Supplemental Table 1. Studies included in the meta-analysis of Cr(VI) and stomach cancer

Author	Location	Number of cases[a]	Study design	Effect measure	Industry or occupation	Relative risk estimate (95% CI)	Adjustments other than age and sex
Ahn et al., 2006[1]	Korea	2	Cohort	SRR	Iron and steel production; stainless steel production work, 10-35 years duration	13.65 (0.76-66.26)	Employment duration, and work in other processes
Amandus, 1986[2]	US	16	Cohort	SMR	Non-asbestos cement plants; > 20 years tenure in cement plant, ≥ 20 years latency	1.27 (0.73-2.06)	
Axelsson et al., 1980[3]	Sweden	4	Cohort	SMR	Ferrochromium production	0.78 (0.21-2.01)	
Becker, 1999[4]	Germany	4	Cohort	SMR	Arc welders; effective welding period > 25% of work day	1.12 (0.30-2.86)	
Costantini et al., 1989[5]	Italy: Tuscany	6	Cohort	SMR	Leather tanning; male tanners	0.43 (0.16-0.94)	
Dab et al., 2011[6]	France	3	Cohort	SMR	Cement production; employed ≥ 1 year from 1990 to 2005	0.38 (0.08-1.26)	
Danielsen et al., 1996[7]	Norway	3	Cohort	SIR	Boiler welders; ever welding on stainless steel	1.03 (0.21-3.03)	
Davies et al., 1991[8]	UK: Bolton	6	Cohort	SMR	Chromate production; early and pre-process change workers	2.08 (0.76-4.53)	Social class and area
Davies et al., 1991[8]	UK: Eaglescliff	4	Cohort	SMR	Chromate production; early and pre-process change workers	0.39 (0.10-0.99)	Social class and area
Davies et al., 1991[8]	UK: Rutherglen	9	Cohort	SMR	Chromate production; early and pre-process change workers	0.70 (0.32-1.32)	Social class and area
Deschamps et al., 1995[9]	France	2	Cohort	SMR	Chromate pigment production	1.52 (0.18-5.50)	
Edling et al., 1986[10]	Sweden	6	Case-control	OR	Leather tanning; occupation "tanner" or "tannery worker"	1.6 (0.6-4.0)	
Franchini et al., 1983[11]	Italy	1	Cohort	SMR	Metal plating; "hard" plating workers	3.33 (0.04-18.55)	
Garabrant & Wegman, 1984[12]	US: Massachusetts	2	Cohort	PMR	Leather workers; female	2.80 (0.31-10.11)	
Garabrant & Wegman, 1984[12]	US: Massachusetts	16	Cohort	PMR	Leather workers; male	1.69 (0.97-2.74)	

Gonzalez et al., 1991[13]	Spain: Catalonia	41	Case-control	OR	Brick masons; exposed to dust	1.69 (0.82-3.46)	Education, SES, and fruit and vegetable intake
Gonzalez et al., 1991[13]	Spain: Catalonia	5	Case-control	OR	Leather workers; exposed to dust	1.82 (0.40-8.25)	Education, SES, and fruit and vegetable intake
Hara et al., 2010[14]	Japan: Tokyo	14	Cohort	SMR	Chrome plating; male platers, mean age at baseline = 49.5 years	0.67 (0.37-1.06)	
Hayes et al., 1989[15]	New Jersey	2	Cohort	SMR	Chromate pigment production; ≥ 10 years of exposure to chromate dusts	2.14 (0.24-7.73)	Race
Horiguchi et al., 1990[16]	Japan: Osaka	2	Cohort	SMR	Chrome plating; workers employed ≥ 10 years	1.43 (0.02-7.50)	
Huvinen & Pukkala, 2013[17]	Finland	12	Cohort	SIR	Ferrochromium and stainless steel production workers; chromite mine workers	0.80 (0.42-1.40)	
Jakobsson et al., 1993[18]	Sweden	13	Cohort	SIR	Cement production; men employed ≥ 1 year, ≥ 15 years since start of employment	1.14 (0.61-1.94)	
Jakobsson et al., 1997[19]	Sweden	8	Cohort	SIR	Stainless steel grinding; workers diagnosed ≥ 15 years after start of employment	0.8 (0.3-1.7)	
Jarvholm et al., 1982[20]	Sweden	4	Cohort	SMR	Steel polishing; men who had worked ≥ 5 years as polishers, latency period ≥ 10 years	9.76 (2.62-25.0)	
Kano et al., 1993[21]	Japan	8	Cohort	SMR	Chromate pigment production	1.20 (0.52-2.37)	
Kneller et al., 1990[22]	China: Shanghai	55	Cohort	SIR	Leather products workers	1.50 (1.13-1.95)	
Kneller et al., 1990[22]	China: Shanghai	5	Cohort	SIR	Leather tanning; tanners, feltmongers, and pelt dressers	0.94 (0.30-2.19)	
Koh et al., 2013[23]	Korea	14	Cohort	SIR	Cement industry workers; high exposure group	2.18 (1.19-3.65)	
Korallus et al., 1993[24]	Germany: Leverkusen	4	Cohort	SMR	Chromate production; workers exposed ≥ 1 year	0.63 (0.17-1.60)	
Korallus et al., 1993[24]	Germany: Uerdingen	12	Cohort	SMR	Chromate production; workers exposed ≥ 1 year	1.92 (1.04-3.24)	
Krstev et al., 2005[25]	Poland: Warsaw	4	Case-control	OR	Leather workers; females	3.10 (0.70-14.9)	Education, smoking, and number of jobs

