

Supplementary Information for

Multi-cohort study identifies social determinants of systemic inflammation over the life course

Eloïse Berger^{1,¤}, Raphaële Castagné^{1,¤}, Marc Chadeau-Hyam², Murielle Bochud³, Angelo d'Errico⁴, Martina Gandini⁵, Maryam Karimi², Mika Kivimäki^{5,6}, Vittorio Krogh⁷, Michael Marmot⁵, Salvatore Panico⁸, Martin Preisig⁹, Fulvio Ricceri⁴, Carlotta Sacerdote¹⁰, Andrew Steptoe⁵, Silvia Stringhini⁹, Rosario Tumino¹¹, Paolo Vineis^{2,12,µ}, Cyrille Delpierre^{1,µ}, Michelle Kelly-Irving^{1,µ,*}; LIFEPAth consortium

* Address correspondence to:

Michelle Kelly-Irving

LEASP, UMR 1027, Inserm-Université Toulouse III Paul Sabatier

Faculty of Medicine Purpan, 37 allées Jules Guesde, 31000 Toulouse

E-mail: michelle.kelly@inserm.fr

This PDF file includes:

Supplementary text

Supplementary Figure 1-3

Supplementary Tables 1-14

Supplementary note 1

The Lifepath consortium consists of:

Harri Alenius, Mauricio Avendano, Valeria Baltar, Mel Bartley, Henrique Barros, , Cristian Carmeli, Luca Carra, Françoise Clavel-Chapelon, Giuseppe Costa, Emilie Courtin, Angela Donkin, Angelo D'Errico, Pierre-Antoine Dugue, Paul Elliott, Giovanni Fiorito, Silvia Fraga, Valérie Garès, Martina Gandini, Graham Giles, Marcel Goldberg, Dario Greco, Allison Hodge, Piia Karisola, Jessica Laine, Thierry Lang, Richard Layte, Benoit Lepage, Johan Mackenbach, Carlos de Mestral, Cathal McCrory, Roger Milne, Peter Muennig, Wilma Nusselder, Dusan Petrovic, Silvia Polidoro, Martin Preisig, Olli Raitakari, Ana Isabel Ribeiro, Fulvio Ricceri, Erica Reinhard, Oliver Robinson, Jose Rubio Valverde, Roberto Satolli, Gianluca Severi, Martin J Shipley, Joannie Tieulent, Salvatore Vaccarella, Anne-Claire Vergnaud, Peter Vollenweider, Marie Zins

Supplementary note 2

CRP measurements at follow-up

In the CoLaus study, high-sensitivity C-reactive protein (hs-CRP, mg/L) was assessed by immunoassay and latex HS (IMMULITE 1000-High, Diagnostic Products Corporation, Los Angeles, CA, USA). In Whitehall, CRP was measured using a high-sensitivity immunonephelometric assay in a BN ProSpec nephelometer (Dade Behring, Milton Keynes, UK). In ELSA, circulating hs-CRP was assessed using the N latex CRP mono immunoassay on the Dade Behring Nephelometer II Analyzer.

Supplementary note 3

Regression coefficient attenuation:

We calculated the percentage attenuation in the β coefficient for BMI and life-course SEP in the relevant models using the following formula:

$$\Delta = 100 \times \frac{\beta_{Model\ 1} - \beta_{Model\ 1+BMI}}{\beta_{Model\ 1}}$$

Supplementary Table 1. Multiple regression analyses in men of (A) father's occupational position in 4 cohorts (B) participant's educational attainment and (C) participant's last occupation with CRP at baseline in 6 cohorts from the Lifepath project.

		(A) Father's occupational position (N=7798)[†]		(B) Participant's educational attainment (N=12809)[‡]		(C) Participant's last occupation (N=12809)[‡]	
	Reference	Advantaged (8.2%)		High (27.2%)		Advantaged (41.6%)	
	Level	Middle (27.8%)	Disadvantaged (64.0%)	Medium (19.9%)	Low (53.0%)	Middle (30.0%)	Disadvantaged (28.5%)
Model 1*	β (95% CI)	0.003 (-0.10; 0.10)	0.12 (0.03; 0.22)	0.15 (0.08; 0.21)	0.28 (0.18; 0.37)	0.12 (0.07; 0.17)	0.21 (0.09; 0.33)
	P-value	0.958	0.011	<0.001	<0.001	<0.001	0.001
	I^2	0	0	6.19	69.3	10.8	77.9
	P_H	0.421	0.859	0.243	0.014	0.362	0.001
Model 1* + Alcohol	β (95% CI)	-0.001 (-0.10; 0.10)	0.12 (0.02; 0.21)	0.14 (0.08; 0.20)	0.27 (0.19; 0.35)	0.12 (0.07; 0.16)	0.20 (0.07; 0.32)
	P-val	0.989	0.014	<0.001	<0.001	<0.001	0.002
	I^2	0.001	0	0.023	59.1	0	79.2
	P_H	0.377	0.939	0.302	0.040	0.539	0.001
Model 1* + Smoking	β (95% CI)	0.004 (-0.10; 0.10)	0.11 (0.02; 0.20)	0.13 (0.06; 0.20)	0.22 (0.13; 0.32)	0.10 (0.04; 0.15)	0.16 (0.04; 0.27)
	P-value	0.936	0.021	<0.001	<0.001	<0.001	0.006
	I^2	0	0	20.1	72.3	8.6	73.3
	P_H	0.439	0.922	0.228	0.008	0.522	0.001
Model 1* + BMI	β (95% CI)	-0.02 (-0.12; 0.07)	0.07 (-0.02; 0.16)	0.10 (0.04; 0.16)	0.20 (0.10; 0.30)	0.11 (0.06; 0.16)	0.17 (0.07; 0.28)
	P-value	0.642	0.139	0.001	<0.001	<0.001	0.001
	I^2	0.005	0	2.39	74.7	2.9	71.5
	P_H	0.254	0.937	0.333	0.006	0.474	0.006
Model 1*+ Sedentary	β (95% CI)	0.05 (-0.08; 0.17)	0.10 (-0.01; 0.22)	0.13 (0.07; 0.19)	0.23 (0.16; 0.30)	0.11 (0.06; 0.16)	0.21 (0.12; 0.30)
	P-value	0.460	0.08	<0.001	<0.001	<0.001	<0.001
	I^2	0	0	0	35.1	0	43.3
	P_H	0.485	0.965	0.413	0.165	0.415	0.090
Model 2[‡]	β (95% CI)	-0.01 (-0.12; 0.10)	0.05 (-0.04; 0.14)	0.08 (0.03; 0.14)	0.13 (0.05; 0.21)	0.07 (0.02; 0.11)	0.09 (0.01; 0.17)
	P-value	0.821	0.236	0.005	0.001	0.005	0.025
	I^2	16.3	0	0	57.5	0	48.3
	P_H	0.230	0.957	0.501	0.049	0.890	0.075

[†]Except for model 1 + sedentary where N = 4975

[‡]Except for model 1 + sedentary where N = 9986

*Model 1 adjusted for age

[‡]Model 2 controlled for age and additionally alcohol, smoking, BMI and sedentary

Abbreviations: CI, confidence interval; I^2 , percentage of between study heterogeneity; P_H , P-value of heterogeneity test; BMI, body mass index.

Supplementary Table 2. Multiple regression analyses in women of (A) father's occupational position in 4 cohorts (B) participant's educational attainment and (C) participant's last occupation with CRP at baseline in 6 cohorts from the Lifepath project.

		(A) Father's occupational position (N=5280) [†]		(B) Participant's educational attainment (N=10199) [‡]		(C) Participant's last occupation (N=10199) [‡]	
	Reference	Advantaged (7.9%)		High (19.5%)		Advantaged (19.1%)	
	Level	Middle (24.9%)	Disadvantaged (67.2%)	Medium (15.5%)	Low (65.0%)	Middle (39.1%)	Disadvantaged (41.8%)
Model 1*	β (95% CI)	0.16 (-0.04; 0.37)	0.28 (0.16; 0.40)	0.15 (0.02; 0.27)	0.33 (0.21; 0.45)	0.10 (-0.03; 0.24)	0.31 (0.20; 0.41)
	P-value	0.121	<0.001	0.021	<0.001	0.136	<0.001
	I^2	57.5	0	55.2	67.9	71.3	51.3
	P_H	0.073	0.589	0.050	0.009	0.004	0.104
Model 1* + Alcohol	β (95% CI)	0.15 (-0.06; 0.36)	0.26 (0.13; 0.38)	0.14 (0.02; 0.26)	0.31 (0.19; 0.42)	0.09 (-0.05; 0.22)	0.26 (0.16; 0.36)
	P-val	0.169	<0.001	0.025	<0.001	0.200	<0.001
	I^2	60.2	0	51.9	67.8	69.6	44.0
	P_H	0.060	0.501	0.071	0.010	0.007	0.176
Model 1* + Smoking	β (95% CI)	0.17 (-0.04; 0.37)	0.27 (0.15; 0.39)	0.14 (0.02; 0.27)	0.31 (0.20; 0.43)	0.10 (-0.04; 0.24)	0.29 (0.18; 0.40)
	P-value	0.120	<0.001	0.026	<0.001	0.154	<0.001
	I^2	57.6	0	53.8	66.9	71.3	53.7
	P_H	0.072	0.556	0.060	0.012	0.004	0.086
Model 1* + BMI	β (95% CI)	0.08 (-0.07; 0.24)	0.15 (0.03; 0.26)	0.09 (-0.03; 0.20)	0.19 (0.07; 0.30)	0.06 (-0.03; 0.15)	0.19 (0.13; 0.25)
	P-value	0.304	0.013	0.128	0.001	0.213	<0.001
	I^2	35.7	0	52.8	71.0	49.5	0
	P_H	0.204	0.458	0.069	0.003	0.102	0.580
Model 1* + Sedentary	β (95% CI)	0.23 (0.06; 0.39)	0.26 (0.11; 0.41)	0.14 (0.001; 0.27)	0.28 (0.16; 0.40)	0.15 (0.03; 0.27)	0.31 (0.22; 0.41)
	P-value	0.006	0.001	0.049	<0.001	0.014	<0.001
	I^2	3.0	0.003	55.2	61.5	46.7	20.9
	P_H	0.424	0.343	0.070	0.037	0.112	0.468
Model 2[‡]	β (95% CI)	0.07 (-0.09; 0.22)	0.12 (0.002; 0.24)	0.07 (-0.04; 0.18)	0.14 (0.04; 0.25)	0.04 (-0.05; 0.13)	0.13 (0.07; 0.19)
	P-value	0.386	0.046	0.208	0.009	0.363	<0.001
	I^2	32.7	4.57	47.0	67.6	44.4	0
	P_H	0.222	0.362	0.108	0.010	0.140	0.786

[†]Except for model 1 + sedentary where N = 2794

[‡]Except for model 1 + sedentary where N = 7713

*Model 1 adjusted for age

[‡]Model 2 controlled for age and additionally alcohol, smoking, BMI and sedentary

Abbreviations: CI, confidence interval; I^2 , percentage of between study heterogeneity; P_H , P-value of heterogeneity test; BMI, body mass index.

