Supplementary Data

Title of the manuscript: “Residential proximity to industrial pollution sources and colorectal cancer risk: a multicase-control study (MCC-Spain)”.

This document is available as supplementary data for inclusion as online documentation. It includes:

a) Appendix A, showing the description of the risk gradient analysis (assessment of the existence of radial effects near industrial facilities).
b) Table S1, showing the list of industrial groups, together with their E-PRTR categories, and number of installations by industrial group and province.
c) Table S2, showing the sensitivity analysis with the characteristics of included and excluded colorectal cancer cases.
d) Table S3, showing the odds ratios of colorectal cancer by industrial distance and industrial group.
e) Table S4, showing the odds ratios of colorectal cancer by industrial distance and industrial group, for the sensitivity analysis with only individuals living in their current residence for ≥10 years (long-term residents).
f) Table S5, showing the specific pollutants that can be released by the facilities to both air and water, according to the industrial groups.
g) Table S6, showing amounts (in kg) of carcinogens (IARC classification) and other toxic substances released by the facilities in the study area in 2009, grouped by industrial sector.
h) Table S7, showing the odds ratios of colorectal cancer for ever-decreasing radiuses within a 30-kilometer area surrounding each industrial installation, both overall and by industrial group, for the sensitivity analysis with only individuals living in their current residence for ≥10 years (long-term residents).
i) Figure S1, showing a flow chart displaying the selection process of colorectal cancer cases and controls.
j) Figure S2, showing the box-and-whisker plots with the years of commencement of operations of the 134 industries studied, according to the industrial group.

k) Figure S3, showing the odds ratios of colorectal cancer by groups of carcinogenic and other toxic substances with statistically significant results and a number of cases and controls ≥10, for the sensitivity analysis with only individuals living in their current residence for ≥10 years (long-term residents).

l) Figure S4, showing the odds ratios of colorectal cancer by specific pollutant with statistically significant results and a number of cases and controls ≥10, for the sensitivity analysis with only individuals living in their current residence for ≥10 years (long-term residents).

Supplementary Data, Appendix A.

Analysis 5 (assessment of the existence of radial effects near industrial facilities)

The risk gradient analysis near industrial installations was confined to an area of 30 km surrounding each installation, and the ORs were estimated using mixed multiple unconditional logistic regression models, as follows:

a) *All industries as a whole (all sectors)*: for each subject i, a new variable "$minimum\ distance_i$" was defined as:

$$minimum\ distance_i = min\{industrial\ distance_{ij}\}_j$$

i=1, …, 3505 subjects, j=1, …, 134 facilities

where $industrial\ distance_{ij}$ is the distance between subject i and facility j. This new explanatory variable was categorized in concentric rings (0-1, 1-1.5, 1.5-2, 2-2.5, 2.5-3, and 3-30 km as reference). This was included in the models as both a categorical and a continuous variable, thereby making it possible for: the effect of the respective distances to be estimated by the former; the existence of radial effects to be ascertained by the latter (rise in OR with increasing proximity to an installation); and, by applying the likelihood ratio test, the statistical significance of such minimum distance-related effects to be computed.

b) *By industrial group*: for each subject i and industrial group k, 22 new variables "$minimum\ distance_industrial\ group_{ik}$" were calculated as:

$$minimum\ distance_industrial\ group_{ik} = min\{industrial\ group\ distance_{ij}\}_j$$

i=1, …, 3505 subjects, k=1, …, 22 industrial groups, j=1, …, no. of facilities of industrial group k,

where $industrial\ group\ distance_{ij}$ is the distance between subject i and facility j belonging to industrial group k. These new explanatory variables were categorized in concentric rings (0-1, 1-1.5, 1.5-2, 2-2.5, 2.5-3, and 3-30 km as reference). These were included in the models as categorical and continuous variables, and subjects that had some industry other than the group analyzed at ≤3 km were excluded.

Supplementary Data, Table S1: list of industrial groups, together with their E-PRTR categories, and number of installations by industrial group and province.

		Provinces											
Industrial group	E-PRTR category	Asturias	Barcelona	Cantabria	Granada	Gipuzkoa	Huelva	Leon	Madrid	Murcia	Navarre	Valencia	TOTAL
Combustion installations	1.c	1	1	0	1	1	2	1	0	0	0	0	7
Production and processing of metals	2.a, 2.b, 2.c.i, 2.c.ii, 2.d, 2.e	1	3	4	0	2	1	0	0	0	2	0	13
Galvanization	2.c.iii	2	0	0	0	0	0	0	0	1	0	0	3
Surface treatment of metals and plastic	2.f	2	10	6	1	2	0	0	1	0	4	1	27
Mining industry	3.a, 3.b	0	0	0	0	0	0	1	0	0	0	0	1
Cement and lime	3.c, 3.d	1	0	0	0	1	0	1	0	0	0	0	3
Glass and mineral fibers	3.e, 3.f	0	3	0	0	0	0	1	0	0	0	0	4
Ceramic	3.g	1	0	1	4	0	2	0	0	0	0	0	8
Organic chemical industry	4.a	0	9	0	1	0	0	0	0	0	1	0	11
Inorganic chemical industry	4.b	0	1	0	0	0	1	0	0	0	0	0	2
Fertilizers	4.c	0	0	0	0	0	1	0	0	0	0	0	1
Biocides	4.d	0	0	0	0	0	0	0	0	1	0	0	1
Pharmaceutical products	4.e	0	2	0	0	0	0	1	1	0	0	0	4
Explosives and pyrotechnics	4.f	0	0	0	0	0	1	0	0	2	0	0	3
Hazardous waste	5.a, 5.b	0	1	4	0	0	1	0	0	0	0	0	6
Non-hazardous waste	5.c, 5.d	0	0	1	0	1	0	0	0	0	0	0	2
Disposal or recycling of animal waste	5.e	0	1	0	0	0	0	0	0	0	0	1	2
Urban waste-water treatment plants	5.f, 5.g	0	1	1	1	0	1	1	0	0	0	2	7
Paper and wood production	6.a, 6.b, 6.c	0	1	0	0	0	1	0	0	0	1	0	3
Food and beverage sector	8.a, 8.b, 8.c	0	4	0	1	0	0	3	1	2	2	3	16
Surface treatment using organic solvents	9.c	0	1	0	0	2	0	0	0	2	2	1	8
Ship building	9.e	1	0	1	0	0	0	0	0	0	0	0	2
TOTAL		9	38	18	9	9	11	9	3	8	12	8	134

Supplementary Data, Table S2: sensitivity analysis with the characteristics of included and excluded colorectal cancer cases.

Characteristic	n (%) or mean (SD)		*p*-value[a]
	Included cases (n=557)	Excluded cases (n=1583)	
Age, mean (SD)	67.2 (10.0)	66.9 (11.1)	0.858
Sex, n (%)			
Men	352 (63.2)	1013 (64.0)	
Women	205 (36.8)	570 (36.0)	0.775
Province, n (%)			
Asturias	62 (11.1)	15 (0.9)	
Barcelona	130 (23.3)	566 (35.8)	
Cantabria	18 (3.2)	133 (8.4)	
Gipuzkoa	9 (1.6)	110 (6.9)	
Granada	44 (7.9)	120 (7.6)	
Huelva	32 (5.8)	39 (2.5)	
Leon	199 (35.7)	191 (12.1)	
Madrid	27 (4.9)	205 (12.9)	
Murcia	10 (1.8)	24 (1.5)	
Navarre	14 (2.5)	111 (7.0)	
Valencia	12 (2.2)	69 (4.4)	<0.001
Body mass index (kg/m^2), mean (SD)	27.6 (4.6)	27.4 (4.5)	0.495
Family history of colorectal cancer, n (%)			
None	442 (79.4)	1237 (78.1)	
Second degree only	20 (3.6)	58 (3.7)	
1 first degree	81 (14.5)	223 (14.1)	
>1 first degree	14 (2.5)	41 (2.6)	
Missing	-	24 (1.5)	0.997
Tobacco smoking, n (%)			
Never	210 (37.7)	668 (42.2)	
Former smoker	251 (45.1)	599 (37.9)	
Current smoker	96 (17.2)	303 (19.1)	
Missing	-	13 (0.8)	0.017
Educational level, n (%)			
Less than primary school	159 (28.5)	529 (33.4)	
Primary school completed	215 (38.6)	591 (37.3)	
Secondary school	124 (22.3)	302 (19.1)	
University graduate	59 (10.6)	161 (10.2)	0.146
Physical activity in leisure time (MET), mean (SD)	155.4 (272.1)	135.84 (250.4)	0.109
Total energy intake (kcal/day), mean (SD)	1980.8 (605.6)	2023.0 (647.4)	0.232
Alcohol consumption (g/day), mean (SD)	22.8 (32.8)	24.5 (34.9)	0.719
Vegetable intake (g/day), mean (SD)	173.5 (111.8)	175.6 (107.5)	0.391
Red/processed meat intake (g/day), mean (SD)	71.9 (43.7)	75.2 (49.7)	0.303
Living in their current residence for ≥10 years, n (%)	451 (81.0)	1340 (84.6)	0.051

