

## Supplementary Material: tables

### Asthma is associated with frailty among community-dwelling adults – the GAZEL cohort.

*Benjamin Landré*<sup>1</sup>, *Rachel Nadif*<sup>2</sup>, *Marcel Goldberg*<sup>3,4</sup>, Julie Gourmelen<sup>3</sup>, *Marie Zins*<sup>3,4</sup>,  
*Joël Ankri*<sup>1,5</sup>, *Marie Herr*<sup>1,5</sup>

#### Affiliations:

1. Université Paris-Saclay, UVSQ, Univ. Paris-Sud, Inserm, Echappement aux anti-infectieux et pharmaco-épidémiologie, CESP, 94807, Villejuif, France.;
2. Université Paris-Saclay, UVSQ, Univ. Paris-Sud, Inserm, Équipe d'Épidémiologie Respiratoire Intégrative, CESP, 94807, Villejuif, France ;
3. INSERM, UMS 011, Population-based Epidemiological Cohorts, 94807, Villejuif, France;
4. Faculty of Medicine, Paris Descartes University, Paris, France;
5. Département Hospitalier d'Épidémiologie et de Santé Publique, Hôpitaux Universitaires Paris Ile-de-France Ouest, Assistance Publique-Hôpitaux de Paris, Paris, France.

#### Corresponding author:

Rachel Nadif, Université Paris-Saclay, UVSQ, Inserm, CESP, Équipe d'Épidémiologie Respiratoire Intégrative, 94807, Villejuif, France ;

Phone number: 33 (0) 145595189

Email: [rachel.nadif@inserm.fr](mailto:rachel.nadif@inserm.fr)

1 **Table A1: Prevalence of frail (F), pre-frail (P-F) and robust (R) among participants with current asthma (CA) and without current asthma**  
 2 **(NCA) according to BMI category in 2015**  
 3

Asthma definition		Normal BMI				Overweight BMI				Obese BMI			
		All	R	P-F	F	All	R	P-F	F	All	R	P-F	F
<b>Current asthma in 2015</b>	CA	131	72 (55.0%)	44 (33.6%)	15 (11.5%)	143	72 (50.4%)	60 (42.0%)	11 (7.7%)	86	31 (36.1%)	36 (41.9%)	19 (22.1%)
	NCA	4,605	3,108 (67.5%)	1,316 (28.6%)	181 (3.9%)	5,203	3,163 (60.8%)	1,798 (34.6%)	242 (4.7%)	1,616	604 (37.4%)	809 (50.1%)	203 (12.6%)
<b>Current asthma in 2002</b>	CA	458	260 (56.8%)	163 (36.6%)	35 (7.6%)	621	298 (48.0%)	269 (43.3%)	54 (8.7%)	304	83 (27.3%)	154 (50.7%)	67 (22.0%)
	NCA	2,632	1,832 (69.6%)	701 (26.6%)	99 (3.8%)	2,844	1,788 (62.9%)	951 (33.4%)	105 (3.7%)	807	329 (40.8%)	395 (49.0%)	83 (10.3%)
<b>Constant report of current asthma from 1990 to 2015</b>	CA	33	14 (42.4%)	14 (42.4%)	5 (15.15%)	41	24 (58.5%)	12 (29.3%)	5 (12.2%)	25	7 (28%)	13 (52%)	5 (20%)
	NCA	2,500	1,739 (69.6%)	671 (26.8%)	90 (3.6%)	2,712	1,704 (62.8%)	912 (33.6%)	96 (3.5%)	736	300 (40.8%)	362 (49.2%)	74 (10.1%)
<b>At least one report between 1990 and 2015</b>	CA	410	253 (61.7%)	129 (34.5%)	28 (6.8%)	446	240 (53.8%)	170 (38.1%)	36 (8.1%)	245	83 (33.9%)	115 (46.9%)	47 (19.2%)
	NCA	4,326	2,927 (67.7%)	1,231 (28.5%)	168 (3.9%)	4,900	2,995 (61.1%)	1,668 (34.5%)	217 (4.43%)	1,457	552 (38.9%)	730 (50.1%)	175 (12.0%)
<b>Sensibility</b>	CA	51	26 (51.0%)	19 (37.3%)	6 (11.8%)	63	36 (57.1%)	22 (34.9%)	5 (7.9%)	34	11 (32.4%)	15 (44.1%)	8 (23.5%)
	NCA	4,685	3,154 (67.3%)	1,341 (28.6%)	190 (4.1%)	5,283	3,199 (60.6%)	1,836 (34.8%)	248 (4.7%)	1,668	624 (37.4%)	830 (49.8%)	214 (12.8%)

