

Table S1. Reported influenza-like illness cases in Bialystok and Bialystok County divided by year and by age group.

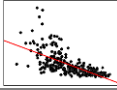
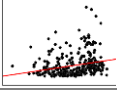
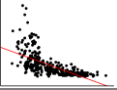
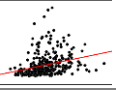
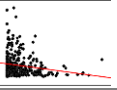
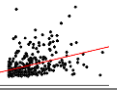
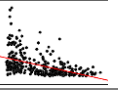
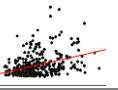

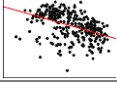
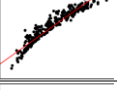
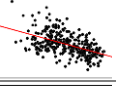
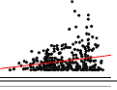
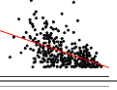
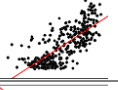
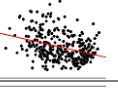

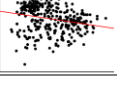
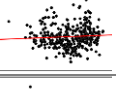
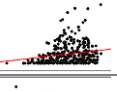
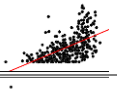
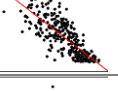
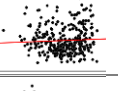

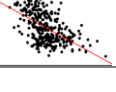
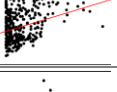
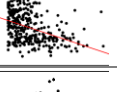
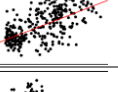
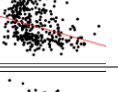

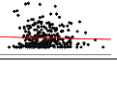
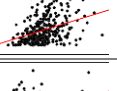
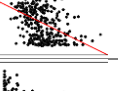
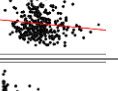

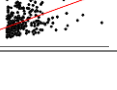
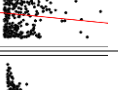
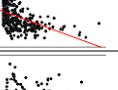

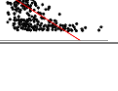
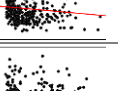

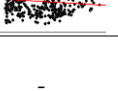


Age \ Year	2013	2014	2015	2016	2017	2018	2019	2013-2019
0-4	11,092	8,982	10,041	14,794	16,092	10,606	10,396	82,003
5-14	10,574	7,869	9,084	14,064	14,350	10,038	7,267	73,246
15-64	25,332	16,376	18,966	27,674	31,900	22,752	16,559	159,559
65+	4,716	2,563	3,224	4,975	6,226	5,711	3,764	31,179
Total	51,714	35,790	41,315	61,507	68,568	49,107	37,986	345,987

Table S2. Annual and 24-hour concentrations of particulate matter ($\mu\text{g}/\text{m}^3$) in Białystok and the Białystok County.

				24-hour concentrations						
Year		Annual mean	SD	Min	P25	Median	P75	Max	n (%) > WHO daily guidelines	n (%) missing
2013	PM _{2.5}	22.9	11.1	3.8	15.2	20.3	28.1	75.2	122 (35%)	21 (6%)
	PM ₁₀	23.2	13.7	3.9	13.9	20.3	28.8	96.5	13 (4%)	0
2014	PM _{2.5}	24.9	11.7	5.9	16.0	22.9	32.8	69.7	151 (42%)	4 (1%)
	PM ₁₀	26.5	15.8	5.8	15.2	22.1	33.3	97.1	30 (8%)	0
2015	PM _{2.5}	24.9	14.7	6.1	15.0	19.9	31.6	91.0	125 (36%)	16 (5%)
	PM ₁₀	25.3	18.1	4.7	13.1	19.6	30.4	115.4	40 (11%)	0
2016	PM _{2.5}	19.8	9.1	3.3	12.9	18.1	25.2	65.2	77 (26%)	65 (22%)
	PM ₁₀	20.2	12.5	1.7	11.8	16.7	24.7	86.9	12 (3%)	0
2017	PM _{2.5}	21.0	12.9	2.7	12.9	17.9	25.8	129.7	92 (27%)	23 (7%)
	PM ₁₀	20.2	14.4	2.7	11.5	17.0	24.2	139.1	12 (3%)	0
2018	PM _{2.5}	24.0	13.3	2.4	14.2	21.4	29.9	88.4	132 (37%)	9 (3%)
	PM ₁₀	22.1	14.6	2.8	11.9	18.2	27.9	97.4	19 (5%)	1 (<1%)
2019	PM _{2.5}	19.0	9.3	2.9	12.8	17.6	22.3	64.4	68 (19%)	3 (1%)
	PM ₁₀	18.6	10.1	2.7	11.8	16.8	22.5	91.2	3 (1%)	0

Abbreviations: PM_{2.5}, particulate matter with aerodynamic diameters of 2.5 μm or less; PM₁₀, particulate matter with aerodynamic diameters of 10 μm or less; SD, standard deviation

Table S3. Spearman's correlation coefficients between the environmental factors and the incidence of influenza-like illness.