[a]Two-sided Chi-square test (with Yates's correction for continuity), and Mann-Whitney U-test (with continuity correction) test where appropriate.

Supplementary Data, Table S3: odds ratios of colorectal cancer by industrial distance and industrial group.

	Individuals residing at ≤1 km						Individuals residing at ≤1.5 km						Individuals residing at ≤2 km						Individuals residing at ≤2.5 km						Individuals residing at ≤3 km					
Industrial group (no. industries)	Co[a]	Ca[b]	OR (95%CI)[c]	*p*[d]	*p*-BH[e]	*p*-BY[f]	Co[a]	Ca[b]	OR (95%CI)[c]	*p*[d]	*p*-BH[e]	*p*-BY[f]	Co[a]	Ca[b]	OR (95%CI)[c]	*p*[d]	*p*-BH[e]	*p*-BY[f]	Co[a]	Ca[b]	OR (95%CI)[c]	*p*[d]	*p*-BH[e]	*p*-BY[f]	Co[a]	Ca[b]	OR (95%CI)[c]	*p*[d]	*p*-BH[e]	*p*-BY[f]
Reference	1215	167	1.00	-	-	-	1215	167	1.00	-	-	-	1215	167	1.00	-	-	-	1215	167	1.00	-	-	-	1215	167	1.00	-	-	-
All sectors (134)	295	86	2.03 (1.44-2.87)	-	-	-	560	157	1.96 (1.47-2.61)	-	-	-	1015	235	1.51 (1.16-1.96)	-	-	-	1354	325	1.39 (1.09-1.77)	-	-	-	1733	390	1.26 (1.00-1.59)	-	-	-
Combustion installations (6)	11	2	0.20 (0.04-0.97)	0.045	0.113	0.373	24	4	0.24 (0.08-0.73)	0.012	0.028	0.095	36	5	0.23 (0.08-0.61)	0.004	0.010	0.034	89	11	0.31 (0.16-0.62)	0.001	0.003	0.011	252	20	0.29 (0.17-0.49)	<0.001	<0.001	<0.001
Production and processing of metals (13)	138	17	1.41 (0.78-2.56)	0.259	0.486	1.000	168	19	1.43 (0.80-2.55)	0.224	0.299	1.000	225	31	1.91 (1.15-3.17)	0.012	0.023	0.081	453	58	2.28 (1.45-3.57)	<0.001	<0.001	<0.001	515	76	2.66 (1.77-4.00)	<0.001	<0.001	<0.001
Galvanization (3)	16	3	0.86 (0.23-3.20)	0.816	0.981	1.000	34	8	0.80 (0.33-1.94)	0.627	0.711	1.000	68	24	1.09 (0.57-2.09)	0.787	0.935	1.000	106	40	1.11 (0.61-2.03)	0.729	0.880	1.000	133	51	1.11 (0.58-2.13)	0.747	0.822	1.000
Surface treatment of metals and plastic (27)	48	29	5.45 (3.13-9.50)	<0.001	<0.001	<0.001	224	56	2.65 (1.79-3.92)	<0.001	<0.001	<0.001	487	82	2.10 (1.47-3.01)	<0.001	<0.001	<0.001	642	96	1.55 (1.11-2.18)	0.011	0.023	0.084	968	145	1.48 (1.08-2.02)	0.014	0.028	0.103
Mining industry (1)	23	4	0.25 (0.08-0.79)	0.017	0.064	0.212	26	4	0.21 (0.07-0.65)	0.007	0.020	0.068	26	4	0.21 (0.07-0.65)	0.007	0.015	0.052	26	4	0.21 (0.07-0.65)	0.007	0.016	0.060	26	4	0.21 (0.07-0.65)	0.007	0.017	0.063
Cement and lime (3)	17	3	0.23 (0.06-0.83)	0.025	0.075	0.249	28	4	0.20 (0.07-0.60)	0.004	0.014	0.047	31	4	0.19 (0.06-0.58)	0.003	0.008	0.029	49	4	0.19 (0.06-0.55)	0.003	0.008	0.029	84	7	0.31 (0.13-0.74)	0.008	0.018	0.065
Glass and mineral fibers (4)	5	2	2.41 (0.45-13.05)	0.307	0.512	1.000	41	11	1.81 (0.87-3.79)	0.113	0.192	0.661	46	26	4.24 (2.39-7.54)	<0.001	<0.001	<0.001	149	59	3.24 (2.12-4.96)	<0.001	<0.001	<0.001	271	74	2.06 (1.39-3.07)	<0.001	<0.001	<0.001
Ceramic (8)	14	2	1.33 (0.25-7.07)	0.734	0.981	1.000	22	7	2.48 (0.89-6.89)	0.082	0.155	0.533	83	11	1.29 (0.59-2.80)	0.523	0.710	1.000	107	14	1.18 (0.59-2.35)	0.639	0.839	1.000	119	19	1.35 (0.73-2.50)	0.343	0.503	1.000
Organic chemical industry (11)	17	24	11.54 (5.69-23.40)	<0.001	<0.001	<0.001	95	66	5.78 (3.75-8.91)	<0.001	<0.001	<0.001	219	82	3.57 (2.33-5.47)	<0.001	<0.001	<0.001	347	115	4.70 (3.12-7.08)	<0.001	<0.001	<0.001	436	133	4.80 (3.20-7.20)	<0.001	<0.001	<0.001
Inorganic chemical industry (2)	0	2	inf (0-inf)	0.844	0.981	1.000	6	20	34.68 (12.81-93.92)	<0.001	<0.001	<0.001	36	43	10.77 (6.29-18.44)	<0.001	<0.001	<0.001	80	60	6.56 (4.21-10.24)	<0.001	<0.001	<0.001	92	69	6.74 (4.38-10.36)	<0.001	<0.001	<0.001
Fertilizers (1)	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	15	2	0.53 (0.11-2.61)	0.435	0.563	1.000
Biocides (1)	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	6	2	1.30 (0.21-8.15)	0.779	0.880	1.000	10	4	1.49 (0.33-6.71)	0.603	0.698	1.000
Pharmaceutical products (4)	17	6	0.97 (0.35-2.67)	0.956	0.981	1.000	86	21	1.42 (0.81-2.46)	0.218	0.299	1.000	191	49	1.39 (0.93-2.09)	0.108	0.187	0.662	321	98	1.34 (0.97-1.84)	0.073	0.128	0.466	457	141	1.28 (0.96-1.70)	0.097	0.178	0.656
Explosives and pyrotechnics (3)	0	0	-	-	-	-	0	0	-	-	-	-	3	0	0 (0-inf)	0.937	0.971	1.000	11	2	0.64 (0.12-3.57)	0.610	0.839	1.000	15	2	0.47 (0.09-2.45)	0.370	0.509	1.000
Hazardous waste (6)	26	2	0.90 (0.18-4.51)	0.902	0.981	1.000	90	8	0.97 (0.40-2.35)	0.954	0.954	1.000	129	14	1.02 (0.50-2.09)	0.966	0.971	1.000	279	26	0.57 (0.26-1.27)	0.172	0.258	0.941	320	33	0.69 (0.36-1.32)	0.259	0.407	1.000
Non-hazardous waste (2)	0	0	-	-	-	-	2	1	4.67 (0.38-57.40)	0.229	0.299	1.000	2	1	4.67 (0.38-57.40)	0.229	0.335	1.000	25	5	4.19 (1.38-12.76)	0.012	0.023	0.084	84	8	1.76 (0.71-4.40)	0.224	0.379	1.000
Disposal or recycling of animal waste (2)	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	11	0	0 (0-inf)	0.915	0.961	1.000	66	9	1.27 (0.55-2.93)	0.572	0.698	1.000
Urban waste-water treatment plants (7)	0	0	-	-	-	-	1	1	1.38 (0.08-24.24)	0.827	0.879	1.000	29	5	0.50 (0.18-1.38)	0.178	0.282	1.000	188	44	0.72 (0.46-1.13)	0.152	0.246	0.895	337	87	0.99 (0.68-1.44)	0.955	0.955	1.000
Paper and wood production (3)	0	0	-	-	-	-	0	0	-	-	-	-	2	0	0 (0-inf)	0.971	0.971	1.000	9	0	0 (0-inf)	0.976	0.976	1.000	103	2	0.10 (0.02-0.41)	0.001	0.003	0.010
Food and beverage sector (16)	12	15	3.47 (1.47-8.16)	0.004	0.020	0.066	36	34	5.38 (3.03-9.56)	<0.001	<0.001	<0.001	121	53	4.93 (3.05-7.96)	<0.001	<0.001	<0.001	187	73	5.89 (3.82-9.09)	<0.001	<0.001	<0.001	390	111	3.34 (2.38-4.68)	<0.001	<0.001	<0.001
Surface treatment using organic solvents (8)	46	4	2.39 (0.67-8.51)	0.179	0.384	1.000	57	7	3.76 (1.32-10.73)	0.013	0.028	0.095	117	24	4.28 (2.31-7.93)	<0.001	<0.001	<0.001	237	68	6.62 (4.22-10.36)	<0.001	<0.001	<0.001	302	88	6.16 (4.06-9.36)	<0.001	<0.001	<0.001
Ship building (2)	15	0	0 (0-inf)	0.981	0.981	1.000	27	5	0.55 (0.19-1.61)	0.275	0.334	1.000	54	18	1.15 (0.58-2.31)	0.689	0.873	1.000	190	48	0.93 (0.61-1.67)	0.796	0.880	1.000	190	48	0.93 (0.51-1.67)	0.796	0.834	1.000

