

Table S1. Clinical characteristics of the study population (N=1,953). Data are mean \pm SD.

Variable	Healthy ageing (n= 431)	Unhealthy ageing (n=1522)	p-value
Total cholesterol (mmol/l)	6.13 \pm 1.06	6.09 \pm 1.17	0.51
HDL cholesterol (mmol/l)	1.60 \pm 0.40	1.54 \pm 0.38	<0.001
Triglycerides (mmol/l)	1.61 \pm 0.87	1.83 \pm 1.14	<0.001
C-reactive protein (mg/L) [†]	3.29 \pm 2.18	3.23 \pm 2.12	0.73
Haemoglobin (g/dL)	14.52 \pm 1.25	14.29 \pm 1.63	0.007
Glycated haemoglobin, HbA1c (%)	5.46 \pm 0.35	5.52 \pm 0.58	0.03
Systolic blood pressure (mmHg)	136.8 \pm 18.2	134.9 \pm 18.2	0.06
Body mass index (kg/m ²)	27.1 \pm 3.8	27.9 \pm 4.8	<0.001

[†]Values presented as geometric mean.

Participants' body weight was measured using Tanita electronic scales without shoes and in light clothing, and height was measured using a Stadiometer with the Frankfort plane in the horizontal position. BMI was calculated using the standard formulae [weight (kilograms)/height (meters) squared]. Systolic and diastolic BP was measured with an Omron HEM-907 blood pressure monitor three times in the sitting position after 5-minute rest between each reading. The initial reading was discarded and an average of the second and third BP recordings was used for the present analyses. Blood analysis was carried out at the Royal Victoria Infirmary (Newcastle-upon-Tyne, UK). Detailed information on the technicalities of the blood analysis, the internal quality control, and the external quality assessment for the laboratory have been described (Graig R, Deverill C, Pickering K. Quality control of blood, saliva and urine analytes. In: K. Spronston and J. Mindell, Editors, Health survey for England 2004, Methodology and documentation Vol. 2, The Information Centre, London, 2006, pp. 34–41.)

Table S2 Odds ratio (95% confidence interval) for the association of baseline physical activity and healthy ageing over 8 years follow up in clinical sub-sample.

	Model 1	Model 2	Model 3
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Inactive	1.00 (ref)	1.00	1.00
Moderate physical activity	2.51 (1.72 – 3.66)	2.13 (1.45 – 3.13)	2.11 (1.43 – 3.11)
Vigorous physical activity	3.51 (2.38 – 5.17)	2.85 (1.91 – 4.23)	2.82 (1.89 – 4.21)
p-trend	<0.001	<0.001	<0.001

Model 1; adjustment for age, sex.

Model 2; adjustment for age, sex, smoking (never; previous; current), alcohol (daily; at least weekly; rarely; never), marital status (married; always single; separated; widowed), wealth quintile.

Model 3; additionally adjusted for biological risk markers (HDL cholesterol, triglycerides, C-reactive protein, glycated haemoglobin, haemoglobin, BMI)