

Asthma-specific job exposure matrix: Online Supplement

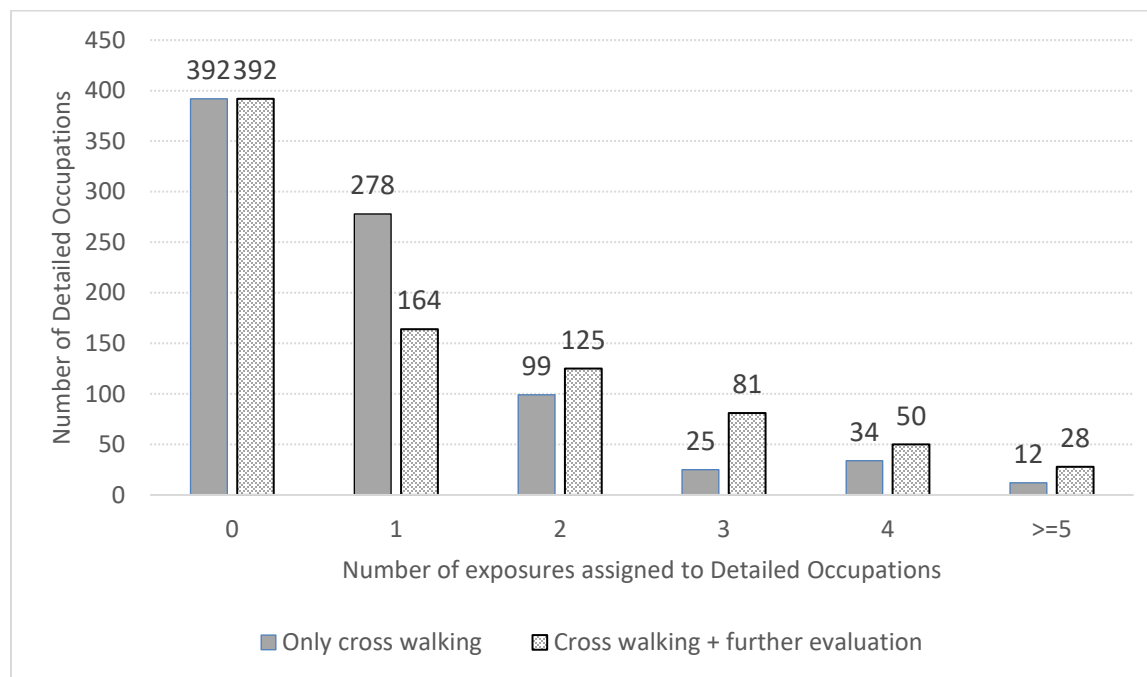
Development of an asthma-specific job exposure matrix for use in the United States: Online Supplement

PK Henneberger,¹ LM Kurth,¹ B Doney,¹ X Liang,¹ E Andersson²

¹Respiratory Health Division, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Morgantown, WV, USA

²Department of Occupational and Environmental Medicine, Sahlgrenska University Hospital , Gothenburg, Sweden

Online Supplement Figure 1. Frequency that SOC 2010 Detailed Occupations were assigned different numbers of exposures at two points in development of USA-JEM: just after transferring exposures from the N-JEM based on cross walking from the ISCO-88 codes, and later after evaluation and revision^a



^a The median number of exposures was one for both only cross walking and cross walking + further evaluation, but the means were 0.91 and 1.22, respectively. After evaluation and revisions, the numbers indicated represent the combination of *probable* and *possible* exposures in the USA-JEM.