[a]Number of cases.
[b]Number of controls.
[c]ORs were estimated from various mixed multiple logistic regression models (an independent model for each industrial distance), that included age, sex, body mass index 1-year before the interview, family history of colorectal cancer, tobacco smoking, educational level, physical activity, total energy intake, alcohol consumption, vegetable intake, red/processed meat intake, and province of residence (as a random effect).
[d]*p*-value associated with hypothesis test for the mixed multiple logistic regression model.
[e]*p*-value adjusted by Benjamini & Hochberg's method.
[f]*p*-value adjusted by Benjamini & Yekutieli's method.

Supplementary Data, Table S4: odds ratios of colorectal cancer by industrial distance and industrial group, for the sensitivity analysis with only individuals living in their current residence for ≥10 years (long-term residents).

	Individuals residing at ≤1 km						Individuals residing at ≤1.5 km						Individuals residing at ≤2 km						Individuals residing at ≤2.5 km						Individuals residing at ≤3 km					
Industrial group (no. industries)	Co[a]	Ca[b]	OR (95%CI)[c]	p[d]	p-BH[e]	p-BY[f]	Co[a]	Ca[b]	OR (95%CI)[c]	p[d]	p-BH[e]	p-BY[f]	Co[a]	Ca[b]	OR (95%CI)[c]	p[d]	p-BH[e]	p-BY[f]	Co[a]	Ca[b]	OR (95%CI)[c]	p[d]	p-BH[e]	p-BY[f]	Co[a]	Ca[b]	OR (95%CI)[c]	p[d]	p-BH[e]	p-BY[f]
Reference	999	136	1.00	-	-	-	999	136	1.00	-	-	-	999	136	1.00	-	-	-	999	136	1.00	-	-	-	999	136	1.00	-	-	-
All sectors (134)	239	75	2.26 (1.54-3.30)	-	-	-	466	128	1.91 (1.38-2.62)	-	-	-	852	193	1.51 (1.13-2.02)	-	-	-	1130	262	1.35 (1.03-1.77)	-	-	-	1464	315	1.20 (0.92-1.56)	-	-	-
Combustion installations (6)	9	2	0.21 (0.04-1.06)	0.059	0.148	0.489	20	4	0.29 (0.09-0.91)	0.034	0.083	0.284	27	5	0.28 (0.10-0.79)	0.016	0.038	0.135	75	11	0.39 (0.19-0.78)	0.008	0.021	0.077	226	19	0.32 (0.19-0.55)	<0.001	<0.001	<0.001
Production and processing of metals (13)	115	14	1.31 (0.68-2.52)	0.421	0.702	1.000	135	16	1.42 (0.76-2.66)	0.276	0.387	1.000	183	23	1.57 (0.89-2.78)	0.118	0.224	0.795	372	47	2.17 (1.31-3.58)	0.003	0.011	0.038	422	62	2.67 (1.69-4.22)	<0.001	<0.001	<0.001
Galvanization (3)	13	3	1.35 (0.35-5.26)	0.669	0.981	1.000	29	6	0.83 (0.30-2.29)	0.717	0.762	1.000	54	14	0.90 (0.41-1.98)	0.792	0.885	1.000	81	27	1.19 (0.58-2.41)	0.637	0.787	1.000	104	33	0.98 (0.46-2.08)	0.954	0.962	1.000
Surface treatment of metals and plastic (27)	44	27	5.70 (3.16-10.28)	<0.001	<0.001	<0.001	192	47	2.53 (1.64-3.89)	<0.001	<0.001	<0.001	408	71	2.16 (1.46-3.20)	<0.001	<0.001	<0.001	533	80	1.53 (1.05-2.23)	0.028	0.059	0.214	815	116	1.40 (0.99-1.98)	0.060	0.120	0.443
Mining industry (1)	18	4	0.32 (0.10-1.03)	0.057	0.148	0.489	21	4	0.25 (0.08-0.80)	0.020	0.057	0.195	21	4	0.25 (0.08-0.80)	0.020	0.042	0.150	21	4	0.25 (0.08-0.80)	0.020	0.047	0.170	21	4	0.25 (0.08-0.80)	0.020	0.044	0.162
Cement and lime (3)	14	3	0.26 (0.07-0.99)	0.049	0.148	0.489	23	4	0.24 (0.08-0.75)	0.014	0.048	0.164	26	4	0.23 (0.07-0.71)	0.011	0.030	0.106	42	4	0.22 (0.07-0.68)	0.008	0.021	0.077	75	6	0.31 (0.12-0.79)	0.014	0.034	0.126
Glass and mineral fibers (4)	4	2	2.98 (0.51-17.29)	0.224	0.480	1.000	35	9	1.61 (0.71-3.62)	0.252	0.387	1.000	39	20	3.49 (1.83-6.65)	<0.001	<0.001	<0.001	134	52	3.20 (2.01-5.10)	<0.001	<0.001	<0.001	248	65	2.08 (1.33-3.24)	0.001	0.003	0.012
Ceramic (8)	9	0	0 (0-inf)	0.907	0.981	1.000	14	4	1.85 (0.51-6.74)	0.351	0.426	1.000	61	8	1.19 (0.50-2.88)	0.693	0.844	1.000	78	11	1.27 (0.59-2.75)	0.541	0.710	1.000	88	15	1.46 (0.74-2.91)	0.277	0.435	1.000
Organic chemical industry (11)	16	23	12.51 (5.99-26.11)	<0.001	<0.001	<0.001	88	58	5.64 (3.53-9.01)	<0.001	<0.001	<0.001	209	73	3.73 (2.33-5.97)	<0.001	<0.001	<0.001	323	98	4.59 (2.91-7.23)	<0.001	<0.001	<0.001	400	109	4.21 (2.69-6.58)	<0.001	<0.001	<0.001
