

Supplementary Data 4. Descriptive Summary of Outcomes from Included Studies

(K=9)

No.	Author (year), country	Outcomes	Subgroup (Exposure)	Follow-up	Effect size
1	Ekblom-Bak (2021), Sweden	CVD incidence	Total (Light PA vs. MetS+sedentary)	20-yr	HR (95% CI) 0.71 (0.50–1.00) [†]
			Total (Moderate/high vs. MetS+sedentary)		0.73 (0.49–1.09) [†]
		CVD mortality	Total (Light PA vs. MetS+sedentary)		0.84 (0.48–1.48)
			Total (Moderate/high vs. MetS+sedentary)		0.49 (0.23–1.05)
		All-cause mortality	Total (Light PA vs. MetS+sedentary)		0.88 (0.63–1.23)
			Total (Moderate/high vs. MetS+sedentary)		0.68 (0.45–1.03)
2	Fan (2023), China	CVD mortality	aMED (Above Median) vs. MetS + aMED (Below Median)	12-yr	HR (95% CI) 0.65 (0.49–0.87)
			aMED (Median) vs. MetS + aMED (Below Median)		0.71 (0.52–0.98)
		All-cause mortality	aMED (Above Median) vs. MetS + aMED (Below Median)		0.74 (0.64–0.86)
			aMED (Median) vs. MetS + aMED (Below Median)		0.77 (0.66–0.90)
3	Lee (2023), Korea	CVD incidence	PA (1-499) vs. MetS+sedentary	8-yr	0.89 (0.88, 0.91)
			PA (500-999) vs. MetS+sedentary		0.86 (0.84, 0.87)
			PA (1000-1499) vs. MetS+sedentary		0.80 (0.78, 0.82)
			PA (1500 \geq) vs. MetS+sedentary		0.82 (0.80, 0.84)
		All-cause mortality	PA (1-499) vs. MetS+sedentary		0.86 (0.85, 0.87)
			PA (500-999) vs. MetS+sedentary		0.82 (0.81, 0.83)
			PA (1000-1499) vs. MetS+sedentary		0.76 (0.74, 0.77)
			PA (1500 \geq) vs. MetS+sedentary		0.78 (0.77, 0.80)
4	Park (2021), Korea	CVD incidence	MetS-chronic (Ex-smoker vs. MetS-chronic-nonsmoker)	4-yr	RR (95%CI) 1.02 (0.98–1.06)
			MetS-chronic (Current, light-to-moderate vs. MetS-chronic-nonsmoker)		1.44 (1.38–1.51)
			MetS-chronic (Current, heavy vs. MetS-chronic-nonsmoker)		1.72 (1.65–1.79)
5	Park (2020), Korea	CVD incidence	MetS-chronic (1–2 day/wk) vs. MetS-chronic+0 day/wk	4-yr	RR (95%CI) 0.93 (0.90–0.95)
			MetS-chronic (3–4 day/wk) vs. MetS-chronic+0 day/wk		0.83 (0.81–0.86)
			MetS-chronic (\geq 5 day/wk) vs. MetS-chronic+0 day/wk		0.84 (0.81–0.87)
		All-cause mortality	MetS-chronic (1–2 day/wk) vs. MetS-chronic+0 day/wk		RR (95%CI) 0.82 (0.78–0.86)
			MetS-chronic (3–4 day/wk) vs. MetS-chronic+0 day/wk		0.77 (0.72–0.81)

