

Supplementary Table SI. Multivariable Cox regression analysis for Mortality after Excluding Participants with History of CHD

		lnPIV quartiles				Per one-unit increment in lnPIV
		Q1	Q2	Q3	Q4	P for trend
All-cause mortality						
Model 1	Reference	1.06 (0.93, 1.21)	1.14 (1.00, 1.30)	1.58 (1.40, 1.80)	<0.0001	1.35 (1.26, 1.44)
		0.3708	0.0509	<0.0001		<0.0001
Model 2	Reference	1.01 (0.88, 1.15)	1.10 (0.97, 1.26)	1.50 (1.32, 1.70)	<0.0001	1.31 (1.23, 1.40)
		0.8944	0.1462	<0.0001		<0.0001
Model 3	Reference	1.00 (0.88, 1.15)	1.08 (0.95, 1.23)	1.40 (1.24, 1.60)	<0.0001	1.24 (1.16, 1.33)
		0.9539	0.2530	<0.0001		<0.0001
Cardiovascular mortality						
Model 1	Reference	1.10 (0.85, 1.42)	1.14 (0.89, 1.48)	1.57 (1.23, 2.00)	0.0002	1.41 (1.24, 1.60)
		0.4787	0.3016	0.0003		<0.0001
Model 2	Reference	1.05 (0.81, 1.35)	1.11 (0.86, 1.44)	1.49 (1.16, 1.90)	0.0009	1.38 (1.21, 1.57)
		0.7347	0.4184	0.0016		<0.0001
Model 3	Reference	1.04 (0.80, 1.34)	1.09 (0.84, 1.41)	1.40 (1.09, 1.79)	0.0050	1.31 (1.15, 1.49)
		0.7674	0.5001	0.0077		<0.0001

Model 1: adjust for gender, age, race, education, PIR. Model 2: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, stroke, bronchitis, cancer, and diabetes treatment. Model 3: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, stroke, bronchitis, cancer, diabetes treatment, HbA1c, fast blood glucose, HOMA-IR, serum albumin, eGFR, TC, triglyceride, LDL-C and HDL-C. Abbreviation: 95% CI, 95% confidence interval; OR, odds ratio; PIV, pan-immune-inflammation value. $p < 0.05$ was considered statistically significant.

Supplementary Table SII. Multivariable Cox regression analysis for Mortality after Excluding Participants with History of stroke

		lnPIV quartiles				Per one-unit increment in lnPIV
		Q1	Q2	Q3	Q4	P for trend
All-cause mortality						
Model 1	Reference	1.06 (0.93, 1.22)	1.15 (1.01, 1.31)	1.57 (1.39, 1.78)	<0.0001	1.37 (1.28, 1.46)
		0.3582	0.0377	<0.0001		<0.0001
Model 2	Reference	1.00 (0.87, 1.14)	1.11 (0.97, 1.27)	1.48 (1.30, 1.67)	<0.0001	1.32 (1.24, 1.41)
		0.9876	0.1203	<0.0001		<0.0001
Model 3	Reference	0.98 (0.85, 1.11)	1.06 (0.93, 1.21)	1.38 (1.22, 1.57)	<0.0001	1.26 (1.18, 1.34)
		0.7131	0.3490	<0.0001		<0.0001
Cardiovascular mortality						
Model 1	Reference	1.03 (0.81, 1.32)	1.06 (0.83, 1.35)	1.50 (1.19, 1.90)	0.0003	1.43 (1.26, 1.61)
		0.7886	0.6512	0.0006		<0.0001
Model 2	Reference	0.95 (0.74, 1.22)	1.02 (0.80, 1.31)	1.40 (1.11, 1.77)	0.0014	1.38 (1.22, 1.56)
		0.6889	0.8699	0.0048		<0.0001
Model 3	Reference	0.93 (0.73, 1.19)	0.97 (0.76, 1.25)	1.33 (1.05, 1.68)	0.0063	1.32 (1.17, 1.49)
		0.5708	0.8402	0.0179		<0.0001

Model 1: adjust for gender, age, race, education, PIR. Model 2: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, bronchitis, cancer, and diabetes treatment. Model 3: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, bronchitis, cancer, diabetes treatment, HbA1c, fast blood glucose, HOMA-IR, serum albumin, eGFR, TC, triglyceride, LDL-C and HDL-C. Abbreviation: 95% CI, 95% confidence interval; OR, odds ratio; PIV, pan-immune-inflammation value. $p < 0.05$ was considered statistically significant.