Supplementary Table 3. Life course multiple regression analyses in men of SEP with CRP at baseline in a random effect meta-analytical framework from 6 cohorts from the Lifepath.

		Model A*					Model B [‡]				
	Level	β	95% CI	P-value	I^2	P_H	β	95% CI	P-value	I^2	P_H
Father's occupation	Middle	0.003	(-0.10; 0.10)	0.958	0	0.421	-0.03	(-0.13; 0.07)	0.581	0	0.409
	Disadvantaged	0.12	(0.03; 0.22)	0.011	0	0.859	0.05	(-0.04; 0.15)	0.279	0	0.976
Educational level	Medium	-	-	-	-	-	0.11	(0.01; 0.20)	0.033	14.8	0.257
	Low	-	-	-	-	-	0.21	(0.08; 0.35)	0.002	66.4	0.044
Last occupation	Middle	-	-	-	-	-	-	-	-	-	-
	Disadvantaged	-	-	-	-	-	-	-	-	-	-
		Model C [§]					Model D [#]				
	Level	β	95% CI	P-value	I^2	P_H	β	95% CI	P-value	I^2	P_H
Father's occupation	Middle	-0.004	(-0.11; 0.10)	0.938	0.006	0.388	-0.03	(-0.13; 0.07)	0.585	0	0.407
	Disadvantaged	0.10	(0.01; 0.20)	0.032	0	0.832	0.05	(-0.04; 0.15)	0.280	0	0.943
Educational level	Medium	-	-	-	-	-	0.10	(0.02; 0.18)	0.014	0.064	0.293
	Low	-	-	-	-	-	0.22	(0.07; 0.37)	0.004	68.3	0.018
Last occupation	Middle	0.09	(0.02; 0.15)	0.011	0.545	0.501	0.05	(-0.02; 0.12)	0.139	0.153	0.511
	Disadvantaged	0.11	(-0.08; 0.30)	0.259	77.8	0.005	0.01	(-0.22; 0.25)	0.913	83.2	0.001
		Fully adjusted [‡]									
	Level	β	95% CI	P-value	I^2	P_H					
Father's occupation	Middle	-0.02	(-0.14; 0.11)	0.810	31.3	0.197					
	Disadvantaged	0.03	(-0.06; 0.12)	0.532	0	0.804					
Educational level	Medium	0.04	(-0.03; 0.12)	0.275	0	0.475					
	Low	0.10	(-0.05; 0.24)	0.184	69.2	0.025					
Last occupation	Middle	0.02	(-0.04; 0.08)	0.528	0	0.971					
	Disadvantaged	-0.02	(-0.15; 0.12)	0.778	52.3	0.097					

*Model A adjusted for age, father's occupational position

[‡]Model B adjusted for age, father's occupational position and participant's educational attainment

[§]Model C adjusted for age, father's occupational position and participant's last occupation

[#]Model D adjusted for age, father's occupational position, participant's educational attainment and participant's last occupation

[‡]Fully adjusted model controlled age, father's occupational position, participant's educational attainment, participant's last occupation and additionally alcohol, smoking, BMI and sedentary

Abbreviations: CI, confidence interval; I^2 , heterogeneity; P_H , P-value of heterogeneity test; BMI, body mass index.

Supplementary Table 4. Life course multiple regression analyses in women of SEP with CRP at baseline in a random effect meta-analytical framework from 6 cohorts from the Lifepath.

		Model A*					Model B [‡]				
	Level	β	95% CI	P-value	I^2	P_H	β	95% CI	P-value	I^2	P_H
Father's occupation	Middle	0.16	(-0.04; 0.37)	0.121	57.5	0.073	0.10	(-0.09; 0.30)	0.296	50.3	0.113
	Disadvantaged	0.28	(0.16; 0.40)	<0.001	0	0.589	0.18	(0.05; 0.31)	0.006	0.023	0.493
Educational level	Medium						0.11	(-0.06; 0.28)	0.202	47.4	0.136
	Low						0.28	(0.10; 0.46)	0.002	66.0	0.029
Last occupation	Middle						-	-	-	-	-
	Disadvantaged						-	-	-	-	-
		Model C [§]					Model D [#]				
	Level	β	95% CI	P-value	I^2	P_H	β	95% CI	P-value	I^2	P_H
Father's occupation	Middle	0.13	(-0.07; 0.33)	0.192	54.0	0.093	0.10	(-0.10; 0.29)	0.329	49.5	0.118
	Disadvantaged	0.22	(0.09; 0.36)	0.001	10.9	0.296	0.16	(0.04; 0.29)	0.013	0.032	0.497
Educational level	Medium	-	-	-	-	-	0.11	(-0.11; 0.32)	0.327	62.9	0.037
	Low	-	-	-	-	-	0.24	(-0.03; 0.51)	0.076	82.0	0.001
Last occupation	Middle	0.05	(-0.15; 0.25)	0.631	67.8	0.010	0.01	(-0.24; 0.26)	0.963	77.5	0.001
	Disadvantaged	0.22	(0.06; 0.39)	0.009	51.5	0.102	0.14	(-0.10; 0.38)	0.250	70.7	0.007
		Fully adjusted [‡]									
	Level	β	95% CI	P-value	I^2	P_H					
Father's occupation	Middle	0.04	(-0.10; 0.18)	0.585	22.1	0.295					
	Disadvantaged	0.08	(-0.04; 0.20)	0.193	0.021	0.442					
Educational level	Medium	0.06	(-0.15; 0.26)	0.586	64.3	0.033					
	Low	0.13	(-0.10; 0.35)	0.263	77.3	0.004					
Last occupation	Middle	-0.003	(-0.20; 0.19)	0.976	67.6	0.015					
	Disadvantaged	0.06	(-0.11; 0.23)	0.498	50.0	0.125					

*Model A adjusted for age, father's occupational position

[‡]Model B adjusted for age, father's occupational position and participant's educational attainment

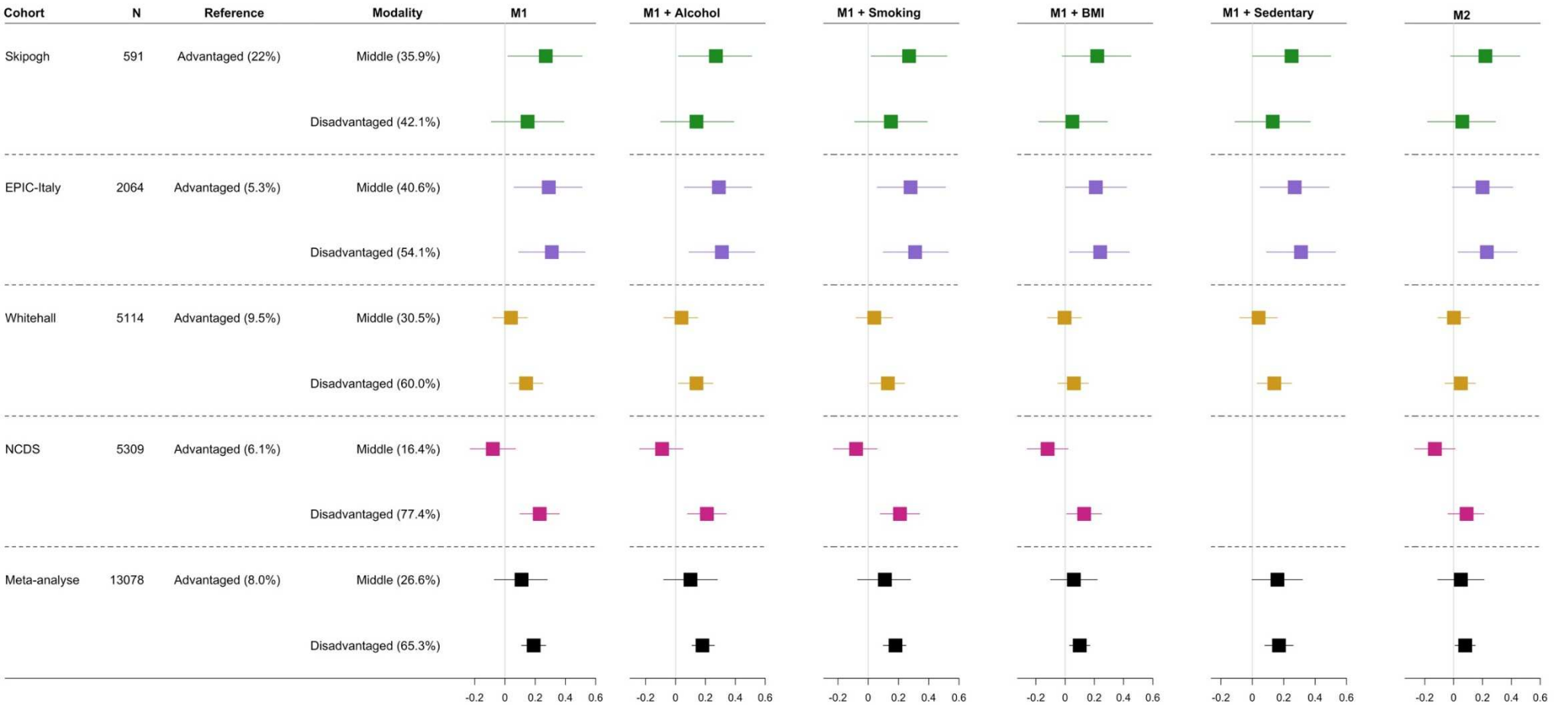
[§]Model C adjusted for age, father's occupational position and participant's last occupation

[#]Model D adjusted for age, father's occupational position, participant's educational attainment and participant's last occupation

[‡]Fully adjusted model controlled age, father's occupational position, participant's educational attainment, participant's last occupation and additionally alcohol, smoking, BMI and sedentary

Abbreviations: CI, confidence interval; I^2 , heterogeneity; P_H , P-value of heterogeneity test; BMI, body mass index.

