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Global climate change, ground-level ozone and human health

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Heat waves, ambient ozone and smoke from forest fires have a drastic impact on urban populations, which could increase with climate change. Ozone (O₃) is a well-documented respiratory oxidant, but increasing epidemiological evidence points to extra-pulmonary effects, including positive associations between ambient O₃ concentrations and cardiovascular, respiratory morbidity and mortality. We used statistical analysis for the time series of daily emergency admissions interrelationship with cardiovascular diseases and daily average temperature (T^oC) of air and 24-hour average ambient ozone levels for summer months 2008, 2009 and 2010 in Vyatskie Polyany. In Moscow we used statistical analysis for the time series of daily emergency admissions interrelationship with respiratory diseases, mortality and daily max. 1-h ozone levels for summer 2010. Lower concentration of ozone and high T^oC no association with cardiovascular diseases. The influence 24-hour average ambient ozone more than 60mkg/m³ sixteen days are associated with increased emergency admissions with cardiovascular diseases. The smoke from forest fires has not increased quantity emergency admissions in Vyatskie Polyany. In Moscow the acute effects of high ozone levels on mortality and respiratory diseases have been shown to vary with age and to be unfavorable to the elderly. Ozone modified temperature effects on cardiovascular diseases of the population in Vyatskie Polyany the summer of 2010. In Moscow the acute effects of high ozone levels on mortality and respiratory diseases have been shown to vary with age and to be unfavorable to the elderly.

Biography

Sergey N Kotelnikov graduated from the Moscow Institute of Engineers of Civil Aviation in 1982 and is a Researcher of General Physics Institute, A M Prokhorov Russian Academy of Sciences. His research interests include study of the mechanisms of formation of ground-level ozone and its effects on living systems. He is the author of 42 scientific publications.

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