Braggio JT, Literature Review of the Contribution of Remote Sensing Exposures to Asthma, Other Respiration Specific Outcomes, and Risk Factors in Greenness, Air Pollution, and Wildfire Ecologic Settings, *Atmosphere* 2024, Supplementary File, Tables S1-S9.

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Table S1: Associations Between Selected Variables and Risk Factors with the Significant Outcome Group: Respiration Group of Asthma and Ecologic Setting of Greenness.

VARIABLES[1]	SIGNIFICANT OUTCOME GROUP[2]			COMMENTS
	NS	SL	SH	
Respiration Group[d]				Selection of the asthma study participants.
Asthma	9 (29.0)	14 (45.2)	8 (25.8)	
Ecologic Setting[d]				Selection of the greenness ecologic setting.
Greenness	9 (29.0)	14 (45.2)	8 (25.8)	
Publication Year[c]				Publication year was not significant.
2009-2016	1 (3.2)	0 (0.0)	1 (3.2)	
2017-2023	8 (25.8)	14 (45.2)	7 (22.6)	
Country[b]				Country was significant. Italy had the highest number outcomes in the SL group, while the United States had the highest number of outcomes in the SH group than other countries.
Australia	0 (0.0)	0 (0.0)	1 (3.2)	
China	0 (0.0)	2 (6.4)	0 (0.0)	
Italy	4 (12.9)	7 (22.6)	0 (0.0)	
Lithuania	0 (0.0)	0 (0.0)	1 (3.2)	
Norway	1 (3.2)	1 (3.2)	0 (0.0)	
Spain	1 (3.2)	0 (0.0)	1 (3.2)	
United States	3 (9.7)	4 (12.9)	5 (16.1)	
Design[b]				Design was significant. More cross sectional design specific outcomes in the SL group.
Case Control	1 (3.2)	1 (3.2)	2 (6.4)	
Cross Sectional	6 (19.4)	9 (29.0)	2 (6.4)	
Prospective Cohort	2 (6.4)	4 (12.9)	4 (12.9)	
Surveillance[a]				Surveillance was significant, with prevalence specific outcomes occurring more often than incidence.
Incidence	1 (3.2)	4 (12.9)	1 (3.2)	
Prevalence	8 (25.8)	9 (29.0)	7 (22.6)	
Other	0 (0.0)	1 (3.2)	0 (0.0)	
ICD-CM[c]				ICD-CM was not significant.
9	2 (6.4)	6 (19.4)	2 (6.4)	
Other	7 (22.6)	8 (25.8)	6 (19.4)	
Questionnaire Dx[c]				Questionnaire Dx was not significant.
No	5 (16.1)	9 (29.0)	6 (19.4)	
Yes	4 (12.9)	5 (16.1)	2 (6.4)	
Medical Dx[c]				Medical Dx was not significant.
No	7 (22.6)	8 (25.8)	6 (19.4)	
Yes	2 (6.4)	6 (19.4)	2 (6.4)	
Preexposure Studies[d]				Outcome could not be evaluated statistically.
No	9 (29.0)	14 (45.2)	8 (25.8)	
Lung Studies[c]				Lung studies variable was not significant.
No	5 (16.1)	9 (29.0)	4 (12.9)	
Yes	4 (12.9)	5 (16.1)	4 (12.9)	
Psychologic Studies[c]				

No	8 (25.8)	12 (38.7)	8 (25.8)	Psychologic studies variable was not significant.
Yes	1 (3.2)	2 (6.4)	0 (0.0)	
Age[a]				Age risk factor was significant, with all outcomes in the SL group.
No	9 (29.0)	10 (32.3)	8 (25.8)	
Yes	0 (0.0)	4 (12.9)	0 (0.0)	
Education/Income[c]				Education/income risk factor was not significant.
No	9 (29.0)	13 (41.9)	8 (25.8)	
Yes	0 (0.0)	1 (3.2)	0 (0.0)	
Ethnicity/Race[c]				Ethnicity/race risk factor was not significant.
No	9 (29.0)	13 (41.9)	7 (22.6)	
Yes	0 (0.0)	1 (3.2)	1 (3.2)	
Environmental[b]				Environmental risk factor was significant, with more outcomes in the SL group.
No	6 (19.4)	3 (9.7)	1 (3.2)	
Yes	3 (9.7)	11 (35.5)	7 (22.6)	
Gender[c]				Gender risk factor was not significant.
No	9 (29.0)	11 (35.5)	8 (25.8)	
Yes	0 (0.0)	3 (9.7)	0 (0.0)	
Geographic[c]				Geographic risk factor was not significant.
No	9 (29.0)	12 (38.7)	7 (22.6)	
Yes	0 (0.0)	2 (6.4)	1 (3.2)	
Psychologic[a]				Psychologic risk factor was significant, with more outcomes in the SL group.
No	9 (29.0)	10 (32.3)	7 (22.6)	
Yes	0 (0.0)	4 (12.9)	1 (3.2)	
Other[c]				Other risk factor was not significant.
No	7 (22.6)	8 (25.8)	5 (16.1)	
Yes	2 (6.4)	6 (19.4)	3 (9.7)	
Single Mechanisms[a]				Single physiologic mechanisms variable was significant, with most outcomes in the SL group.
Immune (IM)	1 (5.0)	2 (10.0)	1 (5.0)	
Oxidative Stress (OS)	1 (5.0)	3 (15.0)	0 (0.0)	
Other (OT)	5 (25.0)	6 (30.0)	1 (5.0)	
Multiple Mechanisms[d]				Outcome could not be evaluated statistically.
IMIN	2 (18.2)	3 (27.3)	6 (54.6)	

