



**Figure S1.** Power analysis for each aeroallergen based on a range of expected ORs from 1.01 to 1.06. Only total aeroallergens reached a power of 80% in the OR range.

**Table S1.** Acute effects of outdoor aeroallergen counts on the risk of asthma admissions: odds ratios (10-grains/m<sup>3</sup> increase) and 95% confidence intervals through the conditional logistic regression models: overall effects (n=85) of each aeroallergen. Significant effects are in bold.

Lag	Alternaria	Ambrosia	Betula	Cupressus	Graminaceae	Olive	Pinaceae	Urticaceae
Lag 0	<b>1.140</b> [ <b>1.020, 1.275</b> ]	4.922 [0.2, 121.308]	1.473 [0.293, 7.394]	1.034 [0.981, 1.090]	0.939 [0.791, 1.115]	1.751 [0.963, 3.183]	1.056 [0.984, 1.134]	1.192 [0.959, 1.483]
Lag 1	<b>1.101</b> [ <b>1.013, 1.197</b> ]	1.228 [0.120, 12.606]	1.487 [0.492, 4.493]	1.015 [0.980, 1.052]	0.957 [0.855, 1.072]	1.442 [0.979, 2.123]	1.041 [0.991, 1.094]	1.122 [0.965, 1.305]
Lag 2	<b>1.063</b> [ <b>1.002, 1.128</b> ]	0.306 [0.017, 5.640]	1.501 [0.503, 4.481]	0.996 [0.961, 1.033]	0.976 [0.906, 1.052]	1.187 [0.985, 1.431]	1.026 [0.996, 1.058]	1.056 [0.957, 1.166]
Lag 3	1.027 [0.979, 1.076]	0.076 [0.001, 6.291]	1.515 [0.309, 7.416]	0.978 [0.927, 1.032]	0.995 [0.911, 1.086]	0.977 [0.873, 1.095]	1.012 [0.991, 1.033]	0.994 [0.909, 1.087]
Lag 4	0.991 [0.938, 1.047]	0.019 [0.001, 9.310]	1.529 [0.156, 14.964]	0.960 [0.889, 1.037]	1.014 [0.883, 1.165]	0.805 [0.603, 1.074]	0.997 [0.966, 1.029]	0.936 [0.819, 1.07]
Lag 5	0.957 [0.886, 1.034]	0.005 [0.001, 15.192]	1.544 [0.074, 32.238]	0.942 [0.851, 1.044]	1.033 [0.846, 1.262]	0.663 [0.403, 1.088]	0.983 [0.934, 1.035]	0.881 [0.722, 1.074]

**Table S2.** Acute effects of outdoor aeroallergen counts on the risk of asthma admissions overall and by child subgroup: odds ratios (10-grains/m<sup>3</sup> increase) and 95% confidence intervals through the conditional logistic regression models excluding children below 2 years. Significant effects are in bold.

Lag	Overall (n=75)	Outdoor sensitization (n=35)	No outdoor sensitization (n=38)	Females (n=31)	Males (n=44)	0-4 years (n=30)	5-17 years (n=45)
Lag 0	<b>1.054</b> [ <b>1.010, 1.099</b> ]	<b>1.085</b> [ <b>1.004, 1.173</b> ]	1.034 [0.983, 1.087]	1.030 [0.981, 1.082]	<b>1.076</b> [ <b>1.011, 1.146</b> ]	1.031 [0.956, 1.112]	<b>1.065</b> [ <b>1.007, 1.127</b> ]
Lag 1	<b>1.036</b> [ <b>1.007, 1.067</b> ]	<b>1.058</b> [ <b>1.003, 1.115</b> ]	1.021 [0.986, 1.058]	1.023 [0.989, 1.059]	<b>1.050</b> [ <b>1.007, 1.095</b> ]	1.014 [0.962, 1.068]	<b>1.046</b> [ <b>1.007, 1.087</b> ]
Lag 2	<b>1.019</b> [ <b>1.001, 1.037</b> ]	<b>1.031</b> [ <b>1.001, 1.061</b> ]	1.009 [0.985, 1.033]	1.017 [0.991, 1.042]	<b>1.025</b> [ <b>1.001, 1.050</b> ]	0.997 [0.962, 1.032]	<b>1.027</b> [ <b>1.004, 1.052</b> ]
Lag 3	1.002 [0.988, 1.017]	1.004 [0.986, 1.023]	0.997 [0.973, 1.021]	1.010 [0.981, 1.039]	1.000 [0.983, 1.017]	0.980 [0.946, 1.015]	1.009 [0.991, 1.026]
Lag 4	0.986 [0.963, 1.009]	0.979 [0.945, 1.013]	0.984 [0.950, 1.020]	1.003 [0.962, 1.046]	0.975 [0.946, 1.005]	0.963 [0.913, 1.015]	0.991 [0.964, 1.018]
Lag 5	0.969 [0.935, 1.005]	0.954 [0.899, 1.012]	0.972 [0.924, 1.023]	0.997 [0.940, 1.056]	0.952 [0.906, 1.000]	0.947 [0.877, 1.022]	0.973 [0.931, 1.016]

**Table S3.** Acute effects of outdoor aeroallergen counts on the risk of asthma admissions overall and by child subgroup: odds ratios (10-grains/m<sup>3</sup> increase) and 95% confidence intervals through the conditional logistic regression models excluding cases that occurred before the end of March. Significant effects are in bold.

