

**Supplementary material****Work as welder and occupational exposure to dust and fumes and  
invasive pneumococcal disease risk**

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**Supplementary material;****Table A. The following drugs were captured using the following codes;**

- a. Pneumococcal vaccination was defined as ATC code J07A L01, J07A L02 and J07A L52.
- b. Drugs used in alcohol dependence were defined as ATC code N07BB comprising disulfiram, calcium carbimide, acamprosate, naltrexone and nalmefene.

**Table B. Occupations classified as high exposed to inorganic dust.**

<b>ISCO code</b>	<b>Occupation</b>
7111	Miners and quarry workers
7112	Shotfires and blasters
7113	Stone splitters and carvers
7123	Concrete workers
7134	Insulation workers
8110	Mining-plant operators
8112	Mineral-ore and stone processors
8121	Ore and metal furnace processors
9311	Mining and quarrying labourers

**Table C. Occupations classified as high exposed to silica dust**

<b>ISCO code</b>	<b>Occupation</b>
7111	Miners and quarry workers
7112	Shotfires and blasters
7113	Stone splitters and carvers
7123	Concrete workers
8110	Mining-plant operators
8112	Mineral-ore and stone processors
9311	Mining and quarrying labourers

**Table D. Occupations classified as high exposed to fumes**

<b>ISCO code</b>	<b>Occupation</b>
5161	Firefighters
7112	Shotfires and blasters
7142	Varnishers and related painters
7210	Metal moulders
7212	Welders and flamecutters
8273	Baked-goods machine operators
9311	Mining and quarrying labourers

**Table E. Occupations classified as high exposed to vapors and gases**

<b>ISCO code</b>	<b>Occupation</b>
7143	Building structure cleaners
7212	Welders and flamecutters

8142 Paper and pulp plant operators

**Table F. Occupations classified as high exposed to organic dust**

<b>ISCO code</b>	<b>Occupation</b>
6122	Poultry producers
7412	Bakers and pastry-cooks
8273	Grain- and spice-milling machine operators
8274	Baked-goods machine operators

**Table G. Logistic regression models for invasive pneumococcal disease (IPD) risk without pneumonia in relation to occupational exposure defined by job-exposure matrix to vapors and gases, inorganic dust, silica dust, fumes, silica dust and organic dust during the year preceding the index date (onset of IPD).**

Occupational exposures	Invasive pneumococcal disease (IPD) without pneumonia N=1295	
	OR	95% CI
<b>Fumes (n=836)</b>	0.99	0.83-1.18
<b>Inorganic dust (n=1024)</b>	1.10	0.91-1.33
<b>Silica dust (n=208)</b>	1.30	0.95-1.79
<b>Vapors and gases (n=963)</b>	0.97	0.80 – 1.17
<b>Organic dust (n=362)</b>	1.11	0.88 – 1.40

Matched for gender, age and place of residency, and adjusted for educational level, ethanol abuse, and diagnoses of COPD, asthma and diabetes and any other occupational exposures;

**Table H. Logistic regression models of invasive pneumococcal disease (IPD) risk and IPD with pneumonia in relation to occupational exposure to vapors and gases, inorganic dust, silica dust, fumes, silica dust and organic dust during the year preceding the index date (onset of IPD). All metalworkers are *excluded*.**

Occupational exposures	Invasive pneumococcal disease (IPD)			
	All IPD (N= 4353)		IPD with pneumonia (N=3070)	
	OR	95% CI	OR	95% CI
<b>Fumes</b>				
All <sup>1</sup>	1.05	0.95-1.16	1.08	0.96-1.21
Low <sup>1</sup>	1.05	0.95-1.16	1.08	0.96-1.21
High <sup>1</sup>	0.87	0.36-2.13	1.10	0.44-2.78
<b>Inorganic dust</b>				
All <sup>1</sup>	1.05	0.95 – 1.17	1.03	0.91-1.17
Low <sup>1</sup>	1.05	0.90 – 2.35	1.03	0.91-1.16
High <sup>1</sup>	1.45	0.90 -2.35	1.32	0.76-2.30
<b>Silica dust</b>				
All <sup>1</sup>	1.35	1.12-1.61	1.33	1.07-1.66
Low <sup>1</sup>	1.32	1.09-1.60	1.32	1.05-1.67
High <sup>1</sup>	1.56	0.94-2.59	1.40	0.77-2.53
<b>Vapors and gases</b>				
All <sup>1</sup>	0.93	0.84 – 1.03	0.92	0.82-1.05
Low <sup>1</sup>	0.93	0.84 – 1.03	0.92	0.81-1.04
High <sup>1</sup>	1.13	0.65 - 1.97	1.11	0.58-2.13
<b>Organic dust</b>				
All <sup>1</sup>	0.95	0.84-1.09	0.89	0.76-1.04
Low <sup>1</sup>	0.95	0.83-1.08	0.88	0.75-1.04
High <sup>1</sup>	1.17	0.62-2.20	1.09	0.50-2.38

1. Matched for gender, age and place of residency, and adjusted for educational level, ethanol abuse, and diagnoses of COPD, asthma and diabetes and other occupational exposures;