[1]Abbreviations: immune-inflammation, IMIN. [2]Significant outcome group: not significant, NS; significantly lower, SL; significantly higher, SH. Each cell entry includes totals (percentages). Significance evaluated with the Chi-Square test, *p*: a, ≤0.05; b, ≤0.01; c, >0.05; bold superscript identifies the use of the exact estimate; d, variable was not evaluated statistically.

Table S2: Associations Between Selected Variables and Risk Factors with the Significant Outcome Group: Respiration Group of Asthma and Ecologic Setting of Air Pollution.

VARIABLES[1]	SIGNIFICANT OUTCOME GROUP[2]			COMMENTS
	NS	SL	SH	
Respiration Group[d]				Selection of asthma study participants.
Asthma	25 (33.3)	4 (5.3)	46 (61.3)	
Ecologic Setting[d]				Selection of the air pollution ecologic setting.
Air Pollution	25 (33.3)	4 (5.3)	46 (61.3)	
Publication Year[c]				Publication year was not significant.
2009-2016	4 (5.3)	0 (0.0)	11 (14.7)	
2017-2023	21 (28.0)	4 (5.3)	35 (46.7)	
Country[b]				Country was significant. There were more countries with SH than SL outcomes. The four counties with more SH outcomes were Canada and the United States (n=10 each), followed by Italy (n=9), and China (n=7).
2+ Countries	3 (4.0)	0 (0.0)	2 (2.7)	
Australia	3 (4.0)	0 (0.0)	4 (5.3)	
Canada	1 (1.3)	1 (1.3)	10 (13.3)	
China	8 (10.7)	3 (4.0)	7 (9.3)	
Italy	7 (9.3)	0 (0.0)	9 (12.0)	
Mexico	0 (0.0)	0 (0.0)	1 (1.3)	
Peru	0 (0.0)	0 (0.0)	2 (2.7)	
Taiwan	0 (0.0)	0 (0.0)	1 (1.3)	
United States	3 (4.0)	0 (0.0)	10 (13.3)	
Design[b]				Design was significant. Cross sectional design was used more often (n=41) than the retrospective cohort (n=13).
Case Control	1 (1.3)	0 (0.0)	5 (6.7)	
Cross Sectional	18 (24.0)	3 (4.0)	20 (26.7)	
Panel	0 (0.0)	0 (0.0)	1 (1.3)	
Prospective Cohort	2 (2.7)	1 (1.3)	5 (6.7)	
Retrospective Cohort	3 (4.0)	0 (0.0)	10 (13.3)	
Time Series	1 (1.3)	0 (0.0)	5 (6.7)	
Surveillance[a]				Surveillance was significant, with prevalence used more often than incidence.
Incidence	5 (6.7)	1 (1.3)	15 (20.0)	
Prevalence	20 (26.7)	3 (4.0)	31 (41.3)	
ICD-CM[b]				ICD-9-CM was significant, with the 9th edition used more often than the 10th edition.
9	2 (2.7)	0 (0.0)	16 (21.3)	
10	2 (2.7)	1 (1.3)	8 (10.7)	
Other	21 (28.0)	3 (4.0)	22 (29.3)	
Questionnaire Dx[b]				Questionnaire Dx was significant, with more outcomes in the SH (n=21) than in the SL (n=3) group.
No	4 (5.3)	1 (1.3)	24 (32.0)	
Yes	21 (28.0)	3 (4.0)	21 (28.0)	
Other	0 (0.0)	0 (0.0)	1 (1.3)	
Medical Dx[b]				Medical Dx was significant, with more outcomes in the SH
No	15 (20.0)	3 (4.0)	18 (24.0)	
Yes	4 (5.3)	1 (1.3)	24 (32.0)	

