

Publication

Greenspace exposure and cancer incidence: a 27-year follow-up of the French GAZEL cohort

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BACKGROUND: Greenspace exposure has been suggested to be associated with a range of health outcomes. The available evidence on the association of this exposure with cancer is still very scarce and inconsistent. **OBJECTIVES:** We aimed to study the association between greenspace exposure and all-site and site-specific (prostate, breast, colorectal, bladder, lung, and malignant melanoma of skin) cancer incidence in the GAZEL cohort. **METHODS:** This study was based on over 27 years of follow-up (1989-2016) of 19,408 participants across France. We assessed the residential greenspace exposure within several buffers as well as residential proximity to green spaces (agricultural, urban, and forests) in each follow-up. We used time-dependent Cox models, controlling for time-varying personal and area-level variables, with different lags between exposure and outcome. Additional analysis was conducted according to the urban-rural residence of the participants' over follow-up. **RESULTS:** Over the 294,645 person-years of follow-up, we registered 4075 incident cases of cancer. We found an increase in the risk for all-sites cancer with an inter-quartile range increase of Normalized Difference in Vegetation Index across different buffers (hazard ratio (HR) of 1.08; 95% CI: 1.02, 1.14 for the 100 m buffer). We found a positive association of all-sites cancer with proximity to agricultural lands (HR: 1.03; 95% CI: 1.00, 1.05), and forests (HR:1.04; 95% CI: 1.00, 1.07), but not with urban green spaces. The cancer site-specific analyses suggested a protective role of greenspace for breast, lung, and colorectal cancers (e.g. breast cancer HR at 100 m buffer: 0.82; 95% CI: 0.69, 0.99). Non-significant associations were observed for prostate, bladder, and skin cancer. Stratified analyses based on urban, semi-urban, and rural classification did not suggest any differential pattern. **CONCLUSION:** We identified an increased risk of all-site cancer with increased greenspace and proximity to agricultural lands and forests; whereas potential protective role of greenspace for breast cancer.

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