Supplementary Figure 1. Forest plot of regression coefficient [95% confidence interval] of the association between father’s occupational position and CRP concentration at baseline by cohort, in random effect meta-analysis framework for the total population for Model 1 (M1) and after adjustment on behavioural and lifestyle intermediate factors.



M1 is adjusted for age and sex (except in NCDS, sex only).
Meta-analyses for M1 + sedentary includes 7769 participants in all population.

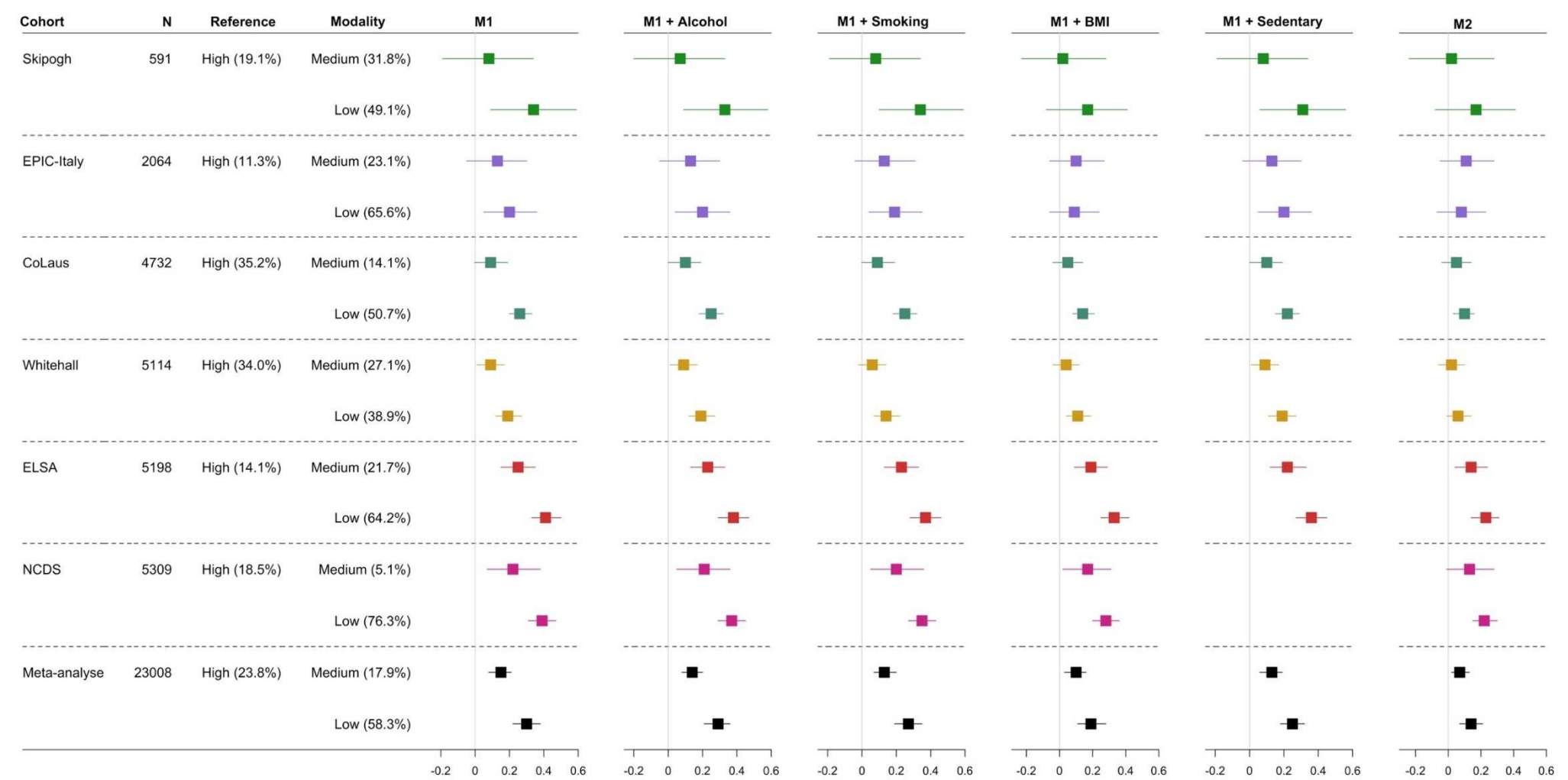
Supplementary Table 5. Multiple regression analyses of father occupational position with CRP at baseline in 4 cohorts from the Lifepath project.

	Ref.	Level	Model 1			Model 1 + Alcohol			Model 1 + Smoking			Model 1 + BMI			Model 1 + Sedentary			Model 2		
			β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value
Skipogh (N=591)	Advantaged (22%)	Middle (35.9%)	0.27	(0.02; 0.51)	0.034	0.27	(0.02; 0.51)	0.036	0.27	(0.02; 0.52)	0.034	0.22	(-0.02; 0.45)	0.071	0.25	(0.002; 0.50)	0.049	0.22	(-0.02; 0.46)	0.071
		Disadvantaged (42.1%)	0.15	(-0.09; 0.39)	0.227	0.14	(-0.10; 0.39)	0.240	0.15	(-0.09; 0.39)	0.227	0.05	(-0.18; 0.29)	0.659	0.13	(-0.11; 0.37)	0.305	0.06	(-0.18; 0.29)	0.647
EPIC-Italy (N=2064)	Advantaged (5.3%)	Middle (40.6%)	0.29	(0.06; 0.51)	0.012	0.29	(0.06; 0.51)	0.012	0.28	(0.06; 0.51)	0.011	0.21	(0.003; 0.42)	0.047	0.27	(0.05; 0.49)	0.017	0.20	(-0.01; 0.41)	0.057
		Disadvantaged (54.1%)	0.31	(0.09; 0.53)	0.005	0.31	(0.09; 0.53)	0.005	0.31	(0.10; 0.53)	0.005	0.24	(0.03; 0.44)	0.026	0.31	(0.09; 0.53)	0.006	0.23	(0.03; 0.44)	0.026
Whitehall (N=5114)	Advantaged (9.5%)	Middle (30.5%)	0.04	(-0.08; 0.15)	0.564	0.04	(-0.08; 0.15)	0.565	0.04	(-0.08; 0.16)	0.527	-0.004	(-0.12; 0.11)	0.940	0.04	(-0.08; 0.16)	0.473	0.002	(-0.11; 0.11)	0.965
		Disadvantaged (60.0%)	0.14	(0.03; 0.25)	0.016	0.14	(0.02; 0.25)	0.017	0.13	(0.01; 0.24)	0.027	0.06	(-0.05; 0.16)	0.280	0.14	(0.03; 0.25)	0.013	0.05	(-0.06; 0.15)	0.379
NCDS (N=5309)	Advantaged (6.1%)	Middle (16.4%)	-0.08	(-0.23; 0.07)	0.273	-0.09	(-0.24; 0.05)	0.208	-0.08	(-0.23; 0.06)	0.261	-0.12	(-0.26; 0.02)	0.095	-			-0.13	(-0.27; 0.01)	0.067
		Disadvantaged (77.4%)	0.23	(0.10; 0.36)	0.001	0.21	(0.08; 0.34)	0.002	0.21	(0.08; 0.34)	0.002	0.13	(0.01; 0.25)	0.039				0.09	(-0.04; 0.21)	0.161

Model 1 is adjusted for age and sex (except for NCDS, sex only)

Meta-analysis with random effect on a total of 13,078 participants (except for model 1 + sedentary where N = 7,769)

Supplementary Figure 2. Forest plot of regression coefficient [95% confidence interval] of the association between educational attainment and CRP concentration at baseline by cohort, in random effect meta-analysis framework for the total population for Model 1 (M1) and after adjustment on behavioural and lifestyle intermediate factors.



M1 is adjusted for age and sex (except in NCDS, sex only).
 Meta-analyses on M1 + sedentary includes 17699 participants in all population.