Other	6 (8.0)	0 (0.0)	4 (5.3)	(n=24) than in the SL (n=1) group.
Preexposure Studies[a]				Preexposure studies variable was significant, with all seven outcomes in the SH group.
No	25 (33.3)	4 (5.3)	39 (52.0)	
Yes	0 (0.0)	0 (0.0)	7 (9.3)	
Lung Studies[b]				Lung studies variable was significant, with most in the SL (n=3) group.
No	15 (20.0)	1 (1.3)	45 (60.0)	
Yes	10 (13.3)	3 (4.0)	1 (1.3)	
Psychologic Studies[c]				Psychologic studies variable was not significant.
No	25 (33.3)	4 (5.3)	44 (58.7)	
Yes	0 (0.0)	0 (0.0)	2 (2.7)	
Age[c]				Age risk factor was not significant.
No	25 (33.3)	4 (5.3)	41 (54.7)	
Yes	0 (0.0)	0 (0.0)	5 (6.7)	
Education/Income[c]				Education/income risk factor was not significant.
No	25 (33.3)	4 (5.3)	43 (57.3)	
Yes	0 (0.0)	0 (0.0)	3 (4.0)	
Ethnicity/Race[c]				Ethnicity/race risk factor was not significant.
No	25 (33.3)	4 (5.3)	43 (57.3)	
Yes	0 (0.0)	0 (0.0)	3 (4.0)	
Environmental[b]				Environmental risk factor was significant, with more outcomes in the SH group.
No	21 (28.0)	0 (0.0)	1 (1.3)	
Yes	4 (5.3)	4 (5.3)	45 (60.0)	
Gender[a]				Gender risk factor was significant, with all outcomes in the SH (n=6) group.
No	25 (33.3)	4 (5.3)	40 (53.3)	
Yes	0 (0.0)	0 (0.0)	6 (8.0)	
Geographic[c]				Geographic risk factor was not significant.
No	24 (32.0)	4 (5.3)	40 (53.3)	
Yes	1 (1.3)	0 (0.0)	6 (8.0)	
Psychologic[c]				Psychologic risk factor was not significant.
No	25 (33.3)	4 (5.3)	44 (58.7)	
Yes	0 (0.0)	0 (0.0)	2 (2.7)	
Other[c]				Other risk factor was not significant.
No	24 (32.0)	4 (5.3)	40 (53.3)	
Yes	1 (1.3)	0 (0.0)	6 (8.0)	
Single Mechanisms[a]				Single physiologic mechanisms variable was significant, with all outcomes in the SH group.
Immune (IM)	3 (7.3)	0 (0.0)	12 (29.3)	
Oxidative Stress (OS)	1 (2.4)	0 (0.0)	1 (2.4)	
Other (OT)	10 (24.4)	0 (0.0)	14 (34.2)	
Multiple Mechanisms[a]				Multiple physiologic mechanisms variable was significant, with more outcomes in the SH group.
IMIN	1 (2.9)	0 (0.0)	4 (11.8)	
IMINOS	8 (23.5)	4 (11.8)	11 (32.4)	
INOS	2 (5.9)	0 (0.0)	4 (11.8)	

[1]Abbreviations: immune-inflammation, IMIN; immune-inflammation-oxidative stress, IMINOS; inflammation-oxidative stress, INOS. [2]Significant outcome group: not significant, NS;

significantly lower, SL; significantly higher, SH. Each entry includes totals (percentages). Significance evaluated with the Chi-Square test, *p*: a, ≤0.05; b, ≤0.01; c, >0.05; bold superscript identifies the use of the exact estimate; d, variable not evaluated statistically.

Table S3: Associations Between Selected Variables and Risk Factors with the Significant Outcome Group: Respiration Group of Asthma and Ecologic Setting of Wildfire.

