

Love and allergies in the city beautiful—Chandigarh, India

Authors' reply

We thank Kapil Goyal and Mini Singh for their interest in our recent Article¹ and Comment.² While we agree generally that increases in urban greenery can lead to increases in pollens in the atmosphere, the evidence for a corresponding increase in allergy ailments is inconsistent.³ Although we cannot comment on the situation in Chandigarh specifically, a Spanish cross-sectional study⁴ of around 3000 children found no association between current asthma or allergic rhinoconjunctivitis and living near a forest, or with greenness measured within either 100 m, 250 m, 500 m, or 1000 m around the home. A recent cross-sectional study⁵ from England found that green space, gardens, and tree density were all associated with reduced hospitalisations for asthma, with varying levels of association depending on the corresponding levels of background air pollution. A large Canadian birth cohort⁶ also reported decreased risk of developing asthma associated with residential surrounding greenness among preschool children (but no association among school-aged children). Elsewhere, another Canadian study⁷ reported that exposure to air pollution, but not greenness, was associated with increased risk of development of asthma.

In our view, the existing evidence does not support the notion of a linear association between greenness and allergy ailments, suggesting that pollen levels alone do not explain any observed associations with allergic response, and that other environmental and sociodemographic characteristics, including medication use, might play an important role. As we described in our article, the benefits of increased urban trees and greenness have been associated in different contexts with reduced concentrations and exposures to air pollution, reduced exposures to noise and to extreme temperatures, ultraviolet protection, and increased opportunities for physical activity and social interactions. Thus, it is plausible that, in some cases, the protective effects of greenness could reduce pollen allergy response, in spite of increased exposure.

Overall, we agree with the authors that strategic planting of specific kinds of trees and plants, in terms of species and genotype, is necessary for the purposes of maximising benefits to population health. We also acknowledge that when assessing the potential impacts of greenness on population health one needs to consider the complex interplay between the various environmental and social determinants of health pathways that could vary across a diverse series of adverse health outcomes.

We declare no competing interests.

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