			MetS-chronic (≥ 5 day/wk) vs. MetS-chronic+0 day/wk			0.81 (0.76–0.85)
6	Stensvold (2011), Norway	CVD mortality	High PA (≥ 65 years old) vs. MetS+inactive	10-yr	HR (95% CI)	0.52 (0.37–0.73)
			High PA (< 65 years old) vs. MetS+inactive			0.60 (0.29–1.22)
			Low PA (≥ 65 years old) vs. MetS+inactive			0.76 (0.62–0.93)
			Low PA (< 65 years old) vs. MetS+inactive			1.03 (0.58–1.83)
			Moderate PA (≥ 65 years old) vs. MetS+inactive			0.58 (0.46–0.74)
			Moderate PA (< 65 years old) vs. MetS+inactive			0.63 (0.33–1.20)
		All-cause mortality	High PA (≥ 65 years old) vs. MetS+inactive			0.59 (0.47–0.74)
			High PA (< 65 years old) vs. MetS+inactive			0.52 (0.37–0.73)
			Low PA (≥ 65 years old) vs. MetS+inactive			0.75 (0.65–0.86)
			Low PA (< 65 years old) vs. MetS+inactive			0.71 (0.54–0.94)
			Moderate PA (≥ 65 years old) vs. MetS+inactive			0.65 (0.56–0.76)
			Moderate PA (< 65 years old) vs. MetS+inactive			0.58 (0.43–0.79)
7	Wu (2023), China	CVD mortality	coffee 1 cup/day vs. MetS + 0 cup/day	14-yr	HR (95% CI)	0.89 (0.80–0.99)
			coffee 2 cups/day vs. MetS + 0 cup/day			1.05 (0.95–1.16)
			coffee 3 cups/day vs. MetS + 0 cup/day			0.99 (0.88–1.12)
			coffee ≥ 4 cups/ day vs. MetS + 0 cup/day			1.13 (1.03–1.25)
			Tea 1 cup/day vs. MetS + 0 cup/day			0.89 (0.80–0.99)
			Tea 2 cups/day vs. MetS + 0 cup/day			1.05 (0.95–1.16)
		All-cause mortality	Tea 3 cups/day vs. MetS + 0 cup/day			0.99 (0.88–1.12)
			Tea ≥ 4 cups/day vs. MetS + 0 cup/day			1.13 (1.03–1.25)
			coffee 1 cup/day vs. MetS + 0 cup/day			0.93 (0.89–0.98)
			coffee 2 cups/day vs. MetS + 0 cup/day			0.99 (0.94–1.04)
			coffee 3 cups/day vs. MetS + 0 cup/day			0.95 (0.89–1.01)
			coffee ≥ 4 cups/day vs. MetS + 0 cup/day			1.05 (1.01–1.11)
		CVD mortality	Tea 1 cup/day vs. MetS + 0 cup/day			0.94 (0.87–1.01)
			Tea 2 cups/day vs. MetS + 0 cup/day			0.89 (0.84–0.95)
			Tea 3 cups/day vs. MetS + 0 cup/day			0.90 (0.84–0.95)
			Tea ≥ 4 cups/day vs. MetS + 0 cup/day			0.91 (0.87–0.96)

8	Wu (2022), China	CVD mortality	lifesyle category (3-5) vs. Mets+Scoring 0-2	13-yr	HR (95% CI)	0.78 (0.68-0.89)
			lifesyle category (6-8) vs. Mets+Scoring 0-2			0.55 (0.45-0.67)
		All-cause mortality	lifesyle category (3-5) vs. Mets+Scoring 0-2			0.73 (0.69-0.78)
			lifesyle category (6-8) vs. Mets+Scoring 0-2			0.56 (0.51-0.62)
9	Ye (2020), China	CVD incidence	Sleep duration (<6 hr) vs. 7-8 hr	10-month	OR (95% CI)	1.21 (0.358,4.104)
			Sleep duration (6-7 hr) vs. 7-8 hr			0.745 (0.286,1.942)
			Sleep duration (8-9 hr) vs. 7-8 hr			1.677 (0.984,2.855)
			Sleep duration (>9 hr) vs. 7-8 hr			1.731 (0.896,3.344)

Note. alternative Mediterranean diet index (aMED); CI = Confidence interval; CVD = Cardiovascular disease; HR = Hazard ratio; hr = Hour; K = Number of included studies; MetS = Metabolic syndrome; OR = Odds ratio; PA = Physical activity; RR = Relative risk; wk = week; yr = Year.