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**Greenspace exposure and dimensions of depressive symptoms: findings from the French CONSTANCES cohort**

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**ABSTRACT**

**BACKGROUND AND AIM** - The association between greenspace exposure and different dimensions of depression is yet to be established. We aimed to explore this association in a large population-based cohort. **METHODS** - Data from the enrollment phase of the French CONSTANCES cohort (2012-2020) were analyzed cross-sectionally. Depressive symptoms were measured by the Centre of Epidemiologic Studies Depression (CES-D) questionnaire allowing to compute a total CES-D score ( $\geq 19$  used as a cutoff score to identify individuals at risk for clinical depression), and including four dimensions (depressed affect, disturbed interpersonal relations, low positive affect, somatic complaints). Residential surrounding greenspace exposure was quantified using the satellite-based Normalized Difference Vegetation Index (NDVI) at 300m buffer during the enrollment year. Adjusted multiple logistic and linear regression models were developed, reported as odds ratio [OR] for dichotomized total depressive symptoms, and  $\beta$  for dimension-scores, with a 95% confidence interval [CI] for an interquartile range [IQR] increase in exposure. Analyses stratified by personal and socioeconomic variables were performed. **RESULTS** - In total 185,781 participants were included (age:  $46.80 \pm 13.61$  years, 53.5% women). Residential surrounding greenness (average NDVI: 0.53; IQR=0.28) was significantly associated with lower odds of having depressive symptoms (OR [95%CI]: 0.94 [0.90-0.99]). This exposure was also associated with a lower scores for all dimensions ( $\beta$  [95% CI]: -0.043 [-0.053: -0.033]; -0.016 [-0.026:-0.006]; -0.020 [-0.030:-0.010]; and -0.019 [-0.029:-0.009] for depressed affect, disturbed interpersonal relations, low positive affect, and somatic complaints, respectively). We found suggestions for potentially stronger protective associations in men and participants with lower income. **CONCLUSION** - Residential surrounding greenspace was associated with lower depressive symptoms in general, and all four dimensions especially depressed affect and somatic complaints. Considering depression prevalence, its burden, and the increasing trend of urbanization, our finding is of importance for policymakers.

**KEYWORDS:** Nature; Greenspace; Mental health; CONSTANCES Cohort

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