Krstev et al., 2005[25]	Poland: Warsaw	8	Case-control	OR	Leather workers; males	5.10 (1.0-25.0)	Education, smoking, and number of jobs
Langård et al., 1990[26]	Norway	7	Cohort	SIR	Ferrochromium production; workers first employed before 1960	1.45 (0.58-2.99)	
Lipworth et al., 2011[27]	US: California	26	Cohort	SMR	Aircraft manufacturing workers; exposed to chromates	0.72 (0.47-1.05)	Race
Mallin et al., 1989[28]	US: Illinois	9	Case-control	OR	Brickmasons and stonemasons; white males	4.30 (1.18-15.6)	Blue vs. white collar job
McDowall, 1984[29]	UK: North Kent	4	Cohort	SMR	Cement production-packing; employed in 1939 in occupation identified as cement manufacture	3.21 (0.86-8.22)	
McDowall, 1984[29]	UK: North Kent	9	Cohort	SMR	Cement production-other laborers; employed in 1939 in occupation identified as cement manufacture	1.48 (0.67-2.81)	
McDowall, 1984[29]	UK: North Kent	8	Cohort	SMR	Cement production-maintenance; employed in 1939 in occupation identified as cement manufacture	2.11 (0.91-4.16)	
Mikoczy & Hagmar, 2005[30]	Sweden	13	Cohort	SIR	Leather tanning; workers employed ≥ 1 year, 20 year latency period	0.98 (0.52-1.68)	
Minder & Beer-Porizek, 1992[31]	Switzerland	52	Cohort	SMR	Masons; males, mortality 1979-1982	1.42 (1.04-1.96)	
Montanaro et al., 1997[32]	Italy: Genoa	10	Cohort	SMR	Leather tanning; male and female workers employed ≥ 6 months, employed 1955-1988	0.79 (0.38-1.46)	
Moulin et al., 1990[33]	France	4	Cohort	SMR	Ferrochromium and stainless steel production; workers employed ≥ 1 year in ferrochromium or stainless steel workshops	2.75 (0.75-7.01)	
Moulin et al., 1993a[34]	France	7	Cohort	SMR	Ferrochromium and stainless steel production; workers employed ≥ 3 years in production workforce	0.92 (0.37-1.90)	
Moulin et al., 1993b[35]	France	6	Cohort	SMR	Stainless steel and mild steel welding; men employed as welders ≥ 1 year	2.09 (0.77-4.55)	
Moulin et al., 1995[36]	France: Plant 1	26	Cohort	SMR	Stainless steel production; males	1.04 (0.68-1.52)	
Moulin et al., 1995[36]	France: Plant 2	15	Cohort	SMR	Stainless steel production; males	0.84 (0.47-1.38)	
Parent et al., 1998[37]	Canada: Montreal	11	Case-control	OR	Leather workers; employed ≥ 10 years	1.0 (0.5-1.9)	Birthplace, education, smoking, and proxy interview

