Supplementary Table 1 Peritoneal mesothelioma odds ratios (OR) and 90% confidence intervals (CI) for occupational asbestos exposure from the job-exposure matrix (SYN-JEM), calculated with conditional logistic regression models (set: age category), adjusted for province of residence, education, and residual age within age category, Lombardy, Italy, **2000-2007**

Occupational asbestos exposure	Men				Women			
	Cases	EAGLE controls	OR	90% CI	Cases	EAGLE controls	OR	90% CI
	N (%)	N (%)			N (%)	N (%)		
Total 2000-2007	41 (100)	1617 (100)			27 (100)	499 (100)		
Never exposed	20 (48.8)	1114 (68.9)	1.00	Reference	21 (77.8)	449 (90.0)	1.00	Reference
Ever exposed	21 (51.2)	503 (31.1)	1.92	1.08-3.43	6 (22.2)	50 (10.0)	1.49	0.60-3.70
Duration*								
Never exposed	20 (48.8)	1114 (69.5)	1.00	Reference	21 (77.8)	449 (90.2)	1.00	Reference
<10 years	5 (12.2)	189 (11.8)	1.34	0.56-3.19	3 (11.1)	8 (1.6)	7.62	1.96-29.6
10-19 years	5 (12.2)	86 (5.4)	3.08	1.27-7.48	0 (0.0)	18 (3.6)	NC	NC
20-29 years	4 (9.8)	72 (4.5)	1.90	0.69-5.21	3 (11.1)	13 (2.6)	3.24	0.88-11.9
30+ years	7 (17.1)	141 (8.8)	2.31	1.04-5.14	0 (0.0)	10 (2.0)	NC	NC
P-trend			0.04				0.84	
Duration (per 10 years)*			1.25	1.05-1.49			0.93	0.57-1.54
Cumulative exposure*								
Never exposed	20 (48.8)	1114 (69.5)	1.00	Reference	21 (77.8)	449 (90.2)	1.00	Reference
<0.888 ff/mL-years	7 (17.1)	211 (13.2)	1.66	0.70-3.60	3 (11.1)	17 (3.4)	2.85	0.82-9.92
<3.158ff/mL-years	5 (12.2)	201 (12.6)	1.13	0.47-2.72	1 (3.7)	22 (4.4)	0.45	0.07-2.72
3.158+ ff/mL-years	9 (21.9)	76 (4.7)	4.88	2.26-10.5	2 (7.4)	10 (2.0)	2.50	0.57-10.9
P-trend			0.008				0.60	
Cumulative exposure* (ff/mL-years)			1.34	1.16-1.54			0.96	0.65-1.41
Cumulative exposure* (log(ff/mL-years))			2.10	1.36-3.24			0.87	0.35-2.15
TSFE*								
Never exposed	20 (48.8)	1114 (69.3)	1.00	Reference	21 (77.8)	449 (90.2)	1.00	Reference
<40 years	6 (14.6)	159 (9.9)	1.61	0.71-4.03	5 (18.5)	26 (5.2)	2.87	1.02-8.13
40-49 years	5 (12.2)	182 (11.3)	1.10	0.45-2.72	1 (3.7)	17 (3.4)	0.48	0.08-3.00
50-59 years	6 (14.6)	116 (7.2)	3.16	1.33-7.49	0 (0.0)	4 (0.8)	NC	NC
60+ years	4 (9.8)	36 (2.2)	4.04	1.33-12.3	0 (0.0)	2 (0.4)	NC	NC
P-trend			0.02				0.96	

Period 2002-2007 includes cases first diagnosed in 2000-2007 living in five provinces and EAGLE controls enrolled in 2002-2004 living in 216 municipalities of the same five provinces; both series aged 35-79-years.
Abbreviations: NC, not calculated; TSFE, time since first exposure.
*Missing data for 16 EAGLE controls (15 men and 1 woman) with incomplete job histories.

Supplementary Table 2 Peritoneal mesothelioma odds ratios (OR) and 90% confidence intervals (CI) for occupational asbestos exposure from the job-exposure matrix (SYN-JEM), calculated with conditional logistic regression models (set: age category), adjusted for province of residence, education, and residual age within age category, Lombardy, Italy, **2008-2015**

Occupational asbestos exposure	Men				Women			
	Cases	MISEM controls	OR	90% CI	Cases	MISEM controls	OR	90% CI
	N (%)*	N (%)			N (%)	N (%)		
Total 2008-2015	86 (100)	141 (100)			73 (100)	64 (100)		
Never exposed	35 (40.7)	94 (66.7)	1.00	Reference	62 (84.9)	61 (95.3)	1.00	Reference
Ever exposed	51 (59.3)	47 (33.3)	2.85	1.61-5.05	11 (15.1)	3 (4.7)	2.00	0.54-7.34
Duration								
Never exposed	35 (40.7)	94 (66.7)	1.00	Reference	62 (84.9)	61 (95.3)	1.00	Reference
<10 years	14 (16.3)	22 (15.6)	1.87	0.86-4.07	5 (6.9)	0 (0.0)	NC	NC
10-19 years	7 (8.1)	3 (2.1)	9.63	2.22-41.7	4 (5.5)	2 (3.1)	1.02	0.17-6.00
20-29 years	7 (8.1)	4 (2.8)	3.10	0.87-11.1	2 (2.7)	1 (1.6)	0.84	0.10-6.99
30+ years	23 (26.7)	18 (12.8)	3.15	1.49-6.66	0 (0.0)	0 (0.0)	NC	NC
P-trend			0.004				0.78	
Duration (per 10 years)			1.34	1.11-1.60			1.04	0.48-2.25
Cumulative exposure								
Never exposed	35 (40.7)	94 (66.7)	1.00	Reference	62 (84.9)	61 (95.3)	1.00	Reference
<0.888 ff/mL-years	15 (17.4)	20 (14.2)	2.15	0.99-4.68	4 (5.5)	2 (3.1)	1.13	0.21-6.03
<3.158ff/mL-years	20 (23.3)	17 (12.1)	2.93	1.35-6.33	4 (5.5)	1 (1.6)	3.09	0.40-23.7
3.158+ ff/mL-years	16 (18.6)	10 (7.1)	4.12	1.69-10.1	3 (4.1)	0 (0.0)	NC	NC
P-trend			0.002				0.27	
Cumulative exposure (ff/mL-years)			1.37	1.13-1.67			2.08	0.71-6.16
Cumulative exposure (log(ff/mL-years))			2.54	1.60-4.02			3.57	0.59-21.7
TSFE								
Never exposed	35 (40.7)	94 (66.7)	1.00	Reference	62 (84.9)	61 (95.3)	1.00	Reference
<40 years	8 (9.3)	8 (5.7)	2.00	0.65-6.22	1 (1.4)	1 (1.6)	0.30	0.02-3.66
40-49 years	13 (15.1)	17 (12.1)	1.82	0.74-4.47	6 (8.2)	1 (1.6)	1.62	0.22-12.2
50-59 years	18 (20.9)	19 (13.5)	2.80	1.28-6.10	4 (5.5)	1 (1.6)	5.20	0.66-41.3
60+ years	12 (14.0)	3 (2.1)	10.2	2.51-41.5	0 (0.0)	0 (0.0)	NC	NC
P-trend			0.001				0.21	

