Supplements

Tables

Supplementary Table 1. Linear regression and correlation analysis between adenocarcinoma ratios and demographic/epidemiological variables across the 17 Regional Health Divisions (RHDs) of São Paulo State, Brazil, from 2000 to 2023. Columns show the RHD identifier, slope of the regression line (Slope), p-value of the linear model (pval_lm), correlation coefficient (Cor_coef), and p-value of the correlation (pval_cor) for each analyzed ratio: Total lung adenocarcinoma, Female-to-Male adenocarcinoma, Young-Adult (<50 vs ≥50 years) adenocarcinoma, and EC I–II / III–IV adenocarcinoma.

	RHD	Slope	pval_lm	Cor_coef	pval_cor
Adenocarcinoma – total lung cancer ratio					
	1	0.005	0.000	0.796	0.000
	2	0.005	0.077	0.368	0.077
	3	0.000	0.825	-0.048	0.825
	5	0.001	0.721	0.077	0.721
	6	0.004	0.002	0.597	0.002
	7	0.006	0.001	0.649	0.001
	8	0.006	0.047	0.441	0.031
	9	0.000	0.992	-0.053	0.807
	10	-0.001	0.729	-0.075	0.729
	11	-0.002	0.785	-0.059	0.785
	12	0.009	0.185	0.349	0.185
	13	-0.001	0.646	-0.099	0.646
	14	0.005	0.043	0.416	0.043
	15	0.007	0.000	0.823	0.000
	16	0.002	0.101	0.343	0.101
	17	-0.002	0.467	-0.156	0.467
Female-Male Adenocarcinoma ratio					
	1	0.013	0.000	0.944	0.000
	2	0.010	0.003	0.580	0.003
	3	0.008	0.004	0.568	0.004
	5	0.011	0.003	0.600	0.002
	6	0.010	0.000	0.770	0.000
	7	0.014	0.000	0.816	0.000
	8	0.013	0.001	0.656	0.000
	9	0.004	0.218	0.261	0.218
	10	0.007	0.009	0.523	0.009
	11	0.014	0.009	0.638	0.001
	12	-0.001	0.949	-0.030	0.949
	13	0.007	0.000	0.726	0.000
	14	0.009	0.024	0.479	0.024

	15	0.013	0.000	0.889	0.000
	16	0.011	0.003	0.581	0.003
	17	0.003	0.182	0.282	0.182
Young-Adult (<50≥50y) Adenocarcinoma ratio					
	1	-0.007	0.000	-0.831	0.000
	2	-0.004	0.344	-0.063	0.771
	3	-0.008	0.359	-0.339	0.105
	5	-0.003	0.211	-0.265	0.211
	6	-0.005	0.009	-0.520	0.009
	7	-0.005	0.060	-0.297	0.159
	8	-0.009	0.087	-0.376	0.070
	9	-0.006	0.028	-0.371	0.075
	10	-0.009	0.034	-0.474	0.019
	11	-0.003	0.532	-0.180	0.411
	12	-0.014	0.300	-0.227	0.416
	13	-0.009	0.022	-0.499	0.013
	14	-0.008	0.146	-0.226	0.289
	15	-0.006	0.000	-0.678	0.000
	16	-0.014	0.002	-0.739	0.000
	17	-0.006	0.015	-0.490	0.015
EC (I-II/III-IV) Adenocarcinoma ratio					
	1	0.002	0.043	0.417	0.043
	2	0.008	0.008	0.529	0.008
	3	0.002	0.601	0.112	0.601
	5	0.011	0.002	0.690	0.000
	6	-0.008	0.026	-0.381	0.066
	7	-0.001	0.560	-0.125	0.560
	8	0.012	0.002	0.592	0.002
	9	0.018	0.034	0.457	0.025
	10	-0.002	0.785	-0.054	0.801
	11	0.049	0.012	0.681	0.000
	12	0.003	0.328	0.309	0.262
	13	0.008	0.018	0.390	0.060
	14	0.004	0.322	0.120	0.576
	15	0.006	0.007	0.539	0.007
	16	-0.001	0.858	-0.039	0.858
	17	-0.003	0.543	-0.017	0.936