Supplementary Table SIII. Multivariable Cox regression analysis for Mortality after Excluding Participants with History of bronchitis

		lnPIV quartiles				Per one-unit increment in lnPIV
		Q1	Q2	Q3	Q4	P for trend
All-cause mortality						
Model 1	Reference	1.09 (0.96, 1.24)	1.18 (1.04, 1.34)	1.62 (1.43, 1.83)	<0.0001	1.37 (1.28, 1.46)
		0.1728	0.0113	<0.0001		<0.0001
Model 2	Reference	1.03 (0.91, 1.17)	1.14 (1.00, 1.29)	1.53 (1.35, 1.73)	<0.0001	1.33 (1.25, 1.42)
		0.6288	0.0468	<0.0001		<0.0001
Model 3	Reference	1.02 (0.90, 1.16)	1.10 (0.97, 1.25)	1.45 (1.29, 1.65)	<0.0001	1.27 (1.19, 1.35)
		0.7524	0.1466	<0.0001		<0.0001
Cardiovascular mortality						
Model 1	Reference	1.02 (0.80, 1.30)	1.12 (0.89, 1.43)	1.54 (1.23, 1.94)	<0.0001	1.43 (1.27, 1.61)
		0.8530	0.3343	0.0002		<0.0001
Model 2	Reference	0.95 (0.75, 1.21)	1.08 (0.85, 1.37)	1.46 (1.16, 1.83)	0.0002	1.39 (1.23, 1.57)
		0.6768	0.5389	0.0011		<0.0001
Model 3	Reference	0.95 (0.74, 1.21)	1.04 (0.82, 1.32)	1.40 (1.11, 1.76)	0.0010	1.33 (1.18, 1.50)
		0.6679	0.7389	0.0039		<0.0001

Model 1: adjust for gender, age, race, education, PIR. Model 2: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, stroke, cancer, and diabetes treatment. Model 3: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, stroke, cancer, diabetes treatment, HbA1c, fast blood glucose, HOMA-IR, serum albumin, eGFR, TC, triglyceride, LDL-C and HDL-C. Abbreviation: 95% CI, 95% confidence interval; OR, odds ratio; PIV, pan-immune-inflammation value. $p < 0.05$ was considered statistically significant.

Supplementary Table SIV. Multivariable Cox regression analysis for Mortality after Excluding Participants with History of cancer

		lnPIV quartiles				Per one-unit increment in lnPIV
		Q1	Q2	Q3	Q4	P for trend
All-cause mortality						
Model 1	Reference	1.08 (0.94, 1.24)	1.21 (1.06, 1.39)	1.65 (1.45, 1.87)	<0.0001	1.39 (1.30, 1.48)
		0.2661	0.0046	<0.0001		<0.0001
Model 2	Reference	1.01 (0.88, 1.15)	1.17 (1.02, 1.33)	1.53 (1.34, 1.74)	<0.0001	1.34 (1.25, 1.43)
		0.9342	0.0262	<0.0001		<0.0001
Model 3	Reference	1.00 (0.87, 1.15)	1.14 (0.99, 1.30)	1.47 (1.29, 1.67)	<0.0001	1.28 (1.20, 1.37)
		0.9686	0.0602	<0.0001		<0.0001
Cardiovascular mortality						
Model 1	Reference	1.07 (0.83, 1.37)	1.20 (0.94, 1.54)	1.59 (1.25, 2.01)	<0.0001	1.44 (1.27, 1.62)
		0.5945	0.1471	0.0001		<0.0001
Model 2	Reference	0.99 (0.77, 1.27)	1.15 (0.90, 1.47)	1.46 (1.15, 1.86)	0.0003	1.39 (1.22, 1.57)
		0.9092	0.2703	0.0018		<0.0001
Model 3	Reference	0.99 (0.77, 1.27)	1.12 (0.88, 1.44)	1.42 (1.12, 1.80)	0.0011	1.34 (1.18, 1.52)
		0.9404	0.3579	0.0041		<0.0001