Period 2008-2015 includes cases first diagnosed in 2008-2015 and MISEM controls enrolled in 2014; both series living in any province and aged 20-89 years.

Abbreviations: NC, not calculated; TSFE, time since first exposure.

Supplementary Table 3 Peritoneal mesothelioma odds ratios (OR) and 90% confidence intervals (CI) for expert-based assessment of asbestos exposure based on the national mesothelioma registry (ReNaM) questionnaire, calculated with conditional logistic regression models (set: age category), adjusted for province of residence, education, and residual age within age category, Lombardy, Italy, 2008-2015. **Analysis restricted to subjects directly interviewed**

Asbestos exposure	Men				Women			
	Cases N (%)	Controls N (%)	OR	90% CI	Cases* N (%)	Controls N (%)	OR	90% CI
Total 2008-2015	53 (100)	141 (100)			39 (100)	64 (100)		
Never exposed	13 (24.5)	90 (63.8)	1.00	Reference	23 (59.0)	59 (92.2)	1.00	Reference
Ever exposed	40 (75.5)	51 (36.2)	7.23	3.23-16.2	16 (41.0)	5 (7.8)	9.91	2.36-41.5
Source/probability								
Never exposed	13 (24.5)	90 (63.8)	1.00	Reference	23 (59.0)	59 (92.2)	1.00	Reference
Extra-occupational	0 (0.0)	3 (2.1)	NC	NC	1 (2.6)	0 (0.0)	NC	NC
Occupational, pp	9 (17.0)	25 (17.7)	2.48	0.88-7.02	3 (7.7)	3 (4.7)	1.65	0.14-19.4
Occupational, definite	31 (58.5)	23 (16.3)	19.8	7.22-54.4	12 (30.8)	2 (3.1)	18.1	3.05-107
Occupational, duration*								
Never exposed	13 (24.5)	90 (65.2)	1.00	Reference	23 (60.5)	59 (92.2)	1.00	Reference
<10 years	10 (18.9)	16 (11.6)	4.27	1.51-12.0	5 (13.2)	0 (0.0)	NC	NC
10-19 years	5 (9.4)	9 (6.5)	5.85	1.39-24.6	7 (18.4)	4 (6.2)	5.09	0.96-27.0
20-29 years	4 (7.6)	7 (5.1)	4.66	1.09-19.9	2 (5.3)	0 (0.0)	NC	NC
30+ years	21 (39.6)	16 (11.6)	15.4	5.59-42.6	1 (2.6)	1 (1.6)	4.32	0.27-68.1
P-trend			<0.001				0.11	
Occupational, duration* (per 10 years)			1.72	1.37-2.16			1.73	0.86-3.48
Occupational, TSFE*								
Never exposed	13 (24.5)	90 (65.2)	1.00	Reference	23 (60.5)	59 (92.2)	1.00	Reference
<40 years	6 (11.3)	10 (7.3)	4.68	1.13-19.3	2 (5.3)	0 (0.0)	NC	NC
40-49 years	18 (34.0)	14 (10.1)	12.6	4.49-35.4	4 (10.5)	1 (1.6)	NC	NC
50-59 years	10 (18.9)	19 (13.8)	4.36	1.57-12.1	5 (13.2)	1 (1.6)	13.3	1.47-120
60+ years	6 (11.3)	5 (3.6)	15.0	2.93-76.3	4 (10.5)	3 (4.7)	5.82	0.99-34.1
P-trend			<0.001				0.02	

Period 2008-2015 includes cases directly interviewed first diagnosed in 2008-2015 and MISEM controls enrolled in 2014; both series living in any province and aged 20-89 years.

Abbreviations: NC, not calculated; pp, possible/probable; TSFE, time since first exposure.

*Cases with extra-occupational exposure not included in analysis.

