

Supplementary material

Text S1: Details on study design and participants of the cohorts included in analysis.

COLAUS|PSYCOLAUS. COLAUS|PSYCOLAUS is an ongoing prospective study assessing the clinical, biological, and genetic determinants of cardiovascular disease in the city of Lausanne, Switzerland, and the association of cardiovascular risk factors and diseases with mental disorders. The initial survey was conducted between 2003 and 2006 and included 6733 participants aged between 35 and 75 years; the first follow-up survey was conducted 5.5 years afterwards and included 5064 participants. In each survey, data on socioeconomic status, lifestyle, mental status, and cardiovascular risk factors are collected by questionnaire or clinical examination. <https://www.colaus-psycolaus.ch/>

CONSTANCES. The CONSTANCES cohort was established in late 2012. Supported by the French National Research Agency (ANR-11-INBS-0002), it was designed as a randomly selected sample of French adults aged 18 to 69 years at inception; at the end of 2019, 215 000 participants were included. At enrolment, the participants complete questionnaires collecting data on health, lifestyle, individual, familial, social, and occupational factors and life events and benefits from a comprehensive health examination. The follow-up includes a yearly self-administered questionnaire, a health examination every four years, and an annual linkage to social and health national databases (Zins et al, 2015). http://www.constances.fr/index_EN.php

ELSA. The English Longitudinal Study of Ageing (ELSA) is a panel study of a representative cohort of men and women living in England aged ≥ 50 years. It was designed as a sister study to the Health and Retirement Study in the USA and is multidisciplinary in orientation, involving the collection of economic, social, psychological, cognitive, health, biological, and genetic data. The study commenced in 2002, and the sample has been followed up every two years. Data are collected using computer-assisted personal interviews and self-completion questionnaires, with additional nurse visits for the assessment of biomarkers every 4 years. The original sample consisted of 11 391 members, ranging in age from 50 to 100 years. <http://www.elsa-project.ac.uk/>

EPIPORTO. The EPIPorto study was initiated in 1999 and recruited 2485 adult dwellers aged 18 years or older in the city of Porto, northwest of Portugal. Briefly, simple random digit dialing of landline telephones was used to select households. Most houses (>95%) had a landline telephone at the time of this procedure. A table of random numbers was used to define the last four digits that were specific to individual houses, assuming the local prefix codes to limit the universe to the city of Porto. Nonexisting numbers, those corresponding to fax numbers, or telephone numbers of nonindividual subscribers were ignored. The household was considered unreachable after at least four dialing attempts at different hours and including week and weekend days. Within each household, a permanent resident aged 18 years or older was selected using simple random sampling. The proportion of participation was 70%. A follow-up evaluation was conducted from 2005 to 2008 (participation rate=68% of the baseline sample) by trained interviewers using structured questionnaires and forms, following the same protocol for data collection as at baseline. In both evaluations, participants were invited to visit the Department at Medical School for an interview, which included a questionnaire on social, demographic, behavioural, and clinical data and a physical examination including blood collection. <http://ispup.up.pt/research/research-structures/>

NCDS. The National Child Development Study (NCDS) recruited 17 415 babies born in one week of 1958 (98.2% of all births that week) in Great Britain (England, Scotland, and Wales). Participants were surveyed at birth and ages 7, 11, 16, 23, 33, 42, 44/45, 46, and 50 years. Information was collected on economic, medical, developmental, and social aspects of participants' lives. At age 46/47 (the cut-off age of this study), a subsample of participants (n=11 881; 77.9% of the target) took part in a biomedical survey (Power & Elliott, 2006). <http://www.cls.ioe.ac.uk/page.aspx?&siteid=724&siteidtitle=Welcome+to+the+1958+National+Child+Development+Study>

WHITEHALL II. The Whitehall II study was established in 1985 to examine the socioeconomic gradient in health among 10 308 London-based civil servants (6895 men and 3413 women) aged 35 to 55 years. Baseline examination (phase 1) took place during 1985-1988, and involved a clinical examination and a self-administered questionnaire containing sections on demographic characteristics, health, lifestyle factors, work characteristics, social support, and life events. <https://www.ucl.ac.uk/whitehallII>

Table S1: Spirometry description and information on exclusions from the analysis.

