

Table E1. Characteristics and design of the three cohort studies

	European Community Health Survey III (ECRHS III)	Global Allergy and Asthma European Network (GA2LEN) survey	Burden of Obstructive Lung Disease (BOLD)
Design	Second follow up of general population based survey	Stratified sample from general population: healthy, asthma without chronic rhinosinusitis (CRS), CRS and asthma with CRS	General population sample
Age span	39-67 years	16-76 years	40 and above
Year	2010-2014	2008-2009	2003-2017
Centres	23 centres in Europe and one in Australia	15 centres all in Europe	34 centres all around the world
Data	Spirometry with reversibility testing Allergy testing Measurement of exhaled nitric oxide (FeNO) Questionnaire data	Spirometry with reversibility testing Allergy testing FeNO* Questionnaire data	Spirometry with reversibility testing Questionnaire data

*In subsample

Table E2 Characteristics and prevalence of bronchodilator reversibility (% and mean±SD) in the European Community Health Survey III (ECRHS III) and Global Allergy and Asthma European Network (GA2LEN) surveys.

	No airway disease (controls) (n=6196)	Current asthma (n=1323)	p-value vs. controls	COPD (n=119)	p-value vs. controls	p-value asthma vs COPD
Characteristics						
Female	52.4	60.5	<0.0001	42.0	<0.0001	<0.0001
Age	52±10	49±13	<0.0001	58±8	<0.0001	<0.0001
Smoking history			<0.0001		<0.0001	<0.0001
never	46.0	50.5		0		
ex	34.7	36.2		55.5		
current	19.3	13.3		44.5		
BMI			<0.0001		<0.0001	<0.0001
<20	3.7	3.6		0.8		
20-25	35.6	35.2		31.4		
>25-30	39.8	33.9		40.7		
>30	20.9	27.2		17.1		
FEV1 pre % of predicted	96±18	84±18	<0.0001	74±17	<0.0001	<0.0001
FVC pre % of predicted	99±15	93±15	<0.0001	93±17	<0.0001	>0.99
FEV1/FVC pre %	77±7	72±10	<0.0001	61±7	<0.0001	<0.0001
FEV1 post % of predicted	98±14	88±17	<0.0001	78±16	<0.0001	<0.0001
FVC post % of predicted	98±13	95±14	<0.0001	98±17	>0.99	0.047
FEV1/FVC post %	79±6	75±10	<0.0001	62±5	<0.0001	<0.0001
Flow response						
ΔFEV1 ≥ 12% from baseline	3.2	15.0	<0.0001	19.3	<0.0001	<0.0001
ΔFEV1 ≥ 10% of predicted	5.2	20.0	<0.0001	28.6	<0.0001	0.03
ΔFEV1 ≥ 12% and 200 mL from baseline	3.0	14.1	<0.0001	16.8	<0.0001	0.43
Volume response						
ΔFVC ≥ 10.5% from baseline	2.9	10.7	<0.0001	20.7	<0.0001	0.002
ΔFVC ≥ 9.2% of predicted	6.5	17.2	<0.0001	29.4	<0.0001	0.001
ΔFVC ≥ 10.5% and 320 mL from baseline	2.6	9.0	<0.0001	19.8	<0.0001	<0.0001

Table E3 Characteristics and prevalence of bronchodilator reversibility (% and mean±SD) in the Burden of Obstructive Lung Disease (BOLD) survey

	No airway disease (controls) (n=25,453)	Current asthma (n=1510)	p-value vs. controls	COPD (n=1027)	p-value vs. controls	p-value asthma vs COPD
Characteristics						
Female	53.1	65.4	<0.0001	24.6	<0.0001	<0.0001
Age	54±11	56±11	<0.0001	60±11	<0.0001	<0.0001
Smoking history			<0.0001		<0.0001	<0.0001
never	64.9	58.2		0		
ex	18.7	25.3		39.2		
current	16.4	16.6		60.8		
BMI			<0.0001		<0.0001	<0.0001
<20	9.4	6.8		16.4		
20-25	33.1	24.6		38.1		
>25-30	34.2	30.7		31.9		
>30	23.3	37.9		13.6		
FEV1 pre % of predicted	85±18	72±23	<0.0001	64±20	<0.0001	<0.0001
FVC pre % of predicted	88±18	83±20	<0.0001	87±21	0.02	<0.0001
FEV1/FVC pre %	77±7	69±13	<0.0001	57±10	<0.0001	<0.0001
FEV1 post % of predicted	87±18	77±22	<0.0001	68±20	<0.0001	<0.0001
FVC post % of predicted	88±18	85±19	>0.99	91±20	<0.0001	<0.0001
FEV1/FVC post %	79±7	71±12	<0.0001	58±9	<0.0001	<0.0001
Flow response						
ΔFEV1 ≥ 12% from baseline	6.6	24.8	<0.0001	25.1	<0.0001	0.84
ΔFEV1 ≥ 10% of predicted	9.8	30.9	<0.0001	30.0	<0.0001	0.62
ΔFEV1 ≥ 12% and 200 mL from baseline	5.6	20.0	<0.0001	18.6	<0.0001	0.38
Volume response						
ΔFVC ≥ 10.5% from baseline	5.9	20.3	<0.0001	25.7	<0.0001	0.002
ΔFVC ≥ 9.2% of predicted	11.7	27.6	<0.0001	31.8	<0.0001	0.02
ΔFVC ≥ 10.5% and 320 mL from baseline	3.9	14.2	<0.0001	21.8	<0.0001	<0.0001