Supplementary Table 4 Peritoneal mesothelioma odds ratios (OR) and 90% confidence intervals (CI) for occupational asbestos exposure from the job-exposure matrix (SYN-JEM), calculated with conditional logistic regression models (set: age category), adjusted for period (2000-2007 and 2008-2015), province of residence, education, and residual age within age category, Lombardy, Italy, 2000-2015. **Analysis restricted to subjects directly interviewed**

Occupational asbestos exposure	Men				Women			
	Cases N (%)	Controls N (%)	OR	90% CI	Cases N (%)	Controls N (%)	OR	90% CI
Total 2000-2015	69 (100)	1758 (100)			51 (100)	563 (100)		
Total 2000-2007	16 (23.2)	1617 (92.0)			12 (23.5)	499 (88.6)		
Total 2008-2015	53 (76.8)	141 (8.0)			39 (76.5)	64 (11.4)		
Never exposed	32 (46.4)	1208 (68.7)	1.00	Reference	39 (76.5)	510 (90.6)	1.00	Reference
Ever exposed	37 (53.6)	550 (31.3)	1.79	1.08-2.96	12 (23.5)	53 (9.4)	3.14	1.24-7.99
Duration*								
Never exposed	32 (46.4)	1208 (69.3)	1.00	Reference	39 (76.5)	510 (90.7)	1.00	Reference
<10 years	11 (15.9)	211 (12.1)	1.46	0.72-2.93	5 (9.8)	8 (1.4)	18.1	3.92-83.3
10-19 years	3 (4.3)	89 (5.1)	1.98	0.63-6.19	4 (7.8)	20 (3.6)	1.32	0.30-5.80
20-29 years	6 (8.7)	76 (4.4)	2.01	0.75-5.38	3 (5.9)	14 (2.5)	2.65	0.49-14.3
30+ years	17 (24.6)	159 (9.1)	2.07	1.08-3.99	0 (0.0)	10 (1.8)	NC	NC
P-trend			0.045				0.32	
Duration (per 10 years)*			1.22	1.05-1.42			1.13	0.68-1.88
Cumulative exposure*								
Never exposed	32 (46.4)	1208 (69.3)	1.00	Reference	39 (76.5)	510 (90.7)	1.00	Reference
<0.888 ff/mL-years	11 (15.9)	231 (13.3)	1.28	0.62-2.61	5 (9.8)	19 (3.4)	3.04	0.86-10.8
<3.158ff/mL-years	13 (18.8)	218 (12.5)	1.59	0.81-3.15	3 (5.9)	23 (4.1)	1.44	0.27-7.55
3.158+ ff/mL-years	13 (18.8)	86 (4.9)	3.55	1.66-7.59	4 (7.8)	10 (1.8)	9.02	2.00-40.8
P-trend			0.01				0.03	
Cumulative exposure* (ff/mL-years)			1.31	1.13-1.52			1.46	1.03-2.08
Cumulative exposure* (log(ff/mL-years))			2.05	1.38-3.06			2.50	1.04-6.03
TSFE								
Never exposed	32 (46.4)	1208 (69.1)	1.00	Reference	39 (76.5)	510 (90.7)	1.00	Reference
<40 years	8 (11.6)	167 (9.6)	1.35	0.58-3.15	5 (9.8)	27 (4.8)	3.67	1.06-12.8
40-49 years	10 (14.5)	199 (11.4)	1.27	0.58-2.78	5 (9.8)	18 (3.2)	3.02	0.71-12.7
50-59 years	13 (18.8)	135 (7.7)	2.24	1.07-4.68	2 (3.9)	5 (0.9)	2.19	0.24-20.1
60+ years	6 (8.7)	39 (2.2)	3.90	1.21-12.6	0 (0.0)	2 (0.4)	NC	NC
P-trend			0.02				0.10	

Period 2002-2007 includes cases directly interviewed first diagnosed in 2000-2007 living in five provinces and EAGLE controls enrolled in 2002-2004 living in 216 municipalities of the same five provinces; both series aged 35-79-years. Period 2008-2015 includes cases first diagnosed in 2008-2015 and MISEM controls enrolled in 2014; both series living in any province and aged 20-89 years.

Abbreviations: TSFE, time since first exposure.

*Missing data for 16 EAGLE controls (15 men and 1 woman) with incomplete job histories.

