



ATOPIC ECZEMA/DERMATITIS

## ASSOCIATIONS OF AMBIENT AIR POLLUTION AND MEDICAL CARE VISITS FOR ATOPIC DERMATITIS

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**Background:** Previous studies have reported numerous environmental factors for atopic dermatitis (AD), such as allergens and chemical stimulants. However, few studies have addressed the relationship between ambient air pollution and AD at a population level.

**Objective:** To evaluate the effect of air pollutants on medical care visits for AD and to identify susceptible populations.

**Materials and Methods:** In this time-series study conducted on 513,870 medical care visits for AD from 2012 to 2015 identified by reviewing national health insurance claim data in Incheon, Republic of Korea. Treating daily number of medical care visits for AD as a dependent variable, generalized additive models with Poisson distributions were constructed, which included air pollutant levels, ambient temperature, relative humidity, day of the week, national holiday, and season. Risks were expressed as relative risks (RR) with 95% confidence intervals (95% CIs) per interquartile range increase of each air pollutant.

**Results:** Higher levels of particulate matter of diameter  $\leq 10\mu\text{m}$  (PM10) (RR, 1.009; 95% CI, 1.007–1.012), ozone (1.028; 1.023–1.033), and sulfur dioxide (1.033; 1.030–1.037) were significantly associated with increased risk of medical care visits for AD on same days. In all age and sex groups, ozone was associated with a significantly higher risk of medical care visits, with greatest risk among 13- to 18-year-old males (RR, 1.127; 95% CI, 1.095–1.159).

**Conclusion:** This study suggests relationships of ambient PM10, ozone, and sulfur dioxide levels with medical care visits for AD.

