Supplement Table 1. Dropouts per cohort by sex and follow up.

Age	PIAMA		BAMSE		GINI-PLUS		LISA-PLUS		MAS	
	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)
4y	131/1909 (6.9%)	147/2054 (7.2 %)	121/2024 (12.0 %)	121/2065 (17.0 %)					-	-
5y	31/1778 (1.7%)	29/1907 (1.5%)							-	-
6y	20/1747 (1.1%)	32/1878 (1.7%)			876/2839 (30.9%)	951/2991 (31.8%)	383/1510 (25.4%)	394/1584 (24.9%)	96/630 (15.2%)	89/684 (13.0%)
7y	28/1727 (1.6%)	31/1846 (1.7%)							0/534 (0.0%)	0/595 (0.0%)
8y	51/1699 (3.0%)	66/1815 (3.6%)	118/1903 (6.2%)	118/1944 (6.1%)					4/534 (0.8%)	2/595 (0.3%)
9y									0/530 (0.0%)	1/593 (0.2%)
10y					135/1963 (6.9%)	157/1569 (10.0%)	119/1127 (10.6%).	109/1190 (9.2%)	5/530 (0.9%)	5/592 (0.9%)
11y	254/1648 (15.4%)	277/1749 (15.8%)							1/525 (0.2%)	1/587 (0.2%)
12y			53/1785 (3.0%)	51/1828 (2.8%)					33/524 (6.3%)	42/586 (7.2%)
13y									5/491 (1.0%)	9/544 (1.7%)
14y	240/1394 (17.2%)	290/1472 (19.7%)								
15y					109/1829 (6.0%)	113/1412 (8.0%)	62/1008 (6.2%)	60/1081 (5.6%)	28/486 (5.8%)	28/535 (5.2%)
16y			122/1732 (7.0%)	189/1777 (10.6%)						
20y									38/458 (8.3%)	55/507 (10.5%)

n= number of dropouts, N= number of total participants at earlier follow-up minus drop-outs at earlier follow-up.

Supplement Table 2. Sex-specific incidence of **asthma** in five European birth cohorts by age.

Age	PIAMA Female n/N (%)	PIAMA Male n/N (%)	BAMSE Female n/N (%)	BAMSE Male n/N (%)	GINIplus Female n/N (%)	GINIplus Male n/N (%)	LISA Female n/N (%)	LISA Male n/N (%)	MAS Female n/N (%)	MAS Male n/N (%)
4y	119/1712 (7.0%)	190/1821 (10.4 %)	221/1836 (12.0 %)	316/1858 (17.0 %)					-	-
5y	46/1577 (2.9%)	68/1625 (4.2%)							-	-
6y	15/1520 (1.0%)	14/1547 (0.9%)			52/1875 (2.8%)	89/1933 (4.6%)	29/1068 (2.7%)	41/1104 (3.7%)	13/454 (2.9%)	21/504 (4.2%)
7y	31/1455 (2.1%)	33/1496 (2.2%)							7/440 (1.6%)	9/465 (1.9%)
8y	27/1391 (1.9%)	22/1411 (1.6%)	58/1499 (3.9%)	71/1436 (4.9%)					3/424 (0.7%)	6/453 (1.3%)
9y									10/356 (2.8%)	24/363 (6.6%)
10y					42/1564 (2.7%)	70/1569 (4.5%)	13/802 (1.6%)	31/849 (3.7%)	7/351 (2.0%)	9/355 (2.5%)
11y	17/1115 (1.5%)	27/1130 (2.4%)							1/425 (0.2%)	2/434 (0.5%)
12y			56/1418 (3.9%)	64/1355 (4.7%)					7/303 (2.3%)	12/305 (3.9%)
13y									10/317 (3.2%)	9/318 (2.8%)
14y	17/978 (1.7%)	17/959 (1.8%)								
15y					31/1467 (2.1%)	37/1443 (2.6%)	22/767 (2.9%)	29/814 (3.6%)	6/234 (2.6%)	4/223 (1.8%)
16y			55/1312 (4.2%)	32/1204 (2.7%)						
20y									11/365 (3.0%)	6/366 (1.6%)

n= number of participants per analyses, N= number of total participants at time of recruitment, y= years.

Supplement Table 3. Sex-specific incidence of **rhinitis** in five European birth cohorts by age.