Cohort Study (Wave, year of test)	Test setup	N of participants who completed spirometry	N of participants with acceptable FEV ₁ and FVC *Spirometry-related reasons for exclusion	N of participants included (with complete information in exposures and outcome)
COLAUS PSYCOLAUS (Wave 2, 2014-2017)	Spirometry was performed using SentrySuite Masterscreen PFT equipment (CareFusion, San Diego, USA), according to ATS/ERS recommendations ²⁸ , performing a minimum of three acceptable forced manoeuvres. The highest technically acceptable values of FEV ₁ and FVC were analysed.	3359	3359	2313
CONSTANCES (Wave 1, 2012-2017)	Spirometry was performed according to ATS/ERS recommendations ²⁸ , performing a minimum of three acceptable forced manoeuvres. The highest technically acceptable values of FEV ₁ and FVC were analysed.	70 694	70 211 *Incomplete information in FEV ₁ or FVC (n=189) *End of test in first second, FEV ₁ =FVC (n=69) * FEV ₁ >FVC (n=225)	54 690
ELSA (Wave 6, 2012-2013)	Spirometry was performed using Vitalograph Escort portable spirometer, performing a minimum of three acceptable forced manoeuvres. The highest technically acceptable values of FEV ₁ and FVC were analysed.	6875	6819 *Incomplete information in FEV ₁ (n=10) *End of test in first second, FEV ₁ =FVC (n=9) *Sub-maximal effort, FEV ₁ < 0.5L (n=24) * FEV ₁ >FVC (n=13)	2195
EPIPORTO (Wave 2, 2014-2015)	Spirometry was performed using SpiroLab II®, according to ATS/ERS recommendations ²⁸ , performing a minimum of three acceptable forced manoeuvres. The highest technically acceptable values of FEV ₁ and FVC were analysed.	1496	1460 *End of test in first second, FEV ₁ =FVC (n=1) *Sub-maximal effort, FEV ₁ < 0.5L (n=35)	1274
NCDS (Wave 8 2002-2003)	Spirometry was performed using a Vitalograph Micro hand-held spirometer, performing a minimum of three acceptable forced manoeuvres. The highest technically acceptable values of FEV ₁ and FVC were analysed.	9089	9068 *Sub-maximal effort, FEV ₁ and FVC < 0.5L (n=1) *End of test in first second, FEV ₁ =FVC (n=10) * FEV ₁ >FVC (n=10)	6666
WHITEHALL II (Wave 11, 2012-2013)	Spirometry was performed using a portable flow spirometer (MicroPlus Spirometer; Micro Medical Ltd., Kent, United Kingdom), according to ATS/ERS recommendations ²⁸ . The largest FVC and FEV ₁ values from three manoeuvres were analysed.	5040	5028 *Sub-maximal effort, FEV ₁ < 0.5L (n=2) *End of test in first second, FEV ₁ =FVC (n=10)	3358

Legend: ATS/ERS, American Thoracic Society/European Respiratory Society; FEV₁: forced expiratory volume in the first second; FVC: forced vital capacity age and height-adjusted; N: number; NA: not applicable.