Inorganic chemical industry (2)	0	2	inf (0-inf)	0.981	0.981	1.000	5	15	29.31 (9.68-88.75)	<0.001	<0.001	<0.001	26	38	13.17 (7.15-24.24)	<0.001	<0.001	<0.001	66	53	7.16 (4.39-11.67)	<0.001	<0.001	<0.001	77	61	7.16 (4.48-11.45)	<0.001	<0.001	<0.001
Fertilizers (1)	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	9	2	0.73 (0.14-3.85)	0.715	0.851	1.000
Biocides (1)	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	4	2	2.09 (0.27-16.06)	0.480	0.672	1.000	5	3	2.49 (0.40-15.67)	0.330	0.484	1.000
Pharmaceutical products (4)	12	5	1.14 (0.37-3.54)	0.817	0.981	1.000	72	17	1.39 (0.75-2.56)	0.296	0.387	1.000	157	40	1.36 (0.87-2.13)	0.180	0.285	1.000	266	81	1.28 (0.90-1.82)	0.163	0.285	1.000	386	119	1.26 (0.92-1.73)	0.149	0.252	0.931
Explosives and pyrotechnics (3)	0	0	-	-	-	-	0	0	-	-	-	-	2	0	0 (0-inf)	0.947	0.986	1.000	8	2	0.86 (0.14-5.36)	0.875	0.935	1.000	11	2	0.61 (0.11-3.45)	0.579	0.749	1.000
Hazardous waste (6)	14	1	1.07 (0.13-9.09)	0.954	0.981	1.000	59	7	1.35 (0.51-3.52)	0.545	0.618	1.000	91	12	1.16 (0.53-2.54)	0.711	0.844	1.000	214	23	0.67 (0.29-1.57)	0.358	0.537	1.000	250	29	0.72 (0.36-1.45)	0.361	0.496	1.000
Non-hazardous waste (2)	0	0	-	-	-	-	1	1	8.58 (0.46-161.90)	0.152	0.274	0.941	1	1	8.58 (0.46-161.90)	0.152	0.263	0.931	18	4	3.89 (1.10-13.74)	0.035	0.067	0.244	60	7	2.13 (0.78-5.82)	0.139	0.252	0.931
Disposal or recycling of animal waste (2)	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	11	0	0 (0-inf)	0.890	0.935	1.000	58	8	1.14 (0.47-2.79)	0.774	0.851	1.000
Urban waste-water treatment plants (7)	0	0	-	-	-	-	1	1	1.32 (0.07-23.52)	0.851	0.851	1.000	27	5	0.55 (0.20-1.58)	0.268	0.392	1.000	163	38	0.72 (0.44-1.18)	0.197	0.318	1.000	289	74	0.99 (0.65-1.50)	0.962	0.962	1.000
Paper and wood production (3)	0	0	-	-	-	-	0	0	-	-	-	-	1	0	0 (0-inf)	0.986	0.986	1.000	6	0	0 (0-inf)	0.973	0.973	1.000	97	2	0.11 (0.03-0.44)	0.002	0.006	0.020
Food and beverage sector (16)	9	12	3.92 (1.48-10.41)	0.006	0.030	0.100	29	28	5.98 (3.12-11.44)	<0.001	<0.001	<0.001	105	45	5.83 (3.38-10.06)	<0.001	<0.001	<0.001	157	62	7.12 (4.35-11.66)	<0.001	<0.001	<0.001	335	97	3.54 (2.44-5.14)	<0.001	<0.001	<0.001
Surface treatment using organic solvents (8)	42	3	1.99 (0.46-8.56)	0.354	0.664	1.000	53	5	2.86 (0.84-9.73)	0.092	0.196	0.672	108	19	4.07 (2.02-8.22)	<0.001	<0.001	<0.001	214	55	6.19 (3.78-10.15)	<0.001	<0.001	<0.001	267	73	6.07 (3.81-9.66)	<0.001	<0.001	<0.001
Ship building (2)	14	0	0 (0-inf)	0.974	0.981	1.000	26	3	0.39 (0.11-1.45)	0.161	0.274	0.941	46	13	1.24 (0.55-2.76)	0.604	0.820	1.000	149	33	0.89 (0.45-1.76)	0.742	0.866	1.000	149	33	0.89 (0.45-1.76)	0.742	0.851	1.000

[a]Number of cases.
[b]Number of controls.
[c]ORs were estimated from various mixed multiple logistic regression models (an independent model for each industrial distance), that included age, sex, body mass index 1-year before the interview, family history of colorectal cancer, tobacco smoking, educational level, physical activity, total energy intake, alcohol consumption, vegetable intake, red/processed meat intake, and province of residence (as a random effect).
[d]*p*-value associated with hypothesis test for the mixed multiple logistic regression model.
[d]*p*-value associated with hypothesis test for the mixed multiple logistic regression model.
[e]*p*-value adjusted by Benjamini & Hochberg's method.
[f]*p*-value adjusted by Benjamini & Yekutieli's method.

Supplementary Data, Table S5: specific pollutants that can be released by the facilities to both air and water, by industrial group, according to the E-PRTR categories.