Model 1: adjust for gender, age, race, education, PIR. Model 2: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, stroke, bronchitis, and diabetes treatment. Model 3: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, stroke, bronchitis, diabetes treatment, HbA1c, fast blood glucose, HOMA-IR, serum albumin, eGFR, TC, triglyceride, LDL-C and HDL-C. Abbreviation: 95% CI, 95% confidence interval; OR, odds ratio; PIV, pan-immune-inflammation value. $p < 0.05$ was considered statistically significant.

Supplementary Table SV. Multivariable Cox regression analysis for Mortality after Excluding Participants with less than 2-year of follow-up

		lnPIV quartiles				Per one-unit increment in lnPIV	
		Q1	Q2	Q3	Q4	P for trend	
All-cause mortality							
Model 1	Reference	1.10 (0.96, 1.25)	1.21 (1.06, 1.38)	1.54 (1.36, 1.75)	<0.0001	1.31 (1.23, 1.40)	
		0.1584	0.0037	<0.0001	<0.0001		
Model 2	Reference	1.04 (0.91, 1.18)	1.16 (1.02, 1.32)	1.46 (1.28, 1.65)	<0.0001	1.28 (1.19, 1.36)	
		0.6016	0.0257	<0.0001	<0.0001		
Model 3	Reference	1.02 (0.89, 1.16)	1.13 (0.99, 1.28)	1.40 (1.24, 1.59)	<0.0001	1.24 (1.16, 1.32)	
		0.8215	0.0757	<0.0001	<0.0001		
Cardiovascular mortality							
Model 1	Reference	0.98 (0.77, 1.26)	1.11 (0.87, 1.41)	1.43 (1.13, 1.81)	0.0009	1.36 (1.20, 1.54)	
		0.8988	0.4127	0.0028	<0.0001		
Model 2	Reference	0.91 (0.71, 1.16)	1.05 (0.82, 1.34)	1.33 (1.05, 1.68)	0.0043	1.31 (1.16, 1.49)	
		0.4424	0.6849	0.0181	<0.0001		
Model 3	Reference	0.90 (0.70, 1.15)	1.03 (0.80, 1.31)	1.29 (1.02, 1.63)	0.0094	1.28 (1.13, 1.45)	
		0.4021	0.8298	0.0345	0.0001		

Model 1: adjust for gender, age, race, education, PIR. Model 2: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, stroke, bronchitis, cancer, and diabetes treatment. Model 3: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, stroke, bronchitis, cancer, diabetes treatment, HbA1c, fast blood glucose, HOMA-IR, serum albumin, eGFR, TC, triglyceride, LDL-C and HDL-C. Abbreviation: 95% CI, 95% confidence interval; OR, odds ratio; PIV, pan-immune-inflammation value. $p < 0.05$ was considered statistically significant.

Supplementary Table SVI. Multivariable Cox regression analysis for Mortality after Excluding Participants with extreme values of the lnPIV