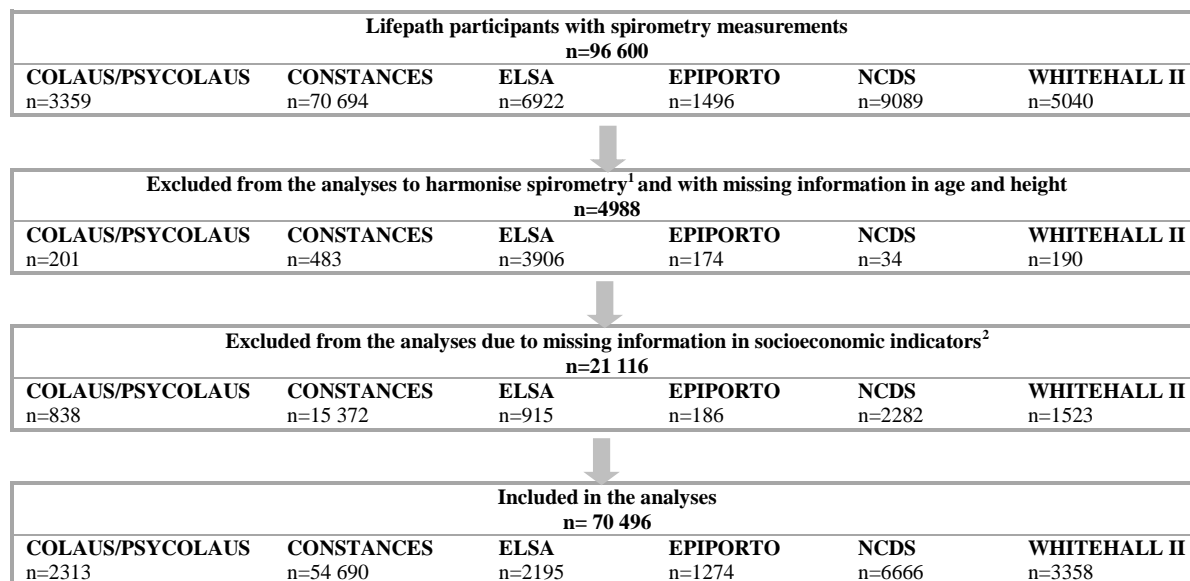


Figure S1: Overview of the study flowchart.

¹Reasons for exclusion were incomplete information for FEV₁ and FVC, tests which ended in the first second or with a volume in the first second higher than total volume.

²Included participants had complete information for the three socioeconomic indicators, ie, paternal occupational position, educational level, and occupational position.

Table S2: Comparison of included and excluded participants according to demographic and socioeconomic factors.

	Included	Excluded	p-value
Age , mean (SD), y	48.8 (12.4)	47.8 (15.0)	<0.001
Sex , n (%)			<0.001
Women	35 653 (50.6)	13 802 (54.6)	
Men	34 843 (49.4)	11 498 (45.4)	
Height , mean (SD), cm	169.1 (9.2)	168.0 (9.3)	<0.001
Socioeconomic indicators , n (%)			
Paternal occupational position			0.081
High	13 274 (18.8)	2041 (19.7)	
Intermediate	26 414 (37.5)	3810 (36.8)	
Low	30 808 (43.7)	4490 (43.5)	
Educational level			<0.001
High	36 791 (52.2)	7517 (38.4)	
Intermediate	20 393 (28.9)	6 705 (34.2)	
Low	13 312 (18.9)	5355 (27.4)	
Occupational position			<0.001
High	22 341 (31.7)	3393 (25.9)	
Intermediate	25 861 (35.3)	4899 (37.4)	
Low	23 294 (33.0)	4814 (36.7)	

Legend: In bold statistically significant values.

	MEN (n=26 876)						WOMEN (n=26 912)					
	COLAUS PSYCOLAUS (n=1140)	CONSTANCES (n=26 238)	ELSA (n=1055)	EPIPORTO (n=518)	NCDS (n=3444)	WHITEHALL II (n=2448)	COLAUS PSYCOLAUS (n=1173)	CONSTANCES (n=28 452)	ELSA (n=1140)	EPIPORTO (n=756)	NCDS (n=3222)	WHITEHALL II (n=910)

Table S3: Characteristics of participants included by sex and cohort (n=70 496).