	PIAMA		BAMSE		GINI-PLUS		LISA-PLUS		MAS	
Age	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)
4y	331/1714 (19.3%)	428/1829 (23.4 %)	180/1820 (9.9%)	233/1865 (12.5%)					-	-
5y	125/1380 (9.1%)	176/1401 (12.6 %)							-	-
6y	87/1236 (7.0%)	105/1213 (8.7%)			247/1894 (13.0%)	346/1969 (17.6%)	109/1069 (10.2%)	195/1111 (17.6%)	56/454 (12.3%)	78/504 (15.5%)
7y	61/1122 (5.4%)	77/1103 (7.0%)							30/400 (7.5%)	43/412 (10.4%)
8y	49/1032 (4.7%)	45/990 (4.5%)	143/1527 (9.4%)	171/1508 (11.3%)					36/340 (10.6%)	32/345 (9.3%)
9y									23/312 (7.4%)	24/315 (7.6%)
10y					194/1404 (13.8%)	216/1350 (16.0%)	110/741 (14.8%)	131/738 (17.8%)	21/260 (8.1%)	17/266 (6.4%)
11y	61/821 (7.4%)	92/772 (11.9%)							18/223 (8.1%)	16/242 (6.6%)
12y			156/1360 (11.5%)	199/1324 (15.0%)					17/217 (7.8%)	19/230 (8.3%)
13y									5/206 (2.4%)	3/213 (1.4%)
14y	90/682 (13.2%)	78/597 (13.1%)								
15y					218/1199 (18.2%)	190/1126 (16.9%)	116/654 (17.7%)	106/635 (16.7%)	11/137 (8.0%)	15/149 (10.1%)
16y			170/1175 (14.5%)	168/1048 (16.0%)						
20y									89/241 (36.9%)	84/274 (30.7%)

n= number of participants per analyses, N= number of total participants at time of recruitment, y= years.

Supplement Table 4. Sex-specific incidence of **respiratory multimorbidity** in five European birth cohorts by age.

	PIAMA		BAMSE		GINI-PLUS		LISA-PLUS		MAS	
Age	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)	Female n/N (%)	Male n/N (%)
4y	51/1706 (3.0%)	98/1808 (5.4%)	43/1811 (2.4%)	69/1843 (3.7%)					-	-
5y	24/1634 (1.5%)	55/1705 (3.2%)							-	-
6y	9/1589 (0.6%)	14/1628 (0.9%)			26/1868 (1.4%)	40/1925 (2.1%)	7/1059 (0.7%)	23/1097 (2.1%)	6/454 (1.3%)	14/504 (2.8%)
7y	16/1534 (1.0%)	32/1589 (2.0%)							7/447 (1.6%)	8/472 (1.7%)
8y	25/1478 (1.7%)	15/1498 (1.0%)	43/1649 (2.6%)	53/1653 (3.2%)					4/378 (1.1%)	4/395 (1.0%)
9y									6/356 (1.7%)	18/368 (4.9%)
10y					34/1562 (2.2%)	54/1573 (3.4%)	11/805 (1.4%)	28/852 (3.3%)	8/354 (2.3%)	6/362 (1.7%)
11y	13/1190 (1.1%)	18/1204 (1.5%)							1/311 (0.3%)	3/339 (0.9%)
12y			37/1567 (2.4%)	64/1579 (4.1%)					5/307 (1.6%)	10/317 (3.2%)
13y									7/295 (2.4%)	7/306 (2.3%)
14y	16/1058 (1.5%)	17/1043 (1.6%)								
15y					23/1470 (1.6%)	38/1472 (2.6%)	16/773 (2.1%)	13/824 (1.6%)	3/237 (1.3%)	5/232 (2.2%)
16y			58/1482 (3.9%)	39/1405 (2.8%)						
20y									11/378 (2.9%)	5/382 (1.3%)

n= number of participants per analyses, N= number of total participants at time of recruitment, y= years.

Supplement Table 5. Overview of included follow-up assessments of birth cohorts and available questionnaire and IgE data.

Age	PIAMA	BAMSE	GINIplus	LISA	MAS
4y	O, A	O,A			
5y	O				A
6y	O		O,A	O,A	O,A
7y	O				O,A
8y	O, A	O,A			O
9y					O
10y			O,A	O,A	O,A
11y	O				O
12y	A	O			O
13y					O,A
14y	O				
15y			O,A	O,A	O
16y		O,A			
20y					O

O indicates available outcome data for asthma and rhinitis.

A indicates available IgE data against aero-allergens for allergic sensitization.