

Table 17. Residential electromagnetic field exposure and childhood leukemia. Based on Table A5-4 in NRC 1997 and Table 4.21 in NIEHS 1998.

Cited in NRC NIEHS	Reference (location)	Category ^a	Associated magnetic flux density (μ T) ^{a,b}	Crude OR or RR ^c	95% CI	Odds ratio or relative risk									Cases	Controls	
						0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0			
Wire code																	
Yes	Yes	Wertheimer and Leeper 1979 (Denver, Colo., U.S.A.)	HCC vs. LCC: at death HCC vs. LCC: at birth	HCC = 0.25 (median) LCC < 0.05 (median)	3.0 2.3	1.8–5.0 1.3–3.9										145	154
Yes	No	Fulton et al. 1980 (Rhode Island, N.Y., U.S.A.)	VH OH OL Reference = VL	VH = 0.18 (mean) OH = 0.096 (mean) OL = 0.065 (mean) VL = 0.044 (mean)	1.0 1.2 1.1	0.6–1.8 0.7–2.1 0.6–1.9										47.5	56.3
Yes	Yes	Savitz et al. 1988 (Denver, Colo., U.S.A.)	VH vs. VL OH vs. L	VH = 0.216; VL = 0.03 OH = 0.09; OL = 0.05	2.8 1.5	0.9–8.0 0.9–2.6										35	96
Yes	Yes	London et al. 1991 (Los Angeles, Calif., U.S.A.)	VH OH OL Reference = VL	VH = 0.107 (median) OH = 0.066 (median) OL = 0.058 (median) VL = 0.043 (median)	2.2 1.4 1.0	1.1–4.3 0.8–2.6 0.5–1.7										42	24
No	Yes	Linnet et al. 1997 (location not given)	VH OH OL UG + VL = reference	VH = 0.107 (median) OH = 0.066 (median) OL = 0.058 (median) VL = 0.043 (median)	0.9 1.0 1.1	0.5–1.6 0.7–1.5 0.7–1.5										408 (matched cases)	
Distance																	
Yes	No	Feychting and Ahlbom 1993 (Sweden)	To power line To power line Reference	<51 m = 0.138 (mean) 51–100 m = 0.065 (mean) ≥101 m = 0.044 (mean)	2.9 1.1	1.0–7.3 0.4–2.7										6	34
Yes	No	Coleman et al. 1989 (SE London, U.K.)	To substation To substation To substation Reference	0–24 m = 0.18 (mean) 25–49 m = 0.096 (mean) 50–99 m = 0.065 (mean) ≥100 m = 0.044 (mean)	1.6 1.5 0.7	0.3–8.4 0.6–3.6 0.4–1.4										3	3
Measured																	
Yes	Yes	Savitz et al. 1988 (Denver, Colo., U.S.A.)	At low power At high power	0.2 0.2	1.9 1.4	0.7–5.6 0.6–3.5										36	207
Yes	No	Tomenius 1986 (Stockholm, Sweden)	Total residence Reference	≥0.3 <0.3	0.3	0.1–1.1										4	10
Yes	No	London et al. 1991 (Los Angeles, Calif., U.S.A.)	24-h 24-h 24-h	≥0.268 0.119–0.267 0.068–0.124	1.5 0.9 0.7	0.7–3.3 0.5–1.7 0.4–1.2										20	11
																24	22
																35	42

Table 17. (continued).

