBIDITY AND MORTALITY ASSOCIATED  
WITH EXPOSURE  
TO THE COMMON URBAN AIR POLLUTANTS**

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The relationship between ambient air pollution and health remains of primary concern. In a typical urban environment, individuals are exposed to a complex mix of up to 200 air pollutants with a wide range of exposure-response functions and health impacts. Monitoring and modeling may be used to assess pollutant levels, but accurate yet accessible communication of the associated health impacts is problematic. An Air Pollution or Air Quality Index system, a numerical scale indicating the level of air pollution in an area, is widely used for this purpose. The predominant approach employs the relevant national Air Quality Standard (AQS) as a benchmark for calculating the index values, and to associate these index values with general descriptors indicating the expected health impact. This approach has an element of subjectivity, as the AQS may include factors other than health. The national standards of different countries may be different though they are supposedly based on the same underlying epidemiological and controlled exposure data. We propose the use of attributable health risk functions to construct a novel Air Pollution Index System. The proposed system offers a transparent and objective methodology that reflects the empirical epidemiological and controlled exposure data, including observed attributable increases of total mortality, and cardiovascular and respiratory mortality and morbidity. Our index system differs significantly from the United Kingdom and United States' systems.