	Pollutants released by industrial groups	
Industrial group	Air	Water
Combustion installations	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, dioxins+furans, trichloroethylene, benzene, PAHs[b], PM_{10}[c], TSP[d], manganese, vanadium	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, dioxins+furans, PAHs[b], toluene, fluoranthene, benzo(g,h,i)perylene
Production and processing of metals	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, hexachlorobenzene, lindane, dioxins+furans, polychlorinated biphenyls, anthracene, benzene, naphthalene, PAHs[b], PM_{10}[c], TSP[d]	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, pentachlorophenol, anthracene, nonylphenol and nonylphenol ethoxylates, naphthalene, organotin compounds, PAHs[b], octylphenols and octylphenol ethoxylates, fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene
Galvanization	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, nickel and compounds, lead and compounds, zinc and compounds, dioxins+furans, PM_{10}[c], TSP[d]	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, nickel and compounds, lead and compounds, zinc and compounds, PAHs[b]
Surface treatment of metals and plastic	NMVOC[a], cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, benzene, dichloromethane, 1,2,3,4,5,6-hexachlorocyclohexane, tetrachloroethylene, trichloroethylene, di-(2-ethyl hexyl) phthalate, PAHs[b], PM_{10}[c], TSP[d], manganese, vanadium	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, anthracene, naphthalene, organotin compounds, di-(2-ethyl hexyl) phthalate, PAHs[b], fluoranthene, trichloromethane, toluene, benzo(b)fluoranthene, ethyl benzene, xylenes
Mining industry	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, NMVOC[a], PM_{10}[c], TSP[d]	Arsenic and compounds, cadmium and compounds, copper and compounds, nickel and compounds, lead and compounds, zinc and compounds
Cement and lime	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, dioxins+furans, polychlorinated biphenyls, anthracene, benzene, naphthalene, di-(2-ethyl hexyl) phthalate, PAHs[b], PM_{10}[c], TSP[d], thallium, antimony, cobalt, manganese, vanadium	Copper and compounds, zinc and compounds
Glass and mineral fibers	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, dioxins+furans, polychlorinated biphenyls, benzene, PAHs[b], PM_{10}[c], TSP[d], manganese, vanadium	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, benzene, ethyl benzene, toluene, xylenes, octylphenols and octylphenol ethoxylates
Ceramic	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, benzene, PAHs[b], PM_{10}[c], TSP[d], thallium, antimony, cobalt, manganese, vanadium	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, trichloromethane, naphthalene
Organic chemical industry	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, 1,2-dichloroethane, dichloromethane, dioxins+furans, tetrachloroethylene, tetrachloromethane, trichloromethane, vinyl chloride, anthracene, benzene, ethylene oxide, naphthalene, PAHs[b], PM_{10}[c], TSP[d], antimony, cobalt, manganese, vanadium	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, aldrin, atrazine, chlordane, chlorfenvinphos, chlorpyrifos, DDT, 1,2-dichloroethane, dichloromethane, dieldrin, endosulfan, endrin, hexachlorobenzene, hexachlorobutadiene, 1,2,3,4,5,6-hexachlorocyclohexane, mirex, dioxins+furans, simazine, tetrachloroethylene, trichlorobenzenes, trichloroethylene, trichloromethane, vinyl chloride, anthracene, benzene, brominated diphenylethers, nonylphenol and nonylphenol ethoxylates, ethyl benzene, naphthalene, organotin compounds, di-(2-ethyl hexyl) phthalate, PAHs[b], toluene, tributyltin and compounds, xylenes, octylphenols and octylphenol ethoxylates, fluoranthene, isodrin, benzo(b)fluoranthene, indeno(g,h,i)perylene
Inorganic chemical industry	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, dichloromethane, dioxins+furans, tetrachloromethane, trichloromethane, PM_{10}[c], TSP[d], antimony	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, hexachlorobenzene, dioxins+furans, trichloromethane, organotin compounds, PAHs[b], fluoranthene
Fertilizers	NMVOC[a], zinc and compounds, PM_{10}[c], TSP[d], cobalt	
Biocides	NMVOC[a], dichloromethane, PM_{10}[c]	Copper and compounds, zinc and compounds, ethyl benzene, xylenes
Pharmaceutical products	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and	Chromium and compounds, copper and compounds, mercury and compounds, lead and compounds, zinc and compounds, 1,2-dichloroethane, dichloromethane, tetrachloroethylene, tetrachloromethane,

	Pollutants released by industrial groups	
Industrial group	Air	Water
	compounds, 1,2-dichloroethane, dichloromethane, tetrachloromethane, trichloromethane, PM_{10}[c], TSP[d], thallium, antimony, cobalt, manganese, vanadium	trichloroethylene, trichloromethane, benzene, ethyl benzene, toluene, xylenes, naphthalene, PAHs[b], fluoranthene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene
Explosives and pyrotechnics	NMVOC[a], lead and compounds, PM_{10}[c]	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds
Hazardous waste	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, hexachlorobenzene, dioxins+furans, tetrachloroethylene, trichloroethylene, benzene, PAHs[b], PM_{10}[c], TSP[d], thallium, antimony, cobalt, manganese, vanadium	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, dichloromethane, benzene, polychlorinated biphenyls, tetrachloroethylene, trichloroethylene, trichloromethane, ethyl benzene, naphthalene, organotin compounds, PAHs[b], toluene, xylenes
Non-hazardous waste	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, dioxins+furans, dichloromethane, tetrachloroethylene, tetrachloromethane, trichloroethylene, vinyl chloride, PM_{10}[c], TSP[d], antimony, cobalt, manganese, vanadium	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, alachlor, aldrin, atrazine, chlordane, chlorfenvinphos, chlorpyrifos, DDT, 1,2-dichloroethane, dichloromethane, dieldrin, diuron, endosulfan, endrin, heptachlor, hexachlorobenzene, hexachlorobutadiene, 1,2,3,4,5,6-hexachlorocyclohexane, lindane, mirex, dioxins+furans, pentachlorobenzene, pentachlorophenol, polychlorinated biphenyls, simazine, tetrachloroethylene, trichlorobenzenes, trichloroethylene, trichloromethane, vinyl chloride, anthracene, benzene, brominated diphenylethers, nonylphenol and nonylphenol ethoxylates, ethyl benzene, isoproturon, naphthalene, organotin compounds, di-(2-ethyl hexyl) phthalate, PAHs[b], toluene, tributyltin and compounds, triphenyltin and compounds, trifluralin, xylenes, octylphenols and octylphenol ethoxylates, flouranthene, isodrin, hexabromobiphenyl
Disposal or recycling of animal waste	NMVOC[a], PAHs[b], dioxins+furans, PAHs[b], PM_{10}[c], TSP[d]	Zinc and compounds, dioxins+furans
Urban waste-water treatment plants	NMVOC[a], cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, dioxins+furans, PM_{10}[c]	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, atrazine, 1,2-dichloroethane, diuron, lindane, pentachlorophenol, simazine, tetrachloroethylene, tetrachloromethane, trichloromethane, anthracene, benzene, nonylphenol and nonylphenol ethoxylates, ethyl benzene, isoproturon, naphthalene, organotin compounds, di-(2-ethyl hexyl) phthalate, PAHs[b], toluene, tributyltin and compounds, xylenes, octylphenols and octylphenol ethoxylates, fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene
Paper and wood production	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, di-(2-ethyl hexyl) phthalate, PM_{10}[c], TSP[d]	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, tetrachloroethylene, trichlorobenzenes, trichloroethylene, trichloromethane, organotin compounds, di-(2-ethyl hexyl) phthalate, PAHs[b], toluene
Food and beverage sector	NMVOC[a], arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, dioxins+furans, PM_{10}[c], TSP[d]	Chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, naphthalene, PAHs[b], toluene, fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, benzo(b)fluoranthene
Surface treatment using organic solvents	NMVOC[a], chromium and compounds, copper and compounds, nickel and compounds, lead and compounds, zinc and compounds, dichloromethane, naphthalene, PAHs[b], PM_{10}[c], TSP[d]	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, 1,2-dichloroethane, trichloroethylene, trichloromethane, organotin compounds, toluene, naphthalene, PAHs[b]
Ship building	NMVOC[a], cadmium and compounds, chromium and compounds, copper and compounds, nickel and compounds, lead and compounds, zinc and compounds, PM_{10}[c], TSP[d], antimony, cobalt, manganese	Arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, organotin compounds, PAHs[b]

[a]Non-methane volatile organic compounds.
[b]Polycyclic aromatic hydrocarbons.
[c]Particulate matter with a diameter between 2.5 and 10 µm.
[d]Total suspended particulate matter.

Supplementary Data, Table S6: amounts (in kg) of carcinogens (IARC classification) and other toxic substances released by the facilities in the study area in 2009, grouped by industrial sector.

