

Supplementary table 1. Characteristics of the study population in additional physical activity measures and medications

	Full sample			PRE-POST			PRE-PRE			POST-POST		
	BL	FU	Change ^a	BL	FU	Change ^a	BL	FU	Change ^a	BL	FU	Change ^a
Self-reported PA [n]	274	298	274	143	149	143	53	56	53	78	93	78
SR-PA [MET-h/day]	5.15 ±4.38	4.91 ±3.93	-0.23 ±3.72	5.25 ±4.54	4.90 ±3.85	-0.39 3.71	5.86 ±4.91	5.81 ±3.90	-0.10 ±3.26	4.49 ±3.59	4.40 ±4.00	-0.03 ±4.05
Accelerometer-measured PA [n]	235	283	222	134	141	126	43	55	43	58	87	53
ACC-MVPA [min/day]	67.3 ±29.2	62.8 ±27.2	-3.9 ±23.0	65.7 ±32.5	62.7 ±27.6	-3.1 ±25.3	72.6 ±23.0	68.0 ±25.9	-5.4 ±20.8	67.3 ±25.1	59.8 ±27.2	-4.6 ±19.0
Medications^b												
Use of antihypertensives												
Non-user	86 (238)	78 (233)		90 (129)	79 (117)		83 (44)	80 (45)		82 (65)	76 (71)	
User	14 (38)	22 (65)		10 (15)	21 (32)		17 (9)	20 (11)		18 (14)	24 (22)	
Use of lipid modifying agents												
Non-user	97 (267)	92 (274)		98 (141)	92 (140)		94 (50)	89 (50)		96 (76)	90 (84)	
User	3 (9)	8 (24)		2 (3)	8 (9)		6 (3)	11 (6)		4 (3)	10 (9)	
Use of thyroid therapy												
Non-user	91 (250)	88 (262)		93 (134)	91 (136)		87 (46)	82 (46)		89(70)	86 (80)	
User	9 (26)	12 (36)		7 (10)	9 (13)		13 (7)	18 (10)		11 (9)	14 (13)	

Data are mean ± SD unless otherwise specified. PRE-POST, participants who were pre- or perimenopausal at baseline and postmenopausal at follow-up; PRE-PRE, participants who were pre- or perimenopausal in both measurements; POST-POST, participants who were postmenopausal already at baseline; BL, baseline measurement; FU, follow-up measurement; PA, physical activity; SR-PA, self-report physical activity questionnaire; MET; metabolic equivalent; ACC-MVPA, accelerometer-measured daily moderate-to-vigorous physical activity. ^a For participants with baseline and follow-up measurement, ^b Data are % (n).

Supplementary table 2. Pooled fixed effect estimates for blood-based biomarkers with self-reported physical activity (n=298)