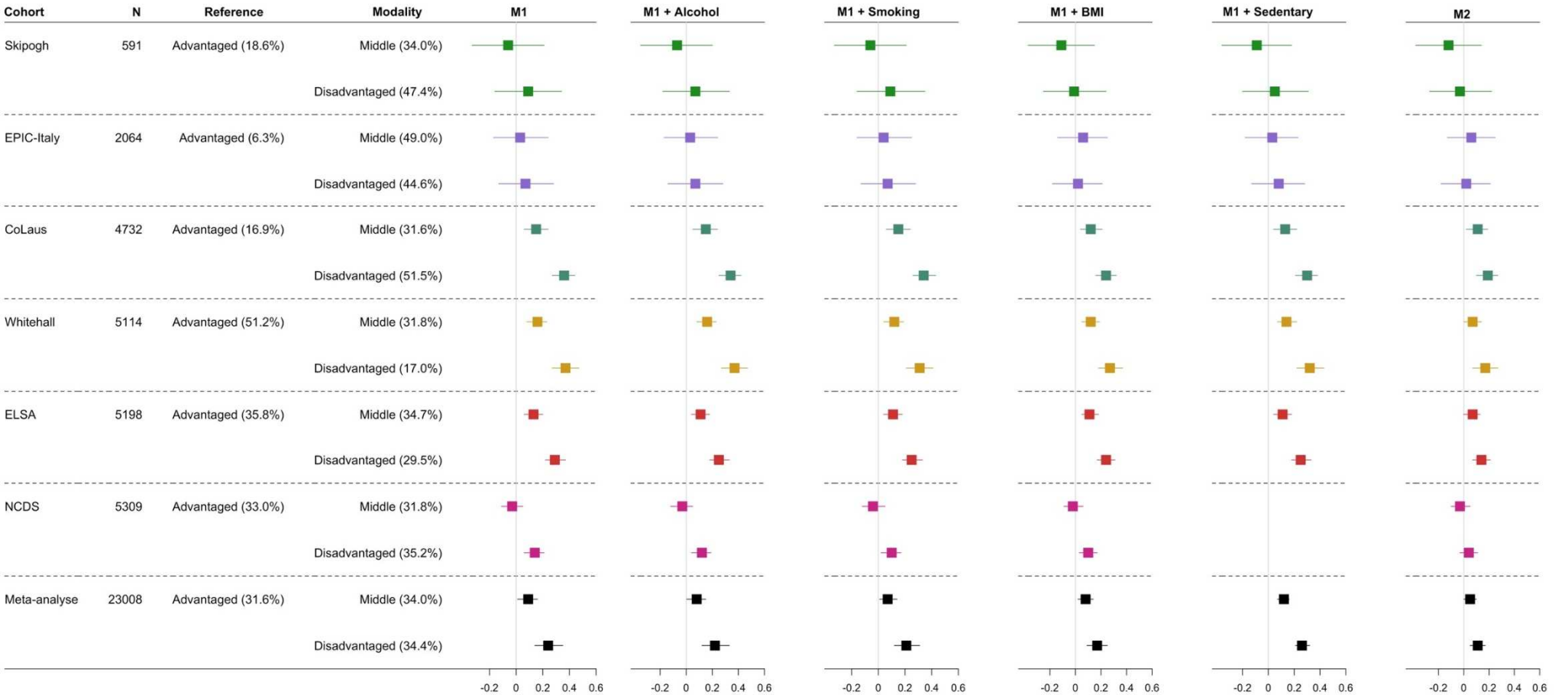
Supplementary Table 6. Multiple regression analyses of participant's educational attainment with CRP at baseline in 6 cohorts from the Lifepath project.

	Ref.	Level	Model 1			Model 1 + Alcohol			Model 1 + Smoking			Model 1 + BMI			Model 1 + Sedentary			Model 2		
			β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value
Skipogh (N=591)	High (19.1%)	Medium (31.8%)	0.08	(-0.19; 0.34)	0.578	0.07	(-0.20; 0.33)	0.619	0.08	(-0.19; 0.34)	0.578	0.02	(-0.23; 0.28)	0.865	0.08	(-0.19; 0.34)	0.575	0.02	(-0.24; 0.28)	0.874
		Low (49.1%)	0.34	(0.09; 0.59)	0.007	0.33	(0.09; 0.58)	0.009	0.34	(0.10; 0.59)	0.007	0.17	(-0.08; 0.41)	0.184	0.31	(0.06; 0.56)	0.014	0.17	(-0.08; 0.41)	0.190
EPIC-Italy (N=2064)	High (11.3%)	Medium(23.1%)	0.13	(-0.05; 0.30)	0.150	0.13	(-0.05; 0.30)	0.154	0.13	(-0.04; 0.31)	0.135	0.10	(-0.06; 0.27)	0.215	0.13	(-0.04; 0.30)	0.144	0.11	(-0.05; 0.28)	0.182
		Low (65.6%)	0.20	(0.05; 0.36)	0.011	0.2	(0.04; 0.36)	0.012	0.19	(0.04; 0.35)	0.014	0.09	(-0.06; 0.24)	0.240	0.20	(0.05; 0.36)	0.012	0.08	(-0.07; 0.23)	0.29
CoLaus (N=4732)	High (35.2%)	Medium (14.1%)	0.09	(-0.003; 0.19)	0.058	0.10	(0; 0.19)	0.051	0.09	(-0.001; 0.19)	0.053	0.05	(-0.04; 0.14)	0.293	0.10	(0; 0.19)	0.05	0.05	(-0.04; 0.14)	0.245
		Low (50.7%)	0.26	(0.20; 0.33)	<0.001	0.25	(0.18; 0.32)	<0.001	0.25	(0.18; 0.32)	<0.001	0.14	(0.08; 0.21)	<0.001	0.22	(0.15; 0.29)	<0.001	0.10	(0.03; 0.16)	0.003
Whitehall (N=5114)	High (34.0%)	Medium (27.1%)	0.09	(0.01; 0.17)	0.034	0.09	(0.01; 0.17)	0.032	0.06	(-0.02; 0.14)	0.135	0.04	(-0.04; 0.12)	0.317	0.09	(0.01; 0.17)	0.031	0.02	(-0.06; 0.10)	0.65
		Low (38.9%)	0.20	(0.12; 0.27)	<0.001	0.19	(0.12; 0.27)	<0.001	0.14	(0.07; 0.22)	<0.001	0.11	(0.04; 0.19)	0.002	0.19	(0.11; 0.27)	<0.001	0.06	(-0.01; 0.14)	0.099
ELSA (N=5198)	High (14.1%)	Medium (21.7%)	0.25	(0.15; 0.35)	<0.001	0.23	(0.13; 0.33)	<0.001	0.23	(0.13; 0.33)	<0.001	0.19	(0.09; 0.29)	<0.001	0.22	(0.12; 0.33)	<0.001	0.14	(0.04; 0.24)	0.004
		Low (64.2%)	0.41	(0.33; 0.50)	<0.001	0.38	(0.29; 0.47)	<0.001	0.37	(0.28; 0.46)	<0.001	0.33	(0.25; 0.42)	<0.001	0.36	(0.27; 0.45)	<0.001	0.23	(0.14; 0.31)	<0.001
NCDS (N=5309)	High (18.5%)	Medium (5.1%)	0.22	(0.07; 0.38)	0.005	0.21	(0.05; 0.36)	0.009	0.20	(0.05; 0.36)	0.011	0.17	(0.02; 0.31)	0.027	-			0.13	(-0.01; 0.28)	0.075
		Low (N=76.3%)	0.39	(0.31; 0.47)	<0.001	0.37	(0.29; 0.45)	<0.001	0.35	(0.27; 0.43)	<0.001	0.28	(0.20; 0.36)	<0.001				0.22	(0.15; 0.30)	<0.001

Model 1 is adjusted for age and sex (except for NCDS, sex only)

Meta-analysis with random effect on a total of 23 008 participants (except for model 1 + sedentary where N = 17699)

Supplementary Figure 3. Forest plot of regression coefficient [95% confidence interval] of the association between participant’s last occupation and CRP concentration at baseline by cohort, in random effect meta-analysis framework for the total population for Model 1 (M1) and after adjustment on behavioural and lifestyle intermediate factors.



M1 is adjusted for age and sex (except in NCDS, sex only).
 Meta-analyses on M1 + sedentary includes 17699 participants in all population.

Supplementary Table 7. Multiple regression analyses of participant's last occupation with CRP at baseline in 6 cohorts from the Lifepath project.

	Ref.	Level	Model 1			Model 1 + Alcohol			Model 1 + Smoking			Model 1 + BMI			Model 1 + Sedentary			Model 2		
			β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value
Skipogh (N=591)	Advantaged (18.6%)	Middle (34.0%)	-	(-0.33; 0.21)	0.667	-	(-0.35; 0.20)	0.593	-	(-0.33; 0.21)	0.672	-	(-0.37; 0.15)	0.421	-	(-0.36; 0.18)	0.534	-	(-0.38; 0.14)	0.359
		Disadvantaged (47.4%)	0.09	(-0.16; 0.34)	0.474	0.07	(-0.18; 0.33)	0.567	0.09	(-0.16; 0.35)	0.47	-	(-0.25; 0.24)	0.970	0.05	(-0.20; 0.31)	0.679	-	(-0.27; 0.22)	0.84
EPIC-Italy (N=2064)	Advantaged (6.3%)	Middle (49.0%)	0.03	(-0.17; 0.24)	0.744	0.03	(-0.17; 0.24)	0.742	0.04	(-0.16; 0.25)	0.676	0.06	(-0.14; 0.25)	0.579	0.03	(-0.18; 0.23)	0.784	0.06	(-0.13; 0.25)	0.528
		Disadvantaged (44.6%)	0.07	(-0.13; 0.28)	0.500	0.07	(-0.14; 0.28)	0.501	0.07	(-0.13; 0.28)	0.495	0.02	(-0.18; 0.21)	0.864	0.08	(-0.13; 0.28)	0.467	0.02	(-0.18; 0.21)	0.857
CoLaus (N=4732)	Advantaged (16.9%)	Middle (31.6%)	0.15	(0.06; 0.24)	0.001	0.15	(0.05; 0.24)	0.002	0.15	(0.06; 0.24)	0.002	0.12	(0.04; 0.21)	0.005	0.13	(0.04; 0.22)	0.006	0.11	(0.02; 0.19)	0.015
		Disadvantaged (51.5%)	0.36	(0.27; 0.44)	<0.001	0.34	(0.25; 0.42)	<0.001	0.34	(0.26; 0.43)	<0.001	0.24	(0.16; 0.32)	<0.001	0.30	(0.21; 0.38)	<0.001	0.19	(0.10; 0.27)	<0.001
Whitehall (N=5114)	Advantaged (51.2%)	Middle (31.8%)	0.16	(0.08; 0.23)	0.00003	0.16	(0.08; 0.23)	<0.001	0.12	(0.04; 0.19)	0.002	0.12	(0.05; 0.19)	0.001	0.14	(0.07; 0.22)	<0.001	0.07	(0; 0.14)	0.05
		Disadvantaged (17.0%)	0.37	(0.27; 0.47)	<0.001	0.37	(0.27; 0.47)	<0.001	0.31	(0.21; 0.41)	<0.001	0.27	(0.18; 0.37)	<0.001	0.32	(0.22; 0.43)	<0.001	0.17	(0.07; 0.27)	0.001
ELSA (N=5198)	Advantaged (35.8%)	Middle (34.7%)	0.13	(0.06; 0.20)	0.0004	0.11	(0.04; 0.18)	0.004	0.11	(0.04; 0.18)	0.002	0.11	(0.05; 0.18)	0.001	0.11	(0.04; 0.18)	0.002	0.07	(-0.002; 0.13)	0.058
		Disadvantaged (29.5%)	0.29	(0.22; 0.37)	<0.001	0.25	(0.18; 0.33)	<0.001	0.25	(0.18; 0.33)	<0.001	0.24	(0.17; 0.31)	<0.001	0.25	(0.18; 0.33)	<0.001	0.14	(0.07; 0.21)	<0.001
NCDS (N=5309)	Advantaged (33.0%)	Middle (31.8%)	-	(-0.11; 0.05)	0.488	-	(-0.12; 0.05)	0.417	-	(-0.12; 0.05)	0.378	-	(-0.09; 0.06)	0.695	-			-	(-0.10; 0.05)	0.499
		Disadvantaged (35.2%)	0.14	(0.06; 0.21)	<0.001	0.12	(0.04; 0.19)	0.003	0.10	(0.02; 0.17)	0.014	0.10	(0.03; 0.17)	0.006				0.04	(-0.03; 0.11)	0.248

Model 1 is adjusted for age and sex (except for NCDS, sex only)

Meta-analysis with random effect on 23008 participants (except for model 1 + sedentary where N = 17699)

Supplementary Table 8. Life course multiple regression analyses of SEP with CRP at baseline in 6 cohorts from the Lifepath project.