Footnotes:

a. Slope = slope of linear regression over time.

b. pval_lm = p-value of linear regression.

c. Cor_coef = Pearson correlation coefficient.

d. pval_cor = p-value of correlation.

e. Ratios analyzed: Total, Female-to-Male, Young-Adult (<50 vs ≥50), EC (I–II / III–IV).

f. RHD = Regional Health Division

Supplementary Table 2. Average Annual Percent Change (AAPC) in the adenocarcinoma-to-total lung cancer ratio (ATR) across Regional Health Divisions (RHDs) of São Paulo State, Brazil, 2000–2023. Columns indicate the RHD number, the estimated AAPC (% per year), the lower and upper bounds of the 95% confidence interval (CI), and whether the trend was statistically significant (1 = significant, 0 = not significant). Values were calculated using linear regression of ATR over time.

RHD	AAPC (%)	95% CI Low (%)	95% CI High (%)	Significant
1	0.50	0.33	0.66	Yes
2	0.54	-0.06	1.14	No
3	-0.05	-0.50	0.40	No
5	0.07	-0.35	0.50	No
6	0.39	0.16	0.62	Yes
7	0.55	0.27	0.84	Yes
8	0.58	0.01	1.15	Yes
9	-0.00	-0.45	0.45	No
10	-0.06	-0.41	0.29	No
11	-0.17	-1.47	1.13	No
12	1.89	-2.97	6.76	No
13	-0.08	-0.46	0.29	No
14	0.45	0.01	0.89	Yes
15	0.72	0.50	0.94	Yes
16	0.24	-0.05	0.53	No
17	-0.16	-0.60	0.28	No

Footnotes:

a. AAPC (%) = estimated average annual percent change.

b. 95% CI Low / High (%) = lower and upper bounds of 95% confidence interval.

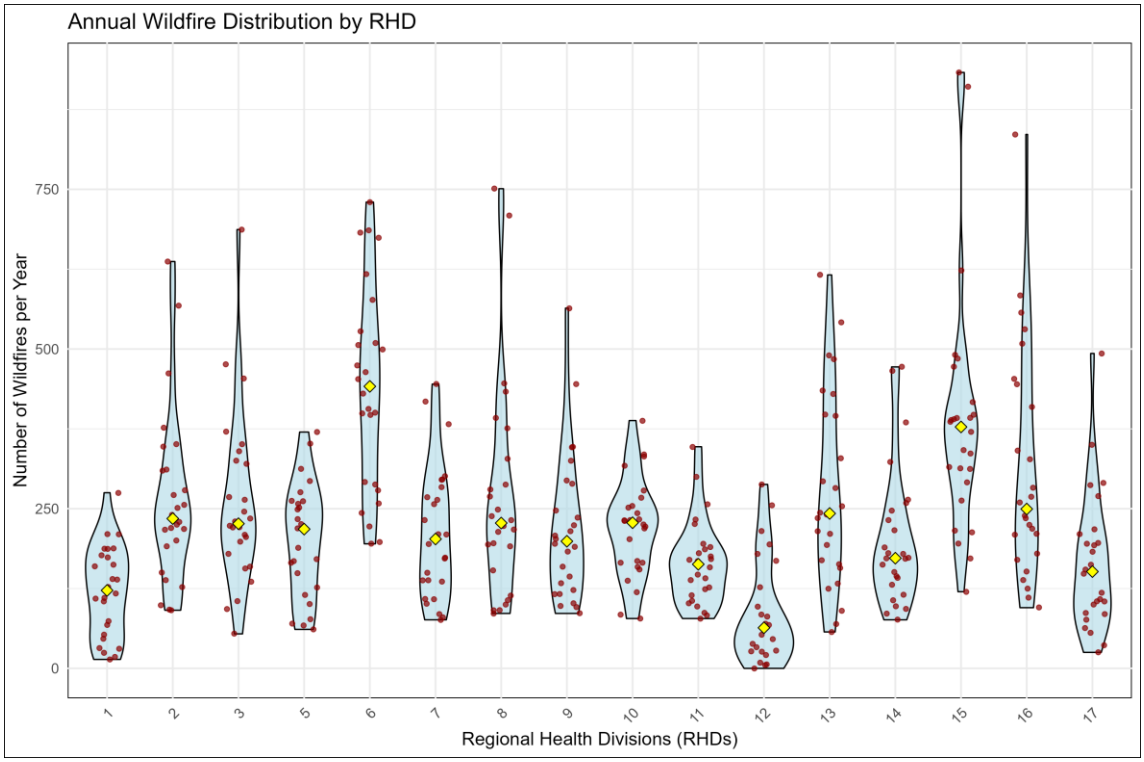
c. Significant = Yes = $p<0.05$; No = not significant.