	Total cholesterol [mmol/l]		HDL-C [mmol/l]		LDL-C [mmol/l]		Glucose [mmol/l]		Triglycerides [mmol/l]	
	B	95% CI	B	95% CI	B	95% CI	B	95% CI	B	95% CI
Intercept (PRE-POST)	5.31***	[5.11, 5.51]	1.61***	[1.52, 1.71]	3.15***	[2.98, 3.33]	5.16***	[5.04, 5.27]	1.18***	[1.05, 1.32]
Main effects										
Group										
PRE-POST (ref.)	-		-		-		-		-	
PRE-PRE	0.03	[-0.27, 0.34]	-0.05	[-0.20, 0.10]	0.05	[-0.22, 0.32]	0.05	[-0.12, 0.22]	0.03	[-0.18, 0.24]
POST-POST	0.31*	[0.06, 0.56]	0.20**	[0.07, 0.32]	0.18	[-0.04, 0.40]	0.05	[-0.09, 0.19]	0.03	[-0.14, 0.21]
SR-PA [MET-h/day]	-0.02*	[-0.05, -0.00]	0.02***	[0.01, 0.03]	-0.03*	[-0.05, -0.01]	-0.01	[-0.02, 0.00]	-0.02**	[-0.04, -0.01]
Age at baseline [year]	0.03	[-0.02, 0.09]	-0.00	[-0.03, 0.03]	0.02	[-0.03, 0.08]	-0.00	[-0.03, 0.03]	0.03	[-0.01, 0.07]
Use of hormonal preparations										
Non-user (ref.)	-		-		-		-		-	
Progestogen	-0.14	[-0.32, 0.04]	-0.12**	[-0.20, -0.03]	-0.06	[-0.21, 0.10]	0.06	[-0.05, 0.16]	-0.02	[-0.14, 0.10]
Estrogen	-0.24	[-0.73, 0.25]	0.20	[-0.02, 0.42]	-0.25	[-0.67, 0.18]	0.04	[-0.26, 0.33]	-0.22	[-0.53, 0.10]
Progestogen + Estrogen	-0.17	[-0.42, 0.07]	-0.08	[-0.19, 0.03]	-0.15	[-0.36, 0.06]	-0.18*	[-0.33, -0.04]	-0.02	[-0.18, 0.12]
Time (PRE-POST)	0.62***	[0.43, 0.82]	0.28***	[0.19, 0.36]	0.54***	[0.38, 0.71]	0.15*	[0.03, 0.28]	0.23***	[0.10, 0.35]
Interactions										
Time × Group										
Time × PRE-POST (ref.)	-		-		-		-		-	
Time × PRE-PRE	-0.25	[-0.52, 0.01]	-0.08	[-0.19, 0.04]	-0.18	[-0.41, 0.05]	-0.06	[-0.22, 0.11]	-0.14	[-0.31, 0.02]
Time × POST-POST	-0.41***	[-0.64, -0.19]	-0.16**	[-0.25, -0.06]	-0.33***	[-0.52, -0.13]	-0.22**	[-0.36, -0.08]	-0.08	[-0.22, 0.06]
Time × SR-PA	-0.00	[-0.03, 0.02]	-0.01	[-0.02, 0.00]	-0.01	[-0.03, 0.02]	-0.00	[-0.02, 0.01]	-0.00	[-0.01, 0.02]

HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; CI, Confidence interval; PRE-POST, participants who were pre- or perimenopausal at baseline and postmenopausal at follow-up (reference group); PRE-PRE, participants who were pre- or perimenopausal in both measurements; POST-POST, participants who were postmenopausal already at baseline; SR-PA, self-reported physical activity; MET, metabolic equivalent; Time, from baseline to follow-up. * $p \leq 0.05$, ** $p \leq 0.01$, *** $p < 0.001$.

Supplementary table 3. Pooled fixed effect estimates for blood-based lipid biomarkers without participants using lipid modifying agents (n=273)

	Total cholesterol [mmol/l]		HDL-C [mmol/l]		LDL-C [mmol/l]		Triglycerides [mmol/l]	
	B	95% CI	B	95% CI	B	95% CI	B	95% CI
Intercept (PRE-POST)	5.46***	[5.12, 5.80]	1.54***	[1.36, 1.73]	3.27***	[2.98, 3.57]	1.22***	[1.01, 1.43]
Main effects								
Group								
PRE-POST (ref.)	-		-		-		-	
PRE-PRE	0.05	[-0.26, 0.36]	-0.04	[-0.20, 0.12]	0.06	[-0.21, 0.34]	0.03	[-0.16, 0.23]
POST-POST	0.34*	[0.09, 0.60]	0.19**	[0.06, 0.32]	0.20	[-0.02, 0.43]	-0.01	[-0.17, 0.15]
ACC-MAD [10 mg]	-0.10*	[-0.20, -0.00]	0.06*	[0.01, 0.12]	-0.10*	[-0.19, -0.02]	-0.07*	[-0.13, -0.00]
Age at baseline [year]	0.03	[-0.03, 0.09]	0.00	[-0.03, 0.04]	0.02	[-0.04, 0.07]	0.03	[-0.01, 0.06]
Use of hormonal preparations								
Non-user (ref.)	-		-		-		-	
Progestogen	-0.14	[-0.31, 0.03]	-0.12**	[-0.21, -0.03]	-0.05	[-0.20, 0.10]	-0.00	[-0.11, 0.11]
Estrogen	-0.07	[-0.53, 0.39]	0.17	[-0.07, 0.42]	-0.04	[-0.43, 0.35]	-0.15	[-0.45, 0.14]
Progestogen + Estrogen	-0.27*	[-0.49, -0.05]	-0.09	[-0.21, 0.02]	-0.23*	[-0.42, -0.04]	-0.00	[-0.15, 0.14]
Time (PRE-POST)	0.64***	[0.30, 0.98]	0.38***	[0.20, 0.56]	0.54***	[0.25, 0.84]	0.27*	[0.05, 0.49]
Interactions								
Time × Group								
Time × PRE-POST (ref.)	-		-		-		-	
Time × PRE-PRE	-0.18	[-0.42, 0.06]	-0.08	[-0.21, 0.05]	-0.14	[-0.34, 0.07]	-0.17*	[-0.32, -0.01]
Time × POST-POST	-0.37***	[-0.57, -0.17]	-0.15**	[-0.26, -0.04]	-0.28**	[-0.45, -0.11]	-0.09	[-0.22, 0.04]
Time × ACC-MAD	0.01	[-0.10, 0.12]	-0.05	[-0.10, 0.01]	0.01	[-0.09, 0.10]	-0.01	[-0.08, 0.06]

HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; CI, Confidence interval; PRE-POST, participants who were pre- or perimenopausal at baseline and postmenopausal at follow-up (reference group); PRE-PRE, participants who were pre- or perimenopausal in both measurements; POST-POST, participants who were postmenopausal already at baseline; ACC-MAD, accelerometer-measured mean amplitude deviation; mg, milligravity (0.00981 m/s²); Time, from baseline to follow-up. * p ≤ 0.05, ** p ≤ 0.01, *** p < 0.001.

Supplementary table 4. Pooled fixed effect estimates for body composition and anthropometrics with self-reported physical activity (n=298)

	Total fat mass [kg]		Android fat mass [kg]		Waist circumference [cm]		Waist-to-hip ratio ×100	
	B	95% CI	B	95% CI	B	95% CI	B	95% CI
Intercept (PRE-POST)	25.70***	[24.20, 27.20]	2.31***	[2.14, 2.48]	84.18***	[82.38, 85.97]	83.80***	[82.57, 85.03]
Main effects								
Group								
PRE-POST (ref.)	-		-		-		-	
PRE-PRE	0.51	[-2.23, 3.64]	0.04	[-0.26, 0.35]	2.02	[-1.21, 5.24]	1.12	[-0.88, 3.11]
POST-POST	-0.96	[-3.22, 1.30]	-0.08	[-0.33, 0.18]	-1.01	[-3.68, 1.67]	-0.31	[-2.00, 1.38]
SR-PA [MET-h/day]	-0.25***	[-0.36, -0.14]	-0.03***	[-0.04, -0.02]	-0.28***	[-0.43, -0.13]	-0.29***	[-0.44, -0.14]
Age at baseline [year]	0.40	[-0.17, 0.97]	0.04	[-0.02, 0.11]	0.62	[-0.05, 1.28]	0.32	[-0.07, 0.71]
Use of hormonal preparations								
Non-user (ref.)	-		-		-		-	
Progestogen	-0.70	[-1.62, 0.22]	-0.07	[-0.19, 0.04]	-0.36	[-1.53, 0.81]	-0.04	[-1.08, 1.01]
Estrogen	0.23	[-1.80, 2.26]	-0.02	[-0.28, 0.24]	0.19	[-2.49, 2.88]	0.28	[-2.80, 2.25]
Progestogen + Estrogen	-0.67	[-1.84, 0.51]	-0.15*	[-0.29, -0.00]	0.56	[-1.99, 0.88]	0.52	[-0.81, 1.84]
Time (PRE-POST)	2.87***	[2.10, 3.64]	0.39***	[0.29, 0.49]	1.49**	[0.48, 2.50]	0.60	[-0.40, 1.60]
Interactions								
Time × Group								
Time × PRE-POST (ref.)	-		-		-		-	
Time × PRE-PRE	-1.09*	[-2.14, -0.04]	-0.12	[-0.26, 0.01]	-0.05	[-1.36, 1.45]	0.70	[-0.71, 2.11]
Time × POST-POST	-1.15*	[-2.05, -0.26]	-0.11	[-0.23, 0.01]	-0.42	[-1.65, 0.82]	0.56	[-0.69, 1.80]
Time × SR-PA	-0.09	[-0.20, 0.02]	-0.01	[-0.02, 0.00]	-0.07	[-0.22, 0.08]	0.15	[-0.00, 0.31]