Online Supplement Table 1. Number (%) of SOC-2010 Detailed Occupations in the Major Occupation Groups with exposure to at least one WRA agent just after cross walking, and then later after evaluation and revision with *probable* or *possible* exposure to at least one WRA agent

SOC-2010 Major Occupation Group Code and Title	N^a	Number (%) of occupations with at least one exposure as assigned by N-JEM, brought over by cross walking	Number (%) of occupations with at least one <i>probable</i> or <i>possible</i> exposure later after evaluation and revision of cross walked assignments
11-0000 Management	34	3 (8.8)	5 (14.7)
13-0000 Business and Financial Operations	32	1 (3.1)	0 (0)
15-0000 Computer and Mathematical	19	0 (0)	0 (0)
17-0000 Architecture and Engineering	35	12 (34.3)	10 (28.6)
19-0000 Life, Physical, and Social Science	43	19 (44.2)	16 (37.2)
21-0000 Community and Social Service	18	3 (16.7)	3 (16.7)
23-0000 Legal	9	4 (44.4)	0 (0)
25-0000 Education, Training, and Library	63	1 (1.6)	14 (22.2)
27-0000 Arts, Design, Entertainment, Sports, and Media	41	7 (17.1)	5 (12.2)
29-0000 Healthcare Practitioners and Technical	61	37 (60.7)	54 (88.5)
31-0000 Healthcare Support	17	13 (76.5)	16 (94.1)
33-0000 Protective Service	22	22 (100)	17 (77.3)
35-0000 Food Preparing and Serving Related	18	18 (100)	18 (100)
37-0000 Building and Grounds Cleaning and Maintenance	10	10 (100)	10 (100)
39-0000 Personal Care and Service	33	23 (69.7)	19 (57.6)
41-0000 Sales and Related	22	1 (4.6)	2 (9.1)
43-0000 Office and Administrative Support	56	10 (17.9)	9 (16.1)
45-0000 Farming, Fishing, and Forestry	15	15 (100)	15 (100)
47-0000 Construction and Extraction	60	59 (98.3)	58 (96.7)
49-0000 Installation, Maintenance, and Repair	52	50 (96.2)	28 (53.8)
51-0000 Production	108	101 (93.5)	96 (88.9)
53-0000 Transportation and Material Moving	52	39 (75)	44 (84.6)
55-0000 Military Specific	20	0 (0)	9 (45.0)
TOTAL	840	448 (53.3)	448 (53.3)

^a N = total number of detailed occupations in Major Occupation Group

Online Supplement Table 2. Number of SOC-2010 Detailed Occupations assigned different exposures either just after cross walking the NJEM exposure codes and later after evaluation and revision

USA-JEM Category	Asthma Exposure	Exposure Codes		Number of occupations	
		N-JEM	USA-JEM	N-JEM	USA-JEM
LMW Agents	Highly reactive LMW agents, other	A	ABC	122	114
	Highly reactive agents, acrylates	B			
	Highly reactive agents, epoxy (Di)isocyanates	C			
		P	P	40	44
HMW Agents	Animal-derived antigens	H	H	28	29
	Plant antigens	I	I	17	33
	Latex	D	D	42	68
	Other HMW biological agents	K	K	36	31
Mixed Agents	Pharmaceutical products (drugs)	S	S	9	21
	Pest control agents	NA	PEST	NA	40
	Metal working fluids	G	G	32	22
	Highly reactive disinfectants and sterilants	M	DIS	9	119
Cleaning Agents	M				
Irritant Agents	Organic dust, wood	E	EW	26	47
	Organic dust, paper		EP		
	Organic dust, textile	F	F	16	22
	Inorganic dust and fumes, metals	O	Ometal	108	151
	Inorganic dust and fumes, multiple sources		Omulti		
	Second-hand tobacco smoke	N	N	21	18
	Exhaust and smoke from combustion	L	L	80	122
	Peak exposure	T	T	29	51
Other	U	NA	129	NA	

Abbreviations: HMW=high molecular weight; LMW=low molecular weight; Mixed= mixed HMW and LMW; NA = not applicable

Online Supplement Table 3. Number of 2010 SOC Detailed Occupations in Major Occupation Groups with *probable* or *possible* exposure, by the 19 agents in the USA-JEM

