

SUPPLEMENTAL MATERIAL

Acute Health Impacts of Airborne Particles Estimated from Satellite Remote Sensing

Table of Contents

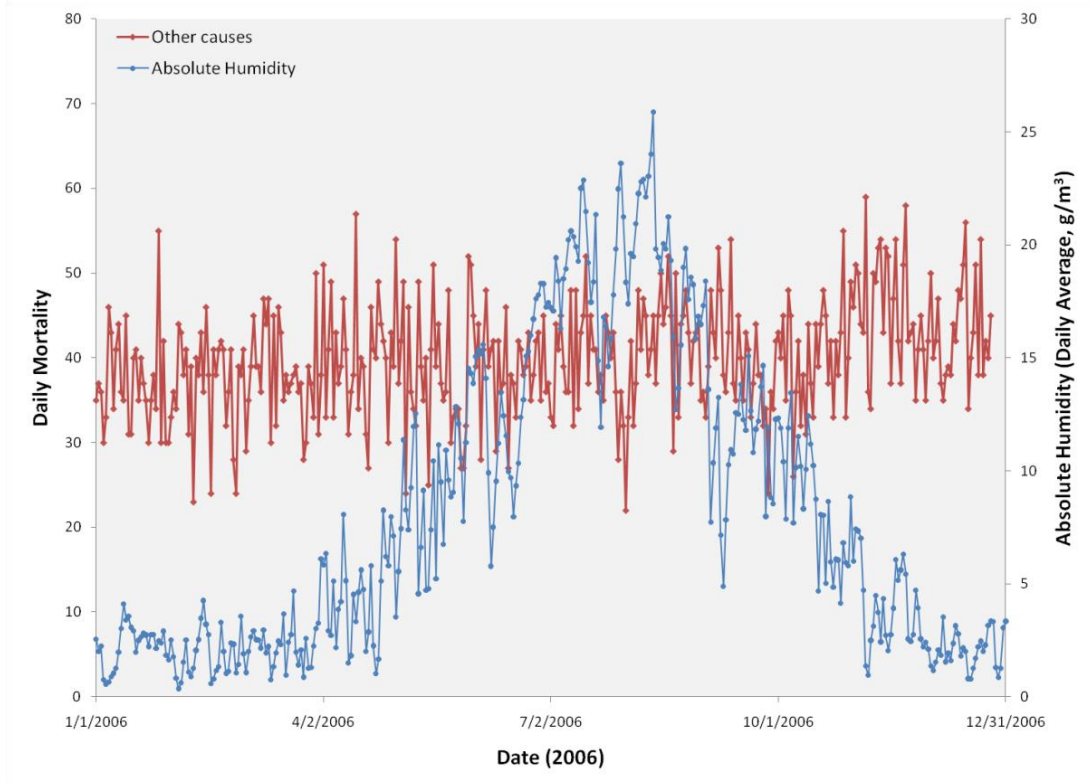
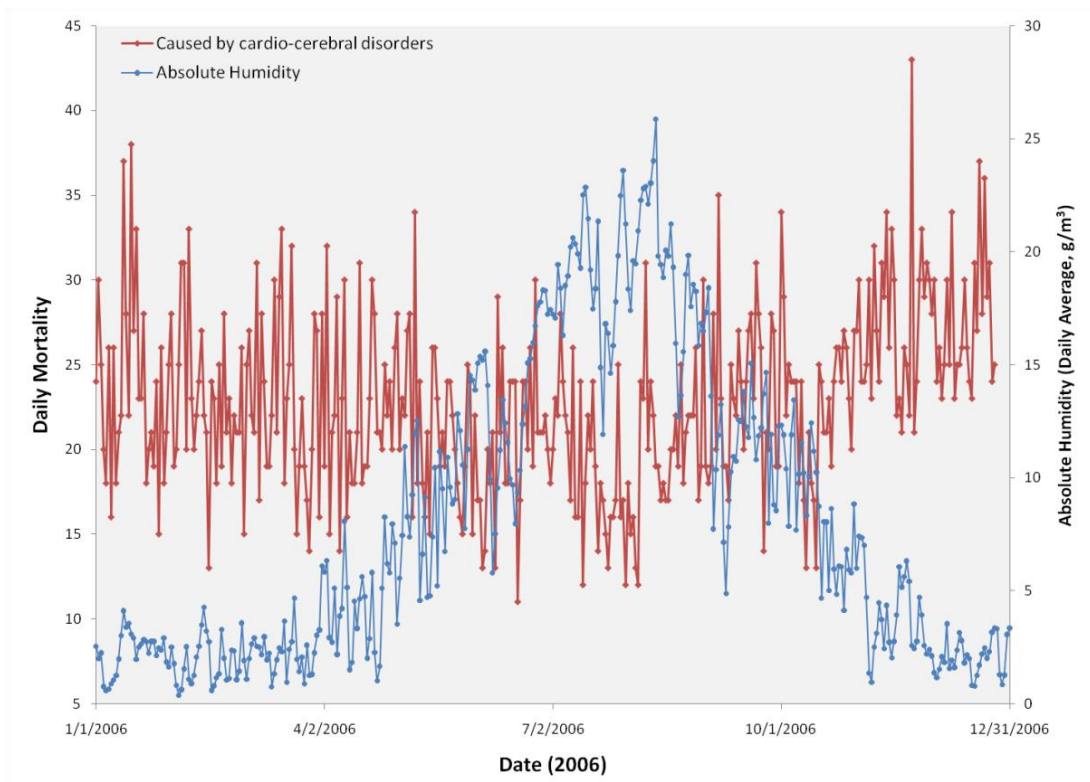
Supplemental Material Table 1. Correlations between meteorological factors and PM assessed by ground and space monitoring.....	3
Supplemental Material, Figure 1. Comparison of annual trends daily average of absolute humidity and daily mortalities for strokes and other causes.....	5
Supplemental Material, Figure2. Comparing current day and lag effects of ground and satellite remote monitored air pollution on daily hospital admissions.	6
Supplemental Material, Figure 3. Heat maps showing the seasonal effects measured by meteorological factors on daily mortality.....	8