CI, Confidence interval; PRE-POST, participants who were pre- or perimenopausal at baseline and postmenopausal at follow-up (reference group); PRE-PRE, participants who were pre- or perimenopausal in both measurements; POST-POST, participants who were postmenopausal already at baseline; SR-PA, self-reported physical activity; MET, metabolic equivalent; Time, from baseline to follow-up. * $p \leq 0.05$, ** $p \leq 0.01$, *** $p < 0.001$.

Supplementary table 5. Pooled fixed effect estimates for blood pressure with self-reported physical activity (n=298)

	Systolic blood pressure [mmHg]		Diastolic blood pressure [mmHg]	
	B	95% CI	B	95% CI
Intercept (PRE-POST)	131.97***	[128.36, 135.57]	84.59***	[82.66, 86.51]
Main effects				
Group				
PRE-POST (ref.)	-		-	
PRE-PRE	1.50	[-4.21, 7.22]	1.16	[-1.99, 4.31]
POST-POST	-1.98	[-6.81, 2.85]	-0.11	[-2.78, 2.56]
SR-PA [MET-h/day]	-0.03	[-0.43, 0.38]	-0.14	[-0.34, 0.06]
Age at baseline [year]	1.15*	[0.03, 2.27]	0.42	[-0.21, 1.06]
Use of hormonal preparations				
Non-user (ref.)	-		-	
Progestogen	0.25	[-2.90, 3.41]	-0.29	[-1.91, 1.32]
Estrogen	-0.10	[-8.04, 7.85]	-1.68	[-5.57, 2.22]
Progestogen + Estrogen	-5.50**	[-9.59, -1.42]	-4.32***	[-6.35, -2.29]
Time (PRE-POST)	4.57**	[1.46, 7.69]	-0.10	[-1.62, 1.42]
Interactions				
Time × Group				
Time × PRE-POST (ref.)	-		-	
Time × PRE-PRE	0.74	[-3.58, 5.06]	-0.61	[-2.67, 1.46]
Time × POST-POST	-0.34	[-4.14, 3.46]	-0.78	[-2.63, 1.06]
Time × SR-PA	-0.41	[-0.85, 0.02]	-0.17	[-0.39, 0.05]

CI, Confidence interval; PRE-POST, participants who were pre- or perimenopausal at baseline and postmenopausal at follow-up (reference group); PRE-PRE, participants who were pre- or perimenopausal in both measurements; POST-POST, participants who were postmenopausal already at baseline; SR-PA, self-reported physical activity; MET, metabolic equivalent; Time, from baseline to follow-up. * $p \leq 0.05$, ** $p \leq 0.01$, *** $p < 0.001$.

Supplementary table 6. Pooled fixed effect estimates for blood pressure without participants using antihypertensives (n=230)

	Systolic blood pressure [mmHg]		Diastolic blood pressure [mmHg]	
	B	95% CI	B	95% CI
Intercept (PRE-POST)	126.67***	[120.42, 132.90]	82.01***	[78.85, 85.17]
Main effects				
Group				
PRE-POST (ref.)	-		-	
PRE-PRE	-0.30	[-6.48, 5.88]	0.68	[-2.71, 4.08]
POST-POST	-1.07	[-6.27, 4.13]	0.30	[-2.54, 3.15]
ACC-MAD [10 mg]	0.66	[-1.15, 2.46]	-0.07	[-0.95, 0.82]
Age at baseline [year]	0.69	[-0.55, 1.92]	0.16	[-0.53, 0.86]
Use of hormonal preparations				
Non-user (ref.)	-		-	
Progestogen	0.71	[-2.60, 4.03]	-0.10	[-1.75, 1.54]
Estrogen	1.51	[-6.12, 9.15]	-1.09	[-4.73, 2.55]
Progestogen + Estrogen	-4.28	[-8.72, 0.16]	-4.26***	[-6.43, -2.09]
Time (PRE-POST)	11.16**	[4.63, 17.70]	1.37	[-1.64, 4.39]
Interactions				
Time × Group				
Time × PRE-POST (ref.)	-		-	
Time × PRE-PRE	0.98	[-3.58, 5.55]	-1.03	[-3.13, 1.08]
Time × POST-POST	-1.28	[-5.19, 2.63]	-1.71	[-3.52, 0.10]
Time × ACC-MAD	-2.52*	[-4.64, -0.38]	-0.48	[-1.46, 0.51]