	Number of cases	Temperature (°C)	Relative humidity (%)	Absolute humidity (g/m ³)	Wind speed (m/s)	Precipitation (mm)	Precipitation duration (hours)	Sunshine duration (hours)	PM _{2.5} (µg/m ³)	PM ₁₀ (µg/m ³)
Number of cases	-									
Temperature (°C)	-0.78 ***	-								
Relative humidity (%)	0.33 ***	-0.5 ***	-							
Absolute humidity (g/m ³)	-0.77	0.97	-0.29	-						
Wind speed (m/s)	0.43 ***	-0.52 ***	0.13 *	-0.54 ***	-					
Precipitation (mm)	-0.15 **	0.15 **	0.23 ***	0.25 ***	NS	-				
Precipitation duration (hours)	0.42 ***	-0.55 ***	0.61 ***	-0.43 ***	0.39 ***	0.58 ***	-			
Sunshine duration (hours)	-0.57 ***	0.75 ***	-0.82 ***	0.62 ***	-0.43 ***	-0.17 **	-0.73 ***	-		
PM _{2.5} (µg/m ³)	0.4 ***	-0.34 ***	NS	-0.37 ***	NS	-0.51 ***	-0.2 ***	NS	-	
PM ₁₀ (µg/m ³)	0.51 ***	-0.54 ***	0.22 ***	-0.55 ***	NS	-0.46 ***	NS	-0.29 ***	0.92 ***	-

Abbreviations: PM_{2.5}, particulate matter with aerodynamic diameters of 2.5 µm or less; PM₁₀, particulate matter with aerodynamic diameters of 10 µm or less

* indicates $p < 0.05$; ** indicates $p < 0.01$; *** indicates $p < 0.001$;

