

SUPPLEMENTAL DATA

Incidence and predictors of asthma exacerbations in middle-aged and older adults: the Rotterdam Study

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Supplemental figure 1; The Rotterdam Study

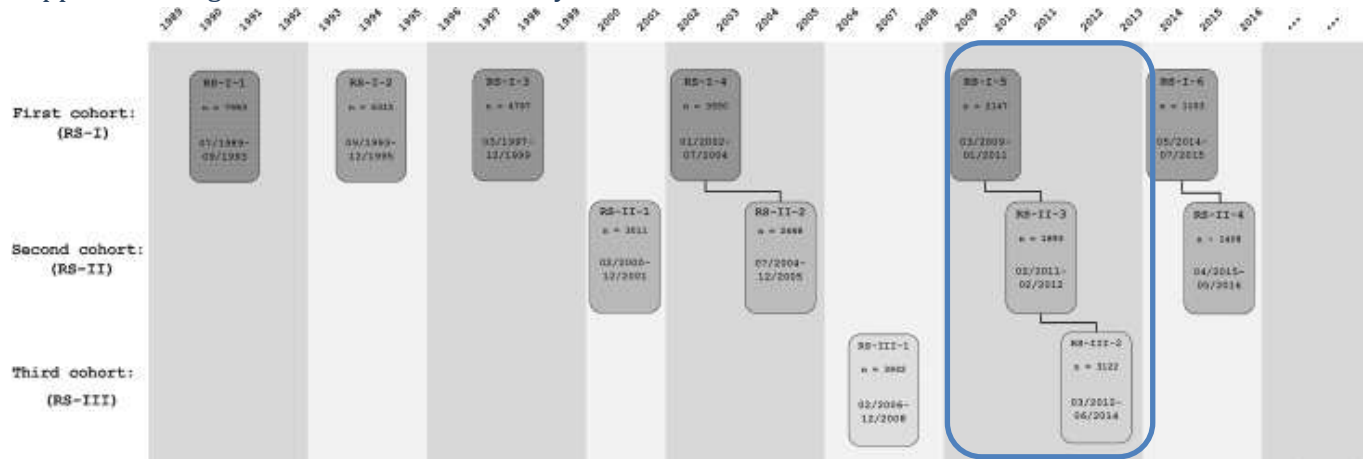


Diagram of examination cycles of the Rotterdam Study (RS). The three cohorts and their re-examinations are horizontally depicted; RS-I, RS-II and RS-III.

Outlined in blue are examinations RS-I-5, RS-II-3, and RS-III-2, these share the same program items and were used to determine determinants of asthma exacerbations.

Figure derived from [16],

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5662692/figure/Fig1/?report=objectonly>