Baseline year	2003	2012	2002	1999/2003	1958	1985/1988	2003	2012	2002	1999/2003	1958	1985/1988
DEMOGRAPHICS, ANTHROPOMETRICS												
Age, mean (SD), y	54.5 (8.6)	48.5 (12.7)	70.5 (7.2)	57.9 (14.3)	45.7 (1.1)	48.9 (5.6)	54.5 (8.3)	47.4 (12.7)	70.4 (7.2)	57.1 (13.0)	45.8 (1.0)	49.2 (5.9)
Age groups, n (%)												
18-44	153 (13.4)	10 091 (38.5)	-	98 (18.9)	254 (7.4)	646 (26.4)	163 (13.9)	11 855 (41.7)	-	144 (19.0)	180 (5.6)	227 (24.9)
45-64	802 (70.4)	12 781 (48.7)	242 (22.9)	238 (45.9)	3190 (92.6)	1802 (73.6)	845 (72.0)	13 579 (47.7)	297 (26.1)	379 (50.1)	3042 (94.4)	683 (75.1)
65 or older	185 (16.2)	3366 (12.8)	813 (77.1)	182 (35.1)	-	-	165 (14.1)	3018 (10.6)	843 (73.9)	233 (30.8)	-	-
Height, mean (SD), cm	175.6 (7.2)	175.9 (6.7)	173.0 (6.9)	169.0 (7.0)	176.2 (6.6)	174.5 (6.8)	163.5 (6.6)	163.1 (6.3)	159.5 (6.4)	155.4 (5.9)	162.7 (6.1)	160.2 (6.5)
Weight, mean (SD), kg	82.1 (13.3)	79.3 (12.7)	84.1 (14.4)	76.0 (12.7)	86.4 (14.1)	81.0 (13.1)	66.6 (12.3)	64.5 (12.5)	71.1 (14.6)	67.7 (32.4)	71.0 (14.6)	69.4 (14.8)
LUNG FUNCTION, mean (SD), mL												
FEV ₁	3384.6 (484.0)	3533.4 (523.2)	2843.3 (498.1)	2915.5 (601.3)	3629.1 (370.5)	3447.9 (434.2)	2701.1 (441.8)	2832.2 (500.1)	2085.9 (480.8)	2174.6 (538.5)	2865.2 (344.5)	2635.3 (430.8)
FVC	4345.7 (614.8)	4475.4 (620.3)	3771.0 (602.3)	3745.9 (699.0)	4614.6 (496.6)	4390.1 (563.1)	3428.5 (560.8)	3524.4 (587.1)	2753.7 (574.2)	2745.0 (621.3)	3591.2 (461.2)	3302.0 (553.9)
SOCIOECONOMIC STATUS, n (%)												
Paternal occupational position (ESEC class)												
High (1-3)	386 (33.9)	5249 (20.0)	103 (9.8)	77 (14.9)	223 (6.5)	247 (10.1)	368 (31.4)	6115 (21.5)	123 (10.8)	96 (12.7)	189 (5.9)	98 (10.8)
Intermediate (4-6)	430 (37.7)	10 578 (40.3)	396 (37.5)	112 (21.6)	565 (16.4)	818 (33.4)	462 (39.4)	11 642 (40.9)	464 (40.7)	165 (21.8)	516 (16.0)	266 (29.2)
Low (7-9)	324 (28.4)	10 411 (39.7)	556 (52.7)	329 (63.5)	2656 (77.1)	1383 (56.5)	343 (29.2)	10 695 (37.6)	553 (48.5)	495 (65.5)	2517 (78.1)	546 (60.0)
Participants' educational level												
High (tertiary school)	453 (39.7)	14 807 (56.4)	265 (25.1)	147 (28.4)	675 (19.6)	998 (40.8)	429 (36.6)	17 788 (62.5)	171 (15.0)	220 (29.1)	574 (17.8)	264 (29.0)
Intermediate (Higher secondary)	201 (17.6)	9465 (36.1)	315 (29.9)	82 (15.8)	140 (4.1)	742 (30.3)	186 (15.9)	8519 (29.9)	254 (22.3)	96 (12.7)	204 (6.3)	189 (20.8)
Low (Primary/ lower secondary)	486 (42.7)	1966 (7.5)	475 (45.0)	289 (55.8)	2629 (76.3)	708 (28.9)	558 (47.6)	2145 (7.5)	715 (62.7)	440 (58.2)	2444 (75.9)	457 (50.2)
Participants' occupational position (ESEC class)												
High (1-3)	319 (28.0)	10 533 (40.1)	254 (24.1)	124 (23.9)	1149 (33.4)	1693 (69.2)	115 (9.8)	7144 (25.1)	74 (6.5)	153 (20.2)	530 (16.4)	253 (27.8)
Intermediate (4-6)	432 (37.9)	7985 (30.4)	519 (49.2)	151 (29.2)	1242 (36.1)	657 (26.8)	396 (33.8)	10 302 (36.2)	696 (61.1)	130 (17.2)	1987 (61.7)	364 (40.0)
Low (7-9)	389 (34.1)	7720 (29.4)	282 (26.7)	243 (46.9)	1053 (30.5)	98 (4.0)	662 (56.4)	11 006 (38.7)	370 (32.5)	473 (62.6)	705 (21.9)	293 (32.2)
HEALTH RISK FACTORS, n (%)												
Smoking												
Never	437 (38.3)	10 413 (41.3)	305 (28.9)	152 (29.3)	1618 (47.0)	1069 (44.4)	520 (44.3)	13 749 (50.3)	501 (43.9)	543 (71.8)	1593 (49.5)	489 (55.5)
Former	457 (40.1)	10 065 (39.9)	616 (58.4)	228 (44.0)	1009 (29.3)	1260 (52.3)	403 (34.4)	8642 (31.6)	468 (41.1)	116 (15.4)	849 (26.4)	358 (40.6)
Current	246 (21.6)	4760 (18.9)	134 (12.7)	138 (26.6)	816 (23.7)	78 (3.3)	250 (21.3)	4966 (18.2)	171 (15.0)	97 (12.8)	779 (24.2)	34 (3.9)
Sedentary behavior (yes)	46 (4.7)	5932 (23.2)	237 (22.5)	380 (73.4)	1687 (54.1)	637 (26.1)	537 (51.5)	6227 (22.6)	328 (28.8)	582 (77.0)	1052 (35.3) ²	343 (37.7)
BMI												
Under/normal weight	416 (36.5)	12 523 (48.0)	241 (22.8)	166 (32.0)	826 (24.0)	893 (36.5)	679 (57.9)	18 646 (65.9)	374 (32.9)	257 (34.0)	1411 (43.8)	365 (40.1)
Overweight/obese	724 (63.5)	13 560 (52.0)	814 (77.2)	352 (68.0)	2616 (76.0)	1555 (63.5)	494 (42.1)	9662 (34.1)	763 (67.1)	499 (66.0)	1810 (56.2)	545 (59.9)
DISEASE HISTORY, n (%)												
Cardiovascular disease	47 (4.1)	691 (2.6)	141 (13.4)	61 (11.8)	243 (7.1)	498 (20.3)	21 (1.8)	229 (0.8)	85 (7.5)	66 (8.7)	238 (7.4)	192 (21.1)
Respiratory disease	82 (7.2)	3749 (14.3)	143 (13.6)	48 (9.3)	238 (6.9)	408 (17.9)	109 (9.3)	3759 (13.2)	216 (18.9)	90 (11.9)	309 (9.6)	220 (26.0)

