Surrounding greenness and birth weight: results from the GINIplus and LISAplus birth cohorts in Munich.

We investigated the association between surrounding greenness at the mother’s residential address at the time of delivery and birth weight in two German birth cohorts and explored potential underlying hypotheses. Complete data on 3203 newborns, recruited in Munich between 1996 and 1999, were available. Surrounding greenness was defined using the mean of the Normalized Difference Vegetation Index, which was derived from Landsat 5TM satellite images. An interquartile increase of surrounding greenness in a 500-m buffer was associated with an average birth weight increase of 17.6g (95% CI=0.5 to 34.6). The effect strengthened after individual adjustment for NO2, PM2.5, distance to major road and population density. The strongest association was found for mothers with less than 10 years of school education. The results remained robust when additionally adjusted for noise or maternal stress during pregnancy. Neighbourhood green spaces were not associated with birth weight. Surrounding greenness at the birth address was positively associated with birth weight in two birth cohorts in Munich. The mechanisms driving this association remain unclear and warrant further investigation.

Health Place