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Breast cancer and exposure to aircraft, road, and railway noise: a case–control study based on health insurance records [1]

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1 *Supplementary tables*

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S1. Combined model of traffic noise exposure and breast cancer risk according to ER receptor status ($L_{pAeq, 24h}$)

	Cases		Control persons		**All**		**ER+**		**ER−**	
	N	%	N	%	OR[a]	95% CI	OR[a]	95% CI	OR[a]	95% CI
Aircraft Noise ($L_{pAeq, 24h}$)										
under 40 dB	3137	47.2	219 066	46.5	1.00	Reference	1.00	Reference	1.00	Reference
40-44 dB	1969	29.6	140 231	29.7	1.00	0.95-1.07	1.00	0.93-1.08	1.01	0.90-1.13
45-49 dB	1038	15.6	74 346	15.8	1.02	0.94-1.10	1.00	0.91-1.10	1.06	0.91-1.22
50-54 dB	371	5.6	29 067	6.2	0.93	0.83-1.05	0.91	0.79-1.05	0.98	0.80-1.21
55-59 dB	126	1.9	8786	1.9	1.09	0.90-1.31	0.95	0.75-1.21	1.42	1.04-1.92
60-64 dB	<5	<0.05	100	<0.02	-	-	-	-	-	-
Road Traffic Noise ($L_{pAeq, 24h}$)										
under 40 dB	755	11.4	51 011	10.8	1.00	Reference	1.00	Reference	1.00	Reference
40-44 dB	1472	22.2	101 593	21.5	0.99	0.91-1.08	0.98	0.88-1.09	1.01	0.86-1.19
45-49 dB	1595	24.0	114 427	24.3	0.96	0.88-1.05	0.93	0.83-1.03	1.04	0.89-1.23
50-54 dB	1159	17.5	82 929	17.6	0.98	0.89-1.07	0.96	0.86-1.07	1.02	0.86-1.21
55-59 dB	720	10.8	51 346	10.9	0.99	0.89-1.09	0.95	0.84-1.08	1.07	0.88-1.29
60-64 dB	511	7.79	37 865	8.0	0.96	0.86-1.08	0.94	0.82-1.08	1.01	0.82-1.25
65-69 dB	327	4.9	25 313	5.4	0.93	0.81-1.06	0.92	0.79-1.08	0.95	0.74-1.21
70 dB+	104	1.6	7112	1.5	1.08	0.87-1.33	1.06	0.83-1.36	1.12	0.76-1.63
Rail Traffic Noise ($L_{pAeq, 24h}$)										
under 40 dB	3650	55.0	255 215	54.1	1.00	Reference	1.00	Reference	1.00	Reference
40-44 dB	806	12.1	58 096	12.3	0.99	0.91-1.07	0.99	0.90-1.08	0.99	0.86-1.14
45-49 dB	1047	15.8	73 994	15.7	1.02	0.95-1.10	1.03	0.94-1.13	0.99	0.87-1.14
50-54 dB	697	10.5	51 325	10.9	0.97	0.89-1.06	0.98	0.88-1.08	0.96	0.82-1.12
55-59 dB	264	4.0	20 184	4.3	0.94	0.82-1.06	0.94	0.80-1.09	0.93	0.74-1.18
60-64 dB	100	1.5	7697	1.6	0.95	0.78-1.16	1.07	0.85-1.34	0.68	0.45-1.04
65-69 dB	49	0.7	3214	0.7	1.14	0.86-1.52	1.27	0.92-1.75	0.84	0.46-1.53
70 dB+	30	0.5	1871	0.4	1.15	0.80-1.66	1.04	0.66-1.64	1.41	0.77-2.56

a) OR reported only when 5 or more cases observed; adjusted for age (third degree polynomial), hormone replacement therapy, education and occupation (if available), regional unemployment levels

S2. Sensitivity analysis examining exposure to aircraft, road traffic or rail traffic noise (24-h) and breast cancer risk among women with available education or occupation data