Supplemental figure 2; FLOWCHART

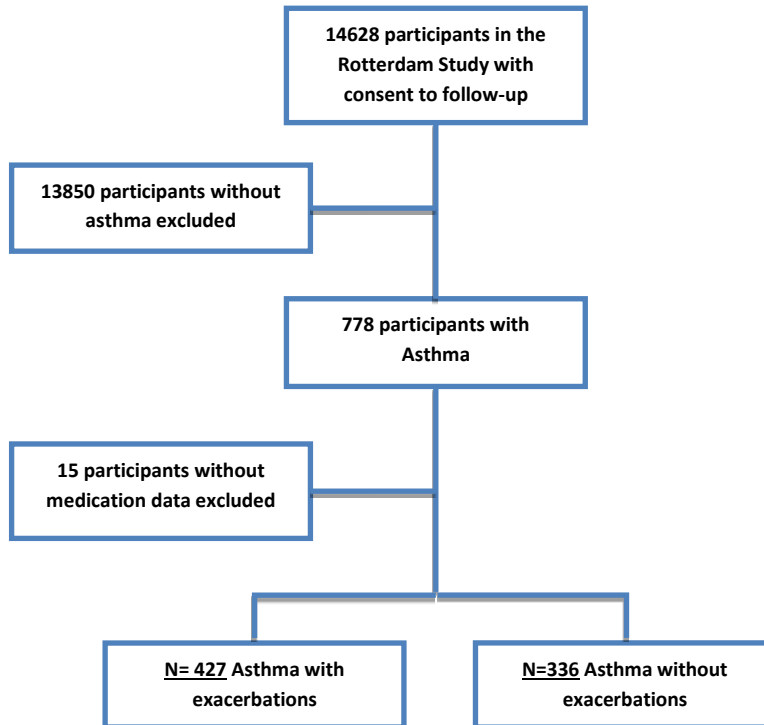


Figure 2. Study profile of participants with the exacerbation status determined at end of follow-up.

Supplemental table I with frequent exacerbators

	Asthma subjects without exacerbations	Asthma subjects with exacerbations (not frequent)	Asthma subjects with frequent exacerbations
n	336	396	31
Females (%)	226 (67.3)	282 (71.2)	20 (64.5)
Age (mean (sd))	60.85 (8.43)	62.00 (8.17)	57.40 (7.59)
BMI (mean (sd))	28.20 (4.61)	28.16 (4.70)	29.42 (5.77)
Smoking status (%)			
never	103 (31.2)	142 (36.4)	8 (25.8)
former	171 (51.8)	174 (44.6)	12 (38.7)
current	56 (17.0)	74 (19.0)	11 (35.5)
Packyears(mean(sd))	14.17 (19.66)	15.01 (20.54)	17.92 (23.53)
Total follow-up years (mean (sd))	11.98 (6.08)	14.97 (6.20)	11.22 (5.37)
Follow-up years with asthma (mean (sd))	10.74 (5.59)	13.36 (5.82)	9.74 (4.86)
Asthma onset after 40 yo (%)	274 (81.5)	321 (81.1)	20 (64.5)
Asthma onset age (mean (sd))	54.81 (17.43)	53.48 (21.98)	46.34 (20.86)
Total N. exacerbations (mean (sd))	0.00 (0.00)	3.49 (3.32)	17.03 (11.06)
Exacerbation rate (mean (sd))	0.00 (0.00)	0.29 (0.23)	1.81 (1.06)
Diabetes mellitus (%)	38 (11.3)	35 (8.8)	4 (12.9)
Hypertension (%)	170 (53.5)	197 (51.8)	19 (61.3)
Depressive symptoms (%)	37 (15.5)	44 (19.0)	10 (37.0)
Osteoporosis (%)			
normal	132 (48.4)	138 (42.9)	12 (48.0)
osteopenia	132 (48.4)	167 (51.9)	12 (48.0)
osteoporosis	9 (3.3)	17 (5.3)	1 (4.0)

Supplemental table II; Baseline characteristics of fifth examination round participants, stratified by sex

		Males (n=150)	Females (n=345)	p
Age		69.5 (8.3)	69.1 (9.1)	0.401
BMI	<30	104 (69.3)	215 (62.3)	0.134
	>30	46 (30.7)	130 (37.7)	
Smoking	never	33 (22.0)	131 (38.0)	<0.001
	former	107 (71.3)	181 (52.5)	
	current	10 (6.7)	33 (9.6)	
Education	low	42 (28.4)	224 (64.9)	<0.001
	intermediate	69 (46.6)	71 (20.6)	
	high	37 (25.0)	50 (14.5)	
Follow-up time		4.2 (1.8)	4.2 (1.7)	0.800
Time to exacerbation*		3.2 (1.9)	2.9 (1.9)	0.347
Spirometry	normal	102 (69.4)	257 (79.3)	0.042
	restriction	4 (2.7)	7 (2.2)	
	obstruction	41 (27.9)	60 (18.5)	
FEV1%predicted		91.1 (17.3)	91.3 (17.4)	0.900
FEV1/FVC		72.6 (8.4)	75.3 (7.4)	<0.001
Prior exacerbation#		0.2 (0.6)	0.2 (0.7)	0.355
Respiratory medication		63 (42.0)	131 (38.0)	0.399
Complaints (≥3)		71 (47.3)	225 (65.4)	<0.001
	Wheezing	87 (58.0)	236 (69.2)	0.016
	Dyspnea	67 (48.2)	234 (72.9)	0.011
	Chronic cough	27 (18.1)	78 (22.8)	0.296
COPD co-diagnosis		23(15.3)	25(7.2)	0.009
Diabetes		21 (14.0)	23 (6.8)	0.011
Heart Failure		9 (6.0)	12 (3.5)	0.203
CHD		34 (22.8)	20 (5.9)	
Depressive symptoms		11 (7.4)	61 (17.8)	