Lag	Overall (n=68)	Outdoor sensitization (n=29)	No outdoor sensitization (n=36)	Females (n=26)	Males (n=42)	0-4 years (n=33)	5-17 years (n=35)
Lag 0	<b>1.064</b> [ <b>1.012, 1.119</b> ]	<b>1.098</b> [ <b>1.003, 1.201</b> ]	1.047 [0.986, 1.112]	1.050 [0.948, 1.164]	<b>1.069</b> [ <b>1.007, 1.134</b> ]	1.032 [0.958, 1.112]	<b>1.087</b> [ <b>1.009, 1.171</b> ]
Lag 1	<b>1.044</b> [ <b>1.009, 1.081</b> ]	<b>1.067</b> [ <b>1.004, 1.133</b> ]	1.032 [0.990, 1.075]	1.037 [0.967, 1.113]	<b>1.047</b> [ <b>1.005, 1.090</b> ]	1.021 [0.970, 1.075]	<b>1.061</b> [ <b>1.008, 1.116</b> ]
Lag 2	<b>1.025</b> [ <b>1.004, 1.046</b> ]	<b>1.037</b> [ <b>1.003, 1.072</b> ]	1.016 [0.989, 1.044]	1.025 [0.982, 1.069]	<b>1.025</b> [ <b>1.002, 1.050</b> ]	1.010 [0.978, 1.043]	<b>1.035</b> [ <b>1.005, 1.066</b> ]
Lag 3	1.006 [0.992, 1.021]	1.008 [0.988, 1.027]	1.001 [0.978, 1.025]	1.012 [0.980, 1.046]	1.005 [0.988, 1.021]	0.999 [0.972, 1.026]	1.010 [0.991, 1.028]
Lag 4	0.988 [0.964, 1.012]	0.979 [0.943, 1.017]	0.986 [0.953, 1.021]	1.004 [0.964, 1.046]	0.984 [0.957, 1.012]	0.988 [0.947, 1.030]	0.985 [0.954, 1.017]
Lag 5	0.969 [0.932, 1.008]	0.952 [0.891, 1.016]	0.972 [0.923, 1.023]	0.988 [0.910, 1.072]	0.964 [0.921, 1.009]	0.977 [0.917, 1.042]	0.961 [0.910, 1.015]

**Table S4.** Acute effects of outdoor aeroallergen counts on the risk of asthma admissions overall and by child subgroup: odds ratios (10-grains/m<sup>3</sup> increase) and 95% confidence intervals through the conditional logistic regression models: time-stratified design. Significant effects are in bold.

Lag	Overall (n=85)	Outdoor sensitization (n=35)	No outdoor sensitization (n=47)	Females (n=36)	Males (n=49)	0-4 years (n=40)	5-17 years (n=45)
Lag 0	<b>1.046</b> [ <b>1.013, 1.081</b> ]	<b>1.101</b> [ <b>1.020, 1.188</b> ]	1.024 [0.984, 1.066]	1.027 [0.990, 1.065]	<b>1.064</b> [ <b>1.016, 1.115</b> ]	1.012 [0.958, 1.069]	<b>1.069</b> [ <b>1.015, 1.124</b> ]
Lag 1	<b>1.031</b> [ <b>1.009, 1.055</b> ]	<b>1.066</b> [ <b>1.013, 1.122</b> ]	1.016 [0.988, 1.045]	1.020 [0.996, 1.045]	<b>1.043</b> [ <b>1.010, 1.076</b> ]	1.006 [0.968, 1.045]	<b>1.047</b> [ <b>1.012, 1.084</b> ]
Lag 2	<b>1.016</b> [ <b>1.003, 1.031</b> ]	<b>1.033</b> [ <b>1.005, 1.061</b> ]	1.008 [0.989, 1.027]	1.013 [0.996, 1.029]	<b>1.022</b> [ <b>1.002, 1.041</b> ]	1.000 [0.976, 1.024]	<b>1.026</b> [ <b>1.006, 1.047</b> ]
Lag 3	1.002 [0.990, 1.014]	1.001 [0.984, 1.018]	0.999 [0.982, 1.017]	1.005 [0.986, 1.026]	1.001 [0.986, 1.016]	0.994 [0.973, 1.015]	1.006 [0.990, 1.021]
Lag 4	0.987 [0.969, 1.007]	0.969 [0.936, 1.003]	0.991 [0.966, 1.017]	0.998 [0.968, 1.030]	0.981 [0.956, 1.006]	0.988 [0.957, 1.020]	0.986 [0.960, 1.012]
Lag 5	0.973 [0.945, 1.002]	0.939 [0.928, 1.001]	0.983 [0.948, 1.020]	0.991 [0.948, 1.037]	0.961 [0.924, 1.001]	0.982 [0.936, 1.030]	0.966 [0.926, 1.007]

**Table S5.** Acute effects of outdoor aeroallergen counts on the risk of asthma admissions overall and by child subgroup: odds ratios (10-grains/m<sup>3</sup> increase) and 95% confidence intervals through the conditional logistic regression models adjusted by apparent temperature. Significant effects are in bold.