Supplementary Table 5 Peritoneal mesothelioma odds ratios (OR) and 90% confidence intervals (CI) for occupational asbestos exposure from the job-exposure matrix (SYN-JEM), calculated with conditional logistic regression models (set: age category), adjusted for period (2000-2007 and 2008-2015), province of residence, education, and residual age within age category, Lombardy, Italy, 2000-2015. **In 2000-2007 only cases living in the same 216 municipalities of EAGLE controls were included (spatial restriction)**
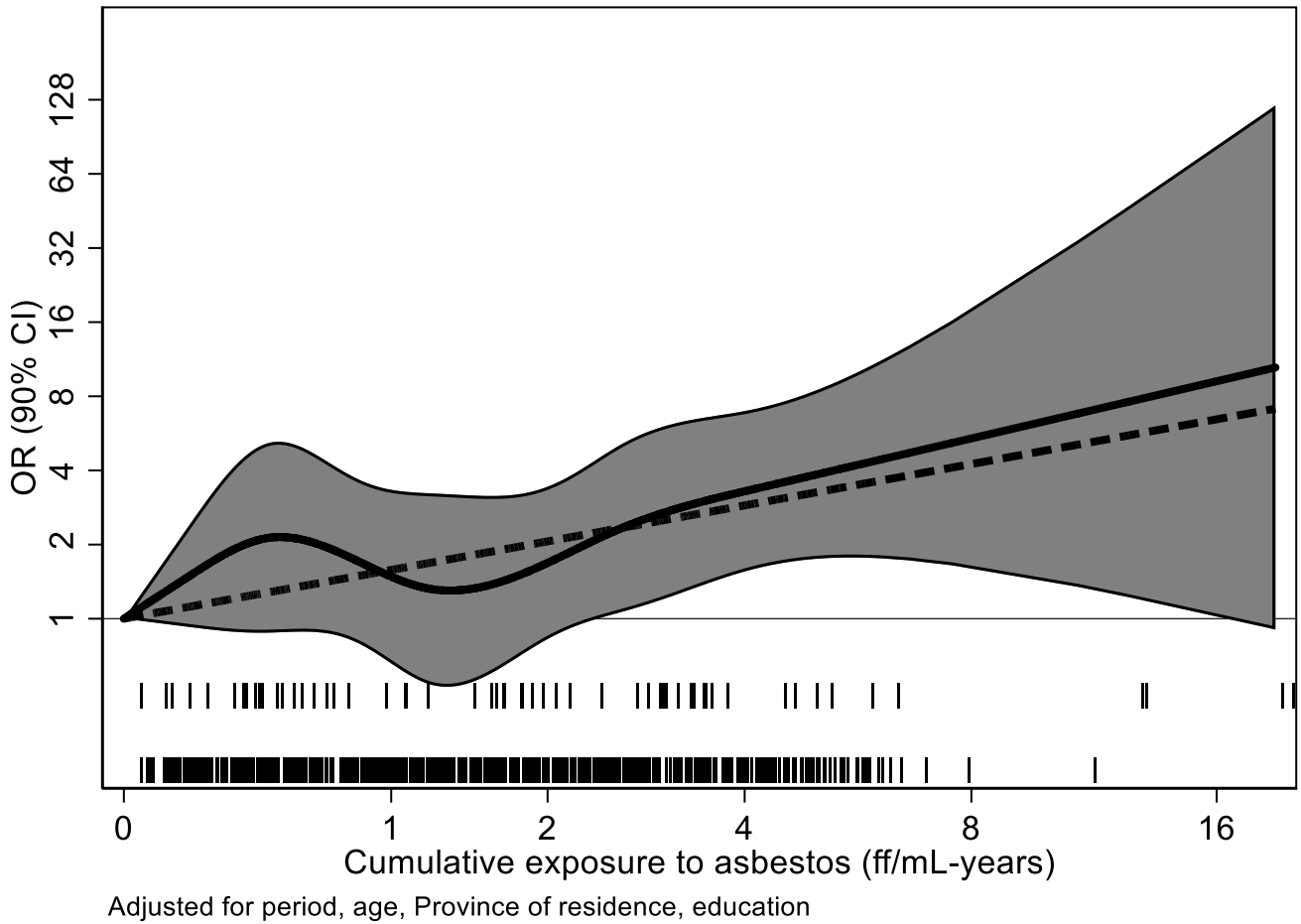
Occupational asbestos exposure	Men				Women			
	Cases N (%)	Controls N (%)	OR	90% CI	Cases N (%)	Controls N (%)	OR	90% CI
Total 2000-2015	105 (100)	1758 (100)			81 (100)	563 (100)		
Total 2000-2007	19 (18.1)	1617 (92.0)			17 (21.0)	499 (88.6)		
Total 2008-2015	86 (81.9)	141 (8.0)			64 (79.0)	64 (11.4)		
Never exposed	46 (43.8)	1208 (68.7)	1.00	Reference	68 (84.0)	510 (90.6)	1.00	Reference
Ever exposed	59 (56.2)	550 (31.3)	2.04	1.31-3.18	13 (16.0)	53 (9.4)	1.78	0.65-4.82
Duration*								
Never exposed	46 (43.8)	1208 (69.3)	1.00	Reference	68 (84.0)	510 (90.7)	1.00	Reference
<10 years	17 (16.2)	211 (12.1)	1.54	0.83-2.84	5 (6.2)	8 (1.4)	4.65	0.65-33.1
10-19 years	10 (9.5)	89 (5.1)	4.24	1.90-9.46	4 (4.9)	20 (3.6)	0.68	0.15-3.11
20-29 years	7 (6.7)	76 (4.4)	1.54	0.59-3.98	4 (4.9)	14 (2.5)	3.59	0.76-17.1
30+ years	25 (23.8)	159 (9.1)	2.24	1.23-4.08	0 (0.0)	10 (1.8)	NC	NC
P-trend			0.01				0.44	
Duration (per 10 years)*			1.23	1.07-1.42			1.18	0.70-2.00
Cumulative exposure*								
Never exposed	46 (43.8)	1208 (69.3)	1.00	Reference	68 (84.0)	510 (90.7)	1.00	Reference
<0.888 ff/mL-years	19 (18.1)	231 (13.3)	1.75	0.96-3.18	4 (4.9)	19 (3.4)	0.76	0.17-3.32
<3.158ff/mL-years	22 (21.0)	218 (12.5)	1.82	1.00-3.29	4 (4.9)	23 (4.1)	1.36	0.29-6.37
3.158+ ff/mL-years	18 (17.1)	86 (4.9)	3.31	1.63-6.69	5 (6.2)	10 (1.8)	9.84	2.07-46.9
P-trend			0.003				0.08	
Cumulative exposure* (ff/mL-years)			1.25	1.09-1.42			1.50	1.05-2.14
Cumulative exposure* (log(ff/mL-years))			1.93	1.36-2.74			2.71	1.10-6.68
TSFE								
Never exposed	46 (43.8)	1208 (69.1)	1.00	Reference	68 (84.0)	510 (90.7)	1.00	Reference
<40 years	11 (10.5)	167 (9.6)	1.36	0.63-2.95	2 (2.5)	27 (4.8)	0.93	0.14-6.20
40-49 years	14 (13.3)	199 (11.4)	1.18	0.58-2.42	7 (8.6)	18 (3.2)	2.16	0.50-9.24
50-59 years	21 (20.0)	135 (7.7)	2.83	1.49-5.39	4 (4.9)	5 (0.9)	2.47	0.39-15.6
60+ years	13 (12.4)	39 (2.2)	5.42	2.08-14.2	0 (0.0)	2 (0.4)	NC	NC
P-trend			0.001				0.28	

Period 2000-2007 includes cases first diagnosed in 2000-2007 and EAGLE controls enrolled in 2002-2004; both series living in 216 municipalities in five provinces and aged 35-79 years. Period 2008-2015 includes cases first diagnosed in 2008-2015 and MISEM controls enrolled in 2014; both series living in any province and aged 20-89 years.

Abbreviations: TSFE, time since first exposure.

*Missing data for 16 EAGLE controls (15 men and 1 woman) with incomplete job histories.

5

Supplementary Figure 1 Association between peritoneal mesothelioma risk and SYN-JEM-based cumulative asbestos exposure (ff/mL-years) in men (same cases and controls as in Supplementary Table 5) using restricted cubic splines (knots at 10th, 25th, 50th, 75th and 90th percentiles of cumulative exposure among exposed, log-transformed), Lombardy, Italy, 2000-2015
Notes: CI, confidence interval; OR, odds ratio; the dashed line shows the log-linear relationship OR = 1.93 per ln(ff/mL-years) (see Supplementary Table 5); vertical bars close to the horizontal axis indicate cases (upper bars) and controls (lower bars).