Supplemental Material Table 1. Correlations between meteorological factors and PM assessed by ground and space monitoring.

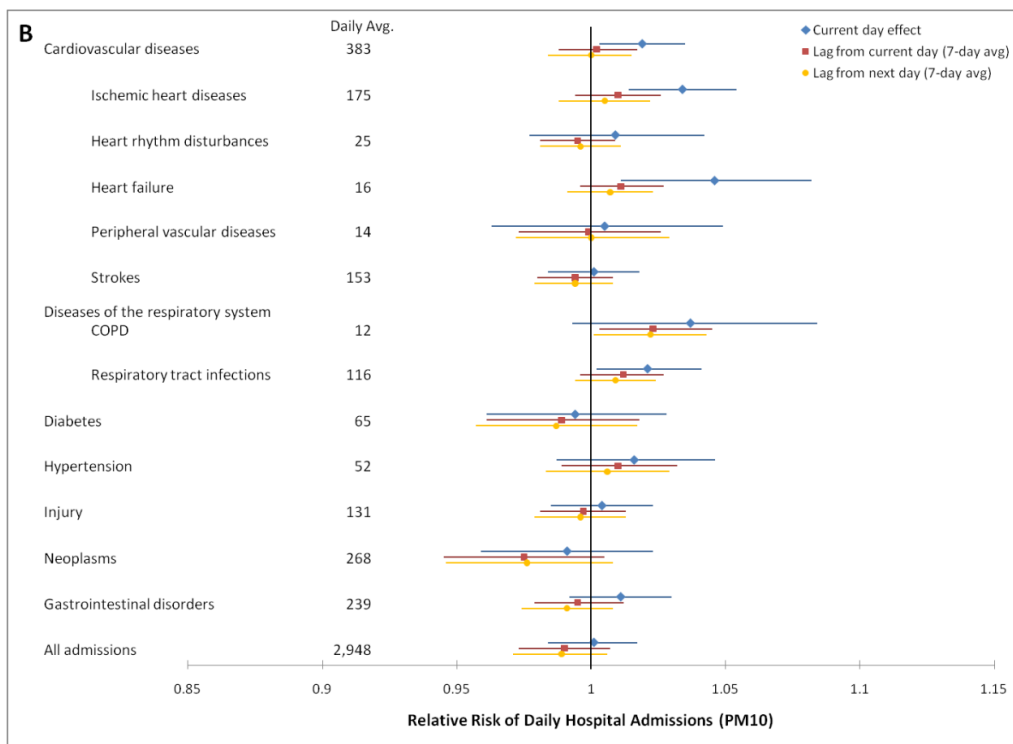
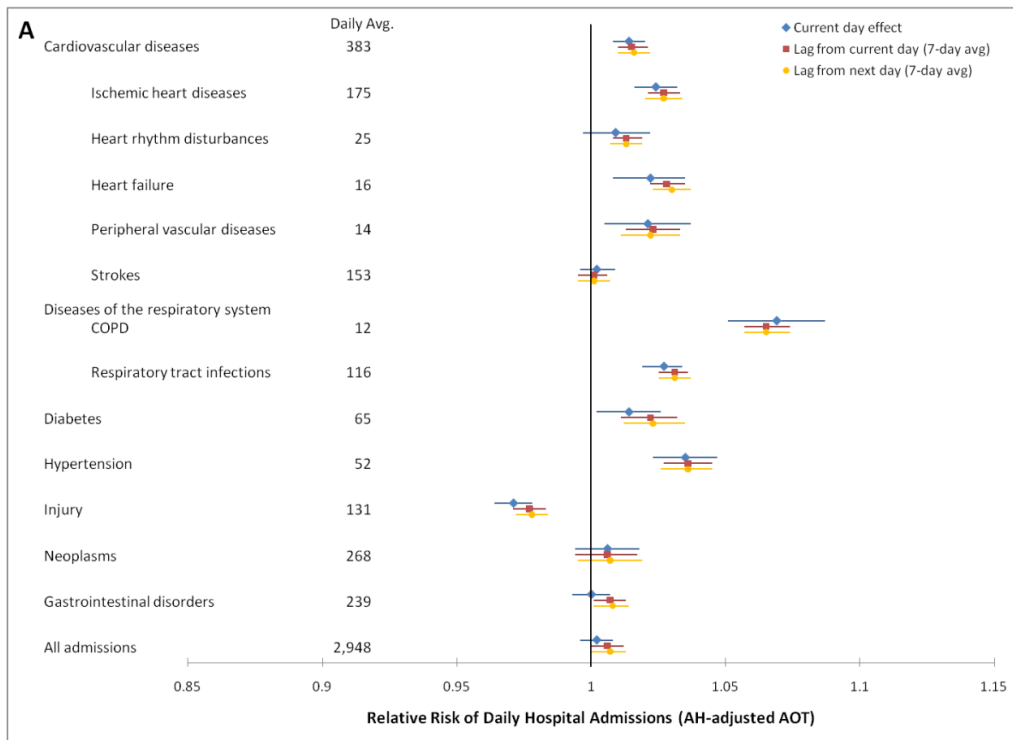
	Atmospheric			Relative	Absolute	AH-calibrated		
	Temperature	pressure	Dew point	humidity	humidity	PM10*	AOD*	AH*
Temperature	1.000	-0.860	0.895	0.392	0.845	-0.164	0.419	-0.411
		<.0001	<.0001	<.0001	<.0001	0.0017	<.0001	<.0001
Atmospheric pressure		1.000	-0.766	-0.350	-0.707	0.021	-0.405	0.279
			<.0001	<.0001	<.0001	0.685	<.0001	<.0001
Dew point			1.000	0.748	0.945	-0.139	0.478	-0.461
				<.0001	<.0001	0.008	<.0001	<.0001
Relative humidity				1.000	0.724	-0.005	0.377	-0.374
					<.0001	0.931	<.0001	<.0001

Absolute	1.000	-0.225	0.454	-0.416
humidity		<.0001	<.0001	<.0001
PM10		1.000	0.220	0.323
			0.0003	<.0001
AOD			1.000	0.558
				<.0001
AH-				1.000
calibrated				
AH				

* Log transformed data.

