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**Title:** Residence in a urban area close to a petrochemical complex and its impact on allergic respiratory diseases in Italian schoolchildren

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**Body:** Aim of the study was to evaluate the influence of living in a urban area close to a petrochemical complex on questionnaire-reported allergic respiratory diseases in children. Between March and December 2012 we evaluated 1,248 schoolchildren (628 M), aged 10-16 yrs, selected from all the junior high schools of Gela (GE, 77,000 inhabitants/637 evaluated subjects), Mediterranean area of Southern Italy, and those of Niscemi (NI, 26,400/354), Mazzarino (MA, 11,800/133), and Butera (BU, 4,900/124), in rural areas respectively 15, 27, and 16 km far from GE. A petrochemical industry, operating since 1965, is located close to the Gela urban area. Parents fulfilled a respiratory questionnaire. Asthmatic bronchitis during the first 2 yrs of life was reported by 10.2% in GE, 8.2 in NI, 5.0 in MA, and 0.0 in BU ( $p=.033$ ,  $\chi^2$  test). Rhinitis in the last 12 months was reported by 28.5% in GE, 15.5 in NI, 19.2 in MA, and 16.7 in BU ( $p=.0002$ ). Doctor diagnosed asthma (A) was reported by 10.1% in GE, 7.7 in NI, 4.4 in MA, and 2.7 in BU ( $p=.014$ ). Use of drugs intended for asthma therapy in the last 12 months was reported by 6.9% in GE, 5.2 in NI, 0.8 in MA, and 1.0 in BU ( $p=.011$ ). In a logistic model, when correcting for parental atopy, passive smoke exposure, mould/dampness at home, personal history for rhinitis, and socioeconomic status, children living in GE show a eightfold risk factor for A with respect to those living in BU (OR 8.2, IC 1.1-61.3,  $p=.04$ ,  $p$  for trend .02). In conclusion, children living in a highly polluted area are at higher risk for developing allergic respiratory diseases. Funded by Operational Cross-border Program Italy-Malta 2007-2013.