Supplementary Table 6 Peritoneal mesothelioma odds ratios (OR) and 90% confidence intervals (CI) for expert-based assessment of asbestos exposure based on the national mesothelioma registry (ReNaM) questionnaire, calculated with conditional logistic regression models (set: age category), adjusted for province of residence, education, and residual age within age category, Lombardy, Italy, 2010-2014. **Analysis restricted to cases first diagnosed in 2010-2014 (temporal restriction)**

Asbestos exposure	Men				Women			
	Cases N (%)	Controls N (%)	OR	90% CI	Cases* N (%)	Controls N (%)	OR	90% CI
Total 2010-2014	53 (100)	141 (100)			46 (100)	64 (100)		
Never exposed	14 (26.4)	90 (63.8)	1.00	Reference	29 (63.0)	59 (92.2)	1.00	Reference
Ever exposed	39 (73.6)	51 (36.2)	7.01	3.12-15.7	17 (37.0)	5 (7.8)	8.67	2.34-32.1
Source/probability								
Never exposed	14 (26.4)	90 (63.8)	1.00	Reference	29 (63.0)	59 (92.2)	1.00	Reference
Extra-occupational	0 (0.0)	3 (2.1)	NC	NC	1 (2.2)	0 (0.0)	NC	NC
Occupational, pp	11 (20.8)	25 (17.7)	3.25	1.22-8.62	2 (4.4)	3 (4.7)	2.33	0.30-18.1
Occupational, definite	28 (52.8)	23 (16.3)	16.1	5.89-44.0	14 (30.4)	2 (3.1)	14.2	2.74-74.0
Occupational, duration†								
Never exposed	14 (26.4)	90 (65.2)	1.00	Reference	29 (64.0)	59 (92.2)	1.00	Reference
<10 years	8 (15.1)	16 (11.6)	3.71	1.25-11.0	9 (20.0)	0 (0.0)	NC	NC
10-19 years	7 (13.2)	9 (6.5)	15.0	4.03-55.9	5 (11.1)	4 (6.2)	1.64	0.24-11.3
20-29 years	2 (3.8)	7 (5.1)	1.34	0.23-7.82	1 (2.2)	0 (0.0)	NC	NC
30+ years	22 (41.5)	16 (11.6)	12.8	4.71-34.5	1 (2.2)	1 (1.6)	1.86	0.14-24.7
P-trend			<0.001				0.21	
Occupational, duration† (per 10 years)			1.62	1.30-2.01			1.40	0.71-2.76
Occupational, TSFE†								
Never exposed	14 (26.4)	90 (65.2)	1.00	Reference	29 (63.0)	59 (92.2)	1.00	Reference
<40 years	3 (5.7)	10 (7.3)	2.80	0.58-13.6	0 (0.0)	0 (0.0)	NC	NC
40-49 years	16 (30.2)	14 (10.1)	9.79	3.40-28.2	5 (11.1)	1 (1.6)	NC	NC
50-59 years	12 (22.6)	19 (13.8)	4.66	1.66-13.1	6 (13.3)	1 (1.6)	15.3	2.00-116
60+ years	8 (15.1)	5 (3.6)	15.3	3.69-63.7	5 (11.1)	3 (4.7)	3.36	0.56-20.2
P-trend			<0.001				0.02	

Period 2010-2014 includes cases first diagnosed in 2010-2014 and MISEM controls enrolled in 2014; both series living in any province and aged 20-89 years.

Abbreviations: NC, not calculated; pp, possible/probable; TSFE, time since first exposure.

*One female case with non-classifiable exposure not included in analysis.

†Cases with extra-occupational exposure not included in analysis.