Legend: ESEC, European Socioeconomic Classification; FEV₁: forced expiratory volume in the first-second age and height-adjusted; FVC: forced vital capacity age and height-adjusted; BMI: body mass index; mL: millilitres.

Table S4: Serially adjusted association of life-course socioeconomic disadvantage with lung function by sex.

	FVC differences, B (95% CI), mL			
	MEN		WOMEN	
	Minimally adjusted model ¹	Fully adjusted model ²	Minimally adjusted model ¹	Fully adjusted model ²
Paternal occupational position				
High	Reference	Reference	Reference	Reference
Intermediate	-197.1 (-215.7; -178.4)	-166.2 (-185.1; -147.3)	-200.0 (-217.2; -182.8)	-173.3 (-190.7; -155.9)
Low	-240.3 (-258.4; -222.1)	-198.5 (-217.1; -180.0)	-253.6 (-270.5; -236.8)	-208.7 (-226.0; -191.5)
Participants' educational level				
High	Reference	Reference	Reference	Reference
Intermediate	-245.8 (-260.5; -231.2)	-189.4 (-205.0; -173.8)	-274.3 (-288.5; -260.1)	-233.1 (-248.2; -218.0)
Low	-299.4 (-316.8; -282.0)	-227.0 (-246.2; -207.8)	-414.3 (-430.3; -398.3)	-351.6 (-369.4; -333.8)
Participants' occupational position				
High	Reference	Reference	Reference	Reference
Intermediate	-116.1 (-131.6; -100.5)	-17.3 (-33.7; -1.0)	-143.5 (-159.7; -127.2)	-35.9 (-52.4; -19.4)
Low	-131.2 (-147.3; -115.1)	21.1 (2.3; 39.9)	-220.9 (-237.2; -204.6)	-0.5 (-19.0; 18.1)

Legend: FVC: forced vital capacity; B: beta-coefficient of linear regression models; CI: confidence interval; In bold statistically significant values.