Cited in		Reference (location)	Category ^a	Associated magnetic flux density (μT) ^{a,b}	Crude OR or RR ^c	95% CI	Odds ratio or relative risk							Cases	Controls
NRC	NIEHS						0	0.5	1.0	1.5	2.0	2.5	3.0		
			Reference for 24-h	≤ 0.067									85	69	
No	Yes	Linnet et al. 1997 (location not given) Acute Lymphoblastic Leukemia (ALL) Matched analysis	24-h	0.4–0.499	6.4	1.3–32								463 matched pairs	
	New		24-h	0.3–0.399	1.5	0.6–3.5									
			24-h	0.2–0.299	1.3	0.7–2.5									
			24-h	0.1–0.199	1.2	0.8–1.7									
			24-h	0.065–0.099	1.0	0.7–1.4									
			Reference	< 0.065											
No	Yes	Michaelis et al. 1998 (Germany)	Median at night	≥ 0.2	3.9	0.9–17									
	New		Median measurement	≥ 0.2	3.2	0.7–15									
			Mean measurement	≥ 0.2	1.5	0.4–5.5									
			Control	< 0.2											
No	Yes	Michaelis et al. 1997 (Lower Saxony, Germany)	Median at night	≥ 0.2	3.8	1.2–12								129	
	New		Median measurement	≥ 0.2	2.3	0.8–6.7									
			Reference	< 0.2											
Yes	No	London et al. 1991 (Los Angeles, California, USA)	Spot	> 0.125	1.2	0.5–2.8								16	
			Spot	0.068–0.124	1.4	0.7–2.9									
			Spot	0.032–0.067	1.0	0.6–1.9									
			Reference	≤ 0.031											
			Reference										67	56	
Estimated															
Yes	No	Feychting and Ahlbom 1993 (Sweden)	Spot	> 0.2	0.6	0.2–1.8								4	
			Spot	0.1–0.19	0.2	0.0–0.9									
			Reference	< 0.1											
													19	207	
Yes	No	Feychting and Ahlbom 1993 (Sweden)	Estimated	≥ 0.3	3.8	1.4–9.3								7	
			Estimated	≥ 0.2	2.7	1.0–6.3									
			Estimated	0.1–0.29	1.5	0.4–4.2									
			Estimated	0.1–0.19	2.1	0.6–6.1									
			Reference	< 0.09											
													27	475	
Yes	Yes	Olsen et al. 1993 (Denmark) Adjusted OR used	Estimated	≥ 0.4	6.0	0.8–44								3	
			Estimated	≥ 0.25	2.5	0.3–6.7									
			Estimated	≥ 0.1	1.0	0.3–3.3									
			Estimated	0.1–0.39	0.3	0.0–2.0									
			Estimated	0.1–0.24	0.5	0.1–4.3									
			Reference	< 0.1											
													5	4	
													4	8	
													1	7	
													1	4	
													829	1658	

Table 17. (concluded).

Cited in NRC NIEHS	Reference (location)	Category ^a	Associated magnetic flux density (μT) ^{a,b}	Crude OR or RR ^c	95% CI	Odds ratio or relative risk									Cases	Controls
						0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0		
Yes Yes	Verkasalo et al. 1993, 1994 (Finland)	10-yr cumm. exposure	≥ 1.0	3.5	0.7–10	[Dotted pattern bar from 0 to 10]									144 cases identified	cohort size 68 300 boys 66 500 girls
		10-yr cumm. exposure	≥ 0.40	1.2	0.3–3.6	[Dotted pattern bar from 0 to 3.6]										
		10-yr cumm. exposure	0.01–0.39	0.9	0.6–1.3	[Dotted pattern bar from 0 to 1.3]										
Yes Yes	Verkasalo et al. 1993, 1994 (Finland)	Average exposure	≥ 0.2	1.6	0.3–4.5	[Dotted pattern bar from 0 to 4.5]									3	1.93 expected
		Average exposure	$>0.01-0.19$	0.9	0.6–1.3	[Dotted pattern bar from 0 to 1.3]										
No Yes New	Tynes and Haldorson 1997 (Norway)	Closest to diagnosis	≥ 0.2	0.5	0.1–2.2	[Dotted pattern bar from 0 to 2.2]									500 max 5 controls/case selected	2004 max
		Closest to diagnosis	≥ 0.14	0.8	0.3–2.4	[Dotted pattern bar from 0 to 2.4]										
		Closest to diagnosis	0.05–0.13	1.5	0.7–3.3	[Dotted pattern bar from 0 to 3.3]										
		Reference	<0.05			[Dotted pattern bar from 0 to 0]										

Note: [Solid black] wire code; [White box] distance; [Diagonal lines] measured; [Dotted pattern] estimated.

^aWire codes: VH = very high; OH = ordinary high; OL = ordinary low; VL = very low; HCC = high current configuration; LCC = low current configuration; UG = underground

^bMagnetic fields for wire codes and distance categories are based on data in Appendix B, NRC 1997.

^cOR = odds ratio; RR = relative risk; cumm. = cumulative; expected = based on population at large.