7

Supplementary Table 7 Peritoneal mesothelioma odds ratios (OR) and 90% confidence intervals (CI) for occupational asbestos exposure from the job-exposure matrix (SYN-JEM), calculated with conditional logistic regression models (set: age category), adjusted for period (2000-2007 and 2008-2015), province of residence, education, and residual age within age category, Lombardy, Italy, 2000-2014. **Analysis restricted to cases first diagnosed in 2000-2004 or in 2010-2014 (temporal restriction)**
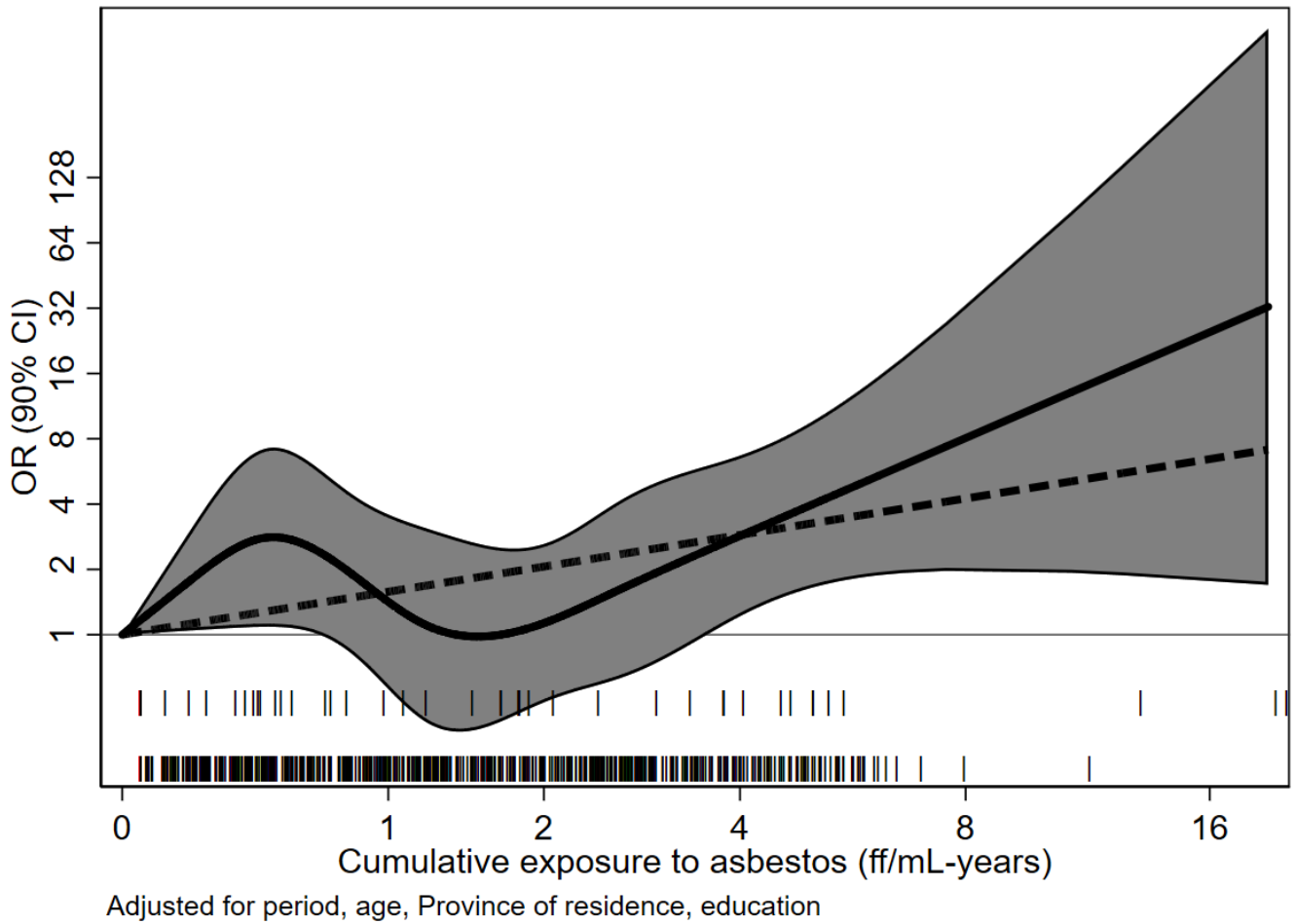
Occupational asbestos exposure	Men				Women			
	Cases N (%)	Controls N (%)	OR	90% CI	Cases N (%)	Controls N (%)	OR	90% CI
Total 2000-2014	74 (100)	1758 (100)			63 (100)	563 (100)		
Total 2000-2004	21 (28.4)	1617 (92.0)			17 (27.0)	499 (88.6)		
Total 2010-2014	53 (71.6)	141 (8.0)			46 (73.0)	64 (11.4)		
Never exposed	35 (47.3)	1208 (68.7)	1.00	Reference	52 (82.5)	510 (90.6)	1.00	Reference
Ever exposed	39 (52.7)	550 (31.3)	1.89	1.15-3.12	11 (17.5)	53 (9.4)	1.74	0.75-4.03
Duration*								
Never exposed	35 (47.3)	1208 (69.3)	1.00	Reference	52 (82.5)	510 (90.7)	1.00	Reference
<10 years	13 (17.6)	211 (12.1)	1.74	0.89-3.39	4 (6.3)	8 (1.4)	5.93	1.46-24.1
10-19 years	6 (8.1)	89 (5.1)	2.58	0.98-6.81	3 (4.8)	20 (3.6)	0.68	0.16-2.83
20-29 years	4 (5.4)	76 (4.4)	1.48	0.51-4.31	4 (6.3)	14 (2.5)	2.53	0.64-9.98
30+ years	16 (21.6)	159 (9.1)	2.11	1.07-4.13	0 (0.0)	10 (1.8)	NC	NC
P-trend			0.06				0.58	
Duration (per 10 years)*			1.20	1.02-1.40			1.09	0.70-1.71
Cumulative exposure*								
Never exposed	35 (47.3)	1208 (69.3)	1.00	Reference	52 (82.5)	510 (90.7)	1.00	Reference
<0.888 ff/mL-years	15 (20.3)	231 (13.3)	2.05	1.07-3.92	4 (6.3)	19 (3.4)	1.24	0.36-4.31
<3.158ff/mL-years	11 (14.9)	218 (12.5)	1.03	0.49-2.17	4 (6.3)	23 (4.1)	1.79	0.50-6.42
3.158+ ff/mL-years	13 (17.6)	86 (4.9)	3.89	1.86-8.15	3 (4.8)	10 (1.8)	3.59	0.76-17.0
P-trend			0.02				0.16	
Cumulative exposure* (ff/mL-years)			1.24	1.08-1.41			1.24	0.89-1.72
Cumulative exposure* (log(ff/mL-years))			1.84	1.25-2.69			1.79	0.80-4.03
TSFE								
Never exposed	35 (47.3)	1208 (69.1)	1.00	Reference	52 (82.5)	510 (90.7)	1.00	Reference
<40 years	5 (6.8)	167 (9.6)	0.88	0.33-2.31	4 (6.3)	27 (4.8)	2.03	0.62-6.37
40-49 years	12 (16.2)	199 (11.4)	1.31	0.61-2.78	5 (7.9)	18 (3.2)	1.33	0.36-4.95
50-59 years	11 (14.9)	135 (7.7)	2.22	1.05-4.68	2 (3.2)	5 (0.9)	2.23	0.35-14.1
60+ years	11 (14.9)	39 (2.2)	6.28	2.47-16.0	0 (0.0)	2 (0.4)	NC	NC
P-trend			0.002				0.35	

Period 2000-2004 includes cases first diagnosed in 2000-2004 living in five provinces and EAGLE controls enrolled in 2002-2004 living in 216 municipalities of the same five provinces; both series aged 35-79-years. Period 2010-2014 includes cases first diagnosed in 2010-2014 and MISEM controls enrolled in 2014; both series living in any province and aged 20-89 years.