VARIABLES[1]	SIGNIFICANT OUTCOME GROUP[2]		COMMENTS
	NS	SH	
Respiration Group[d]			Selection of asthma study participants.
Asthma	5 (27.8)	13 (72.2)	
Ecologic Setting[d]			Selection of wildfire ecologic setting.
Wildfire	5 (27.8)	13 (72.2)	
Publication Year[c]			Publication year was not significant.
2009-2016	0 (0.0)	3 (16.7)	
2017-2023	5 (27.8)	10 (55.6)	
Country[c]			Country was not significant.
Canada	0 (0.0)	1 (5.6)	
Indonesia	0 (0.0)	1 (5.6)	
United States	5 (27.8)	11 (61.1)	
Design[a]			Design was significant, with more case control (n=8) outcomes in the SH group.
Case Control	1 (5.6)	8 (44.4)	
Cross Sectional	4 (22.2)	3 (16.7)	
Time Series	0 (0.0)	2 (11.1)	
Surveillance[d]			Outcome could not be evaluated statistically.
Prevalence	5 (27.8)	13 (72.2)	
ICD-CM[a]			ICD-CM was significant, with more 9th (n=9) than 10th (n=2) edition outcomes in the SH group.
9	1 (5.6)	9 (50.0)	
10	0 (0.0)	2 (11.1)	
Other	4 (22.2)	2 (11.1)	
Questionnaire Dx[c]			Questionnaire Dx was not significant.
No	4 (22.2)	13 (72.2)	
Yes	1 (5.6)	0 (0.)	
Medical Dx[a]			Medical Dx was significant, with most outcomes in the SH (n=11) group.
No	4 (22.2)	2 (11.1)	
Yes	1 (5.6)	11 (61.1)	
Preexposure Studies[d]			Outcome could not be evaluated statistically.
No	5 (27.8)	13 (72.2)	
Lung Studies[b]			Lung studies was significant, with all outcomes (n=3) in the SL group.
No	2 (11.1)	13 (72.2)	
Yes	3 (16.7)	0 (0.0)	
Psychologic Studies[d]			Outcome could not be evaluated statistically.
No	5 (27.8)	13 (72.2)	
Age[c]			Age risk factor was not significant.
No	3 (16.7)	4 (22.2)	
Yes	2 (11.1)	9 (50.0)	

Education/Income[d]			Outcome could not be evaluated statistically.
No	5 (27.8)	13 (72.2)	
Ethnicity/Race[c]			Ethnicity/race risk factor was not significant.
No	3 (16.7)	12 (66.7)	
Yes	2 (11.1)	1 (5.6)	
Environmental[c]			Environmental risk factor was not significant.
No	2 (11.1)	0 (0.0)	
Yes	3 (16.7)	13 (72.2)	
Gender[**a**]			Gender risk factor was significant, with all (n=8) outcomes in the SH group.
No	5 (27.8)	5 (27.8)	
Yes	0 (0.0)	8 (44.4)	
Geographic[c]			Geographic risk factor was not significant.
No	5 (27.8)	12 (66.7)	
Yes	0 (0.0)	1 (5.6)	
Psychologic[d]			Outcome could not be evaluated statistically.
No	5 (27.8)	13 (72.2)	
Other[d]			Outcome could not be evaluated statistically.
No	5 (27.8)	13 (72.2)	
Single Mechanisms[**b**]			Single physiologic mechanisms variable was significant, with more outcomes in the SH group.
Immune (IM)	4 (26.7)	0 (0.0)	
Inflammation (IN)	1 (6.7)	4 (26.7)	
Other (OT)	0 (0.0)	6 (40.0)	
Multiple Mechanisms[d]			Outcome could not be evaluated statistically.
IMINOS	0 (0.0)	2 (66.7)	
INOS	0 (0.0)	1 (33.3)	

[1]Abbreviations: immune-inflammation-oxidative stress, IMINOS; inflammation-oxidative stress, INOS. [2]Significant outcome group: not significant, NS; significantly higher, SH. Each entry includes totals (percentages). Significance evaluated with the Chi-Square test, *p*: a, ≤0.05; b, ≤0.01; c, >0.05; bold superscript identifies the use of the exact estimate; d, outcome not evaluated.

Table S4: Associations Between Selected Variables and Risk Factors with the Significant Outcome Group: Respiration Group of Other Respiration and Ecologic Setting of Greenness.