	IARC groups[a]			Groups of toxic substances[b]								
Industrial group	Group 1	Group 2A	Group 2B	Metals	Pesticides	PACs	Non-HPCs	Plasticizers	POPs	VOCs	Solvents	Other
Combustion installations	1,718,883	805	173	6294	0	321	0	3	173	470,346	600	1,716,080
Production and processing of metals	3,265,670	16,748	8	126,640	33	4291	0.1	0	4280	706,345	177,408	3,078,955
Galvanization	17,225	111	6	4117	3	0.04	0	0	0.04	10,040	80	17,004
Surface treatment of metals and plastic	55,593	4685	206	6786	87	6	0	200	87	1,133,477	4610	52,310
Mining industry	1,490,970	6	0	796	0	0.0003	0	0	0.0003	2444	0.03	1,490,818
Cement and lime	1,029,713	670	1,203	3130	0	2090	0	417	1273	701,026	11,697	1,016,121
Glass and mineral fibers	330,813	1122	3	2548	0	0.0005	0	0	0.0005	2,491,041	422	329,743
Ceramic	947,261	147	10	1788	6	3	0	0	3	107,659	1280	945,038
Organic chemical industry	132,575	888	10,275	985	83	18,399	52	2	31	2,802,712	11,131	75,743
Inorganic chemical industry	113,591	112	19	1549	0	0.0002	0	0	0.0002	6306	23	113,513
Fertilizers	124,324	0.01	61	0.04	0	0.0001	0	0	0.0001	186	61	124,324
Biocides	1118	81	0.2	7	0	0	0	0	0	6945	81	1118
Pharmaceutical products	3129	313,251	91,873	834	0.02	0.01	0	0	0.01	4,202,038	405,237	2993
Explosives and pyrotechnics	530	10	0.1	167	0.01	0.003	0	0	0.02	15,353	164	239
Hazardous waste	23,245	139	2	1035	0.8	149	0	0	150	8811	13	22,704
Non-hazardous waste	35,747	966	2	844	45	1.2	0.9	2	44	172,698	1111	34,926
Disposal or recycling of animal waste	141,489	20	0	274	0	0.8	0	0	0.8	11,403	0.3	141,287
Urban waste-water treatment plants	11,879	1840	281	34,626	161	62	347	178	60	128,541	555	3502
Paper and wood production	331,563	110	0	3242	0.5	0.4	0	0	0.9	853,178	4495	326,456
Food and beverage sector	89,801	6	3	868	2	1.5	0	0	1.4	542,625	52	89,528
Surface treatment using organic solvents	86,403	185	203	885	0.01	224	0	0	24	10,398,598	1819	86,224
Ship building	2	0	0	0	0	2	0	0	2	209	0	0
TOTAL	**9,951,524**	**341,901**	**104,328**	**197,415**	**421**	**25,552**	**400**	**802**	**6131**	**24,771,982**	**620,838**	**9,668,628**

[a]IARC carcinogenic classification: Group 1: carcinogenic to humans (arsenic and compounds, cadmium and compounds, chromium and compounds, nickel and compounds, lindane, dioxins+furans, pentachlorophenol, polychlorinated biphenyls, trichloroethylene, vinyl chloride, benzene, ethylene oxide, polycyclic aromatic hydrocarbons (PAHs), particulate matter (PM_{10}), total suspended particulate matter, and benzo(a)pyrene); Group 2A: probably carcinogenic to humans (lead and compounds, aldrin, DDT, dichloromethane, dieldrin, tetrachloroethylene, and hexabromobiphenyl); Group 2B: possibly carcinogenic to humans (chlordane, 1,2-dichloroethane, heptachlor, hexachlorobenzene, 1,2,3,4,5,6-hexachlorocyclohexane, mirex, tetrachloromethane, 1,1,2,2-tetrachloroethane, trichloromethane, ethyl benzene, naphthalene, di-(2-ethyl hexyl) phthalate, cobalt and compounds, benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene).

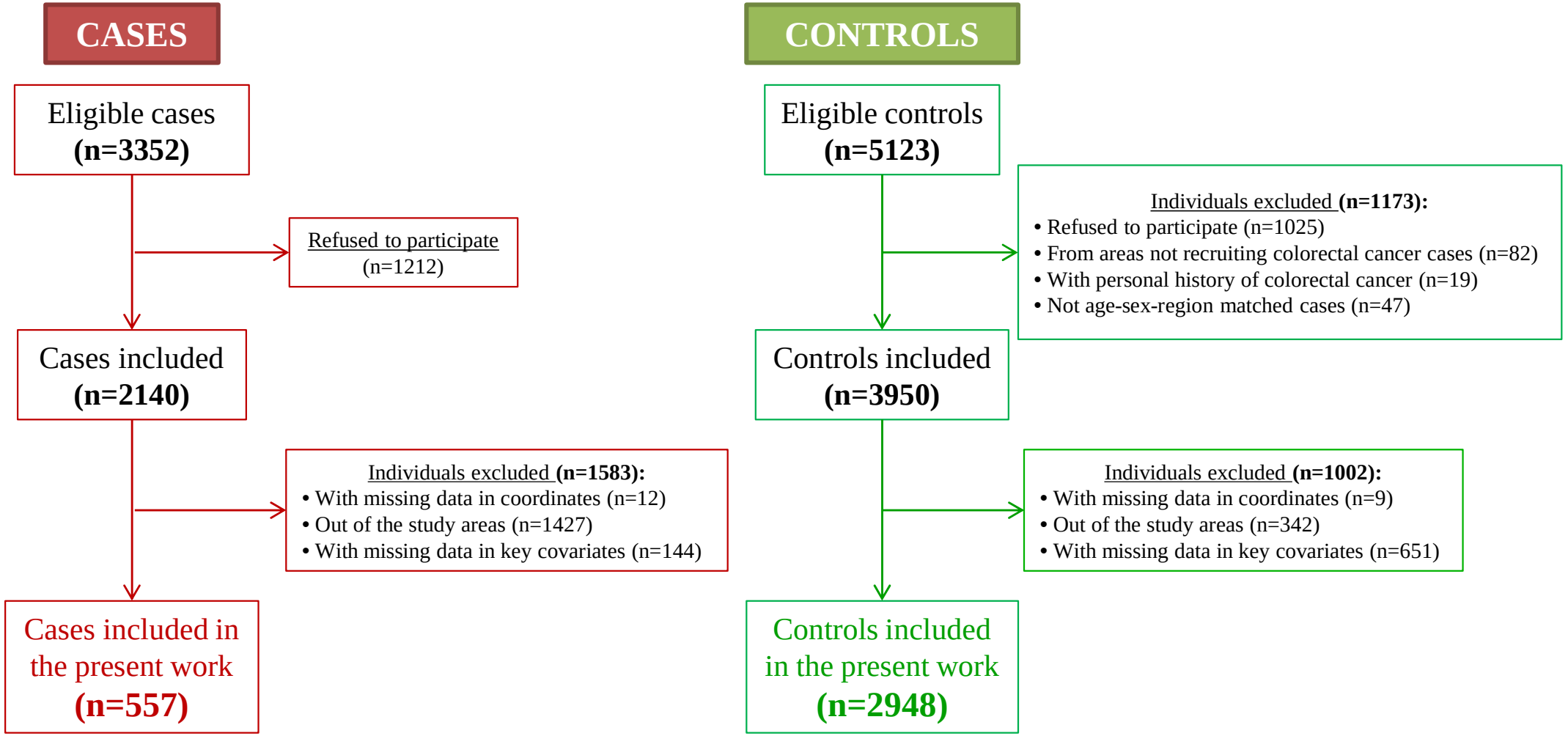
[b]Metals (arsenic and compounds, cadmium and compounds, chromium and compounds, copper and compounds, mercury and compounds, nickel and compounds, lead and compounds, zinc and compounds, organotin compounds, tributyltin and compounds, triphenyltin and compounds, thallium, antimony, cobalt, manganese, and vanadium); Pesticides (alachlor, aldrin, atrazine, chlordane, chlorfenvinphos, chlorpyrifos, DDT, dieldrin, diuron, endosulfan, endrin, heptachlor, lindane, mirex, pentachlorobenzene, pentachlorophenol, simazine, tetrachloromethane, isoproturon, organotin compounds, tributyltin and compounds, triphenyltin and compounds, trifluralin, and isodrin); PACs: polycyclic aromatic chemicals (anthracene, ethylene oxide, naphthalene, PAHs, fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene); Non-HPCs: non-halogenated phenolic chemicals (nonylphenol and nonylphenol ethoxylates, and octylphenols and octylphenol ethoxylates); Plasticizers (di-(2-ethyl hexyl) phthalate, and $C_{10\text{-}13}$-chloroalkanes); POPs: persistent organic pollutants (aldrin, chlordane, DDT, dieldrin, endosulfan, endrin, heptachlor, hexachlorobenzene, 1,2,3,4,5,6-hexachlorocyclohexane, lindane, mirex, dioxins+furans, pentachlorobenzene, polychlorinated biphenyls, brominated diphenylethers, organotin compounds, PAHs, hexabromobiphenyl, benzo(a)pyrene, benzo(b)fluoranthene, and benzo(k)fluoranthene); VOCs: volatile organic compounds (non-methane volatile organic compounds, 1,2-dichloroethane, dichloromethane, hexachlorobutadiene, tetrachloroethylene, trichlorobenzenes, 1,1,1-trichloroethane, trichloroethylene, trichloromethane, vinyl chloride, benzene, ethyl benzene, ethylene oxide, naphthalene, and toluene); Solvents (1,2-dichloroethane, dichloromethane, tetrachloroethylene, trichlorobenzenes, 1,1,1-trichloroethane, trichloroethylene, trichloromethane, benzene, ethyl benzene, toluene, and xylenes); Other (particulate matter (PM_{10}), and total suspended particulate matter).