Lag	Overall (n=85)	Outdoor sensitization (n=35)	No outdoor sensitization (n=47)	Females (n=36)	Males (n=49)	0-4 years (n=40)	5-17 years (n=45)
Lag 0	<b>1.055</b> [1.011, 1.102]	<b>1.090</b> [1.004, 1.182]	1.035 [0.984, 1.089]	1.038 [0.976, 1.103]	<b>1.064</b> [1.004, 1.128]	1.031 [0.959, 1.110]	<b>1.074</b> [1.010, 1.142]
Lag 1	<b>1.039</b> [1.008, 1.070]	<b>1.061</b> [1.004, 1.121]	1.025 [0.988, 1.062]	1.030 [0.986, 1.075]	<b>1.044</b> [1.003, 1.086]	1.019 [0.969, 1.072]	<b>1.052</b> [1.008, 1.098]
Lag 2	<b>1.022</b> [1.004, 1.041]	<b>1.033</b> [1.002, 1.065]	1.014 [0.989, 1.040]	1.021 [0.991, 1.052]	<b>1.024</b> [1.000, 1.048]	1.008 [0.976, 1.040]	<b>1.031</b> [1.004, 1.058]
Lag 3	1.006 [0.992, 1.021]	1.006 [0.987, 1.025]	1.004 [0.982, 1.026]	1.013 [0.984, 1.043]	1.005 [0.988, 1.022]	0.996 [0.969, 1.024]	1.010 [0.992, 1.028]
Lag 4	0.990 [0.969, 1.013]	0.979 [0.945, 1.015]	0.994 [0.964, 1.024]	1.005 [0.965, 1.047]	0.985 [0.958, 1.013]	0.984 [0.944, 1.027]	0.990 [0.962, 1.018]
Lag 5	0.975 [0.942, 1.009]	0.954 [0.898, 1.013]	0.984 [0.941, 1.028]	0.997 [0.940, 1.058]	0.967 [0.924, 1.011]	0.973 [0.913, 1.037]	0.970 [0.927, 1.015]

**Table S6.** Acute effects of outdoor aeroallergen counts on the risk of asthma admissions overall and by child subgroup: odds ratios (10-grains/m<sup>3</sup> increase) and 95% confidence intervals through the conditional logistic regression models adjusted by nitrogen dioxide (NO<sub>2</sub>). Significant effects are in bold.

Lag	Overall (n=85)	Outdoor sensitization (n=35)	No outdoor sensitization (n=47)	Females (n=36)	Males (n=49)	0-4 years (n=40)	5-17 years (n=45)
Lag 0	<b>1.054</b> [1.011, 1.099]	<b>1.093</b> [1.008, 1.185]	1.037 [0.986, 1.091]	1.034 [0.980, 1.091]	<b>1.073</b> [1.011, 1.139]	1.031 [0.961, 1.106]	<b>1.067</b> [1.008, 1.128]
Lag 1	<b>1.037</b> [1.008, 1.068]	<b>1.063</b> [1.006, 1.122]	1.025 [0.989, 1.063]	1.026 [0.989, 1.065]	<b>1.049</b> [1.007, 1.092]	1.019 [0.971, 1.069]	<b>1.047</b> [1.007, 1.088]
Lag 2	<b>1.021</b> [1.003, 1.039]	<b>1.033</b> [1.002, 1.065]	1.014 [0.990, 1.039]	1.019 [0.992, 1.046]	<b>1.025</b> [1.002, 1.050]	1.007 [0.977, 1.038]	<b>1.028</b> [1.004, 1.052]
Lag 3	1.004 [0.991, 1.019]	1.004 [0.986, 1.023]	1.002 [0.981, 1.024]	1.011 [0.983, 1.040]	1.003 [0.986, 1.019]	0.995 [0.969, 1.022]	1.009 [0.991, 1.026]
Lag 4	0.988 [0.967, 1.010]	0.976 [0.942, 1.012]	0.991 [0.962, 1.022]	1.004 [0.964, 1.046]	0.980 [0.953, 1.008]	0.983 [0.944, 1.024]	0.990 [0.963, 1.018]
Lag 5	0.973 [0.940, 1.007]	0.949 [0.893, 1.009]	0.980 [0.938, 1.024]	0.997 [0.940, 1.056]	0.958 [0.915, 1.003]	0.972 [0.914, 1.033]	0.972 [0.930, 1.016]