VARIABLES[1]	SIGNIFICANT OUTCOME GROUP[2]		COMMENTS
	NS	SL	
Respiration Group[d]			Selection of other respiration study participants.
Other Respiration	6 (60.0)	4 (40.0)	
Ecologic Setting[d]			Selection of greenness ecologic setting.
Greenness	6 (60.0)	4 (40.0)	
Publication Year[c]			Publication year was not significant.
2009-2016	1 (10.0)	0 (0.0)	
2017-2023	5 (50.0)	4 (40.0)	
Country[c]			Country was not significant.
Italy	2 (20.0)	2 (20.0)	
Spain	3 (30.0)	1 (10.0)	
United States	1 (10.0)	1 (10.0)	
Design[c]			Design was not significant.
Cross Sectional	4 (40.0)	3 (30.0)	
Prospective Cohort	2 (20.0)	1 (10.0)	
Surveillance[c]			Surveillance was not significant.
Incidence	2 (20.0)	1 (10.0)	
Prevalence	4 (40.0)	3 (30.0)	
ICD-CM[d]			Outcome could not be evaluated statistically.
Other	6 (60.0)	4 (40.0)	
Questionnaire Dx[d]			Outcome could not be evaluated statistically.
Yes	6 (60.0)	4 (40.0)	
Medical Dx[d]			Outcome could not be evaluated statistically.
No	6 (60.0)	4 (40.0)	
Preexposure Studies[d]			Outcome could not be evaluated statistically.
No	6 (60.0)	4 (40.0)	
Lung Studies[d]			Outcome could not be evaluated statistically.
No	6 (60.0)	4 (40.0)	
Psychologic Studies[d]			Outcome could not be evaluated statistically.
No	6 (60.0)	4 (40.0)	
Age[d]			Outcome could not be evaluated statistically.
No	6 (60.0)	4 (40.0)	
Education/Income[d]			Outcome could not be evaluated statistically.
No	6 (60.0)	4 (40.0)	
Ethnicity/Race[d]			Outcome could not be evaluated statistically.
No	6 (60.0)	4 (40.0)	
Environmental[a]			

No	5 (50.0)	0 (0.0)	Environmental risk factor was significant, with four outcomes in the SL group.
Yes	1 (10.0)	4 (40.0)	
Gender[d]			Outcome could not be evaluated statistically.
No	6 (60.0)	4 (40.0)	
Geographic[c]			Geographic risk factor was not significant.
No	6 (60.0)	3 (30.0)	
Yes	0 (0.0)	1 (10.0)	
Psychologic[d]			Outcome could not be evaluated statistically.
No	6 (60.0)	4 (40.0)	
Other[d]			Outcome could not be evaluated statistically.
No	6 (60.0)	4 (40.)	
Single Mechanisms[c]			Single physiologic mechanisms variable was not significant.
Immune (IM)	1 (20.0)	0 (0.0)	
Other (OT)	2 (40.0)	2 (40.0)	
Multiple Mechanisms[d]			Outcome could not be evaluated statistically.
IMIN	3 (60.0)	2 (40.0)	

[1]Abbreviations: immune-inflammation, IMIN. [2]Significant outcome group: not significant, NS; significantly lower, SL. Each entry includes totals (percentages). Significance evaluated with the Chi-Square test, p: a, ≤ 0.05; b, ≤ 0.01; c, >0.05; bold superscript identifies the use of the exact estimate; d, outcome could not be evaluated statistically.

Table S5: Associations Between Selected Variables and Risk Factors with the Significant Outcome Group: Respiration Group of Other Respiration and Ecologic Setting of Air Pollution..

VARIABLES[1]	SIGNIFICANT OUTCOME GROUP[2]			COMMENTS
	NS	SL	SH	
Respiration Group[d]				Selection of other respiration study participants.
Other Respiration	20 (40.0)	4 (8.0)	26 (52.0)	
Ecologic Setting[d]				Selection of the air pollution ecologic setting.
Air Pollution	20 (40.0)	4 (8.0)	26 (52.0)	
Publication Year[b]				Publication year was significant, with most outcomes (n=26) in the SH group.
2009-2016	4 (8.0)	2 (4.0)	0 (0.0)	
2017-2023	16 (32.0)	2 (4.0)	26 (52.0)	
Country[b]				Country was significant. United States and Canada had three and one outcomes in the SL group, respectively. Italy had 10 and China had 9 outcomes in the SH group, respectively.
Australia	2 (4.0)	0 (0.0)	2 (2.0)	
Canada	6 (12.0)	1 (2.0)	1 (2.0)	
China	0 (0.0)	0 (0.0)	9 (18.0)	
Italy	8 (16.0)	0 (0.0)	10 (20.0)	
Mexico	0 (0.0)	0 (0.0)	3 (6.0)	
Tiwan	0 (0.0)	0 (0.0)	1 (2.0)	
United States	4 (8.0)	3 (6.0)	0 (0.0)	
Design[b]				Design was significant, with the cross sectional design contributing 15 outcomes to the SH group, and the prospective cohort contributing four outcomes to the SL group.
Case Control	1 (2.0)	0 (0.0)	0 (0.0)	
Cross Sectional	8 (16.0)	0 (0.0)	15 (30.0)	
Prospective Cohort	9 (18.0)	4 (8.0)	3 (6.0)	
Retrospective Cohort	2 (4.0)	0 (0.0)	6 (12.0)	
Time Series	0 (0.0)	0 (0.0)	2 (4.0)	
Surveillance[b]				Surveillance was significant, with 18 prevalent outcomes in the SH group.
Incidence	11 (22.0)	4 (8.0)	8 (16.0)	
Prevalence	9 (18.0)	0 (0.0)	18 (36.0)	
ICD-CM[b]				ICD-CM was significant, with the 9th and 10th editions each contributing three outcomes to the SH group.
9	1 (2.0)	0 (0.0)	3 (6.0)	
10	6 (12.00	1 (2.0)	3 (6.0)	
Other	13 (26.0)	3 (6.0)	20 (40)	
Questionnaire Dx[b]				Questionnaire Dx was significant, with 20 outcomes in the SH group.
No	8 (16.0)	3 (6.0)	6 (12)	
Yes	12 (24.0)	1 (2.0)	20 (40.0)	
Medical Dx[a]				Medical Dx was significant, with six outcomes in the SH group and one in the SL group.
No	11 (22.0)	3 (6.0)	18 (36.0)	
Yes	7 (14.0)	1 (2.0)	6 (12.0)	
Other	2 (4.0)	0 (0.0)	2 (4.0)	
Preexposure Studies[b]				

