

Supplementary Table 1. Subgroup analysis of study participants

Variable	Number	CHF	Duration	IR (1,000 person-years)	HR (95% CI)	P for interaction
Age, yr						0.6837
<65						
Continuously physically inactive	65,527	366	315,317.02	1.16	1 (reference)	
Physically active to inactive	10,236	63	49,812.33	1.26	1.02 (0.78–1.34)	
Physically inactive to active	16,544	74	80,256.56	0.92	0.81 (0.63–1.04)	
Continuously physically active	8,606	35	41,784.48	0.84	0.72 (0.51–1.02)	
≥65						
Continuously physically inactive	20,206	555	97,289.57	5.70	1 (reference)	
Physically active to inactive	4,023	88	19,533.21	4.51	0.87 (0.69–1.09)	
Physically inactive to active	4,442	86	21,673.08	3.97	0.79 (0.62–0.99)	
Continuously physically active	2,834	54	13,643.88	3.96	0.84 (0.63–1.12)	
Sex						0.0216
Male						
Continuously physically inactive	52,586	464	251,227.6	1.85	1 (reference)	
Physically active to inactive	9,289	106	44,799.55	2.37	1.10 (0.89–1.36)	
Physically inactive to active	14,144	103	68,387.1	1.51	0.81 (0.66–1.01)	
Continuously physically active	8,485	57	41,019.42	1.39	0.70 (0.53–0.92)	
Female						
Continuously physically inactive	33,147	457	161,378.99	2.83	1 (reference)	
Physically active to inactive	4,970	45	24,546	1.83	0.68 (0.50–0.92)	
Physically inactive to active	6,842	57	33,542.55	1.70	0.76 (0.58–1.00)	
Continuously physically active	2,955	32	14,408.95	2.22	1.00 (0.69–1.44)	
Hypertension						0.6907
No						
Continuously physically inactive	37,652	218	180,900.17	1.21	1 (reference)	
Physically active to inactive	5,893	29	28,623.65	1.01	0.79 (0.53–1.16)	
Physically inactive to active	9,664	38	46,883.91	0.81	0.73 (0.52–1.03)	
Continuously physically active	4,974	24	24,136.01	0.99	0.86 (0.56–1.31)	
Yes						
Continuously physically inactive	48,081	703	231,706.43	3.03	1 (reference)	
Physically active to inactive	8,366	122	40,721.89	3.00	0.96 (0.79–1.17)	
Physically inactive to active	11,322	122	55,045.74	2.22	0.81 (0.66–0.98)	
Continuously physically active	6,466	65	31,292.35	2.08	0.75 (0.58–0.97)	
Dyslipidemia						0.3024
No						
Continuously physically inactive	41,084	407	200,121.25	2.03	1 (reference)	
Physically active to inactive	6,955	57	34,267.36	1.66	0.77 (0.58–1.02)	
Physically inactive to active	10,514	64	51,635.69	1.24	0.70 (0.54–0.91)	
Continuously physically active	5,843	41	28,613.07	1.43	0.76 (0.55–1.06)	

(Continued to the next page)