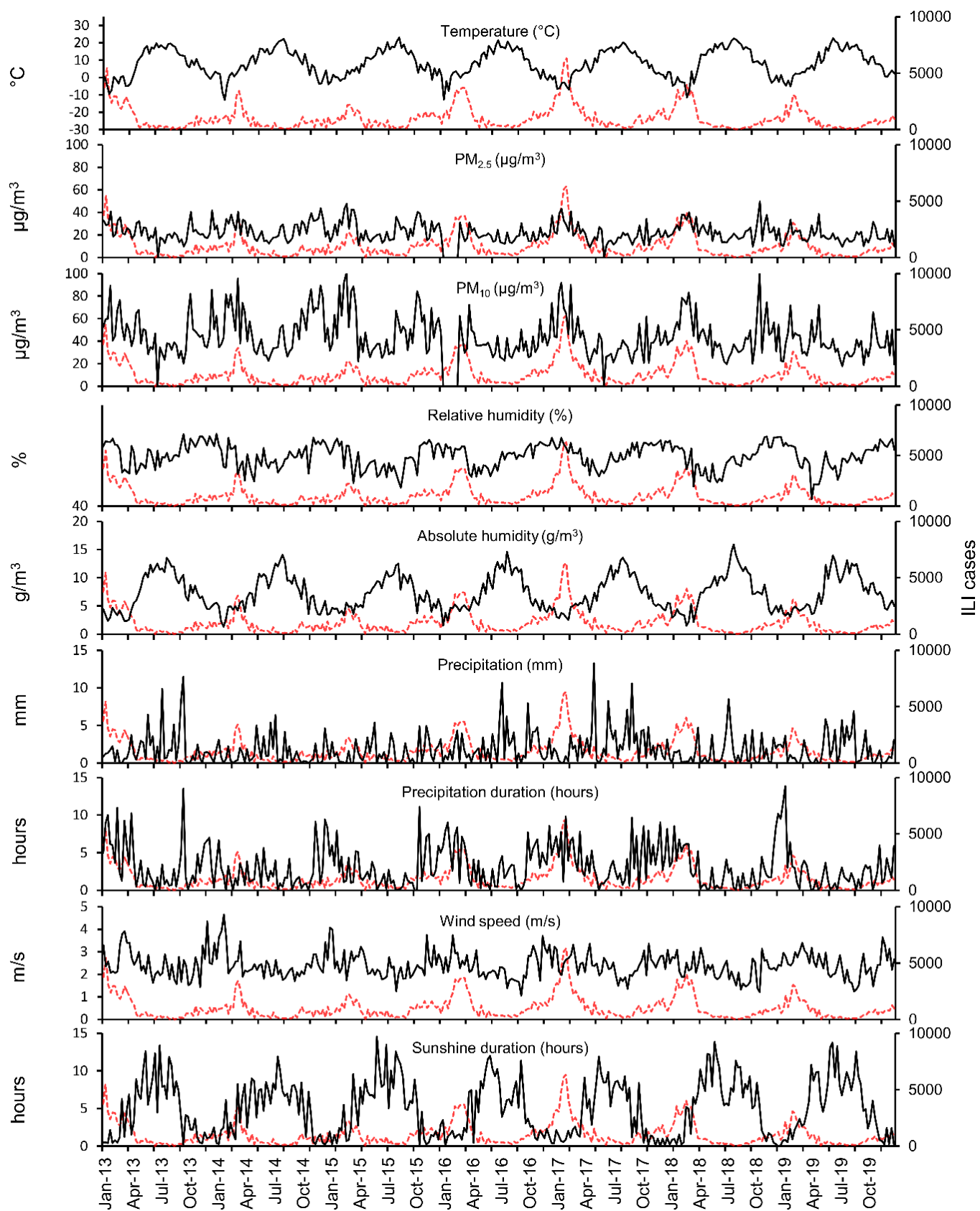


Figure S1. The number of weekly influenza-like cases (red dotted lines) plotted against meteorological and air pollution data (black lines) from Białystok, Poland, from January 2013 – December 2019. Abbreviations: PM_{2.5}, particulate matter with aerodynamic diameters of 2.5 µm or less; PM₁₀, particulate matter with aerodynamic diameters of 10 µm or less; ILI, influenza-like illness

