

## SUPPLEMENTARY MATERIAL

**Supplementary Table 1.** Relationships between times spent in sedentary behaviour/habitual PA at different intensity and eating behaviour traits.

	Binge eating scale														
	Model 0			Model 1			Model 2			Model 3			Model 4		
	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P
Sedentary time (min/day)	-0.004	0.033	<b>0.033</b>	-0.004	0.033	<b>0.035</b>	-0.006	0.123	<b>0.012</b>	-0.005	0.118	<b>0.006</b>	-0.004	0.117	<b>0.026</b>
LPA (min/day)	0.013	0.073	<b>0.001</b>	0.013	0.075	<b>0.001</b>	0.015	0.134	<b>0.008</b>	0.013	0.138	<b>0.001</b>	0.012	0.131	<b>0.009</b>
MPA (min/day)	0.014	0.101	<b>0.000</b>	0.014	0.101	<b>0.000</b>	0.018	0.239	<b>0.000</b>	0.014	0.170	<b>0.000</b>	0.012	0.147	<b>0.003</b>
VPA (min/day)	0.002	0.000	0.989	0.000	0.000	0.999	0.023	0.024	0.885	0.030	0.065	0.815	0.003	0.080	0.981
MVPA (min/day)	0.013	0.091	<b>0.000</b>	0.013	0.091	<b>0.000</b>	0.016	0.215	<b>0.000</b>	0.013	0.161	<b>0.000</b>	0.011	0.142	<b>0.004</b>
MVPA B <sub>10</sub> (min/day)	0.098	0.028	0.050	0.097	0.028	0.052	0.133	0.079	0.063	0.105	0.096	<b>0.033</b>	0.060	0.090	0.246
Overall PA (ENMO, mG/5s)	0.045	0.076	<b>0.001</b>	0.046	0.076	<b>0.001</b>	0.052	0.157	<b>0.003</b>	0.049	0.152	<b>0.000</b>	0.042	0.141	<b>0.004</b>

  

	Three Factor Eating Questionnaire - Cognitive Restraint														
	Model 0			Model 1			Model 2			Model 3			Model 4		
	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P
Sedentary time (min/day)	-0.002	0.001	0.715	0.000	0.029	0.956	0.004	0.048	0.634	-0.002	0.042	0.686	0.000	0.029	0.965
LPA (min/day)	0.015	0.012	0.208	0.010	0.034	0.399	0.002	0.045	0.909	0.009	0.045	0.428	0.011	0.034	0.420
MPA (min/day)	0.012	0.009	0.268	0.010	0.034	0.375	0.004	0.046	0.783	0.009	0.046	0.405	0.005	0.030	0.657
VPA (min/day)	-0.005	0.000	0.989	-0.049	0.029	0.895	0.117	0.046	0.806	0.009	0.046	0.405	0.016	0.029	0.969
MVPA (min/day)	0.011	0.008	0.289	0.009	0.009	0.404	0.005	0.047	0.747	0.008	0.045	0.425	0.005	0.030	0.649
MVPA B <sub>10</sub> (min/day)	0.255	0.023	0.075	0.239	0.049	0.092	0.280	0.071	0.197	0.237	0.061	0.096	0.159	0.037	0.303
Overall PA (ENMO, mG/5s)	0.028	0.003	0.492	0.016	0.030	0.689	0.004	0.045	0.938	0.019	0.042	0.641	0.010	0.029	0.819

  

	Three Factor Eating Questionnaire - Uncontrolled Eating														
	Model 0			Model 1			Model 2			Model 3			Model 4		
	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P
Sedentary time (min/day)	-0.024	0.081	<b>0.001</b>	-0.025	0.085	<b>0.001</b>	-0.033	0.172	<b>0.001</b>	-0.026	0.093	<b>0.000</b>	-0.025	0.103	<b>0.001</b>
LPA (min/day)	0.067	0.117	<b>0.000</b>	0.071	0.126	<b>0.000</b>	0.075	0.183	<b>0.001</b>	0.076	0.143	<b>0.000</b>	0.068	0.122	<b>0.000</b>
MPA (min/day)	0.065	0.127	<b>0.000</b>	0.066	0.133	<b>0.000</b>	0.075	0.218	<b>0.000</b>	0.070	0.146	<b>0.000</b>	0.060	0.123	<b>0.000</b>
VPA (min/day)	0.371	0.004	0.486	0.379	0.004	0.478	0.970	0.052	0.144	0.416	0.008	0.448	0.200	0.017	0.735
MVPA (min/day)	0.059	0.120	<b>0.000</b>	0.061	0.123	<b>0.000</b>	0.071	0.217	<b>0.000</b>	0.064	0.136	<b>0.000</b>	0.055	0.114	<b>0.000</b>
MVPA B <sub>10</sub> (min/day)	0.338	0.020	0.099	0.342	0.020	0.097	0.515	0.064	0.090	0.343	0.023	0.106	0.218	0.024	0.323
Overall PA (ENMO, mG/5s)	0.216	0.103	<b>0.000</b>	0.223	0.108	<b>0.000</b>	0.270	0.215	<b>0.000</b>	0.233	0.118	<b>0.000</b>	0.207	0.104	<b>0.001</b>

