

Table 2.2. Case reports, cohorts and case-control studies of chromium VI and nasal and nasal sinus cancer

Author date/ Place	Study population	n ¹	Relative Risk	95% CI	Comment
<i>Cohort studies</i>					
Enterline (1974) US	1200 workers in 3 chromate production plants employed 1937-40, followed 1941-60	2	na		
Langård and Norseth (1975) Norway	133 workers in a zinc chromate pigment production plant employed and followed 1948-72	1	na	-	
Satoh, et al. (1981) Japan	896 chromate production workers employed 1918-75, followed 1918-78	6	na	-	Exp= 0.5 ⇒ SMR = 120
Watanabe and Fukuchi (1984)	273 chromate production workers in Japan; 1947-73; observed 1960-82	1	na	-	Abstract only.
Davies (1984) U.K.	1152 male workers in 3 lead and/or zinc chromate pigment factories employed 1930's to 1981, followed to 1981	1	5.0	[0.13-27.86]	SMR ref England and Wales
Davies, et al. (1991) U.K.	2298 workers in 3 chromate production factories; exposed before 1976, followed 1950-88	4	15.4	[4.19-39.43]	SMR ref England and Scotland
Korallus, et al. (1993) Germany	2 chromate-producing factories; 1417 workers with at least 1 year of exposure. Exposure and followed 1948-88	0	0	-	
Rosenman, and Stanbury (1996) New Jersey	3408 workers in 4 chromate production facilities, employed during 1937-71	6	6.85	3.14-14.94	PMR ref U.S. Includes 3 cases reported by Machle and Gregorius (1948)
Sorahan et al. (1987)	UK nickel/chromium platers; 2689 (1288 men, 1401 women) first employed 1946-75; observed 1946-83. Most workers exposed to Ni cmpds as well as to Cr VI.	3	10	[2.1-29.2]	SMR ref England and Wales. Conflicting Dx info from regional tumour registry on 2 of the cases. All 3 cases had < 2 years in chrome bath work.

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Sorahan, and Harrington (2000) Yorkshire, U.K.	920 male chrome platers from 54 plants in Yorkshire; employed before 1972, followed 1972-97	1	6.87	0.17-38.3	SMR ref England and Wales
Cohort study total		22 - 26			
Case reports					
Mancuso and Hueper (1951) US	worker in a chromate production plant	1	-	-	As reported by Enterline.
Hueper (1966) Worldwide survey of literature	Worldwide survey of reported cases among chromate workers	6	-	-	No indication of number of person-years at risk
Satoh, et al. (1994) Japan	Workers in a chromate plant	4	-	-	No indication of number of person-years at risk
Sato, et al. (2003) Japan	Worker in a chromate plant	1	-	-	Double primary nasal cavity cancer. No indication of number or person-years at risk
Case report totals		12			
Case control studies					
Hernberg, et al. (1983) Denmark, Finland, Sweden	Population-based, 1977-80, 167 matched cases and controls. Exposure derived from interview and expert assessment	16	2.7	1.1-6.6	All chromium
		13	3.3	1.1-9.4	Welders exposed to chromium
		9	1.5	0.5-4.2	Electro-plating

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Brinton, et al. (1984) North Carolina and Virginia	Hospital-based, 1970-80. 160 cases and 290 controls. Interviews to obtain history and checklist of exposures, including “chromium/chromates”	5	1.5	0.4-5.6	Self-reported exposures are of questionable validity. Overall RR for M and F combined do not seem to reflect sex-specific RR’s. Exposure to “chromium/chromates” seems to be mainly in painters
Luce, et al. (1993) France	Subjects in a hospital-based case-control study, 1986-88. 207 cases and 409 controls. Most controls were hospital-based; some were “friends”. Interviews to obtain detailed job histories. Experts assessed exposure to several agents, including Cr VI	4	0.7	0.2-2.1	Squamous cell
		3	0.4	0.1-1.1	Adenocarcinoma
		5	2.4	0.8-7.1	Other cell types

1 n: Number of exposed cases