



NO₂ possible effects on human health in French Guiana

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The International Agency for Research on Cancer (IARC) recently declared air pollution carcinogenic to humans. Humans are continuously exposed to nitrogen dioxide (NO₂) emissions, a strong oxidizing pollutant commonly found in urban air and homes with unvented combustion appliances. Children and Individuals with asthma have been reported to be more sensitive to NO₂ exposure.

Long-term exposure to NO₂ pollution has been reported to induce defective pulmonary function, inflammation, irritations, respiratory infections like bronchitis, lung fibrosis, asthma exacerbation and an increase in inhalational allergies. Pollution peaks are responsible for older people premature death in city.

According to W H O guideline values for NO₂ emissions, a 1-hour level of 200 µg/m³ (0.1 ppm) and daily annual average of 40 µg/m³ (0.02 ppm) can be a real danger to human health. In general, current exposures in Europe are below this range. However, climate warming changes NO₂ emissions and can become a real public health problem in few years.

We will study here the temporal series of NO₂ variation from data measurement campaigns of 2010 and 2014 in Cayenne city, the French Guiana capital. In this urban zone, NO₂ is mainly created by cars traffic. Only 40% comes from combustion in thermal electric plan. A statistical approach will be used to compare NO₂ Cayenne level to the daily and the annual threshold. Finally the NO₂ evolution related to the climate warming and the growth of road traffic in French Guiana for the next year will be discussed.