

**Table S1.** Indirect effect of mediators on the sleep duration–metabolic syndrome and number of metabolic syndrome components relationship for women

Mediators	c-c'		
	MetS	MetS	Number of MetS Components
C-reactive protein (nM)	-0.039	-0.044 (-0.097, 0.010)	-0.043 (-0.093, 0.006)
γ-Glutamyl transferase (U/L)	-0.035	-0.048 (-0.142, 0.045)	-0.017 (-0.049, 0.014)
Bilirubin (μM)	-0.007	-0.008 (-0.026, 0.011)	-0.012 (-0.032, 0.008)
Carotenoids (μM)	-0.054	<b>-0.078 (-0.133, -0.022)*</b>	<b>-0.055 (-0.093, -0.017)*</b>
Uric acid (μM)	-0.037	-0.065 (-0.146, 0.016)	-0.050 (-0.111, 0.012)
Vitamin A (μM)	0.019	0.010 (-0.023, 0.043)	0.009 (-0.019, 0.036)
Vitamin C (μM)	-0.040	<b>-0.043 (-0.081, -0.005)*</b>	<b>-0.030 (-0.059, 0.000)*</b>
Vitamin D (nM)	-0.090	<b>-0.104 (-0.170, -0.037)*</b>	<b>-0.082 (-0.128, -0.035)*</b>
Vitamin E (μM)	0.032	0.011 (-0.045, 0.067)	0.009 (-0.038, 0.056)

Asterisk indicates significant for Joint test, bold values indicate significant for Sobel test. c-c' and ab = indirect mediation effects; CI = confidence interval; MetS = metabolic syndrome.

**Table S2.** Indirect effect of mediators on the sleep duration–individual metabolic syndrome component relationship for women

Mediators	ab (95% CI <sub>Sobel</sub> )					
	Waist circumference	Systolic blood pressure	Diastolic blood pressure	Triglycerides	Fasting plasma glucose	HDL cholesterol
C-reactive Protein (nM)	-0.628 (-1.347, 0.092)	-0.221 (-0.521, 0.079)	-0.104 (-0.263, 0.055)	-0.024 (-0.052, 0.004)	<b>-0.044</b> <b>(-0.086, -0.001)*</b>	0.006 (-0.002, 0.014)
γ-Glutamyl transferase (U/L)	-0.139 (-0.408, 0.129)	-0.170 (-0.515, 0.175)	-0.025 (-0.08, 0.031)	-0.012 (-0.035, 0.012)	-0.022 (-0.054, 0.010)	0.000 (-0.002, 0.002)
Bilirubin (μM)	-0.120 (-0.349, 0.110)	0.002 (-0.141, 0.146)	-0.044 (-0.129, 0.041)	-0.010 (-0.025, 0.005)	0.004 (-0.014, 0.023)	0.005 (-0.002, 0.012)
Carotenoids (μM)	<b>-0.672</b> <b>(-1.135, -0.210)*</b>	-0.268 (-0.562, 0.025)*	0.004 (-0.088, 0.096)	<b>-0.018</b> <b>(-0.032, -0.005)*</b>	<b>-0.037</b> <b>(-0.065, -0.009)*</b>	<b>0.014</b> <b>(0.004, 0.025)</b>
Uric acid (μM)	-0.544 (-1.218, 0.131)	-0.382 (-0.871, 0.106)	0.020 (-0.042, 0.083)	-0.019 (-0.043, 0.005)	-0.013 (-0.037, 0.012)	0.004 (-0.001, 0.008)*
Vitamin A (μM)	0.031 (-0.073, 0.134)	0.086 (-0.206, 0.378)	-0.008 (-0.066, 0.05)	0.009 (-0.020, 0.037)	0.001 (-0.011, 0.013)	0.001 (-0.003, 0.006)
Vitamin C (μM)	<b>-0.586</b> <b>(-1.046, -0.125)*</b>	0.005 (-0.291, 0.302)	<b>-0.164</b> <b>(-0.325, -0.002)*</b>	<b>-0.022</b> <b>(-0.041, -0.003)*</b>	-0.019 (-0.039, 0.002)	<b>0.011</b> <b>(0.002, 0.019)*</b>
Vitamin D (nM)	<b>-1.091</b> <b>(-1.658, -0.525)</b>	<b>-0.590</b> <b>(-1.106, -0.073)*</b>	-0.055 (-0.183, 0.072)	-0.017 (-0.037, 0.004)	<b>-0.046</b> <b>(-0.086, -0.006)*</b>	<b>0.012</b> <b>(0.003, 0.021)</b>
Vitamin E (μM)	0.047 (-0.193, 0.287)	0.052 (-0.487, 0.591)	0.005 (-0.064, 0.074)	0.014 (-0.059, 0.087)	0.023 (-0.025, 0.072)	0.000 (-0.002, 0.003)

Asterisk indicates significant for Joint test, bold values indicate significant for Sobel test.

ab = indirect effect; CI = confidence interval; HDL = high-density lipoprotein; MetS = metabolic syndrome.