Pippard et al., 1985 [38]	UK	2	Cohort	SMR	Leather tanning; male chrome tanners	0.52 (0.06-1.87)	
Pukkala et al., 2009[39]	Denmark	140	Cohort	SIR	Bricklayers; males, 1961-2005	1.06 (0.89-1.25)	
Pukkala et al., 2009[39]	Finland	89	Cohort	SIR	Bricklayers; males, 1961-2005	0.95 (0.76-1.17)	
Pukkala et al., 2009[39]	Norway	168	Cohort	SIR	Bricklayers; males, 1961-2005	1.20 (1.03-1.40)	
Pukkala et al., 2009[39]	Scandinavia	2	Cohort	SIR	Bricklayers; females, 1961-2005	1.56 (0.19-5.65)	
Rafnsson et al., 1997[40]	Iceland	15	Cohort	SIR	Masons; men with a 30 year lag between finishing vocational training and counting person-years	1.27 (0.71-2.09)	
Robinson et al., 1995[41]	US	32	Cohort	PMR	Brickmasons; white men	2.08 (1.42-2.93)	
Rosenman & Stanbury, 1996[42]	US: New Jersey	2	Cohort	PMR	Chromium smelter; former workers employed > 20 years	1.87 (0.21-6.76)	
Salg & Alterman, 2005[43]	US	8	Cohort	PMR	Bricklayers: non-white; male union members who died between 1986 and 1991	1.17 (0.50-2.31)	
Salg & Alterman, 2005[43]	US	94	Cohort	PMR	Bricklayers: white; male union members who died between 1986 and 1991	1.31 (1.06-1.60)	
Santibañez et al., 2012[44]	Spain: Alicante	29	Case-control	OR	Bricklayers and stonemasons; men who worked ≥ 1 year in the same occupation	1.20 (0.65-2.22)	Province, education, alcohol, smoking, fruit and vegetable intake, and total energy intake
Santibañez et al., 2012[44]	Spain: Alicante	7	Case-control	OR	Pelt, leather, shoemaking; men who worked ≥ 1 year in the same occupation	1.37 (0.40-4.66)	Province, education, alcohol, smoking, fruit and vegetable intake, and total energy intake
Satoh et al., 1981[45]	Japan: Tokyo	11	Cohort	SMR	Chromium production; men employed ≥ 1 year between 1918 and 1975	0.95 (0.47-1.70)	
Silverstein et al., 1981[46]	US: Michigan	4	Cohort	PMR	Die casting and electroplating including chrome plating; white males, employees and retirees with ≥ 10 years of service in the plant	2.54 (0.68-6.50)	
Simonato et al., 1991[47]	Scandinavia	18	Cohort	SIR	Stainless steel welding; cohort included mild steel, stainless steel and shipyard welders	0.85 (0.50-1.34)	
Sjödahl et al., 2007[48]	Sweden	37	Cohort	IRR	Construction workers; males, high exposure to cement dust	1.5 (1.1-2.1)	Smoking and body mass

Smailyte et al., 2004[49]	Lithuania	6	Cohort	SIR	Cement production; workers with cumulative exposure > 130.2 mg/m^3 cement dust	1.5 (0.6-3.0)	
Sorahan et al., 1987[50]	UK: Midlands	1	Cohort	SMR	Chrome plating: females; first employment in chrome bath work	0.32 (0.01-1.78)	
Sorahan et al., 1987[50]	UK: Midlands	13	Cohort	SMR	Chrome plating: males; first employment in chrome bath work	2.06 (1.10-3.52)	
Sorahan & Harrington, 2000[51]	UK: Yorkshire, 54 plants	12	Cohort	SMR	Chrome plating; male platers and others exposed to chromic acid, employed ≥ 3 consecutive months	1.68 (0.87-2.94)	
Stern et al., 2001[52]	US	110	Cohort	PMR	Cement masons; members of Operative Plasterers' and Cement Masons' International Association	1.64 (1.35-1.98)	Race
Sweeney et al., 1985[53]	US: New York City	2	Cohort	SMR	Leather tanning; white male and female retired fur dressers	1.37 (0.15-4.95)	
Walrath et al., 1987[54]	US: New York State	14	Cohort	PMR	Leather workers; female	1.28 (0.70-2.15)	Race
Walrath et al., 1987[54]	US: New York State	71	Cohort	PMR	Leather workers; male	1.83 (1.43-2.31)	Race
Weiderpass et al., 2003[55]	Finland	unknown	Cohort	RR	All occupations; women, workers with medium to high levels of exposure to chromium	0.50 (0.23-1.12)	Stratified by social class and adjusted for job turnover rate
Xu et al., 1996[56]	China	4	Case-control	OR	Cement workers; employed at plant ≥ 15 years	1.2 (0.3-4.3)	Smoking, education, fruit and vegetable intake, stomach disease, and family history
Xu et al., 1996[56]	China	6	Case-control	OR	Metal plating (includes chromium exposure); employed at plant ≥ 15 years	2.1 (0.7-6.3)	Smoking, education, fruit and vegetable intake, stomach disease, and family history

Abbreviations: CI, confidence interval; IRR, incidence rate ratio; OR, odds ratio; PMR, proportional mortality ratio; RR, relative risk; SES, socioeconomic status; SIR, standardized incidence ratio; SMR, standardized mortality ratio; SRR, standardized rate ratio

[a] The number of exposed cases of stomach cancer

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