			Model A			Model B			Model C			Model D			Fully adjusted model		
			β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value	β	95% CI	P-value
EPIC-Italy (N=2064)	Father's occupation	Middle	0.29	(0.06; 0.51)	0.012	0.24	(0.01; 0.47)	0.038	0.28	(0.06; 0.51)	0.014	0.25	(0.02; 0.48)	0.033	0.20	(-0.02; 0.41)	0.068
		Disadvantaged	0.31	(0.09; 0.53)	0.005	0.25	(0.02; 0.47)	0.035	0.31	(0.08; 0.53)	0.008	0.26	(0.03; 0.49)	0.029	0.23	(0.02; 0.45)	0.034
	Educational level	Medium				0.09	(-0.08; 0.27)	0.300	-	-	-	0.10	(-0.08; 0.28)	0.276	0.08	(-0.09; 0.25)	0.352
		Low				0.16	(-0.01; 0.32)	0.064	-	-	-	0.18	(0.003; 0.36)	0.046	0.07	(-0.10; 0.24)	0.422
	Last occupation	Middle				-	-	-	-0.01	(-0.22; 0.20)	0.930	-0.03	(-0.24; 0.17)	0.748	0.01	(-0.18; 0.21)	0.898
		Disadvantaged				-	-	-	0.01	(-0.21; 0.22)	0.953	-0.07	(-0.30; 0.15)	0.531	-0.06	(-0.27; 0.15)	0.596
NCDS (N=5309)	Father's occupation	Middle	-0.08	(-0.23; 0.07)	0.273	-0.13	(-0.28; 0.02)	0.078	-0.09	(-0.24; 0.05)	0.216	-0.14	(-0.28; 0.01)	0.072	-0.16	(-0.30; -0.02)	0.026
		Disadvantaged	0.23	(0.10; 0.36)	0.001	0.12	(-0.02; 0.25)	0.084	0.21	(0.08; 0.34)	0.002	0.12	(-0.02; 0.25)	0.087	0.03	(-0.10; 0.16)	0.632
	Educational level	Medium				0.19	(0.04; 0.35)	0.016	-	-	-	0.20	(0.04; 0.35)	0.014	0.12	(-0.02; 0.27)	0.098
		Low				0.34	(0.25; 0.42)	<0.001	-	-	-	0.34	(0.25; 0.43)	<0.001	0.21	(0.13; 0.29)	<0.001
	Last occupation	Middle				-	-	-	-0.06	(-0.14; 0.03)	0.184	-0.10	(-0.19; -0.02)	0.014	-0.07	(-0.15; 0.004)	0.065
		Disadvantaged				-	-	-	0.09	(0.01; 0.17)	0.025	-0.01	(-0.09; 0.07)	0.815	-0.04	(-0.12; 0.03)	0.260
Skipogh (N = 591)	Father's occupation	Middle	0.27	(0.02; 0.51)	0.034	0.21	(-0.04; 0.45)	0.108	0.26	(0.01; 0.51)	0.039	0.21	(-0.04; 0.46)	0.095	0.20	(-0.04; 0.44)	0.102
		Disadvantaged	0.15	(-0.09; 0.39)	0.227	0.03	(-0.22; 0.28)	0.795	0.13	(-0.12; 0.37)	0.303	0.04	(-0.21; 0.29)	0.755	0.01	(-0.23; 0.26)	0.923
	Educational level	Medium				0.06	(-0.21; 0.32)	0.670	-	-	-	0.13	(-0.16; 0.41)	0.384	0.08	(-0.20; 0.35)	0.594
		Low				0.33	(0.08; 0.59)	0.012	-	-	-	0.41	(0.11; 0.71)	0.008	0.24	(-0.06; 0.54)	0.111
	Last occupation	Middle				-	-	-	-0.09	(-0.36; 0.19)	0.537	-0.20	(-0.49; 0.09)	0.179	-0.21	(-0.49; 0.08)	0.151
		Disadvantaged				-	-	-	0.07	(-0.19; 0.32)	0.620	-0.16	(-0.45; 0.14)	0.310	-0.16	(-0.46; 0.13)	0.270
Whitehall (N = 5114)	Father's occupation	Middle	0.04	(-0.08; 0.15)	0.564	0.01	(-0.11; 0.13)	0.853	0.01	(-0.11; 0.13)	0.866	0.00	(-0.12; 0.12)	0.996	-0.01	(-0.12; 0.10)	0.866
		Disadvantaged	0.14	(0.03; 0.25)	0.016	0.08	(-0.03; 0.20)	0.152	0.08	(-0.03; 0.20)	0.141	0.06	(-0.05; 0.18)	0.283	0.02	(-0.08; 0.13)	0.675
	Educational level	Medium				0.08	(-0.01; 0.16)	0.065	-	-	-	0.05	(-0.04; 0.13)	0.254	0.00	(-0.08; 0.08)	0.992
		Low				0.17	(0.09; 0.25)	<0.001	-	-	-	0.09	(0.001; 0.17)	0.048	0.01	(-0.07; 0.09)	0.739
	Last occupation	Middle				-	-	-	0.15	(0.08; 0.22)	<0.001	0.13	(0.05; 0.21)	0.001	0.06	(-0.01; 0.14)	0.085
		Disadvantaged				-	-	-	0.35	(0.25; 0.45)	<0.001	0.32	(0.21; 0.43)	<0.001	0.15	(0.05; 0.26)	0.004

Supplementary Table 9. Multiple regression analyses of participant's educational attainment with CRP at baseline in 6 cohorts from the Lifepath project after exclusion of participants with CRP ≥ 10 mg/L.