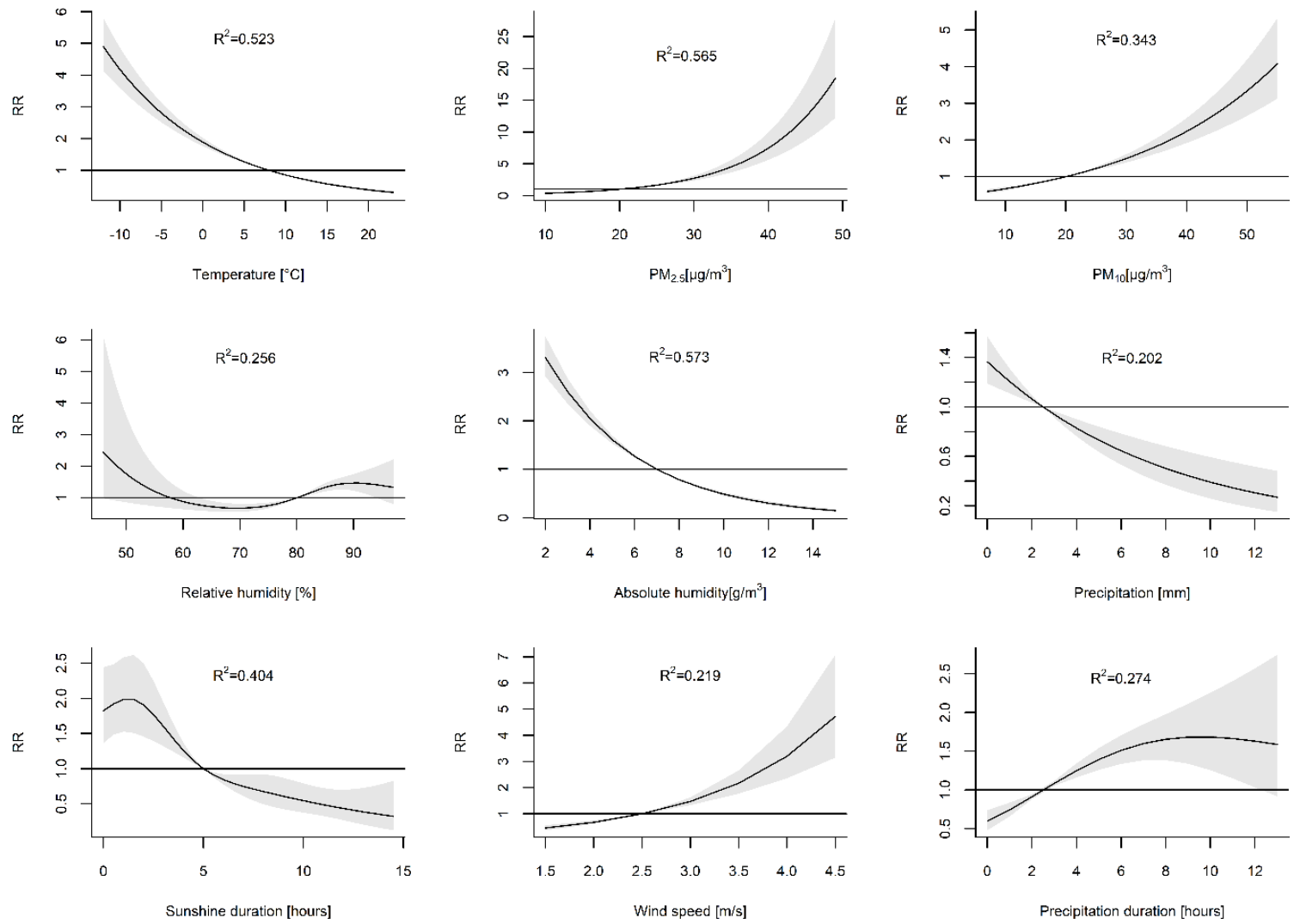


Figure S2. The association between environmental factors and the relative risk (RR) with 95% confidence interval (CI) of influenza-like illness. The analysis was performed for each environmental factor separately. The reference levels were defined as the median values of each of the analyzed variables to calculate RRs. Abbreviations: $\text{PM}_{2.5}$, particulate matter with aerodynamic diameters of 2.5 μm or less; PM_{10} , particulate matter with aerodynamic diameters of 10 μm or less

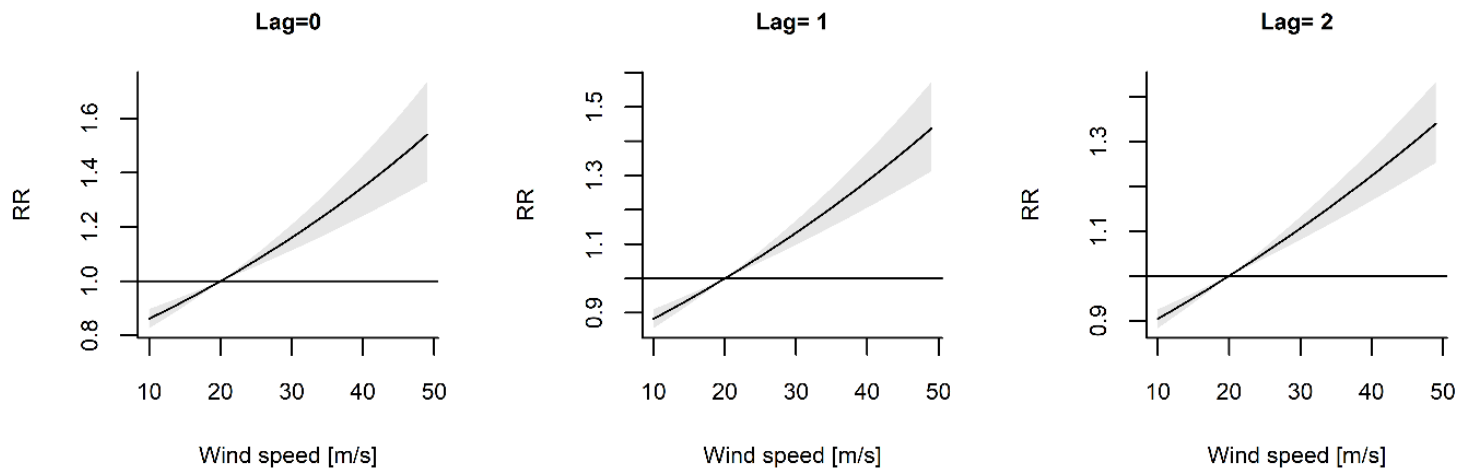


Figure S3. The association between wind speed and the relative risk (RR) of the incidence of influenza-like illness is shown as the estimated exposure-lag-response curves for lags of 0 to 2 weeks with 95% confidence intervals. The model was adjusted for the PM_{2.5} concentration and a long-term trend.