Air pollution, PM2.5composition, source factors, and respiratory symptoms in asthmatic and nonasthmatic children in Santiago, Chile

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© 2017 Elsevier Ltd The objective of this study was to determine the association of respiratory symptoms and medication use and exposure to various air pollutants, PM2.5components, and source factors in a panel of asthmatic and nonasthmatic children in Santiago, Chile. To this end, 174 children (90 asthmatics and 84 nonasthmatics) were followed throughout the winter months of 2010 and 2011. During the study period, children filled out daily diaries to record respiratory symptoms and medication use. Air pollution data were obtained from government central site measurements and a PM2.5characterization campaign. PM2.5source factors were obtained using positive matrix factorization (PMF). Associations of symptoms and exposure to pollutants and source-factor daily scores were modeled separately for asthmatic and nonasthmatic children using mixed logistic regression models with random intercepts, controlling for weather, day of the week, year, and viral outbreaks. Overall, high concentration