4 BMI: body mass index ; CA: current asthmatic; NCA: non-current asthmatic; R: robust ; P-F: pre-frail; F: frail

5 **Table A2: Characteristics of participants according to their report of current asthma in**  
 6 **2002.**

Characteristics in 2015	Participants without current asthma (n= 6,560)	Participants with current asthma (n= 1,456)
<b>Age, years, mean ± SD</b>	69.9 (± 3.4)	70.0 (± 3.5)
<b>Women, n (%)</b>	1,583 (24)	398 (27)
<b>Marital status, N (%)</b>		
Living alone	1,082 (17)	304 (21)
<b>Education level, n (%)</b>		
< High school	1,256 (19)	274 (19)
High school	3,691 (57)	861 (60)
University & other	1,520 (24)	295 (21)
<b>Body Mass Index, kg/m<sup>2</sup>, mean ± SD</b>	25.9 ± 3.8	27.0 ± 4.4
Obese, N (%)	807 (12)	304 (21)
<b>Current tobacco consumption, n (%)</b>		
Non smoker	2,515 (44)	476 (38)
Current smoker	360 (6)	142 (11)
Former smoker	2,784 (49)	627 (50)
<b>Frailty, n (%)</b>		
Robust	4,117 (63)	681 (47)
Pre-frail	2,140 (33)	614 (42)
Frail	303 (5)	161 (11)
<b>Symptoms reported in 2002</b>		
Asthma attack in the last 12 months?	0	242 (17)
Wheezing in the chest, at any moment, in the last 12 months? (Yes)	0	868 (60)
Woken up with difficulty breathing in the last 12 months?	0	808 (57)
Woken up with a breathlessness in the last 12 months?	0	176 (13)
Any asthma medications?	0	300 (21)

7

8

Table A3: Characteristics of the participants in 2015 according to frailty status and current asthma 2015 status.

	Robust			Pre-frail			Frail		
	Non current asthma (N = 7 198)	Current asthma (N = 183)	P-value <sup>1</sup>	Non current asthma (N = 4 116)	Current asthma (N = 142)	P-value <sup>1</sup>	Non current asthma (N = 659)	Current asthma (N = 47)	P-value <sup>1</sup>
<b>Age</b> , years, mean ± SD	69.7 +/- 3.4	69.9 +/- 3.5	0.49	70.0 +/- 3.5	69.5 +/- 3.6	0.15	70.4 +/- 3.6	70.7 +/- 3.3	0.57
<b>Sex</b> , n (%)	1 673 (23)	47 (26)	0.50	1 155 (28)	53 (37)	0.02	288 (44)	22 (47)	0.79
Female									
<b>Marital status</b> , n (%)	1 140 (16)	24 (13)	0.38	801 (20)	35 (25)	0.15	173 (27)	13 (28)	0.93
Living alone									
<b>Education</b> , n (%)	1 351 (19)	28 (16)	0.99	822 (20)	29 (21)	0.99	171 (26)	11 (25)	
< High school									
High school	4 096 (58)	105 (58)		2466(61)	85 (61)		378 (58)	26 (59)	
University & other	1 643 (23)	47 (26)		744 (18)	25 (18)		98 (18)	7 (16)	
<b>Body Mass Index</b> , kg/m <sup>2</sup> , mean ± SD	25.5 +/- 3.3	26.0 +/- 3.7	0.10	26.8 +/- 4.2	27.4 +/- 4.5)	0.12	28.0 +/- 5.1	29.1 +/- 8.0	0.98
Obese (BMI ≥ 30kg/m <sup>2</sup> ), N (%)	604 (9)	31 (18)	< 0.001	809 (21)	36 (25)	0.15	203 (32)	19 (42)	0.35
<b>Current consumption, Tobacco</b> , n (%)	2 798 (45)	74 (49)	0.55	1 467 (42)	48 (40)	0.88	2210 (39)	20 (50)	0.28
Non smoker									
Current smoker	393 (6)	7 (5)		305 (9)	11 (9)		57 (11)	5 (15)	
Former smoker	3 003 (48)	71 (47)		1 693 (49)	61 (51)		270 (50)	15 (38)	
<b>Mood</b> , n (%)	868 (12)	29 (16)	0.15	1104 (27)	51 (36)	0.02	321 (49)	27 (58)	0.31
Depressed, stressed or anxious									
<b>Other chronic diseases</b> , N (%)									
Heart diseases	469 (7)	12 (7)	1	311 (8)	6 (4)	0.16	52 (8)	3 (7)	1
Diabetes	618 (9)	21 (12)	0.22	577 (14)	26 (18)	0.19	134 (20)	9 (19)	0.99
Joint pain	2606 (36)	75 (41)	0.21	2037 (50)	83 (59)	0.04	470 (71)	34 (72)	1
Cancer	859 (12)	28 (16)	0.21	518 (13)	17 (12)	0.81	100 (16)	8 (18)	0.91

