

Publication

Ambient air pollution and newborn size and adiposity at birth : differences by maternal ethnicity (the born in Bradford study cohort)

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 3322170**Author(s)** Schembari, Anna; de Hoogh, Kees; Pedersen, Marie; Dadvand, Payam; Martinez, David; Hoek, Gerard; Petherick, Emily S.; Wright, John; Nieuwenhuijsen, Mark J.**Author(s) at UniBasel** [de Hoogh, Kees](#) ;**Year** 2015**Title** Ambient air pollution and newborn size and adiposity at birth : differences by maternal ethnicity (the born in Bradford study cohort)**Journal** Environmental Health Perspectives**Volume** 123**Number** 11**Pages / Article-Number** 1208-1215

Exposure to ambient air pollution has been associated with reduced size of newborns; however, the modifying effect of maternal ethnicity remains little explored among South Asians.; We investigated ethnic differences in the association between ambient air pollution and newborn's size.; Pregnant women were recruited between 2007 and 2010 for the Born in Bradford cohort study, in England. Exposures to particulate matter ($\leq 10 \mu\text{m}$, PM10; $\leq 2.5 \mu\text{m}$, PM2.5), PM2.5 absorbance, and nitrogen oxides (NOx, NO2) were estimated using land-use regressions models. Using multivariate linear regression models, we evaluated effect modification by maternal ethnicity ("white British" or "Pakistani origin," self-reported) on the associations of air pollution and birth weight, head circumference, and triceps and subscapular skinfold thickness.; A 5- $\mu\text{g}/\text{m}^3$ increase in mean third trimester PM2.5 was associated with significantly lower birth weight and smaller head circumference in children of white British mothers (-43 g; 95% CI: -76, -10 and -0.28 cm; 95% CI: -0.39, -0.17, respectively), but not in children of Pakistani origin (9 g; 95% CI: -17, 35 and -0.08 cm; 95% CI: -0.17, 0.01, respectively) (pint = 0.03 and <0.001). In contrast, PM2.5 was associated with significantly larger triceps and subscapular skinfold thicknesses in children of Pakistani origin (0.17 mm; 95% CI: 0.08, 0.25 and 0.21 mm; 95% CI: 0.12, 0.29, respectively), but not in white British children (-0.02 mm; 95% CI: -0.14, 0.01 and 0.06 mm; 95% CI: -0.06, 0.18, respectively) (pint = 0.06 and 0.11). Patterns of associations for PM10 and PM2.5 absorbance according to ethnicity were similar to those for PM2.5, but associations of the outcomes with NO2 and NOx were mostly nonsignificant in both ethnic groups.; Our results suggest that associations of ambient PM exposures with newborn size and adiposity differ between white British and Pakistani origin infants.; Schembari A, de Hoogh K, Pedersen M, Dadvand P, Martinez D, Hoek G, Petherick ES, Wright J, Nieuwenhuijsen MJ. 2015. Ambient air pollution and newborn size and adiposity at birth: differences by maternal ethnicity (the Born in Bradford study cohort). Environ Health Perspect 123:1208-1215;://dx.doi.org/10.1289/ehp.1408675.

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