Occupations		LMW Agents		HMW Agents				Mixed				Irritant Agents						Peak	Unexp		
		Highly reactive LMW	Diisocyanates	Animal	Plant	Latex	Oth HMW bio agents	Pharmaceutical	Pest Control Agents	Metal Working Fluids	Disinfectants	Cleaning agents	Organic dust, wood	Organic dust, paper	Organic dust, textile	Inorganic dust, metals	Inorg.anic dust, multi	Second hand smoke	Exhaust and smoke	Peak irritant exposure	Unexposed ^a
Major Occupation Group Code and Title	Total	ABC	P	H	I	D	K	S	PEST	G	DIS	M	EW	EP	F	Ometal	Omulti	N	L	T	UN
11-0000 Management	34	0	0	1	1	0	0	0	1	0	0	0	1	0	0	0	2	1	3	0	29
13-0000 Business and Financial Operations	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
15-0000 Computer and Mathematical Occupations	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
17-0000 Architecture and Engineering	35	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	2	4	25
19-0000 Life, Physical, and Social Science	43	5	0	2	2	2	3	0	6	0	3	2	1	0	0	1	3	0	0	3	27
21-0000 Community	18	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	15

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Major Occupation Group Code and Title	Total	ABC	P	H	I	D	K	S	PEST	G	DIS	M	EW	EP	F	Ometal	Omulti	N	L	T	UN
and Social Service																					
23-0000 Legal	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
25-0000 Education, Training, and Library	63	0	0	1	2	1	1	0	0	0	6	9	1	0	1	0	0	0	0	0	49
27-0000 Arts, Design, Entertainment, Sports, and Media	41	1	0	0	1	0	0	0	1	0	0	0	1	0	1	2	1	1	0	0	36
29-0000 Healthcare Practitioners and Technical	61	4	0	2	0	43	0	13	1	0	48	8	0	0	0	5	0	0	0	5	7
31-0000 Healthcare Support	17	1	0	1	0	11	0	1	1	0	15	8	0	0	0	0	0	0	0	1	1
33-0000 Protective Service	22	2	2	2	1	3	0	0	2	0	1	1	0	0	0	1	1	3	8	9	5

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Major Occupation Group Code and Title	Total	ABC	P	H	I	D	K	S	PEST	G	DIS	M	EW	EP	F	Ometal	Omulti	N	L	T	UN
35-0000 Food Prep and Serving Related	18	0	0	0	0	2	0	0	0	0	15	12	0	0	0	0	0	4	8	0	0
37-0000 Building and Grounds Cleaning and Maintenance	10	0	0	1	4	0	4	0	6	0	4	4	3	0	0	0	2	0	3	4	0
39-0000 Personal Care and Service	33	7	0	2	0	5	1	0	2	0	8	5	0	0	0	0	0	5	0	1	14
41-0000 Sales and Related	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	20
43-0000 Office and Administrative Support	56	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	3	0	47
45-0000 Farming, Fishing, and Forestry	15	0	0	8	11	0	10	1	8	0	1	1	5	0	5	0	3	0	6	0	0
47-0000 Construction and Extraction	60	23	14	0	0	0	1	0	3	0	0	0	9	1	1	17	47	0	24	6	2
49-0000 Installation,	52	16	3	0	0	0	0	0	1	4	0	0	0	0	1	13	5	0	11	0	24

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Major Occupation Group Code and Title	Total	ABC	P	H	I	D	K	S	PEST	G	DIS	M	EW	EP	F	Ometal	Omulti	N	L	T	UN
Maintenance, and Repair																					
51-0000 Production	108	52	24	9	11	0	10	6	8	18	12	4	13	10	13	42	21	0	5	15	12
53-0000 Transportation and Material Moving	52	1	1	0	0	0	1	0	0	0	1	1	1	1	0	1	8	0	39	1	8
55-0000 Military Specific	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	9	2	11
TOTAL	840	114	44	29	33	68	31	21	40	22	114	55	35	17	22	85	100	18	122	51	392

^a 'Unexposed' means that the USA-JEM assigned neither *probable* nor *possible* exposure to the detailed occupation.