Table E4. Determinants of bronchodilator reversibility in subject with asthma measured as adjusted* odds ratio (95 % confidence interval)

	ΔFEV_1 $\geq 10\%$ of predicted	ΔFVC $\geq 9.2\%$ of predicted
Wheeze	1.29 (1.02-1.63)	1.36 (1.05-1.73)
Wheeze and breathlessness	1.24 (1.02-1.52)	1.08 (0.78-1.19)
Wheeze not having a cold	1.05 (0.86-1.28)	1.08 (0.88-1.34)
Nocturnal chest tightness	1.24 (0.91-1.68)	1.73 (1.25-2.40)
Beathless at rest	1.18 (0.84-1.65)	1.40 (0.99-1.98)
Breathless after effort	0.84 (0.61-1.15)	1.06 (0.76-1.48)
Nocturnal brathlessness	1.11 (0.80-1.56)	1.20 (0.85-1.71)
Nocturnal cough	0.87 (0.63-1.19)	0.82 (0.59-1.13)
Chronic cough	0.77 (0.63-0.93)	0.91 (0.75-1.12)
Chronic bronchitis	0.93 (0.74-1.17)	1.36 (1.08-1.69)
Asthma attacks		
0	1	1
1	0.97 (0.63-1.50)	1.48 (0.96-2.30)
2 or more	1.03 (0.70-1.52)	0.99 (0.65-1.50)
Nasal allergy	1.16 (0.83-1.60)	0.89 (0.64-1.25)
IgE sensitisation		
Pollen	1.59 (1.11-2.27)	1.34 (0.93-1.93)
Mite	1.80 (1.28-2.53)	1.37 (0.96-1.97)
Pets	1.70 (1.20-2.39)	1.59 (1.11-2.28)
Any	2.07 (1.37-3.13)	1.48 (0.99-2.20)
Total IgE (log increase)	1.26 (0.97-1.64)	0.98 (0.75-1.28)
FeNO (log increase)	5.43 (2.80-10.5)	3.30 (1.67-6.53)

*Adjusted by sex, age, BMI, smoking, prebronchodilator FEV₁ (% pred) and study

Table E5. Determinants of bronchodilator reversibility in subject with COPD measured as adjusted* odds ratio (95 % confidence interval)

	Δ FEV ₁ ≥ 10% of predicted	Δ FVC ≥ 9.2% of predicted
Wheeze	1.21 (0.90-1.62)	0.97 (0.74-1.28)
Wheeze and breathlessness	1.31 (0.93-1.85)	1.17 (0.84-1.63)
Wheeze when no cold	1.35 (0.96-1.92)	1.12 (0.80-1.56)
Habitual coughing	1.12 (0.84-1.51)	0.08 (0.75-1.30)
Chronic bronchitis	0.88 (0.62-1.25)	1.17 (0.85-1.62)
Exacerbations		
0	1	1
1	0.98 (0.33-2.91)	0.99 (0.35-2.78)
2 or more	1.44 (0.74-2.79)	0.75 (0.39-1.45)
MRC		
0	1	1
1	1.07 (0.74-1.54)	1.00 (0.71-1.41)
2	0.79 (0.37-1.54)	1.14 (0.57-2.26)
3 or 4	0.92 (0.57-1.49)	
SF12*		
mcs12	0.99 (0.97-1.01)	0.99 (0.98-1.01)
pcs12	1.01 (0.99-1.02)	1.00 (0.98-1.02)

*Adjusted by sex, age, BMI, smoking, prebronchodilator FEV₁ (% pred) and study