	Cases		Control persons		**All**		**ER+**		**ER−**	
	N	%	N	%	OR[a]	95% CI	OR[a]	95% CI	OR[a]	95% CI
Aircraft Noise ($L_{pAeq, 24h}$)										
under 40 dB	745	44.7	64 018	45.2	1.00	Reference	1.00	Reference	1.00	Reference
40-44 dB	507	30.5	43 344	30.6	1.02	0.90-1.16	1.02	0.88-1.18	1.03	0.83-1.28
45-49 dB	285	17.1	22 622	16.0	1.11	0.96-1.29	1.07	0.89-1.29	1.20	0.92-1.56
50-54 dB	91	5.5	9001	6.4	0.90	0.72-1.14	0.87	0.65-1.15	0.98	0.67-1.46
55-59 dB	36	2.2	2591	1.8	1.29	0.91-1.82	1.14	0.73-1.77	1.62	0.93-2.84
60 dB+	<5	0.1	36	<0.05	-	-	-	-	-	-
Road Traffic Noise ($L_{pAeq, 24h}$)										
under 40 dB	174	10.5	14 915	10.5	1.00	Reference	1.00	Reference	1.00	Reference
40-44 dB	360	21.6	30 104	21.3	1.03	0.86-1.24	0.99	0.79-1.23	1.14	0.82-1.57
45-49 dB	420	25.2	34 546	24.4	1.05	0.88-1.26	1.02	0.82-1.27	1.13	0.82-1.55
50-54 dB	307	18.4	25 427	18.0	1.05	0.87-1.28	1.04	0.83-1.31	1.08	0.76-1.52
55-59 dB	161	9.7	15 426	10.9	0.91	0.73-1.13	0.82	0.62-1.07	1.13	0.77-1.64
60-64 dB	126	7.6	11 414	8.1	0.99	0.78-1.25	0.94	0.71-1.25	1.09	0.73-1.65
65-69 dB	87	5.2	7606	5.4	1.02	0.78-1.32	1.02	0.75-1.39	1.01	0.63-1.63
70 dB+	30	1.8	2174	1.5	1.28	0.86-1.89	1.03	0.62-1.72	1.84	1.00-3.41
Rail Traffic Noise ($L_{pAeq, 24h}$)										
under 40 dB	867	52.1	76 759	54.2	1.00	Reference	1.00	Reference	1.00	Reference
40-44 dB	205	12.3	17 763	12.5	1.05	0.90-1.22	0.96	0.79-1.17	1.23	0.95-1.59
45-49 dB	280	16.8	22 030	15.6	1.16	1.01-1.33	1.16	0.98-1.37	1.15	0.90-1.47
50-54 dB	204	12.3	15 420	10.9	1.19	1.02-1.39	1.16	0.96-1.40	1.26	0.96-1.65
55-59 dB	69	4.1	5882	4.2	1.06	0.83-1.37	1.04	0.77-1.41	1.12	0.73-1.72
60-64 dB	22	1.3	2206	1.6	0.91	0.59-1.39	1.09	0.68-1.75	0.52	0.19-1.39
65-69 dB	10	0.6	982	0.7	0.97	0.52-1.82	1.28	0.66-2.49	0.30	0.04-2.17
70 dB+	8	0.5	570	0.4	1.28	0.63-2.59	0.94	0.35-2.52	2.02	0.75-5.45

a) OR reported only when 5 or more cases observed; adjusted for age (third degree polynomial), hormone replacement therapy, education and occupation (if available), regional unemployment levels

S3. Sensitivity analysis examining exposure to aircraft, road traffic or rail traffic noise (24-h) and breast cancer risk among women with living more than 5 years at the same address prior to the breast cancer diagnosis or 2008 (controls)

	Cases		Control persons		**All**		**ER+**		**ER−**	
	n	%	n	%	OR[a]	95% CI	OR[a]	95% CI	OR[a]	95% CI
Aircraft Noise ($L_{pAeq, 24h}$)										
under 40 dB	1028	48.0	55 941	47.7	1.00	Reference	1.00	Reference	1.00	Reference
40-44 dB	651	30.4	35 784	30.5	0.97	0.87-1.08	0.94	0.83-1.07	1.05	0.87-1.27
45-49 dB	321	15.0	17 352	14.8	0.99	0.86-1.14	0.98	0.83-1.15	1.03	0.80-1.32
50-54 dB	110	5.1	6492	5.5	0.91	0.74-1.12	0.88	0.69-1.13	0.98	0.68-1.42
55-59 dB	31	1.5	1751	1.5	0.97	0.67-1.40	0.89	0.57-1.40	1.16	0.63-2.15
60 dB+	<5	0.1	30	<0.05	-	-	-	-	-	-
Road Traffic Noise ($L_{pAeq, 24h}$)										
under 40 dB	280	13.1	13 689	11.7	1.00	Reference	1.00	Reference	1.00	Reference
40-44 dB	513	23.9	27 536	23.5	0.90	0.77-1.04	0.80	0.68-0.95	1.22	0.91-1.64
45-49 dB	523	24.4	29 561	25.2	0.85	0.73-0.98	0.74	0.62-0.87	1.23	0.92-1.65
50-54 dB	364	17.0	20 147	17.2	0.86	0.73-1.01	0.76	0.63-0.91	1.23	0.90-1.67
55-59 dB	204	9.5	11 807	10.1	0.83	0.69-1.00	0.71	0.57-0.89	1.22	0.86-1.73
60-64 dB	143	6.7	80 47	6.9	0.88	0.71-1.08	0.73	0.57-0.93	1.40	0.96-2.03
65-69 dB	92	4.3	51 66	4.4	0.88	0.69-1.12	0.80	0.60-1.06	1.15	0.73-1.82
70 dB+	24	1.1	1397	1.2	0.89	0.58-1.35	0.86	0.53-1.40	0.99	0.43-2.29
Rail Traffic Noise ($L_{pAeq, 24h}$)										
under 40 dB	1215	56.7	66534	56.7	1.00	Reference	1.00	Reference	1.00	Reference
40-44 dB	272	12.7	14496	12.4	1.02	0.89-1.16	0.94	0.80-1.11	1.20	0.95-1.51
45-49 dB	328	15.3	17352	14.8	1.03	0.90-1.16	0.95	0.82-1.11	1.20	0.97-1.49
50-54 dB	213	9.9	11932	10.2	0.95	0.82-1.11	0.94	0.79-1.13	0.98	0.75-1.29
55-59 dB	67	3.1	4512	3.8	0.79	0.61-1.01	0.83	0.62-1.11	0.68	0.42-1.11
60-64 dB	25	1.2	1562	1.3	0.87	0.58-1.30	0.89	0.55-1.42	0.84	0.39-1.77
65-69 dB	15	0.7	584	0.5	1.42	0.85-2.39	1.60	0.90-2.85	0.98	0.31-3.07
70 dB+	8	0.4	378	0.3	1.18	0.58-2.38	0.62	0.20-1.93	2.56	1.05-6.24

a) OR reported only when 5 or more cases observed; adjusted for age (third degree polynomial), hormone replacement therapy, education and occupation (if available), regional unemployment levels