No	20 (40.0)	3 (6.0)	19 (38.0)	Preexposure studies variable was significant, with seven outcomes in the SH group.
Yes	0 (0.0)	1 (2.0)	7 (14.0)	
Lung Studies[b]				Lung studies variable was significant: two in SL group
No	19 (38.0)	2 (4.0)	26 (52.0)	
Yes	1 (2.0)	2 (2.0)	0 (0.0)	
Psychologic Studies[c]				Psychologic studies variable was not significant.
No	20 (40.0)	4 (8.0)	24 (48.0)	
Yes	0 (0.0)	0 (0.0)	2 (4.0)	
Age[c]				Age risk factor was not significant.
No	20 (40.0)	4 (8.0)	22 (44.0)	
Yes	0 (0.0)	0 (0.0)	4 (8.0)	
Education/Income[d]				Outcome could not be evaluated statistically.
No	20 (40.0)	4 (8.0)	26 (52.0)	
Ethnicity/Race[c]				Ethnicity/race risk factor was not significant.
No	20 (40)	3 (6.0)	26 (52.0)	
Yes	0 (0.0)	1 (2.0)	0 (0.0)	
Environmental[b]				Environmental risk factor was significant, with 25 outcomes in the SH group.
No	19 (38.0)	0 (0.0)	1 (2.0)	
Yes	1 (2.0)	4 (8.0)	25 (50.0)	
Gender[a]				Gender risk factor was significant, with four outcomes in the SH group.
No	20 (40.0)	3 (6.0)	22 (44.0)	
Yes	0 (0.0)	1 (2.0)	4 (8.0)	
Geographic[c]				Geographic risk factor was not significant.
No	20 (40.0)	4 (8.0)	24 (48.0)	
Yes	0 (0.0)	0 (0.0)	2 (4.0)	
Psychologic[c]				Psychologic risk factor was not significant.
No	20 (40.0)	4 (8.0)	24 (48.0)	
Yes	0 (0.0)	0 (0.0)	2 (4.0)	
Other[a]				Other risk factor was significant, with five outcomes in the SH group.
No	20 (40.0)	3 (6.0)	21 (42.0)	
Yes	0 (0.0)	1 (2.0)	5 (10.0)	
Single Mechanisms[c]				Single physiologic mechanisms variable was not significant.
Immune (IM)	2 (9.5)	0 (0.0)	2 (9.5)	
Oxidative Stress (OS)	0 (0.0)	0 (0.0)	1 (4.8)	
Other (OT)	9 (42.9)	0 (0.0)	7 (33.3)	
Multiple Mechanisms[b]				Multiple physiologic mechanisms variable was significant, with 11 IMINOS outcomes in the SH group.
IMIN	0 (0.0)	0 (0.0)	3 (10.3)	
IMINOS	6 (20.7)	1 (3.4)	11 (37.9)	
INOS	3 (10.3)	3 (10.3)	2 (6.9)	

[1]Abbreviations: immune-inflammation, IMIN; immune-inflammation-oxidative stress, IMINOS; inflammation-oxidative stress, INOS. [2]Significant outcome group: not significant, NS; significantly lower, SL; significantly higher, SH. Each entry includes totals (percentages). Significance evaluated with the Chi-Square test, *p*: a, ≤0.05; b, ≤0.01; c, >0.05; bold superscript identifies the use of the exact estimate; d, outcome not evaluated statistically.

Table S6: Associations Between Selected Variables and Risk Factors with the Significant Outcome Group: Respiration Group of Other Respiration and Ecologic Setting of Wildfire.