	Ref	Level	Model 1						Model 1 + Alcohol						Model 1 + Smoking						Model 1 + BMI						Model 1 + Sedentary						Model 2					
			B	CI	P-value	I ²	P _H	B	CI	P-value	I ²	P _H	B	CI	P-value	I ²	P _H	B	CI	P-value	I ²	P _H	B	CI	P-value	I ²	P _H	B	CI	P-value	I ²	P _H						
Skipogh (N=553)	High	Medium	0.01	(-0.21; 0.23)	0.934	-	-	0.001	(-0.22; 0.22)	0.994	-	-	0.01	(-0.21; 0.23)	0.936	-	-	-0.04	(-0.25; 0.17)	0.691	-	-	0.01	(-0.21; 0.23)	0.931	-	-	-0.05	(-0.26; 0.16)	0.647	-	-						
		Low	0.10	(-0.10; 0.31)	0.320	-	-	0.10	(-0.11; 0.30)	0.356	-	-	0.11	(-0.10; 0.31)	0.314	-	-	-0.02	(-0.22; 0.19)	0.877	-	-	0.09	(-0.12; 0.30)	0.388	-	-	-0.02	(-0.22; 0.19)	0.868	-	-						
EPIC-Italy (N=2011)	High	Medium	0.13	(-0.04; 0.29)	0.141	-	-	0.12	(-0.04; 0.29)	0.147	-	-	0.13	(-0.04; 0.30)	0.127	-	-	0.10	(-0.06; 0.25)	0.234	-	-	0.12	(-0.04; 0.29)	0.147	-	-	0.10	(-0.06; 0.26)	0.213	-	-						
		Low	0.22	(0.07; 0.37)	0.004	-	-	0.22	(0.07; 0.37)	0.004	-	-	0.21	(0.06; 0.36)	0.005	-	-	0.11	(-0.03; 0.25)	0.128	-	-	0.22	(0.07; 0.37)	0.005	-	-	0.10	(-0.04; 0.24)	0.174	-	-						
CoLaus (N=4572)	High	Medium	0.08	(-0.01; 0.17)	0.086	-	-	0.08	(-0.01; 0.17)	0.077	-	-	0.08	(-0.01; 0.17)	0.080	-	-	0.03	(-0.05; 0.12)	0.440	-	-	0.08	(-0.01; 0.17)	0.081	-	-	0.04	(-0.05; 0.12)	0.383	-	-						
		Low	0.25	(0.19; 0.31)	<0.001	-	-	0.24	(0.18; 0.30)	<0.001	-	-	0.24	(0.18; 0.30)	<0.001	-	-	0.14	(0.08; 0.19)	<0.001	-	-	0.21	(0.14; 0.27)	<0.001	-	-	0.09	(0.03; 0.15)	0.002	-	-						
Whitehall (N=5024)	High	Medium	0.10	(0.02; 0.18)	0.011	-	-	0.10	(0.02; 0.18)	0.010	-	-	0.08	(-0.002; 0.15)	0.057	-	-	0.05	(-0.02; 0.12)	0.175	-	-	0.10	(0.02; 0.18)	0.010	-	-	0.03	(-0.04; 0.10)	0.416	-	-						
		Low	0.19	(0.12; 0.26)	<0.001	-	-	0.19	(0.12; 0.26)	<0.001	-	-	0.14	(0.07; 0.21)	<0.001	-	-	0.11	(0.04; 0.18)	0.002	-	-	0.19	(0.11; 0.26)	<0.001	-	-	0.06	(-0.01; 0.13)	0.091	-	-						
ELSA (N=4796)	High	Medium	0.24	(0.16; 0.33)	<0.001	-	-	0.23	(0.15; 0.32)	<0.001	-	-	0.23	(0.14; 0.32)	<0.001	-	-	0.19	(0.10; 0.27)	<0.001	-	-	0.23	(0.14; 0.32)	<0.001	-	-	0.16	(0.07; 0.24)	<0.001	-	-						
		Low	0.35	(0.27; 0.43)	<0.001	-	-	0.32	(0.25; 0.40)	<0.001	-	-	0.32	(0.24; 0.40)	<0.001	-	-	0.28	(0.20; 0.35)	<0.001	-	-	0.32	(0.24; 0.39)	<0.001	-	-	0.21	(0.13; 0.28)	<0.001	-	-						
NCDS (N=5182)	High	Medium	0.19	(0.04; 0.33)	0.013	-	-	0.18	(0.03; 0.32)	0.020	-	-	0.16	(0.02; 0.31)	0.028	-	-	0.14	(0.00; 0.28)	0.049	-	-	-	-	-	-	-	0.11	(-0.03; 0.25)	0.128	-	-						
		Low	0.36	(0.29; 0.44)	<0.001	-	-	0.35	(0.27; 0.42)	<0.001	-	-	0.32	(0.25; 0.40)	<0.001	-	-	0.27	(0.19; 0.34)	<0.001	-	-	-	-	-	-	-	0.21	(0.14; 0.28)	<0.001	-	-						
Meta-analyse (N= 22138)	High	Medium	0.13	(0.07; 0.20)	<0.001	50.0	0.077	0.13	(0.07; 0.20)	<0.001	44.4	0.118	0.12	(0.06; 0.19)	<0.001	48.3	0.090	0.09	(0.02; 0.15)	0.007	50.2	0.073	0.12	(0.05; 0.19)	0.001	50.2	0.098	0.07	(0.02; 0.13)	0.011	37.1	0.183						
		Low	0.26	(0.19; 0.34)	<0.001	72.3	0.004	0.25	(0.19; 0.32)	<0.001	65.4	0.014	0.24	(0.17; 0.31)	<0.001	71.2	0.004	0.17	(0.09; 0.24)	<0.001	79.2	<0.001	0.22	(0.16; 0.28)	<0.001	52.8	0.080	0.12	(0.06; 0.19)	<0.001	68.9	0.006						
Meta-analyse in Men (N= 12391)	High	Medium	0.14	(0.09; 0.20)	<0.001	0.02	0.346	0.14	(0.09; 0.20)	<0.001	0.001	0.407	0.13	(0.07; 0.18)	<0.001	0.132	0.406	0.10	(0.04; 0.15)	<0.001	4.7	0.308	0.13	(0.07; 0.19)	<0.001	0	0.446	0.08	(0.03; 0.13)	0.002	0	0.514						
		Low	0.25	(0.19; 0.31)	<0.001	36.4	0.076	0.25	(0.20; 0.29)	<0.001	6.3	0.141	0.20	(0.14; 0.26)	<0.001	40.6	0.08	0.17	(0.09; 0.25)	<0.001	63.8	0.021	0.21	(0.16; 0.26)	<0.001	0.056	0.307	0.12	(0.07; 0.17)	<0.001	20.8	0.113						
Meta-analyse in Women (N= 9747)	High	Medium	0.13	(0.02; 0.25)	0.025	54.8	0.046	0.12	(0.01; 0.23)	0.029	51.1	0.071	0.13	(0.01; 0.24)	0.030	54.0	0.053	0.08	(-0.03; 0.18)	0.161	53.1	0.061	0.12	(-0.001; 0.25)	0.052	55.8	0.058	0.06	(-0.04; 0.16)	0.239	46.9	0.111						
		Low	0.30	(0.19; 0.41)	<0.001	69.7	0.007	0.28	(0.17; 0.39)	<0.001	69.1	0.008	0.29	(0.17; 0.40)	<0.001	70.6	0.006	0.17	(0.06; 0.28)	0.002	73.3	0.002	0.25	(0.14; 0.36)	<0.001	60.5	0.045	0.14	(0.03; 0.24)	0.014	71.8	0.004						

Model 1 is adjusted for age and sex (except for NCDS, sex only)

Meta-analysis with random effect on a total of 22138 participants (except for model 1 + sedentary where N = 16956)

Supplementary Table 10. Multiple regression analyses of participant’s educational attainment with CRP at first follow up available only in a subset of 4 cohorts from the Lifepath project.

			Model 1					Model 1 + Alcohol					Model 1 + Smoking					Model 1 + BMI					Model 1 + Sedentary					Model 2				
First follow-up	Ref.	Level	B	CI	P-value	I ²	P _H	B	CI	P-value	I ²	P _H	B	CI	P-value	I ²	P _H	B	CI	P-value	I ²	P _H	B	CI	P-value	I ²	P _H	B	CI	P-value	I ²	P _H
Skipogh (N=232)	High	Medium	0.28	(-0.05; 0.61)	0.103			0.25	(-0.08; 0.59)	0.135			0.27	(-0.06; 0.60)	0.112			0.26	(-0.07; 0.59)	0.118			0.28	(-0.05; 0.61)	0.097			0.24	(-0.09; 0.57)	0.156		
		Low	0.37	(0.07; 0.67)	0.017			0.34	(0.04; 0.65)	0.029			0.38	(0.07; 0.68)	0.016			0.39	(0.09; 0.70)	0.013			0.33	(0.02; 0.63)	0.038			0.35	(0.04; 0.66)	0.030		
CoLaus (N=3636)	High	Medium	0.12	(0.02; 0.22)	0.022			0.12	(0.02; 0.23)	0.019			0.12	(0.02; 0.23)	0.019			0.08	(-0.02; 0.18)	0.106			0.12	(0.02; 0.23)	0.019			0.09	(-0.01; 0.19)	0.070		
		Low	0.26	(0.19; 0.34)	<0.001			0.25	(0.17; 0.32)	<0.001			0.25	(0.18; 0.33)	<0.001			0.17	(0.10; 0.25)	<0.001			0.22	(0.15; 0.30)	<0.001			0.13	(0.06; 0.21)	<0.001		
Whitehall (N=4027)	High	Medium	0.09	(-0.003; 0.18)	0.057			0.09	(0.00; 0.18)	0.051			0.06	(-0.03; 0.15)	0.189			0.05	(-0.03; 0.14)	0.238			0.09	(0.00; 0.18)	0.050			0.03	(-0.05; 0.12)	0.481		
		Low	0.18	(0.09; 0.26)	<0.001			0.18	(0.09; 0.26)	<0.001			0.13	(0.04; 0.21)	0.004			0.12	(0.04; 0.20)	0.005			0.18	(0.09; 0.26)	<0.001			0.06	(-0.02; 0.14)	0.132		
ELSA (N=3532)	High	Medium	0.26	(0.14; 0.37)	<0.001			0.24	(0.13; 0.36)	<0.001			0.24	(0.12; 0.36)	<0.001			0.21	(0.10; 0.32)	<0.001			0.24	(0.12; 0.35)	<0.001			0.17	(0.06; 0.28)	0.002		
		Low	0.38	(0.28; 0.48)	<0.001			0.34	(0.24; 0.45)	<0.001			0.34	(0.24; 0.45)	<0.001			0.30	(0.20; 0.40)	<0.001			0.33	(0.23; 0.43)	<0.001			0.23	(0.13; 0.33)	<0.001		
Meta-analyse (N=11427)	High	Medium	0.16	(0.07; 0.25)	0.001	53.1	0.112	0.15	(0.07; 0.24)	<0.001	43.3	0.186	0.15	(0.05; 0.24)	0.003	56.2	0.088	0.12	(0.03; 0.20)	0.008	50.7	0.122	0.15	(0.07; 0.23)	<0.001	39.6	0.200	0.10	(0.02; 0.18)	0.012	41.0	0.187
		Low	0.28	(0.18; 0.38)	<0.001	69.3	0.029	0.26	(0.17; 0.34)	<0.001	57.0	0.098	0.25	(0.14; 0.36)	<0.001	75.4	0.009	0.21	(0.11; 0.31)	<0.001	72.6	0.020	0.24	(0.17; 0.32)	<0.001	51.4	0.138	0.15	(0.06; 0.24)	0.001	64.4	0.046
Second follow-up																																
Whitehall (N=3927)	High	Medium	0.14	(0.06; 0.23)	0.001			0.15	(0.06; 0.23)	0.001			0.12	(0.03; 0.20)	0.007			0.11	(0.02; 0.19)	0.011			0.15	(0.06; 0.23)	0.001			0.09	(0.004; 0.17)	0.041		
		Low	0.17	(0.09; 0.25)	<0.001			0.16	(0.08; 0.24)	<0.001			0.13	(0.05; 0.21)	0.002			0.11	(0.03; 0.19)	0.007			0.17	(0.08; 0.25)	<0.001			0.07	(-0.01; 0.14)	0.101		
ELSA (N=3046)	High	Medium	0.27	(0.14; 0.39)	<0.001			0.25	(0.13; 0.37)	<0.001			0.24	(0.12; 0.36)	<0.001			0.23	(0.12; 0.35)	<0.001			0.24	(0.12; 0.36)	<0.001			0.18	(0.07; 0.30)	0.002		
		Low	0.38	(0.28; 0.49)	<0.001			0.34	(0.23; 0.45)	<0.001			0.34	(0.24; 0.45)	<0.001			0.32	(0.22; 0.43)	<0.001			0.34	(0.23; 0.45)	<0.001			0.23	(0.12; 0.33)	<0.001		

Model 1 is adjusted for age and sex

Supplementary Table 11. Multiple regression analyses using the disadvantaged/low group as a reference for (A) father's occupational position in 4 cohorts (B) participant's educational attainment and (C) participant's last occupation with CRP at baseline in 6 cohorts from the Lifepath project.