Abbreviations: TSFE, time since first exposure.

*Missing data for 16 EAGLE controls (15 men and 1 woman) with incomplete job histories.

Supplementary Figure 2 Association between peritoneal mesothelioma risk and SYN-JEM-based cumulative asbestos exposure (ff/mL-years) in men (same cases and controls as in Supplementary Table 7) using restricted cubic splines (knots at 10th, 25th, 50th, 75th and 90th percentiles of cumulative exposure among exposed, log-transformed), Lombardy, Italy, 2000-2014
Notes: CI, confidence interval; OR, odds ratio; the dashed line shows the log-linear relationship OR = 1.84 per ln(ff/mL-years) (see Supplementary Table 7); vertical bars close to the horizontal axis indicate cases (upper bars) and controls (lower bars).

Supplementary Table 8 Peritoneal mesothelioma odds ratios (OR) and 90% confidence intervals (CI) for occupational asbestos exposure from the job-exposure matrix (SYN-JEM), calculated with conditional logistic regression models (set: age category), adjusted for period (2000-2004 and 2010-2014), province of residence, education, and residual age within age category, Lombardy, Italy, 2000-2014. **In 2000-2004 only cases living in the same 216 municipalities of EAGLE controls were included (spatiotemporal restriction)**
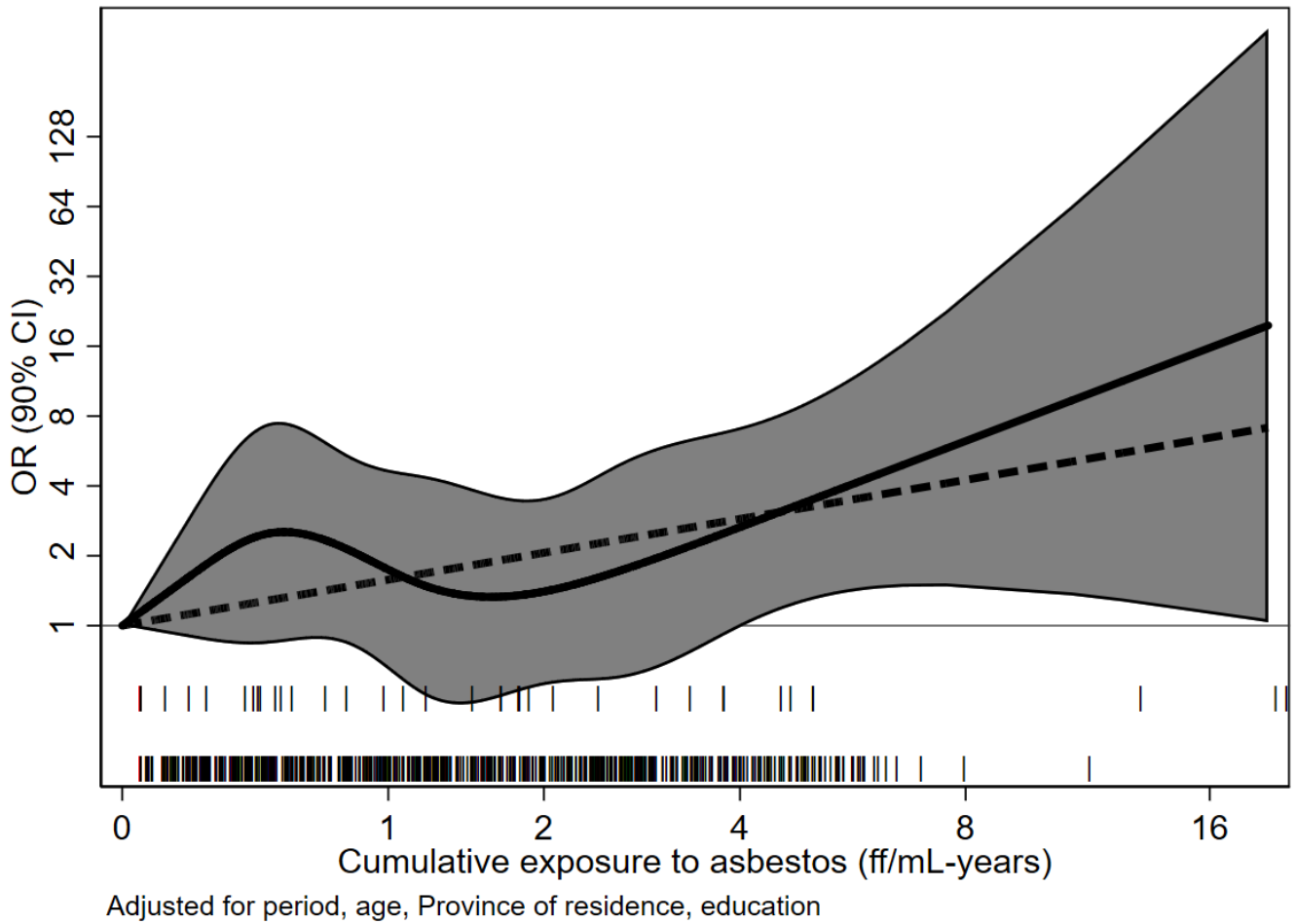
Occupational asbestos exposure	Men				Women			
	Cases N (%)	Controls N (%)	OR	90% CI	Cases N (%)	Controls N (%)	OR	90% CI
Total 2000-2014	63 (100)	1758 (100)			53 (100)	563 (100)		
Total 2000-2004	10 (15.9)	1617 (92.0)			6 (11.3)	499 (88.6)		
Total 2010-2014	53 (84.1)	141 (8.0)			47 (88.7)	64 (11.4)		
Never exposed	29 (46.0)	1208 (68.7)	1.00	Reference	44 (83.0)	510 (90.6)	1.00	Reference
Ever exposed	34 (54.0)	550 (31.3)	2.05	1.16-3.62	9 (17.0)	53 (9.4)	1.79	0.60-5.34
Duration*								
Never exposed	29 (46.0)	1208 (69.3)	1.00	Reference	44 (83.0)	510 (90.7)	1.00	Reference
<10 years	11 (17.5)	211 (12.1)	1.68	0.78-3.62	3 (5.7)	8 (1.4)	4.44	0.51-39.1
10-19 years	6 (9.5)	89 (5.1)	4.71	1.63-13.6	3 (5.7)	20 (3.6)	1.09	0.21-5.66
20-29 years	2 (3.2)	76 (4.4)	0.93	0.22-4.03	3 (5.7)	14 (2.5)	2.58	0.42-15.9
30+ years	15 (23.8)	159 (9.1)	2.31	1.08-4.90	0 (0.0)	10 (1.8)	NC	NC
P-trend			0.06				0.55	
Duration (per 10 years)*			1.23	1.03-1.46			1.18	0.67-2.06
Cumulative exposure*								
Never exposed	29 (46.0)	1208 (69.3)	1.00	Reference	44 (83.0)	510 (90.7)	1.00	Reference
<0.888 ff/mL-years	13 (20.6)	231 (13.3)	2.13	1.02-4.45	3 (5.7)	19 (3.4)	0.75	0.14-3.87
<3.158ff/mL-years	11 (17.5)	218 (12.5)	1.44	0.65-3.21	3 (5.7)	23 (4.1)	1.89	0.35-10.1
3.158+ ff/mL-years	10 (15.9)	86 (4.9)	3.28	1.36-7.92	3 (5.7)	10 (1.8)	10.2	1.67-62.0
P-trend			0.03				0.11	
Cumulative exposure* (ff/mL-years)			1.21	1.05-1.40			1.54	1.03-2.31
Cumulative exposure* (log(ff/mL-years))			1.82	1.18-2.80			2.97	1.06-8.32
TSFE								
Never exposed	29 (46.0)	1208 (69.1)	1.00	Reference	44 (83.0)	510 (90.7)	1.00	Reference
<40 years	4 (6.3)	167 (9.6)	0.86	0.28-2.67	2 (3.8)	27 (4.8)	1.00	0.16-6.31
40-49 years	11 (17.5)	199 (11.4)	1.43	0.61-3.33	5 (9.4)	18 (3.2)	2.75	0.52-14.4
50-59 years	10 (15.9)	135 (7.7)	2.48	1.07-5.71	2 (3.8)	5 (0.9)	2.19	0.27-17.6
60+ years	9 (14.3)	39 (2.2)	7.44	2.37-23.3	0 (0.0)	2 (0.4)	NC	NC
P-trend			0.004				0.31	