¹ The minimally adjusted model was adjusted for age and height.

² The fully adjusted model assessing paternal occupational position as exposure was adjusted for age, height, health risk factors (smoking, sedentary behaviour, and body mass index), and history of disease (respiratory and cardiovascular); the fully adjusted model assessing educational level as exposure was adjusted for age, height, paternal occupational position, health risk factors, and history of disease; and the fully adjusted model assessing occupational position as exposure was adjusted for age, height, paternal occupational position, educational level, health risk factors, and history of disease.

Table S5: Years of lung function lost in FVC by ages 45, 65, and 85 years due to intermediate or low socioeconomic conditions.

		Years of function lost (95% CI) in FVC			
		MEN		WOMEN	
		Minimally adjusted models ¹	Fully adjusted models ²	Minimally adjusted models ¹	Fully adjusted models ²
At age 45 y					
Paternal occupational position	Intermediate	0.87 (-0.46; 2.60)	1.96 (0.52; 5.68)	1.74 (-0.05; 3.95)	1.26 (-0.48; 3.21)
	Low	-0.70 (-2.37; 0.23)	0.46 (-0.70; 2.13)	-4.99 (-7.32; -2.31)	0.42 (-1.41; 3.72)
Educational level	Intermediate	-3.21 (-4.44; -1.87)	-0.47 (-2.24; 1.23)	-7.18 (-9.86; -1.53)	-3.43 (-8.05; 0.42)
	Low	-6.29 (-9.21; -4.04)	-4.08 (-6.69; -2.13)	-8.45 (-10.53; -6.80)	-8.71 (-12.85; -4.35)
Occupational position	Intermediate	-0.83 (-2.53; 0.38)	1.32 (-0.53; 4.30)	1.63 (-1.72; 3.04)	3.10 (-0.52; 6.32)
	Low	-5.13 (-8.37; -3.62)	-5.24 (-8.34 ; -3.04)	-2.30 (-4.30; 0.47)	-1.15 (-3.83; 0.41)
At age 65 y					
Paternal occupational position	Intermediate	-0.31 (-0.78; 1.14)	0.51 (-0.75; 1.53)	0.82 (-1.08; 2.39)	0.56 (-0.35; 1.54)
	Low	-0.79 (-2.16; 0.12)	-0.15 (-1.44; 0.85)	-1.62 (-3.11; 0.12)	-1.62 (-3.17; 0.28)
Educational level	Intermediate	-1.46 (-2.18; -0.80)	0.25 (-0.75; 1.20)	-2.13 (-6.15; -1.12)	-0.96 (-1.89; 3.09)
	Low	-3.80 (-5.29; -2.64)	-2.23 (-3.71; -1.21)	-2.72 (-5.51; -1.64)	-2.55 (-7.57; 3.45)
Occupational position	Intermediate	-0.88 (-1.85; -0.23)	0.48 (-0.93; 1.79)	-0.26 (-2.32; 0.88)	-0.87 (-2.71; 2.32)
	Low	-3.74 (-5.62; -2.66)	-3.50 (-4.96; -2.17)	-2.62 (-4.70; 0.40)	-3.41 (-5.22; 0.66)
At age 85 y					
Paternal occupational position	Intermediate	-0.07 (-1.57; 1.05)	-0.05 (-1.62; 1.24)	0.65 (-1.27; 1.51)	0.31 (-0.61; 1.51)
	Low	-0.84 (-2.41; 0.35)	-0.38 (-2.02; 0.91)	-1.21 (-3.28; -0.30)	-1.40 (-2.86; -0.61)
Educational level	Intermediate	-0.61 (-1.63; 0.07)	0.58 (-0.47; 1.64)	-0.96 (-1.81; -0.34)	-0.34 (-1.29; 0.55)
	Low	-2.53 (-3.80; -0.78)	-1.36 (-3.18; -0.06)	-0.88 (-1.50; 0.15)	-1.00 (-2.38; 0.22)
Occupational position	Intermediate	-0.89 (-2.09; -0.21)	0.14 (-1.43; 1.70)	-0.49 (-1.76; 0.84)	-0.88 (-1.95; 0.01)
	Low	-3.05 (-4.74; -1.91)	-2.67 (-3.93; -1.36)	-1.97 (-3.34; -0.93)	-2.37 (-3.65; -1.46)