		(A) Father's occupational position (N=13078) [†]		(B) Participant's educational attainment (N=23008) [‡]		(C) Participant's last occupation (N=23008) [‡]	
Model 1*	Reference	Disadvantaged (65.3%)		Low (58.3%)		Disadvantaged (34.4%)	
	Level	Middle (26.6%)	Advantaged (8.0%)	Medium (17.9%)	High (23.8%)	Middle (34.0%)	Advantaged (31.6%)
	β (95% CI)	-0.09 (-0.26; 0.08)	-0.19 (-0.27; -0.11)	-0.14 (-0.19; -0.10)	-0.30 (-0.38; -0.22)	-0.16 (-0.21; -0.11)	-0.24 (-0.35; -0.14)
	P-value	0.277	<0.001	<0.001	<0.001	<0.001	<0.001
	I^2	91.3	1.3	0.05	75.6	42.2	81.4
Model 1* + Alcohol	P_H	<0.001	0.466	0.514	0.001	0.140	<0.001
	β (95% CI)	-0.09 (-0.26; 0.07)	-0.18 (-0.26; -0.11)	-0.13 (-0.17; -0.09)	-0.29 (-0.36; -0.21)	-0.15 (-0.20; -0.10)	-0.22 (-0.33; -0.12)
	P-val	0.279	<0.001	<0.001	<0.001	<0.001	<0.001
	I^2	90.9	0	0.05	68.5	35.4	80.9
Model 1* + Smoking	P_H	<0.001	0.518	0.616	0.008	0.180	<0.001
	β (95% CI)	-0.09 (-0.24; 0.07)	-0.18 (-0.25; -0.10)	-0.13 (-0.17; -0.08)	-0.27 (-0.35; -0.19)	-0.14 (-0.19; -0.09)	-0.21 (-0.31; -0.12)
	P-value	0.283	<0.001	<0.001	<0.001	<0.001	<0.001
	I^2	90.0	0	0.01	74.6	40.2	79.1
Model 1* + BMI	P_H	<0.001	0.452	0.445	0.001	0.156	<0.001
	β (95% CI)	-0.06 (-0.21; 0.10)	-0.10 (-0.17; -0.03)	-0.09 (-0.14; -0.05)	-0.19 (-0.28; -0.11)	-0.10 (-0.15; -0.05)	-0.17 (-0.25; -0.09)
	P-value	0.465	0.005	<0.001	<0.001	<0.001	<0.001
	I^2	90.5	0	21.7	79.3	52.1	73.3
Model 1* + Sedentary	P_H	<0.001	0.451	0.301	<0.001	0.084	0.004
	β (95% CI)	-0.04 (-0.13; 0.05)	-0.17 (-0.26; -0.08)	-0.12 (-0.16; -0.08)	-0.25 (-0.32; -0.18)	-0.14 (-0.18; -0.10)	-0.26 (-0.32; -0.21)
	P-value	0.366	<0.001	<0.001	<0.001	<0.001	<0.001
	I^2	50.4	0	0	60.4	9.5	18.5
Model 2[‡]	P_H	0.120	0.381	0.678	0.048	0.349	0.099
	β (95% CI)	-0.05 (-0.19; 0.09)	-0.08 (-0.15; -0.01)	-0.06 (-0.09; -0.02)	-0.14 (-0.21; -0.07)	-0.06 (-0.10; -0.03)	-0.11 (-0.17; -0.05)
	P-value	0.476	0.021	0.005	<0.001	<0.001	<0.001
	I^2	88.0	0	0	67.2	0	51.4
	P_H	<0.001	0.458	0.517	0.009	0.335	0.065

[†]Except for model 1 + sedentary where N = 7769

[‡]Except for model 1 + sedentary where N = 17699

*Model 1 adjusted for age and sex

[‡]Model 2 controlled for age, sex and additionally alcohol, smoking, BMI and sedentary

Abbreviations: CI, confidence interval; I^2 , percentage of between study heterogeneity; P_H , P-value of heterogeneity test; BMI, body mass index.

Supplementary Table 12. Multiple regression analyses using SEP in 2 classes for (A) father's occupational position in 4 cohorts (B) participant's last occupation with CRP at baseline in 6 cohorts from the Lifepath project.

		(A) Father's occupational position (N=13078)†	(B) Participant's last occupation (N=23008)‡
	Reference	Advantaged (43.2%)	Advantaged (70.8%)
	Level	Disadvantaged (56.8%)	Disadvantaged (29.2%)
Model 1*	β (95% CI)	0.16 (0.03; 0.29)	0.17 (0.10; 0.24)
	P-value	0.013	<0.001
	I^2	87.4	74.9
	P_H	<0.001	0.003
Model 1* + Alcohol	β (95% CI)	0.16 (0.03; 0.28)	0.16 (0.09; 0.23)
	P-val	0.012	<0.001
	I^2	86.5	70.7
	P_H	<0.001	0.011
Model 1* + Smoking	β (95% CI)	0.16 (0.03; 0.28)	0.15 (0.09; 0.21)
	P-value	0.012	<0.001
	I^2	86.0	62.7
	P_H	<0.001	0.034
Model 1* + BMI	β (95% CI)	0.09 (-0.02; 0.19)	0.11 (0.03; 0.18)
	P-value	0.100	0.005
	I^2	82.4	78.3
	P_H	<0.001	0.001
Model 1*+ Sedentary	β (95% CI)	0.10 (-0.004; 0.21)	0.15 (0.08; 0.23)
	P-value	0.059	<0.001
	I^2	64.0	68.2
	P_H	0.091	0.019
Model 2[§]	β (95% CI)	0.08 (-0.02; 0.17)	0.06 (0.02; 0.11)
	P-value	0.105	0.003
	I^2	77.5	36.2
	P_H	0.002	0.164

†Except for model 1 + sedentary where N = 7769

‡Except for model 1 + sedentary where N = 17699

*Model 1 adjusted for age and sex

§Model 2 controlled for age, sex and additionally alcohol, smoking, BMI and sedentary

Abbreviations: CI, confidence interval; I^2 , percentage of between study heterogeneity; P_H , P-value of heterogeneity test; BMI, body mass index.

Supplementary Table 13. Additional information about Lifepath cohorts

	Design	Date of recruitment	Data collection	CRP measure	First CRP used in the study	Ethics statement
EPIC-Italy	Prospective cohort	1993 - 1998	Self-administered dietary and lifestyle questionnaire Standardized blood sample and anthropometric measures	HS CRP was measured in plasma, by latex particle-enhanced immunoturbidimetric assay (IL Coagulation Systems on ACL9000)	At baseline, between 1993 - 1998	Approved by the ethical review boards of the International Agency for Research on Cancer, and of the collaborating institutions responsible for subject recruitment in each of the EPIC recruitment centres.
CoLaus	Population-based cross-sectional study	2003 - 2006	Demographic data, socio-economic and marital status, and several lifestyle factors questionnaire. Standardized anthropometric measure	HS-CRP (hs-CRP, mg/L) was assessed by immunoassay and latex HS (IMMULITE 1000-High, Diagnostic Products Corporation, Los Angeles, CA, USA)	At baseline, between 2003 - 2006	Approved by the Institutional Ethics Committee of the University of Lausanne (Switzerland)
Skipogh	Longitudinal family-based study	2009 - 2013	Participants come to the study center an overnight fast. They are welcomed by one of the medical assistants or study nurses. Total duration of the 'check-up' is 2h-2h30. A questionnaire includes questions on previous medical history, medication intake, professional life, and life habits (alimentation, physical activity) was given.	HS-CRP (hs-CRP, mg/L) was assessed by immunoassay and latex HS (Roche Diagnostics, CH)	At baseline, between 2009 - 2013	Approved by the Human Research Ethics Committee, Lausanne University Hospital and University of Lausanne (Lausanne, Switzerland), by the Ethics Committee for the Research on Human Beings, Geneva University Hospitals (Geneva, Switzerland), and by the Ethics Committee of the Canton of Bern, (Bern, Switzerland).
Whitehall	Prospective occupational cohort	From 1985 (12 waves)	Clinical examination and a self-administered questionnaire containing sections on demographic characteristics, health, lifestyle factors, work characteristics, social support, and life events.	CRP was measured using a high-sensitivity immunonephelometric assay in a BN ProSpec nephelometer (Dade Behring, Milton Keynes, Bucks, UK).	In the third wave, between 1991 - 1994	The University College London ethics committee approved this study
ELSA	English longitudinal study of aging	Recruited from Health Survey for England in 1998, 1999, 2001	Face-to-face interview (a computer-assisted personal interview followed by a self-completion questionnaire) every two years of the study and a nurse assessment every four years (measurements of physical function, anthropometric measurements and collection of blood samples).	CRP was measured using the N Latex CRP mono immunoassay on the Behring Nephelometer II analyzer.	In the second wave, between 2004 - 2005	Ethical consent has been obtained for all waves and components of ELSA, according to the ethical approval system in operation at the time.
NCDS	National longitudinal birth cohort study	Babies born in England, Scotland and Wales in one week of 1958 (9 sweeps and new survey in 2018)	Information was mostly reported by the participant, and measurements were collected for the biomedical survey at 45y.	CRP was measured on citrated plasma by high-sensitivity nephelometric analysis of latex particles coated with CRP-monoclonal antibodies. (BN ProSpec protein analyzer, Dade Behring, Marburg, Germany.)		Ethical approval for NCDS was granted by the London Multi-Centre Research Ethics Committee.

Supplementary Table 14: Multiple regression analyses testing the interaction between SEP and gender for (A) father's occupational position in 4 cohorts (B) participant's last occupation with CRP at baseline in 6 cohorts from the Lifepath project.