Period 2000-2004 includes cases first diagnosed in 2000-2004 and EAGLE controls enrolled in 2002-2004; both series living in 216 municipalities in five provinces and aged 35-79 years. Period 2010-2014 includes cases first diagnosed in 2010-2014 and MISEM controls enrolled in 2014; both series living in any province and aged 20-89 years.

Abbreviations: TSFE, time since first exposure.

*Missing data for 16 EAGLE controls (15 men and 1 woman) with incomplete job histories.

Supplementary Figure 3 Association between peritoneal mesothelioma risk and SYN-JEM-based cumulative asbestos exposure (ff/mL-years) in men (same cases and controls as in Supplementary Table 8) using restricted cubic splines (knots at 10th, 25th, 50th, 75th and 90th percentiles of cumulative exposure among exposed, log-transformed), Lombardy, Italy, 2000-2014
Notes: CI, confidence interval; OR, odds ratio; the dashed line shows the log-linear relationship OR = 1.82 per ln(ff/mL-years) (see Supplementary Table 8); vertical bars close to the horizontal axis indicate cases (upper bars) and controls (lower bars).

Supplementary Table 9 Comparison of occupational asbestos exposure* from the job-exposure matrix (SYN-JEM) with expert-based assessment based on the national mesothelioma registry (ReNaM) questionnaire, Lombardy, Italy, period 2008-2015

Occupational asbestos exposure	Cases ReNaM		Controls ReNaM		All ReNaM	
Men	Ever	Never	Ever	Never	Ever	Never
SYN-JEM						
Ever	47	4	32	15	79	19
Never	15	18	16	75	31	93
Sensitivity	0.76		0.67		0.72	
90% CI†	0.66: 0.84		0.55; 0.77		0.64; 0.78	
Specificity		0.82		0.83		0.83
90% CI†		0.65; 0.92		0.76; 0.89		0.76; 0.88
Cohen's kappa	0.50		0.50		0.55	
90% CI	0.40; 0.59		0.41; 0.60		0.47; 0.62	
Women	Ever	Never	Ever	Never	Ever	Never
SYN-JEM						
Ever	6	4	0	3	6	7
Never	19	41	5	56	24	97
Sensitivity	0.24		0.00		0.20	
90% CI†	0.13; 0.40		0.00; 0.40		0.10; 0.34	
Specificity		0.91		0.95		0.93
90% CI†		0.81; 0.96		0.88; 0.98		0.88; 0.96
Cohen's kappa	0.17		-0.06		0.17	
90% CI	0.02; 0.33		-0.17; 0.05		0.08; 0.25	
All	Ever	Never	Ever	Never	Ever	Never
SYN-JEM						
Ever	53	8	32	18	85	26
Never	34	59	21	131	55	190
Sensitivity	0.61		0.60		0.61	
90% CI†	0.52; 0.69		0.49: 0.71		0.54; 0.67	
Specificity		0.88		0.88		0.88
90% CI†		0.80; 0.93		0.83; 0.92		0.84; 0.91
Cohen's kappa	0.47		0.49		0.51	
90% CI	0.39; 0.55		0.41; 0.57		0.43; 0.58	

Period 2008-2015 includes cases first diagnosed in 2008-2015 and MISEM controls enrolled in 2014; both series aged 20-89 years
Abbreviations: CI, confidence interval.
*Cases with extra-occupational exposure not included in analysis.
†Calculated with the Agresti-Coull formula.