VARIABLES[1]	SIGNIFICANT OUTCOME GROUP[2]			COMMENTS
	NS	SL	SH	
Respiration Group[d]				Selection of other respiration study participants.
Other Respiration	5 (35.7)	1 (7.1)	8 (57.1)	
Ecologic Setting[d]				Selection of the wildfire ecologic setting.
Wildfire	5 (35.7)	1 (7.1)	8 (57.1)	
Publication Year[c]				Publication year was not significant.
2009-2016	2 (14.3)	0 (0.0)	2 (14.3)	
2017-2023	3 (21.4)	1 (7.1)	6 (42.9)	
Country[c]				Country was not significant.
Indonesia	0 (0.0)	0 (0.0)	1 (7.1)	
United States	5 (35.7)	1 (7.1)	7 (50.0)	
Design[c]				Design was not significant.
Case Control	2 (14.3)	1 (7.1)	5 (35.7)	
Cross Sectional	2 (14.3)	0 (0.0)	3 (21.4)	
Time Series	1 (7.1)	0 (0.0)	0 (0.0)	
Surveillance[d]				Outcome could not be evaluated statistically.
Prevalence	5 (35.7)	1 (7.1)	8 (57.1)	
ICD-CM[a]				ICD-CM was significant, with four 9th edition and three 10th edition outcomes in the SH group, respectively.
9	5 (35.7)	0 (0.0)	4 (28.6)	
10	0 (0.0)	1 (7.1)	3 (21.4)	
Other	0 (0.0)	0 (0.0)	1 (7.1)	
Questionnaire Dx[d]				Outcome could not be evaluated statistically.
No	5 (35.7)	1 (7.1)	8 (57.1)	
Medical Dx[c]				Medical Dx was not significant.
No	0 (0.0)	0 (0.0)	1 (7.1)	
Yes	5 (35.7)	1 (7.1)	7 (50.0)	
Preexposure Studies[d]				Outcome could not be evaluated statistically.
No	5 (35.7)	1 (7.1)	8 (57.1)	
Lung Studies[d]				Outcome could not be evaluated statistically.
No	5 (35.7)	1 (7.1)	8 (57.1)	
Psychologic Studies[d]				Outcome could not be evaluated statistically.
No	5 (35.7)	1 (7.1)	8 (57.1)	
Age[c]				Age risk factor was not significant.
No	4 (28.6)	0 (0.0)	4 (28.6)	
Yes	1 (7.1)	1 (7.1)	4 (28.6)	
Education/Income[d]				

No	5 (35.7)	1 (7.1)	8 (57.1)	Outcome could not be evaluated statistically.
Ethnicity/Race[c]				Ethnicity/race risk factor was not significant.
No	5 (35.7)	1 (7.1)	7 (50.0)	
Yes	0 (0.0)	0 (0.0)	1 (7.1)	
Environmental[b]				Environmental risk factor was significant.
No	5 (35.7)	0 (0.0)	0 (0.0)	
Yes	0 (0.0)	1 (7.1)	8 (57.1)	
Gender[c]				Gender risk factor was not significant.
No	3 (21.4)	0 (0.0)	4 (28.6)	
Yes	2 (14.3)	1 (7.1)	4 (28.6)	
Geographic[c]				Geographic risk factor was not significant.
No	5 (35.7)	0 (0.0)	7 (50.0)	
Yes	0 (0.0)	1 (7.1)	1 (7.1)	
Psychologic[d]				Outcome could not be evaluated statistically.
No	5 (35.7)	1 (7.1)	8 (57.1)	
Other[d]				Outcome could not be evaluated statistically.
No	5 (35.7)	1 (7.1)	8 (57.1)	
Single Mechanisms[d]				Outcome could not be evaluated statistically.
Other (OT)	2 (25.0)	1 (12.5)	5 (62.5)	
Multiple Mechanisms[c]				Multiple physiologic mechanisms variable was not significant.
IMINOS	2 (33.3)	0 (0.0)	2 (33.3)	
INOS	1 (16.7)	0 (0.0)	1 (16.7)	

[1]Abbreviations: immune-inflammation-oxidative stress, IMINOS; inflammation-oxidative stress, INOS. [2]Significant outcome group: not significant, NS; significantly lower, SL; significantly higher, SH. Each entry includes totals (percentages). Significance evaluated with the Chi-Square test, *p*: a, ≤0.05; b, ≤0.01; c, >0.05; bold superscript identifies the use of the exact estimate; d, outcome not evaluated statistically.

Table S7: AOD-$PM_{2.5}$, AOD-PM_{10}, and AOD-NO_2 Means by Health Outcome, Ecologic Setting, and the Health Outcome by Ecologic Setting Interaction.