(A) Father occupational position														
			Model 1		Model 1 + Alcohol		Model 1 + Smoking		Model 1 + BMI		Model 1 + Sedentary		Fully adjusted	
	Ref.	Levels	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue
Skipogh	High:Men	Medium:Women	0.082 (-0.412; 0.576)	0.74	0.068 (-0.427; 0.564)	0.79	0.083 (-0.412; 0.579)	0.74	-0.035 (-0.51; 0.44)	0.88	0.069 (-0.424; 0.562)	0.78	-0.049 (-0.528; 0.429)	0.84
		Low:Women	-0.03 (-0.51; 0.449)	0.90	-0.035 (-0.515; 0.446)	0.89	-0.028 (-0.51; 0.454)	0.91	-0.139 (-0.598; 0.319)	0.55	-0.029 (-0.508; 0.449)	0.90	-0.138 (-0.599; 0.324)	0.56
EPIC-Italy	High:Men	Medium:Women	0.265 (-0.183; 0.714)	0.246	0.268 (-0.181; 0.716)	0.24	0.267 (-0.178; 0.712)	0.24	0.178 (-0.247; 0.602)	0.41	0.254 (-0.193; 0.701)	0.27	0.176 (-0.245; 0.596)	0.41
		Low:Women	0.315 (-0.127; 0.757)	0.162	0.319 (-0.123; 0.761)	0.16	0.342 (-0.097; 0.781)	0.13	0.159 (-0.26; 0.577)	0.46	0.32 (-0.121; 0.76)	0.16	0.193 (-0.222; 0.607)	0.36
Whitehall	High:Men	Medium:Women	0.151 (-0.109; 0.412)	0.255	0.143 (-0.117; 0.403)	0.28	0.162 (-0.096; 0.42)	0.22	0.08 (-0.166; 0.326)	0.52	0.129 (-0.131; 0.388)	0.33	0.068 (-0.175; 0.311)	0.58
		Low:Women	0.192 (-0.051; 0.434)	0.121	0.181 (-0.061; 0.423)	0.14	0.163 (-0.077; 0.404)	0.18	0.066 (-0.163; 0.296)	0.57	0.167 (-0.074; 0.409)	0.17	0.018 (-0.209; 0.245)	0.88
NCDS	High:Men	Medium:Women	-0.008 (-0.306; 0.289)	0.956	-0.017 (-0.314; 0.28)	0.91	-0.022 (-0.318; 0.274)	0.89	0.065 (-0.216; 0.345)	0.65	-	-	0.042 (-0.236; 0.32)	0.77
		Low:Women	0.13 (-0.134; 0.394)	0.334	0.123 (-0.14; 0.387)	0.36	0.112 (-0.151; 0.375)	0.40	0.172 (-0.077; 0.421)	0.18	-	-	0.144 (-0.103; 0.391)	0.25
(B) Participant's educational attainment														
			Model 1		Model 1 + Alcohol		Model 1 + Smoking		Model 1 + BMI		Model 1 + Sedentary		Fully adjusted	
	Ref.	Levels	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue
Skipogh	High:Men	Medium:Women	-0.011 (-0.538; 0.516)	0.967	-0.015 (-0.543; 0.514)	0.96	-0.007 (-0.536; 0.522)	0.98	0.01 (-0.496; 0.516)	0.97	-0.008 (-0.534; 0.518)	0.98	0.023 (-0.487; 0.533)	0.93
		Low:Women	0.07 (-0.423; 0.563)	0.780	0.08 (-0.416; 0.576)	0.75	0.074 (-0.421; 0.568)	0.77	0.058 (-0.417; 0.533)	0.81	0.093 (-0.4; 0.586)	0.71	0.086 (-0.394; 0.566)	0.72
EPIC-Italy	High:Men	Medium:Women	0.417 (0.069; 0.766)	0.019	0.42 (0.07; 0.769)	0.02	0.437 (0.09; 0.783)	0.01	0.338 (0.008; 0.669)	0.05	0.391 (0.043; 0.739)	0.03	0.348 (0.02; 0.676)	0.04
		Low:Women	0.412 (0.102; 0.721)	0.009	0.416 (0.106; 0.727)	0.01	0.465 (0.157; 0.774)	0.00	0.334 (0.04; 0.628)	0.03	0.387 (0.078; 0.696)	0.01	0.387 (0.094; 0.679)	0.01
Colaus	High:Men	Medium:Women	-0.123 (-0.315; 0.069)	0.208	-0.124 (-0.316; 0.068)	0.21	-0.139 (-0.33; 0.053)	0.16	-0.055 (-0.235; 0.124)	0.55	-0.117 (-0.308; 0.074)	0.23	-0.073 (-0.251; 0.106)	0.42
		Low:Women	-0.082 (-0.215; 0.052)	0.230	-0.093 (-0.227; 0.04)	0.17	-0.08 (-0.214; 0.053)	0.24	-0.086 (-0.211; 0.039)	0.18	-0.072 (-0.205; 0.061)	0.29	-0.085 (-0.209; 0.039)	0.18
Whitehall	High:Men	Medium:Women	-0.132 (-0.333; 0.07)	0.200	-0.118 (-0.319; 0.083)	0.25	-0.142 (-0.341; 0.058)	0.16	-0.16 (-0.35; 0.03)	0.10	-0.118 (-0.319; 0.082)	0.25	-0.154 (-0.342; 0.034)	0.11
		Low:Women	-0.019 (-0.19; 0.151)	0.827	-0.015 (-0.185; 0.156)	0.87	-0.025 (-0.194; 0.144)	0.77	-0.084 (-0.246; 0.077)	0.30	-0.022 (-0.192; 0.148)	0.80	-0.094 (-0.253; 0.066)	0.25
ELSA	High:Men	Medium:Women	0.043 (-0.164; 0.25)	0.687	0.033 (-0.174; 0.239)	0.76	0.035 (-0.171; 0.241)	0.74	0.019 (-0.178; 0.217)	0.85	0.028 (-0.177; 0.233)	0.79	-0.007 (-0.201; 0.187)	0.95
		Low:Women	0.04 (-0.139; 0.218)	0.665	0.033 (-0.146; 0.211)	0.72	0.047 (-0.13; 0.225)	0.60	-0.003 (-0.174; 0.168)	0.97	0.034 (-0.143; 0.212)	0.70	-0.005 (-0.173; 0.163)	0.96
NCDS	High:Men	Medium:Women	-0.103 (-0.417; 0.211)	0.519	-0.107 (-0.42; 0.207)	0.51	-0.098 (-0.41; 0.215)	0.54	-0.098 (-0.41; 0.215)	0.54	-	-	-0.077 (-0.371; 0.217)	0.61
		Low:Women	0.045 (-0.117; 0.208)	0.584	0.034 (-0.129; 0.196)	0.68	0.048 (-0.114; 0.21)	0.56	0.048 (-0.114; 0.21)	0.56	-	-	0.023 (-0.13; 0.175)	0.77
(C) Participant's last occupation														
			Model 1		Model 1 + Alcohol		Model 1 + Smoking		Model 1 + BMI		Model 1 + Sedentary		Fully adjusted	
	Ref.	Levels	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue	β (95% CI)	pvalue
Skipogh	High:Men	Medium:Women	-0.161 (-0.716; 0.394)	0.570	-0.168 (-0.724; 0.388)	0.55	-0.162 (-0.719; 0.394)	0.57	-0.178 (-0.711; 0.354)	0.51	-0.132 (-0.686; 0.422)	0.64	-0.175 (-0.711; 0.36)	0.52
		Low:Women	0.294 (-0.23; 0.819)	0.272	0.287 (-0.238; 0.813)	0.28	0.295 (-0.231; 0.82)	0.27	0.181 (-0.323; 0.685)	0.48	0.322 (-0.201; 0.846)	0.23	0.188 (-0.319; 0.695)	0.47
EPIC-Italy	High:Men	Medium:Women	0.242 (-0.187; 0.671)	0.269	0.243 (-0.187; 0.672)	0.27	0.221 (-0.206; 0.648)	0.31	0.142 (-0.264; 0.549)	0.49	0.244 (-0.184; 0.672)	0.26	0.126 (-0.277; 0.529)	0.54
		Low:Women	0.308 (-0.125; 0.74)	0.163	0.311 (-0.123; 0.744)	0.16	0.338 (-0.092; 0.768)	0.12	0.141 (-0.269; 0.551)	0.50	0.306 (-0.125; 0.738)	0.16	0.183 (-0.224; 0.59)	0.38
Colaus	High:Men	Medium:Women	0.166 (-0.034; 0.365)	0.104	0.16 (-0.04; 0.36)	0.12	0.167 (-0.033; 0.366)	0.10	0.08 (-0.107; 0.267)	0.40	0.177 (-0.022; 0.376)	0.08	0.085 (-0.101; 0.271)	0.37
		Low:Women	0.108 (-0.081; 0.296)	0.263	0.094 (-0.094; 0.282)	0.33	0.111 (-0.078; 0.299)	0.25	0.049 (-0.127; 0.226)	0.58	0.124 (-0.064; 0.311)	0.20	0.054 (-0.121; 0.229)	0.55
Whitehall	High:Men	Medium:Women	0.145 (-0.034; 0.325)	0.113	0.156 (-0.024; 0.335)	0.09	0.166 (-0.012; 0.344)	0.07	0.089 (-0.081; 0.259)	0.30	0.147 (-0.032; 0.326)	0.11	0.112 (-0.056; 0.28)	0.19
		Low:Women	0.077 (-0.139; 0.293)	0.486	0.08 (-0.137; 0.296)	0.47	0.139 (-0.076; 0.354)	0.20	-0.023 (-0.228; 0.182)	0.83	0.11 (-0.107; 0.326)	0.32	0.054 (-0.15; 0.258)	0.61
ELSA	High:Men	Medium:Women	-0.169 (-0.312; -0.027)	0.020	-0.157 (-0.3; -0.015)	0.03	-0.158 (-0.299; -0.016)	0.03	-0.163 (-0.299; -0.027)	0.02	-0.141 (-0.282; 0.001)	0.05	-0.123 (-0.256; 0.011)	0.07
		Low:Women	-0.02 (-0.174; 0.133)	0.795	-0.027 (-0.18; 0.125)	0.73	-0.009 (-0.161; 0.143)	0.91	-0.047 (-0.193; 0.099)	0.53	-0.011 (-0.163; 0.14)	0.88	-0.031 (-0.174; 0.113)	0.68
NCDS	High:Men	Medium:Women	-0.171 (-0.342; 0)	0.050	-0.168 (-0.338; 0.003)	0.05	-0.169 (-0.339; 0.001)	0.05	-0.137 (-0.298; 0.023)	0.09	-	-	-0.133 (-0.292; 0.027)	0.10
		Low:Women	0.032 (-0.128; 0.191)	0.697	0.021 (-0.139; 0.18)	0.80	0.048 (-0.111; 0.206)	0.56	0.022 (-0.128; 0.172)	0.77	-	-	0.033 (-0.117; 0.182)	0.67

*Model 1 adjusted for age and sex

*Model 2 controlled for age, sex and additionally alcohol, smoking, BMI and sedentary

Abbreviations: CI, confidence interval; BMI, body mass index.