		lnPIV quartiles				Per one-unit increment in lnPIV
		Q1	Q2	Q3	Q4	P for trend
All-cause mortality						
Model 1	Reference	1.07 (0.95, 1.21)	1.21 (1.07, 1.36)	1.64 (1.46, 1.84)	<0.0001	1.38 (1.30, 1.47)
		0.2673	0.0021	<0.0001		<0.0001
Model 2	Reference	1.01 (0.89, 1.14)	1.16 (1.02, 1.31)	1.54 (1.37, 1.73)	<0.0001	1.34 (1.26, 1.43)
		0.8557	0.0191	<0.0001		<0.0001
Model 3	Reference	1.00 (0.88, 1.13)	1.12 (0.99, 1.27)	1.47 (1.30, 1.65)	<0.0001	1.29 (1.21, 1.37)
		0.9983	0.0619	<0.0001		<0.0001
Cardiovascular mortality						
Model 1	Reference	0.96 (0.77, 1.21)	1.07 (0.85, 1.33)	1.50 (1.21, 1.85)	<0.0001	1.39 (1.24, 1.56)
		0.7350	0.5791	0.0002		<0.0001
Model 2	Reference	0.89 (0.71, 1.12)	1.01 (0.81, 1.26)	1.39 (1.12, 1.72)	0.0003	1.34 (1.19, 1.51)
		0.3192	0.9274	0.0024		<0.0001
Model 3	Reference	0.89 (0.71, 1.12)	0.98 (0.78, 1.23)	1.34 (1.08, 1.66)	0.0015	1.29 (1.15, 1.45)
		0.3142	0.8759	0.0076		<0.0001

Model 1: adjust for gender, age, race, education, PIR. Model 2: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, stroke, bronchitis, cancer, and diabetes treatment. Model 3: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, stroke, bronchitis, cancer, diabetes treatment, HbA1c, fast blood glucose, HOMA-IR, serum albumin, eGFR, TC, triglyceride, LDL-C and HDL-C. Abbreviation: 95% CI, 95% confidence interval; OR, odds ratio; PIV, pan-immune-inflammation value. $p < 0.05$ was considered statistically significant.

Supplementary Table SVII. Multivariable Cox regression analysis for Mortality after Excluding Participants with missing data for any variable used in the primary analyses

		lnPIV quartiles				Per one-unit increment in lnPIV	
		Q1	Q2	Q3	Q4	P for trend	
All-cause mortality							
Model 1	Reference	1.09 (0.88, 1.35)	1.24 (1.00, 1.52)	1.73 (1.41, 2.12)	<0.0001	1.40 (1.26, 1.55)	
		0.4326	0.0476	<0.0001	<0.0001		
Model 2	Reference	1.05 (0.85, 1.31)	1.23 (1.00, 1.52)	1.68 (1.37, 2.06)	<0.0001	1.38 (1.24, 1.53)	
		0.6314	0.0518	<0.0001	<0.0001		
Model 3	Reference	1.03 (0.83, 1.28)	1.14 (0.92, 1.41)	1.58 (1.29, 1.94)	<0.0001	1.33 (1.20, 1.48)	
		0.7654	0.2165	<0.0001	<0.0001		
Cardiovascular mortality							
Model 1	Reference	1.06 (0.72, 1.56)	1.08 (0.73, 1.58)	1.64 (1.14, 2.36)	0.0047	1.40 (1.16, 1.69)	
		0.7577	0.7118	0.0071	0.0004		
Model 2	Reference	1.01 (0.69, 1.49)	1.06 (0.72, 1.56)	1.63 (1.13, 2.36)	0.0043	1.42 (1.17, 1.72)	
		0.9421	0.7701	0.0087	0.0004		
Model 3	Reference	1.00 (0.68, 1.48)	0.98 (0.66, 1.45)	1.57 (1.09, 2.28)	0.0123	1.40 (1.15, 1.70)	
		0.9818	0.9135	0.0168	0.0009		

Model 1: adjust for gender, age, race, education, PIR. Model 2: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, stroke, bronchitis, cancer, and diabetes treatment. Model 3: adjust for gender, age, race, education, PIR, BMI, smoking history, drinking status, hypertension, CHD, stroke, bronchitis, cancer, diabetes treatment, HbA1c, fast blood glucose, HOMA-IR, serum albumin, eGFR, TC, triglyceride, LDL-C and HDL-C. Abbreviation: 95% CI, 95% confidence interval; OR, odds ratio; PIV, pan-immune-inflammation value. $p < 0.05$ was considered statistically significant.