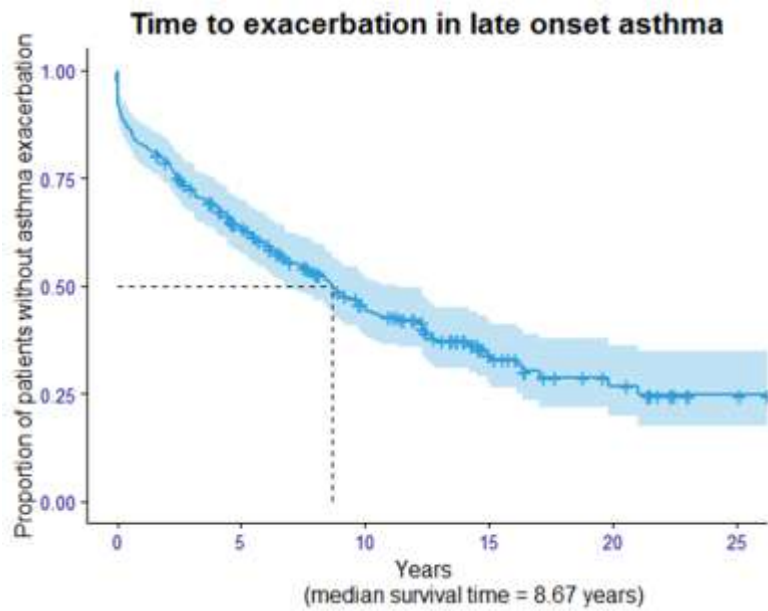
Original data are given and presented as mean(sd) or %. Follow-up time given in years.

* N=177, 318 participants did not exacerbate during follow-up

#exacerbation rate of previous year.

Data were missing in (n=): Education(2), Physical Activity (128), NLR and PLR and SII (8), Spirometry and FEV1 and FEF1/FVC (24), Complaints (1), Diabetes(8), Heart failure (1), CHD(6), Depressive symptoms(4)

Supplemental figure 3; Asthma exacerbation free survival probabilities in subjects with incident (i.e. late onset) asthma



Supplemental Figure C2. Asthma exacerbation free survival probabilities from 2009 onwards