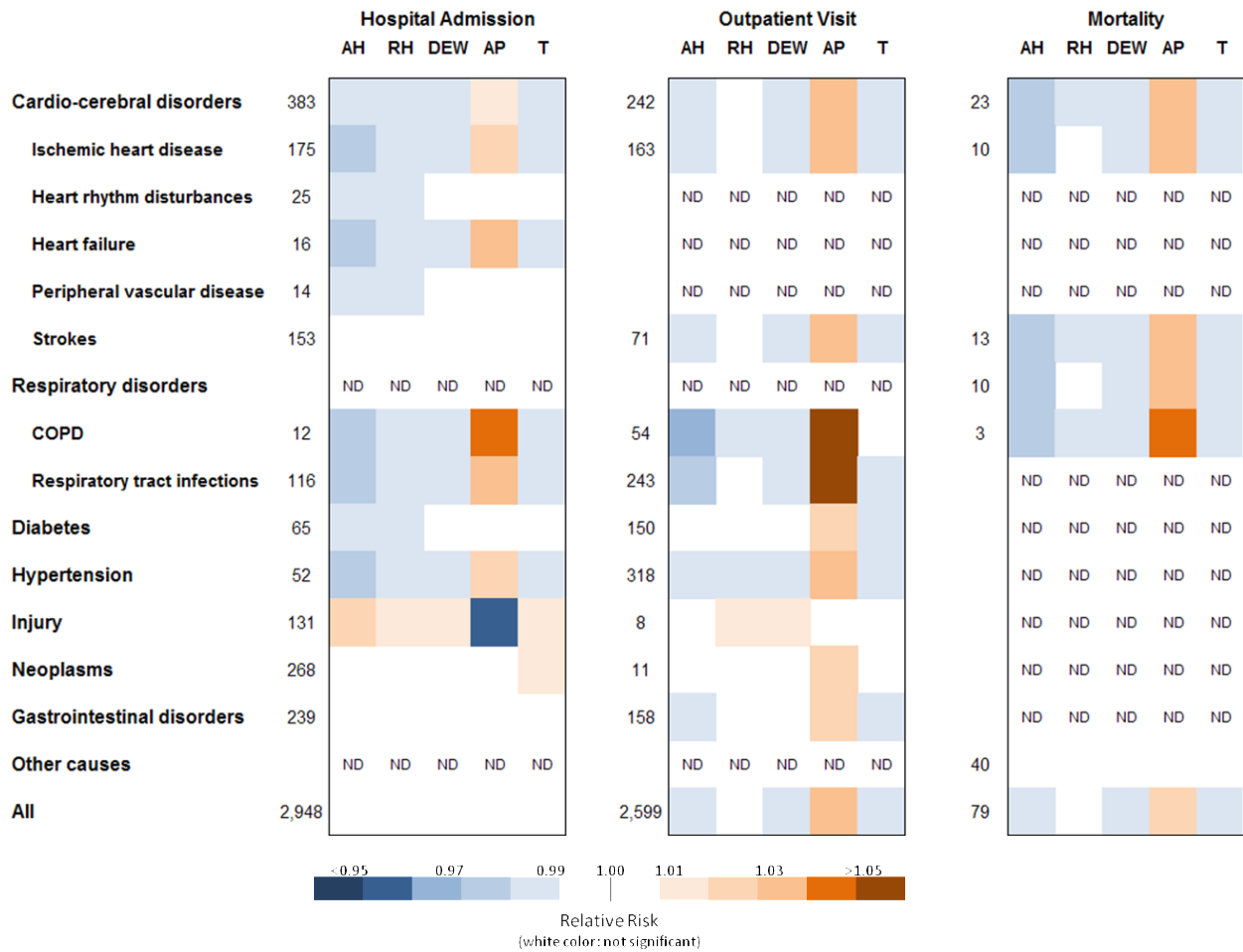


Supplemental Material, Figure 1. Comparison of annual trends daily average of absolute humidity and daily mortalities for strokes and other causes.



Supplemental Material, Figure2. Comparing current day and lag effects of ground and satellite remote monitored air pollution on daily hospital admissions.

In the current day analyses, day of week was included as covariate for AH-calibrated AOD, and absolute humidity and day of week was used as covariates for AOD and PM10. In the lag effect analyses, holiday was included as covariate for AH-calibrated AOD, and absolute humidity and holiday was used as covariates for AOD and PM10. Since there were significant drops of admission before 2007 New Year, we excluded the last week of 2006. The final hospital admission data included 257 days for AH-calibrated AOD and AOD model analyses, and 348 days for PM10 and AH analyses. In all analyses, AH-calibrated AOD, AOD, PM10, and AH were log₂-transformed for easy comparison.



Supplemental Material, Figure 3. Heat maps showing the seasonal effects measured by meteorological factors on daily mortality.

A color coded cell represented a relative risk estimated by generalized linear models corresponding to one unit change of testing meteorological factor, at a significant level of $p < 0.05$. AH, absolute humidity with unit in g/m^3 ; RH, relative humidity with unit in %; DEW, dew point with unit in Celsius scale; AP, atmospheric pressure with unit in $1/10$ inHg; and TF, ambient temperature with unit in Fahrenheit scale. ND, no data available for the analysis.