1 p-value of t-test for continuous variables and chi-squared test for categorical variables

**Table A4: Association between current asthma and frailty criteria.**

Asthma definition		OR	OR	OR	OR	OR
		of exhaustion	of weight loss	of slowness	of weakness	of low physical activity
		[95%CI]	[95%CI]	[95%CI]	[95%CI]	[95%CI]
<b>Current asthma in 2015</b>	Crude	1.60 [1.52 - 2.07]	1.32 [0.86 - 1.94]	2.23 [1.75 - 2.82]	2.05 [1.49 - 2.76]	1.27 [1.00 - 1.60]
	M2	1.60 [1.17 - 2.14]	1.53 [0.95 - 2.33]	1.94 [1.43 - 2.59]	1.64 [1.10 - 2.38]	1.19 [0.90 - 1.55]
	M3	1.40 [1.00 - 1.90]	1.39 [0.86 - 2.15]	1.84 [1.35 - 2.48]	1.53 [1.01 - 2.25]	1.14 [0.87 - 1.49]
<b>Current asthma in 2002</b>	Crude	2.15 [1.85 - 2.49]	1.47 [1.17 - 1.82]	2.27 [1.97 - 2.63]	2.16 [1.79 - 2.61]	1.40 [1.23 - 1.59]
	M2	1.96 [1.65 - 2.33]	1.76 [1.37 - 2.25]	1.98 [1.67 - 2.35]	1.87 [1.49 - 2.35]	1.19 [1.02 - 1.38]
	M3	1.63 [1.35 - 1.96]	1.52 [1.17 - 1.97]	1.75 [1.46 - 2.08]	1.53 [1.20 - 1.94]	1.11 [0.95 - 1.30]
<b>Constant report of current asthma between 1990 and 2015</b>	Crude	1.70 [0.99 - 2.78]	2.22 [1.11 - 4.02]	3.19 [2.04 - 4.87]	2.45 [1.30 - 4.28]	1.48 [0.95 - 2.25]
	M2	1.72 [0.91 - 3.02]	2.66 [1.16 - 5.35]	2.76 [1.58 - 4.69]	1.63 [0.68 - 3.42]	1.36 [0.80 - 2.22]
	M3	1.35 [0.69 - 2.50]	2.40 [1.03 - 4.92]	2.86 [1.60 - 4.95]	1.53 [0.60 - 3.35]	1.31 [0.77 - 2.15]
<b>At least one report between 1990 and 2005</b>	Crude	1.40 [1.14 - 1.71]	1.55 [1.16 - 2.03]	1.78 [1.48 - 2.14]	1.96 [1.55 - 2.46]	1.11 [0.93 - 1.32]
	M2	1.22 [0.96 - 1.54]	1.63 [1.17 - 2.22]	1.56 [1.24 - 1.96]	1.55 [1.15 - 2.05]	1.01 [0.82 - 1.24]
	M3	1.01 [0.78 - 1.30]	1.51 [1.08 - 2.08]	1.38 [1.09 - 1.75]	1.36 [1.00 - 1.82]	0.96 [0.78 - 1.18]

Results are expressed as OR: odds-ratio ; 95%CI: 95 percent confidence interval ;

Model 2 (M2) : adjusted for sex, age (continuous), body mass index (continuous), education, marital status, tobacco consumption ;

Model 3 (M3): further adjustment on diabetes, joint pain, cancer, cardiac diseases and mental status.

*Sensibility: Participants who constantly reported current asthma, or only once, in 2015, were considered as having current asthma; otherwise they were considered as not having current asthma.*