Legend: FVC: forced vital capacity; The reference categories were high paternal occupational position, high education and high occupation; In bold statistically significant values.

¹ The minimally adjusted model was adjusted for age and height.

² The fully adjusted model assessing paternal occupational position as exposure was adjusted for age, height, health risk factors (smoking, sedentary behaviour, and body mass index), and history of disease (respiratory and cardiovascular). The fully adjusted model assessing educational level as exposure was adjusted for age, height, paternal occupational position, health risk factors, and history of disease. The fully adjusted model assessing occupational position as exposure was adjusted for age, height, paternal occupational position, educational level, health risk factors, and history of disease.

Table S6: Association of life-course socioeconomic disadvantage with lung function, stratified by smoking status and sex.

	FEV₁ differences, B (95% CI), mL		
	NEVER SMOKERS	FORMER SMOKERS	CURRENT SMOKERS
MEN			
Paternal occupational position			
High	Reference	Reference	Reference
Intermediate	-175.2 (-199.5; -150.9)	-174.9 (-199.7; -150.2)	-146.8 (-183.1; -110.5)
Low	-209.1 (-232.7; -185.5)	-205.4 (-229.6; -181.2)	-185.5 (-220.1; -150.9)
Participants' educational level			
High	Reference	Reference	Reference
Intermediate	-248.1 (-267.7; -228.4)	-181.1 (-200.1; -162.1)	-158.9 (-187.2; -130.6)
Low	-291.1 (-314.5; -267.8)	-240.9 (-263.7; -218.1)	-280.1 (-311.8; -248.4)
Participants' occupational position			
High	Reference	Reference	Reference
Intermediate	-91.9 (-112.0; -71.8)	-95.7 (-115.8; -75.5)	-83.1 (-115.5; -50.7)
Low	-108.4 (-130.1; -86.7)	-95.0 (-116.5; -73.5)	-59.7 (-90.0; -29.4)
WOMEN			
Paternal occupational position			
High	Reference	Reference	Reference
Intermediate	-216.0 (-238.1; -193.8)	-146.5 (-171.3; -121.8)	-144.6 (-171.0; -118.2)
Low	-263.6 (-285.1; -241.9)	-169.6 (-194.1; -145.0)	-301.0 (-329.9; -272.2)
Participants' educational level			
High	Reference	Reference	Reference
Intermediate	-319.8 (-337.4; -302.1)	-181.0 (-201.9; -160.1)	-154.6 (-182.8; -126.4)
Low	-469.0 (-488.4; -449.5)	-296.3 (-320.6; -271.9)	-283.9 (-313.7; -254.1)
Participants' occupational position			
High	Reference	Reference	Reference
Intermediate	-153.8 (-174.1; -133.4)	-116.4 (-139.9; -93.0)	-69.5 (-101.4; -37.7)
Low	-255.5 (-276.1; -234.9)	-120.4 (-144.7; -96.2)	-61.8 (-92.4; -31.2)

Legend: FEV₁: forced expiratory volume in the first-second; B: beta-coefficient of linear regression models age- and height-adjusted; CI: confidence interval; In bold statistically significant values.

Table S7: Association of life-course socioeconomic disadvantage with lung function, stratified by smoking intensity and sex.