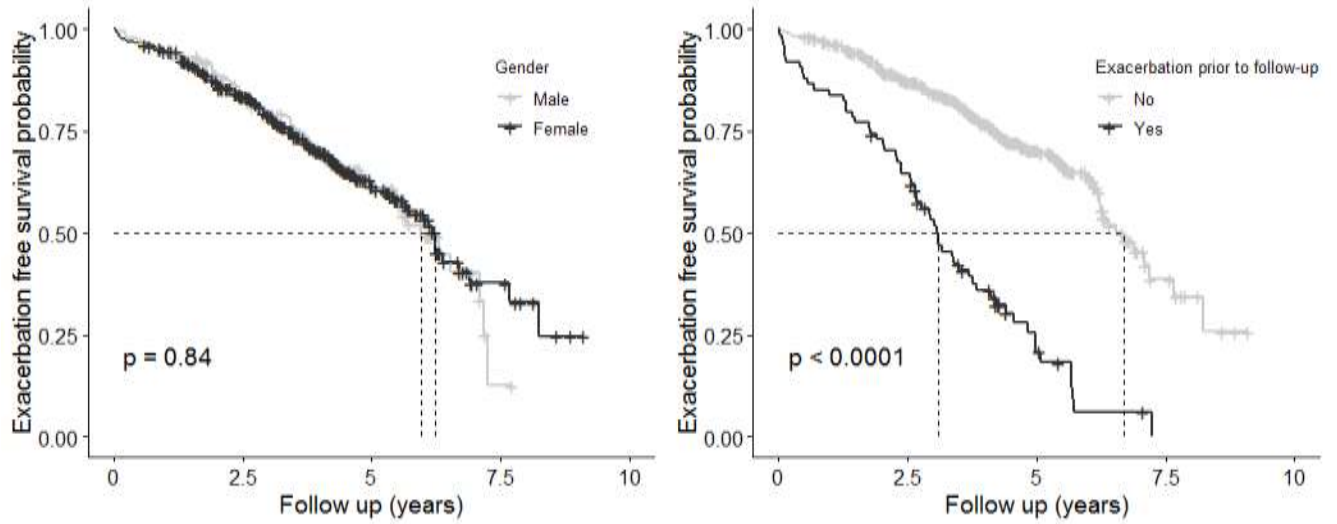
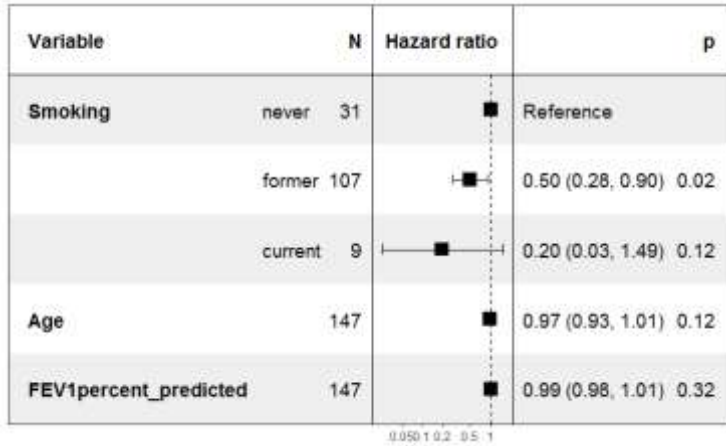


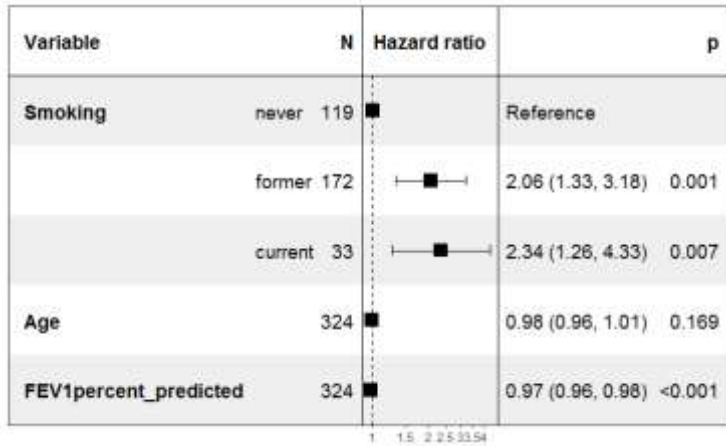
Figure C2. Asthma exacerbation free survival probabilities by sex and by previous asthma exacerbation in the last year. Median survival times (lower-upper): males 5.96 (5.48 – NA), females 6.23(5.67-7.67), no exacerbation in the past year 6.70(6.23-NA), exacerbation in the past year 3.09(2.68- 3.83).

Supplemental Figure 4; Forest plot of the interaction between smoking and sex

Males



Females



HR's for asthma exacerbation in males and females