Supplementary Data, Table S7: odds ratios of colorectal cancer for ever-decreasing radiuses within a 30-kilometer area surrounding each industrial installation, both overall and by industrial group, for the sensitivity analysis with only individuals living in their current residence for ≥10 years (long-term residents).

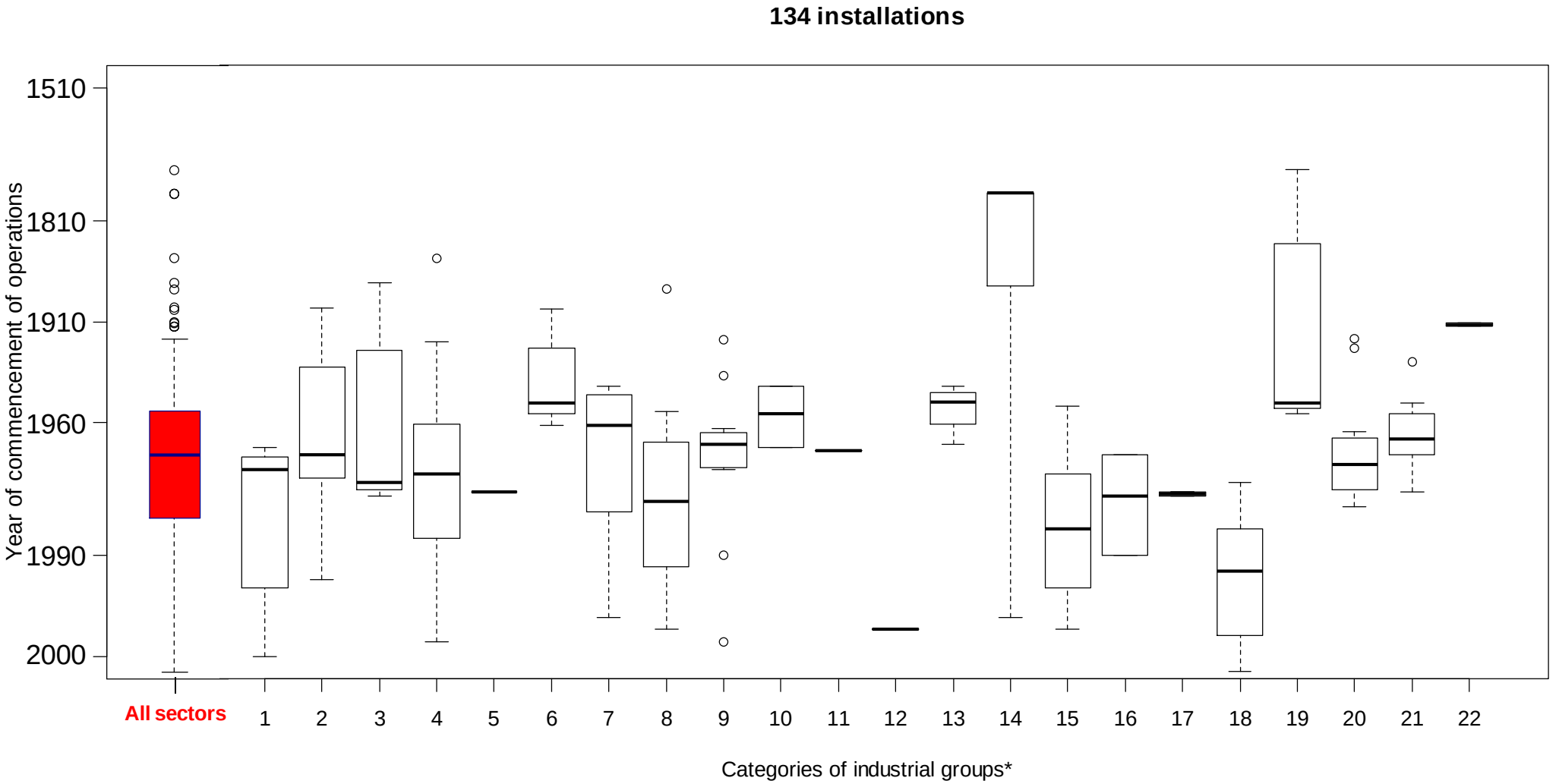
	Categorical variables																	Continuous variables	
	[0-1 km)			[1-1.5 km)			[1.5-2 km)			[2-2.5 km)			[2.5-3 km)			Reference: [3-30 km]			
Industrial group	Co[a]	Ca[b]	OR (95%CI)	Co[a]	Ca[b]	OR (95%CI)	Co[a]	Ca[b]	OR (95%CI)	Co[a]	Ca[b]	OR (95%CI)	Co[a]	Ca[b]	OR (95%CI)	Co[a]	Ca[b]	OR	*p*-trend
All sectors	239	75	2.28 (1.56-3.33)	227	53	1.55 (1.03-2.32)	386	65	0.95 (0.64-1.41)	278	69	1.05 (0.73-1.51)	334	53	0.77 (0.52-1.14)	996	135	1.16	<0.001
Combustion installations	9	2	0.25 (0.05-1.30)	11	2	0.26 (0.05-1.40)	7	1	0.17 (0.02-1.78)	48	6	0.48 (0.18-1.32)	151	8	0.36 (0.16-0.85)	496	95	0.69	0.002
Production and processing of metals	115	14	1.73 (0.81-3.71)	20	2	4.56 (0.84-24.91)	48	7	3.04 (1.05-8.77)	189	24	2.94 (1.41-6.13)	50	15	4.06 (1.87-8.82)	435	41	1.12	0.102
Galvanization	13	3	0.74 (0.13-4.33)	16	3	0.34 (0.06-1.81)	25	8	0.64 (0.20-2.07)	27	13	0.88 (0.30-2.59)	23	6	0.66 (0.19-2.35)	25	12	0.88	0.346
Surface treatment of metals and plastic	44	27	7.13 (3.72-13.65)	148	20	1.73 (0.95-3.15)	216	24	1.63 (0.90-2.97)	125	9	0.63 (0.28-1.40)	282	36	1.35 (0.79-2.33)	872	54	1.31	<0.001
Mining industry	18	4	0.32 (0.08-1.19)	3	0	0 (0-inf)	0	0	-	0	0	-	0	0	-	75	52	0.76	0.039
Cement and lime	14	3	0.20 (0.05-0.90)	9	1	0.11 (0.01-1.07)	3	0	0 (0-inf)	16	0	0 (0-inf)	33	2	1.59 (0.26-9.76)	251	66	0.68	0.005
Glass and mineral fibers	4	2	5.73 (0.91-35.98)	31	7	2.76 (0.97-7.80)	4	11	35.76 (9.18-139.31)	95	32	4.97 (2.44-10.09)	114	13	1.61 (0.70-3.67)	310	71	1.56	<0.001
Ceramic	9	0	0 (0-inf)	5	4	1.23 (0.25-6.06)	47	4	0.09 (0.02-0.39)	17	3	0.24 (0.05-1.14)	10	4	0.51 (0.12-2.20)	50	26	0.71	0.050
Organic chemical industry	16	23	14.05 (6.09-32.42)	72	35	4.60 (2.29-9.27)	121	15	1.25 (0.51-3.06)	114	25	2.79 (1.34-5.82)	77	11	1.70 (0.75-3.84)	242	21	1.55	<0.001
Inorganic chemical industry	0	2	inf (0-inf)	5	13	22.34 (6.51-76.64)	21	23	8.43 (3.79-18.78)	40	15	3.06 (1.35-6.92)	11	8	6.50 (1.77-23.88)	241	25	2.10	<0.001
Fertilizers	0	0	-	0	0	-	0	0	-	0	0	-	9	2	0.50 (0.03-8.09)	18	9	0.50	0.622
Biocides	0	0	-	0	0	-	0	0	-	4	2	NE[c]	1	1	NE[c]	1	0	NE[c]	NE[c]
Pharmaceutical products	12	5	1.42 (0.44-4.59)	60	12	1.87 (0.90-3.85)	85	23	1.44 (0.77-2.69)	109	41	1.33 (0.81-2.16)	120	38	1.46 (0.88-2.44)	737	89	1.13	0.060
Explosives and pyrotechnics	0	0	-	0	0	-	2	0	0 (0-inf)	7	2	1.01 (0.01-81.22)	4	0	0 (0-inf)	10	7	0.50	0.396
Hazardous waste	14	1	0.64 (0.06-6.63)	45	6	0.83 (0.22-3.08)	32	5	0.87 (0.24-3.24)	123	11	0.60 (0.19-1.91)	36	6	0.86 (0.29-2.56)	244	25	0.97	0.831
Non-hazardous waste	0	0	-	1	1	76.36 (1.04-5632.56)	0	0	-	17	3	21.71 (1.19-396.41)	42	3	14.15 (0.87-230.64)	155	2	3.18	0.018
Disposal or recycling of animal waste	0	0	-	0	0	-	0	0	-	11	0	0 (0-inf)	47	8	2.99 (1.12-8.00)	247	17	1.73	0.188
Urban waste-water treatment plants	0	0	-	1	1	1.76 (0.09-34.00)	26	4	0.57 (0.17-1.89)	136	33	1.08 (0.60-1.93)	126	36	1.67 (0.92-3.03)	360	84	0.98	0.855
Paper and wood production	0	0	-	0	0	-	1	0	0 (0-inf)	5	0	0 (0-inf)	91	2	0.09 (0.02-0.50)	255	28	0.09	0.006
Food and beverage sector	9	12	4.18 (1.50-11.60)	20	16	10.95 (4.39-27.33)	76	17	7.39 (3.11-17.56)	52	17	8.81 (3.97-19.54)	178	35	1.80 (1.05-3.06)	795	106	1.63	<0.001
Surface treatment using organic solvents	42	3	4.33 (0.80-23.49)	11	2	14.97 (2.36-94.93)	55	14	12.44 (4.56-33.91)	106	36	9.93 (4.83-20.39)	53	18	7.73 (3.22-18.54)	415	21	2.13	<0.001
Ship building	14	0	0 (0-inf)	12	3	0.37 (0.07-1.97)	20	10	0.99 (0.29-3.39)	56	8	0.31 (0.10-0.94)	47	12	0.89 (0.29-2.75)	27	12	0.74	0.045