CI, Confidence interval; PRE-POST, participants who were pre- or perimenopausal at baseline and postmenopausal at follow-up (reference group); PRE-PRE, participants who were pre- or perimenopausal in both measurements; POST-POST, participants who were postmenopausal already at baseline; ACC-MAD, accelerometer-measured mean amplitude deviation; mg, milligravity (0.00981 m/s²); Time, from baseline to follow-up. * p ≤ 0.05, ** p ≤ 0.01, *** p < 0.001.

Supplementary table 7. Pooled fixed effect estimates for number of metabolic syndrome risk factors with self-reported physical activity (n=298)

	Number of metabolic syndrome risk factors	
	exp(B)	95% CI
Intercept (PRE-POST)	1.41**	[1.11, 1.80]
Main effects		
Group		
PRE-POST (ref.)	-	
PRE-PRE	1.33	[0.95, 1.85]
POST-POST	0.92	[0.69, 1.22]
SR-PA [MET-h/day]	0.94*	[0.91, 0.97]
Age at baseline [year]	1.07*	[1.01, 1.14]
Use of hormonal preparations		
Non-user (ref.)	-	
Progestogen	0.99	[0.79, 1.23]
Estrogen	0.68	[0.34, 1.39]
Progestogen + Estrogen	0.71	[0.50, 1.02]
Time (PRE-POST)	1.20	[0.92, 1.58]
Interactions		
Time × Group		
Time × PRE-POST (ref.)	-	
Time × PRE-PRE	0.79	[0.54, 1.16]
Time × POST-POST	0.94	[0.68, 1.30]
Time × SR-PA	0.99	[0.95, 1.03]

CI, Confidence interval; PRE-POST, participants who were pre- or perimenopausal at baseline and postmenopausal at follow-up (reference group); PRE-PRE, participants who were pre- or perimenopausal in both measurements; POST-POST, participants who were postmenopausal already at baseline; SR-PA, self-reported physical activity; MET, metabolic equivalent; Time, from baseline to follow-up; * $p \leq 0.05$, ** $p \leq 0.01$, *** $p < 0.001$.

Supplementary table 8. Pooled fixed effect estimates for number of metabolic syndrome risk factors without participants using lipid modifying agents or antihypertensives (n=220)

	Number of metabolic syndrome risk factors	
	exp(B)	95% CI
Intercept (PRE-POST)	1.27	[0.73, 2.20]
Main effects		
Group		
PRE-POST (ref.)	-	
PRE-PRE	1.29	[0.84, 1.98]
POST-POST	0.95	[0.65, 1.37]
ACC-MAD [10 mg]	0.88	[0.74, 1.04]
Age at baseline [year]	1.04	[0.96, 1.12]
Use of hormonal preparations		
Non-user (ref.)	-	
Progestogen	0.98	[0.74, 1.30]
Estrogen	0.91	[0.38, 2.15]
Progestogen + Estrogen	0.69	[0.44, 1.08]
Time (PRE-POST)	1.57	[0.80, 3.11]
Interactions		
Time × Group		
Time × PRE-POST (ref.)	-	
Time × PRE-PRE	0.77	[0.48, 1.26]
Time × POST-POST	0.96	[0.63, 1.47]
Time × ACC-MAD	0.88	[0.69, 1.11]

CI, Confidence interval; PRE-POST, participants who were pre- or perimenopausal at baseline and postmenopausal at follow-up (reference group); PRE-PRE, participants who were pre- or perimenopausal in both measurements; POST-POST, participants who were postmenopausal already at baseline; ACC-MAD, accelerometer-measured mean amplitude deviation; mg, milligravity (0.00981 m/s²); Time, from baseline to follow-up. * p ≤ 0.05, ** p ≤ 0.01, *** p < 0.001.