Supplementary Table 1. Continued

Variable	Number	CHF	Duration	IR (1,000 person-years)	HR (95% CI)	P for interaction
Yes						
Continuously physically inactive	44,649	514	212,485.35	2.42	1 (reference)	0.6063
Physically active to inactive	7,304	94	35,078.18	2.68	1.05 (0.84–1.30)	
Physically inactive to active	10,472	96	50,293.96	1.91	0.86 (0.69–1.07)	
Continuously physically active	5,597	48	26,815.3	1.79	0.79 (0.59–1.06)	
CKD						
No						
Continuously physically inactive	80,521	770	387,317.56	1.99	1 (reference)	0.6556
Physically active to inactive	13,301	129	64,690.91	1.99	0.93 (0.77–1.12)	
Physically inactive to active	19,843	137	96,364.94	1.42	0.78 (0.65–0.94)	
Continuously physically active	10,767	73	52,122.28	1.40	0.73 (0.57–0.93)	
Yes						
Continuously physically inactive	5,212	151	25,289.03	5.97	1 (reference)	0.6556
Physically active to inactive	958	22	4,654.63	4.73	0.85 (0.54–1.33)	
Physically inactive to active	1,143	23	5,564.71	4.13	0.80 (0.52–1.25)	
Continuously physically active	673	16	3,306.09	4.84	1.06 (0.63–1.78)	
CVD						
No						
Continuously physically inactive	83,653	857	402,888.61	2.13	1 (reference)	0.5058
Physically active to inactive	13,913	143	67,662.43	2.11	0.94 (0.78–1.12)	
Physically inactive to active	20,445	145	99,338.42	1.46	0.77 (0.65–0.92)	
Continuously physically active	11,158	82	54,105.78	1.52	0.77 (0.61–0.96)	
Yes						
Continuously physically inactive	2,080	64	9,717.98	6.59	1 (reference)	0.5058
Physically active to inactive	346	8	1,683.11	4.75	0.74 (0.35–1.55)	
Physically inactive to active	541	15	2,591.23	5.79	1.02 (0.57–1.79)	
Continuously physically active	282	7	1,322.58	5.29	0.99 (0.45–2.18)	
Obesity, kg/m ^{2a}						
<25						
Continuously physically inactive	41,330	430	199,136.31	2.16	1 (reference)	0.5058
Physically active to inactive	7,178	65	35,032.47	1.86	0.81 (0.62–1.05)	
Physically inactive to active	10,761	75	52,344.47	1.43	0.75 (0.59–0.96)	
Continuously physically active	6,033	41	29,211.58	1.40	0.70 (0.50–0.96)	
≥25						
Continuously physically inactive	44,403	491	213,470.28	2.30	1 (reference)	0.5058
Physically active to inactive	7,081	86	34,313.07	2.51	1.04 (0.83–1.31)	
Physically inactive to active	10,225	85	49,585.18	1.71	0.83 (0.66–1.04)	
Continuously physically active	5,407	48	26,216.78	1.83	0.87 (0.65–1.18)	

(Continued to the next page)

Supplementary Table 1. Continued

Variable	Number	CHF	Duration	IR (1,000 person-years)	HR (95% CI)	P for interaction
Weight change ^b						0.4933
Weight gain						
Continuously physically inactive	17,397	203	82,726.71	2.45	1 (reference)	
Physically active to inactive	2,781	33	13,359.06	2.47	0.96 (0.67–1.39)	
Physically inactive to active	5,103	49	24,501.76	2.00	1.03 (0.75–1.41)	
Continuously physically active	2,351	18	11,313.68	1.59	0.73 (0.45–1.19)	
Weight stable						
Continuously physically inactive	59,829	600	288,407.1	2.08	1 (reference)	
Physically active to inactive	10,160	105	49,468.97	2.12	0.96 (0.78–1.18)	
Physically inactive to active	14,047	95	68,294.12	1.39	0.72 (0.58–0.89)	
Continuously physically active	8,206	61	39,751.93	1.53	0.79 (0.60–1.02)	
Weight loss						
Continuously physically inactive	8,475	117	41,318.52	2.83	1 (reference)	
Physically active to inactive	1,316	13	6,510.36	2.00	0.70 (0.39–1.24)	
Physically inactive to active	1,828	16	9,101.68	1.76	0.68 (0.40–1.15)	
Continuously physically active	881	10	4,352.77	2.30	0.87 (0.45–1.67)	
Malignancy						0.1431
No						
Continuously physically inactive	82,954	884	400,046.05	2.21	1 (reference)	
Physically active to inactive	13,710	140	66,823.25	2.10	0.90 (0.75–1.07)	
Physically inactive to active	20,168	152	98,230.46	1.55	0.79 (0.66–0.93)	
Continuously physically active	11,012	80	53,486.73	1.50	0.74 (0.59–0.93)	
Yes						
Continuously physically inactive	2,779	37	12,560.55	2.94	1 (reference)	
Physically active to inactive	549	11	2,522.29	4.36	1.39 (0.70–2.73)	
Physically inactive to active	818	8	3,699.19	2.16	0.85 (0.40–1.84)	
Continuously physically active	428	9	1,941.63	4.64	1.47 (0.70–3.08)	

Adjusted for age, sex, current smoking, alcohol, income, waist circumference, hypertension, dyslipidemia, CKD, stroke, myocardial infarction, and fasting blood glucose.

CHF, congestive heart failure; IR, incidence rate; HR, hazard ratio; CI, confidence interval; CKD, chronic kidney disease.

^aThe body mass index cutoff of 25 kg/m² was used to define obesity in the Korean population in this study, ^bWeight change was calculated for each subject as the difference in weight between the follow-up health examination and baseline examination and divided into three categories: stable, gain or loss of less than 5% of body weight at baseline; gain, gain of 5% or more of body weight at baseline; loss, loss of 5% or more of body weight at baseline.