[a]Number of controls.
[b]Number of cases.
[c]Not estimated: risk could not be estimated.

Supplementary Data, Figure S1: flow chart displaying the selection process of colorectal cancer cases and controls.

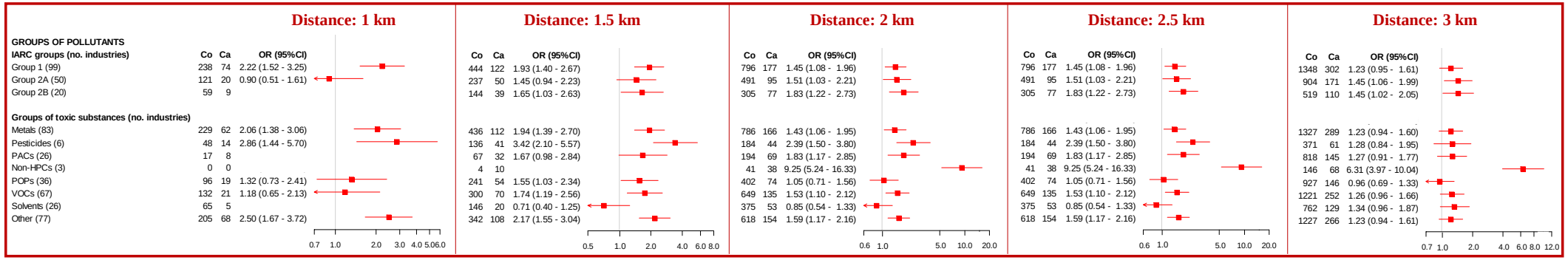
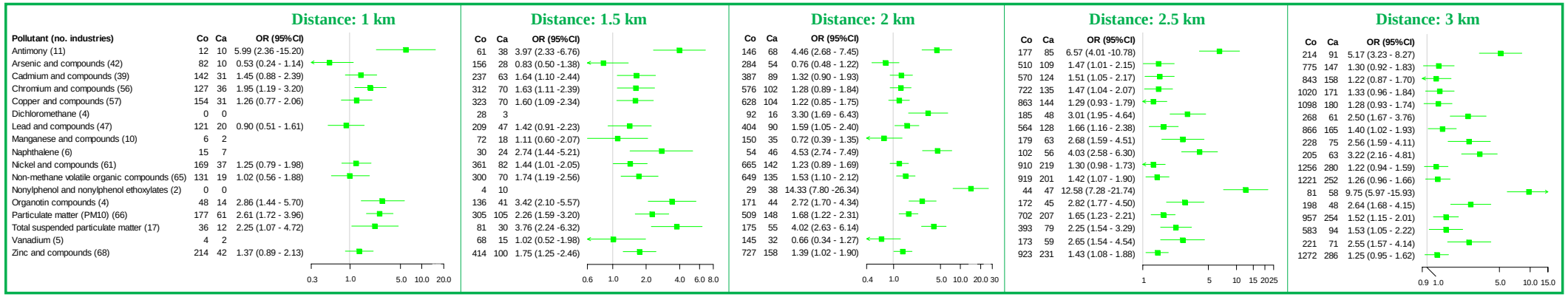


Supplementary Data, Figure S2: box-and-whisker plots with the years of commencement of operations of the 134 industries studied, according to the industrial group. Y-axis is plotted in logarithmic scale.



*1=Combustion installations. 2=Production and processing of metals. 3=Galvanization. 4=Surface treatment of metals and plastic. 5=Mining industry. 6=Cement and lime. 7=Glass and mineral fibers. 8=Ceramic. 9=Organic chemical industry. 10=Inorganic chemical industry. 11=Fertilizers. 12=Biocides. 13=Pharmaceutical products. 14=Explosives and pyrotechnics. 15=Hazardous waste. 16=Non-hazardous waste. 17=Disposal or recycling of animal waste. 18=Urban waste-water treatment plants. 19=Paper and wood production. 20=Food and beverage sector. 21=Surface treatment using organic solvents. 22=Ship building.

Supplementary Data, Figure S3: odds ratios of colorectal cancer by groups of carcinogenic and other toxic substances with statistically significant results and a number of cases and controls ≥10, for the sensitivity analysis with only individuals living in their current residence for ≥10 years (long-term residents). X-axis is plotted in logarithmic scale.



Supplementary Data, Figure S4: odds ratios of colorectal cancer by specific pollutant with statistically significant results and a number of cases and controls ≥10, for the sensitivity analysis with only individuals living in their current residence for ≥10 years (long-term residents). X-axis is plotted in logarithmic scale.