d. RHD = Regional Health Division (1–17).

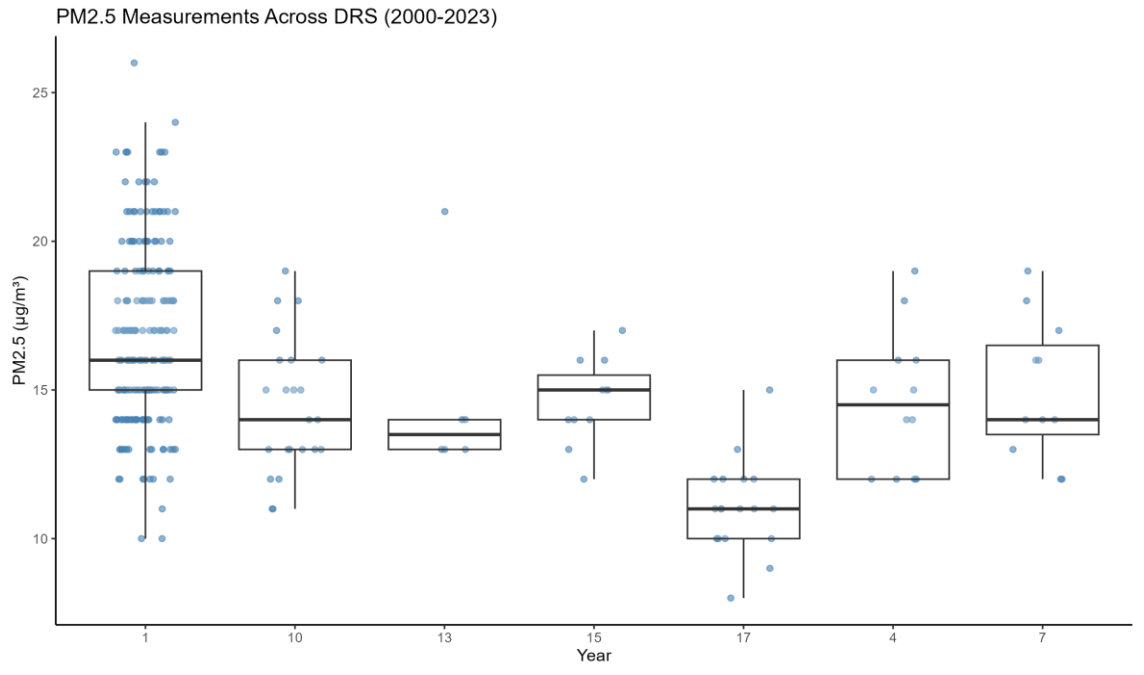
e. Values calculated using linear regression of ATR over time.

Figures:

Supplementary Figure 1: Distribution of annual fire occurrences across Regional Health Divisions (RHDs) in São Paulo State, Brazil, from 2000 to 2023. The violin plots illustrate the density and variability of fire events for each RHD, with wider sections representing higher concentration of values. Median and interquartile ranges are shown within each distribution.



Supplementary Figure 2. Box plots of mean PM2.5 concentrations (µg/m³) recorded between 2000 and 2023 across the seven Regional Health Departments (RHDs) of São Paulo State. Each box represents the distribution of values within one RHD, showing median, interquartile range, and outliers.



Supplementary Figure 3. Scatterplot of all 79 PM2.5 peak measurements recorded between 2000 and 2023 across the seven RHDs, with values ranging from 25 to 121 µg/m³ (mean ± SD: 47.7 ± 14.4 µg/m³).