

**Supplementary Table 1.** Descriptive characteristics of cohorts included in the lung function and airflow obstruction GWASs.

**1. CHARGE lung function GWAS (step 1)**

<b>Study</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>	<b>Mean FEV<sub>1</sub>, L (s.d.)</b>	<b>Mean FEV<sub>1</sub>/FVC (s.d.)</b>
AGES	1689	686	1003	2.13(0.69)	0.74(0.11)
ARIC	9078	4279	4799	2.94 (0.78)	0.74 (0.08)
CHS	3140	1226	1914	2.12 (0.66)	0.71 (0.11)
FHS	7911	3650	4261	3.03 (0.94)	0.75 (0.08)
HealthABC	1472	786	686	2.31 (0.66)	0.74 (0.08)
RS1	1224	556	668	2.31 (0.73)	0.73 (0.08)
RS2	852	381	471	2.71 (0.78)	0.76 (0.09)

**2. SpiroMeta lung function GWAS (step 2)**

<b>Study</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>	<b>Mean FEV<sub>1</sub>, L (s.d.)</b>	<b>Mean FEV<sub>1</sub>/FVC (s.d.)</b>
ALSPAC	1,391	676	715	1.70 (0.26)	0.88 (0.07)
B58C T1DGC	2343	1131	1212	3.31 (0.78)	0.79 (0.08)
B58C WTCCC	1372	691	681	2.93 (0.75)	0.79 (0.08)
BHS1	1168	455	713	2.81 (0.97)	0.76 (0.09)
CROATIA-SPLIT	491	209	282	3.19 (0.91)	0.84 (0.08)
CROATIA-Korcula	825	300	525	2.84 (0.81)	0.84 (0.09)
CROATIA-Vis	769	323	446	3.39 (1.22)	0.77 (0.09)
ECRHS	1594	784	810	3.78(0.82)	0.83 (0.07)
EPIC obese cases	1104	476	628	2.35 (0.69)	0.82 (0.17)
EPIC population based	2336	1100	1236	2.50 (0.72)	0.85 (0.16)
Health 2000	821	394	427	3.29 (0.90)	0.79 (0.07)
KORA F4	904	426	478	3.25 (0.79)	0.77 (0.06)
KORA S3	555	261	294	3.43 (0.78)	0.83 (0.07)
NFBC1966	4556	2182	2374	3.96 (0.79)	0.84 (0.06)
ORCADES	692	322	370	2.88 (0.84)	0.80 (0.09)
SHIP	1777	870	907	3.28 (0.89)	0.87 (0.06)
TwinsUK-I	1885	0	1,885	2.73 (0.56)	0.80 (0.08)

**3. Airflow obstruction GWAS**

<b>Study</b>	<b>Airflow obstruction*</b>	<b>Unaffected</b>
ARIC	914	6,602
FHS	571	5,866
CHS	402	2,183
RS1	99	1,003
RS2	40	668
RS3	70	1,001
HealthABC	108	1,129
AGES	109	1,562
EPIC	127	1,023
BHS	89	661
SAPALDIA	98	833
LBC1936	61	627
B58C	264	4,374
MESA	104	979

\*Airflow obstruction was defined based on the lower limit of normal for both FEV<sub>1</sub> and FEV<sub>1</sub>/FVC from NHANES III prediction equations

Abbreviation key:

AGES = Age, Gene, Environment Susceptibility; ALSPAC = The Avon Longitudinal Study of Parents and Children; ARIC = Atherosclerosis Risk in Communities Study; B58C = British 1958 Birth Cohort; BHS = Bussleton Health Study; CHS = Cardiovascular Health Study; ECRHS: The European Community Respiratory Health Survey; EPIC = European Prospective Investigation into Cancer and Nutrition; FHS = Framingham Heart Study; HealthABC = Health, Aging and Body Composition; KORA = Cooperative Health Research in the Region of Augsburg; LBC1936 = Lothian Birth Cohort 1936; MESA = Multi-Ethnic Study of Atherosclerosis; NFBC = Northern Finland Birth Cohort; ORCADES = Orkney Complex Disease Study; RS1 = Rotterdam Study I; RS2 = Rotterdam Study II; RS3 = Rotterdam Study III; SAPALDIA = Swiss Study on Air Pollution and Lung and Heart Disease in Adults; SHIP = Study of Health in West Pomerania.