AOD-AIR POLLUTION[1]	HEALTH OUTCOME		ECOLOGIC SETTING			HEALTH OUTCOME BY ECOLOGIC SETTING INTERACTION					
	Asthma	Respiration	Green	Air Pollution	Wildfire	Asthma-Green	Asthma-Air Pollution	Asthma-Wildfire	Respiration-Greem	Respiration-Air Pollution	Respiration-Wildfire
AOD-$PM_{2.5}$[c,c,c] (n=74)	26.9	30.3	.	23.7	33.5	.	22.8	31.0	.	24.6	36.0
AOD-PM_{10}[c,d,,d] (n=19)	54.0	39.7	.	46.8	.	.	54.0	.	.	39.7	.
AOD-NO_2[c,d,d] (n=15)	9.3	12.4	.	10.9	.	.	9.3	.	.	12.4	.

[1]AOD-air pollution means for $PM_{2.5}$, PM_{10}, and NO_2 by health outcome, ecologic setting, and the health outcome by ecologic setting interaction. Unit of measurements are $\mu g/m^3$ for particulates and ppb for NO_2. Results produced by utilizing SAS Proc GLM, analysis of variance. Significance, *p*: a, ≤0.05; b, ≤0.01; c, >0.05; d, outcome was not evaluated statistically.

Table S8: Analysis of Individual and Multiple Physiologic Mechanisms of Immune, Inflammation, and Oxidative Stress by Health Outcome and Ecologic Setting Main Effects.

PHYSIOLOGIC MECHANISMS[1]	TOTAL[2]	HEALTH OUTCOME[2]		ECOLOGIC SETTING[2]		
		Asthma	Respiration	Greenness	Air Pollution	Wildfire
Immune (IM)	9 (4.6)	8 (4.0)	1 (0.5)	5 (2.5)	0 (0.0)	4 (2.0)
Inflammation (IN)	24 (12.1)	20 (10.1)	4 (2.0)	0 (0.0)	19 (9.6)	5 (2.5)
Oxidative Stress (OS)	7 (3.5)	6 (3.0)	1 (0.5)	4 (2.0)	3 (1.5)	0 (0.0)
Other (OT)	70 (35.4)	42 (21.2)	28 (14.1)	16 (8.1)	40 (20.2)	14 (7.1)
IMIN	24 (12.1)	16 (8.1)	8 (4.0)	16 (8.1)	8 (4.0)	0 (0.0)
IMINOS	47 (23.7)	25 (12.6)	22 (11.1)	0 (0.0)	41 (20.7)	6 (3.0)
INOS	17 (8.6)	7 (3.5)	10 (5.1)	0 (0.0)	14 (7.1)	3 (1.5)
Total	198 (100.0)[b]	124 (62.6)	74 (37.4)[a]	41 (20.7)	125 (63.1)	32 (16.2)[b]

[1]Abbreviations: immune-inflammation, IMIN; immune-inflammation-oxidative stress, IMINOS; inflammation-oxidative stress, INOS. [2]Physiologic mechanism totals (percentages) are entered in each cell. Significance was evaluated using the Chi-Square test, p: a, $p \leq 0.05$; b, $p \leq 0.01$; bold superscript identifies the use the exact estimate.

Table S9: Analysis of Individual Physiologic Mechanisms of Immune, Inflammation, and Oxidative Stress by Health Outcome and Ecologic Setting.

PHYSIOLOGIC MECHANISMS[1]	TOTAL[2]	HEALTH OUTCOME[2]		ECOLOGIC SETTING[2]		
		Asthma	Respiration	Greenness	Air Pollution	Wildfire
Immune	80 (24.0)	49 (14.7)	31 (9.3)	21 (6.3)	49 (14.7)	10 (3.0)
Inflammation	112 (33.6)	68 (20.4)	44 (13.2)	16 (4.8)	82 (24.6)	14 (4.2)
Oxidative Stress	71 (21.3)	38 (11.4)	33 (9.9)	4 (1.2)	58 (17.4)	9 (2.7)
Other	70 (21.0)	42 (12.6)	28 (8.4)	16 (4.8)	40 (12.0)	14 (4.2)[b]
Total	333 (100.0)[b]	197 (59.2)[c]	136 (40.8)	57 (17.1)	229 (68.8)	47 (14.1)[b]

[1]Physiologic mechanisms by health outcome and ecologic setting. Cell entries are totals (percentages). Significance was evaluated with the Chi-Square test, p: a, $p \leq 0.05$; b, $p \leq 0.01$; c, $p > 0.05$; a or b letters in bold font indicates the use of the exact estimate.