FEV ₁ differences (mL) – B (95%CI) ¹	Smoking intensity	
	1-20 cigarettes per day	≥21 cigarettes per day
MEN (n=6216)		
Paternal occupational position		
High	Reference	Reference
Intermediate	-205.0 (-246.0; -163.9)	-111.0 (-186.0; -36.0)
Low	-244.7 (-285.3; -204.0)	-262.7 (-335.1; -190.3)
Own educational level		
High	Reference	Reference
Intermediate	-161.6 (-194.4; -128.8)	-176.1 (-232.2; -120.0)
Low	-369.6 (-410.5; -328.8)	-505.3 (-568.3; -442.2)
Own occupational position		
High	Reference	Reference
Intermediate	-72.2 (-108.6; -35.8)	-144.3 (-206.9; -81.7)
Low	-87.1 (-123.7; -50.4)	-199.6 (-262.3; -136.8)
WOMEN (n=8187)		
Paternal occupational position		
High	Reference	Reference
Intermediate	-132.4 (-163.1; -101.7)	-259.7 (-313.4; -205.9)
Low	-190.2 (-221.0; -159.3)	-477.5 (-548.7; -406.3)
Own educational level		
High	Reference	Reference
Intermediate	-191.5 (-217.3; -165.7)	-188.7 (-234.4; -142.9)
Low	-390.8 (-424.7; -356.9)	-411.4 (-494.8; -328.0)
Own occupational position		
High	Reference	Reference
Intermediate	-93.8 (-124.8; -62.8)	-115.0 (-180.4; -49.6)
Low	-97.2 (-127.6; -66.9)	-144.0 (-208.1; -79.9)

Legend: FEV₁: forced expiratory volume in the first-second; B: beta-coefficient of linear regression models age- and height-adjusted; CI: confidence interval; In bold statistically significant values.

Table S8: Years of lung function lost in FEV₁ by ages 45, 65, and 85 years due to intermediate or low socioeconomic conditions using the total sample (n= 96 553).

		Years of function lost (95%CI) in FEV₁	
		Fully adjusted models ¹	
		MEN	WOMEN
At age 45 y			
Paternal occupational position	Intermediate	0.86 (-0.05; 2.48)	0.89 (-0.03; 2.02)
	Low	-0.66 (-1.58; 0.32)	-1.39 (-2.61; -0.58)
Educational level	Intermediate	-1.86 (-3.51; -0.75)	-1.75 (-3.28; -0.67)
	Low	-5.00 (-7.93; -3.45)	-6.16 (-9.16; -4.18)
Occupational position	Intermediate	-0.73 (-2.05; 0.05)	-0.21 (-1.78; 0.89)
	Low	-6.30 (-9.79; -4.45)	-6.53 (-9.56; -4.45)
At age 65 y			
Paternal occupational position	Intermediate	0.77 (0.01; 1.85)	0.83 (0.12; 1.77)
	Low	-0.69 (-1.55; 0.09)	-0.66 (-1.52; 0.12)
Educational level	Intermediate	-0.43 (-1.25; 0.48)	-0.25 (-1.23; 0.48)
	Low	-3.09 (-4.36; -2.15)	-2.37 (-3.31; -1.55)
Occupational position	Intermediate	0.12 (-0.60; 1.28)	0.67 (-0.36; 1.34)
	Low	-4.16 (-5.63; -3.11)	-2.59 (-3.68; -1.95)
At age 85 y			
Paternal occupational position	Intermediate	0.73 (-0.47; 1.99)	0.81 (-0.05; 1.71)
	Low	-0.70 (-1.85; 0.36)	-0.33 (-1.37; 0.60)
Educational level	Intermediate	0.37 (-0.40; 1.72)	0.47 (-0.45; 1.21)
	Low	-2.00 (-3.05; -0.84)	-0.46 (-1.30; 0.55)
Occupational position	Intermediate	0.60 (-0.19; 2.02)	1.09 (-0.04; 1.79)
	Low	-2.91 (-4.03; -1.72)	-0.56 (-1.64; 0.17)

Legend: FEV₁: forced expiratory volume in the first-second; The reference categories were high paternal occupational position, high educational level, and high occupational position.

¹The fully adjusted model assessing paternal occupational position as exposure was adjusted for age, height, health risk factors (smoking, sedentary behaviour and BMI) and history of disease (respiratory and cardiovascular). The fully adjusted model assessing educational level as exposure was adjusted for age, height, paternal occupational position, health risk factors and history of disease. The fully adjusted model assessing occupational position as exposure was adjusted for age, height, paternal occupational position, educational level, health risk factors and history of disease.