**Three Factor Eating Questionnaire - Emotional Eating**

	Model 0			Model 1			Model 2			Model 3			Model 4		
	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P
Sedentary time (min/day)	-0.001	0.016	0.135	-0.001	0.031	0.208	-0.001	0.036	0.197	-0.026	0.093	<b>0.000</b>	-0.001	0.054	0.108
LPA (min/day)	0.003	0.047	<b>0.010</b>	0.003	0.056	<b>0.023</b>	0.005	0.124	<b>0.007</b>	0.076	0.143	<b>0.000</b>	0.003	0.072	<b>0.027</b>
MPA (min/day)	0.021	0.700	<b>0.002</b>	0.003	0.081	<b>0.003</b>	0.005	0.134	<b>0.005</b>	0.003	0.091	<b>0.002</b>	0.003	0.084	<b>0.011</b>
VPA (min/day)	-0.008	0.000	0.834	-0.012	0.020	0.758	0.014	0.010	0.782	-0.009	0.025	0.824	0.012	0.034	0.788
MVPA (min/day)	0.003	0.060	<b>0.004</b>	0.003	0.072	<b>0.006</b>	0.004	0.117	<b>0.009</b>	0.003	0.082	<b>0.005</b>	0.003	0.080	<b>0.014</b>
MVPA B <sub>10</sub> (min/day)	0.032	0.033	<b>0.034</b>	0.031	0.049	<b>0.041</b>	0.014	0.014	0.553	0.032	0.056	<b>0.039</b>	0.027	0.056	0.088
Overall PA (ENMO, mG/5s)	0.010	0.042	<b>0.016</b>	0.009	0.054	<b>0.028</b>	0.012	0.077	<b>0.039</b>	0.010	0.064	<b>0.021</b>	0.011	0.076	<b>0.019</b>

**Control of Eating Questionnaire - Craving Control**

	Model 0			Model 1			Model 2			Model 3			Model 4		
	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P
Sedentary time (min/day)	0.036	0.012	0.192	0.030	0.025	0.276	0.057	0.064	0.195	0.038	0.045	0.182	0.033	0.044	0.266
LPA (min/day)	-0.098	0.018	0.119	-0.081	0.028	0.207	-0.111	0.059	0.212	-0.075	0.042	0.248	-0.070	0.042	0.332
MPA (min/day)	-0.129	0.035	<b>0.026</b>	-0.120	0.046	<b>0.039</b>	-0.143	0.080	0.106	-0.126	0.066	<b>0.032</b>	-0.120	0.063	0.058
VPA (min/day)	1.767	0.006	0.381	1.950	0.023	0.332	2.801	0.055	0.310	2.175	0.041	0.281	1.657	0.038	0.460
MVPA (min/day)	-0.087	0.018	0.099	-0.102	0.040	0.066	-0.116	0.069	0.165	-0.107	0.059	0.055	-0.105	0.058	0.081
MVPA B <sub>10</sub> (min/day)	-0.111	0.029	<b>0.045</b>	-0.438	0.018	0.574	-0.225	0.039	0.860	-0.622	0.037	0.428	-0.586	0.038	0.487
Overall PA (ENMO, mG/5s)	-0.505	0.003	0.518	-0.348	0.034	0.112	-0.301	0.053	0.350	-0.354	0.051	0.108	-0.384	0.054	0.110

**Control of Eating Questionnaire - Craving for Sweet**

	Model 0			Model 1			Model 2			Model 3			Model 4		
	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P
Sedentary time (min/day)	-0.003	0.005	0.390	-0.001	0.073	0.705	-0.003	0.135	0.465	-0.001	0.073	0.703	-0.001	0.096	0.732
LPA (min/day)	0.007	0.008	0.293	0.002	0.073	0.716	0.001	0.127	0.955	0.003	0.073	0.695	0.002	0.095	0.770
MPA (min/day)	0.009	0.013	0.177	0.006	0.079	0.312	0.009	0.141	0.329	0.007	0.080	0.291	0.005	0.100	0.423
VPA (min/day)	-0.154	0.004	0.478	-0.195	0.078	0.353	-0.209	0.135	0.456	-0.222	0.079	0.300	-0.242	0.103	0.305
MVPA (min/day)	0.007	0.011	0.219	0.005	0.078	0.378	0.007	0.138	0.392	0.005	0.077	0.363	0.004	0.098	0.480
MVPA B <sub>10</sub> (min/day)	0.122	0.015	0.146	0.107	0.084	0.190	0.196	0.161	0.126	0.114	0.085	0.171	0.103	0.105	0.246
Overall PA (ENMO, mG/5s)	0.023	0.007	0.322	0.013	0.074	0.587	0.012	0.129	0.711	0.012	0.073	0.609	0.011	0.096	0.668

**Control of Eating Questionnaire - Craving for Savoury**

	Model 0			Model 1			Model 2			Model 3			Model 4		
	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P

Sedentary time (min/day)	-0.001	0.001	0.771	-0.001	0.016	0.602	-0.004	0.026	0.323	-0.001	0.014	0.665	0.000	0.041	0.853
LPA (min/day)	0.005	0.008	0.302	0.007	0.028	0.164	0.005	0.017	0.495	0.006	0.022	0.261	0.004	0.046	0.440
MPA (min/day)	0.007	0.015	0.155	0.007	0.033	0.108	0.008	0.030	0.261	0.007	0.029	0.141	0.005	0.050	0.280
VPA (min/day)	-0.095	0.003	0.555	-0.082	0.016	0.610	-0.149	0.017	0.509	-0.104	0.016	0.524	-0.063	0.042	0.721
MVPA (min/day)	0.006	0.012	0.202	0.006	0.030	0.143	0.007	0.025	0.332	0.006	0.026	0.184	0.005	0.050	0.304
MVPA B <sub>10</sub> (min/day)	-0.010	0.000	0.866	-0.005	0.014	0.931	-0.041	0.012	0.693	0.001	0.013	0.983	-0.009	0.041	0.891
Overall PA (ENMO, mG/5s)	0.014	0.005	0.408	0.018	0.022	0.292	0.012	0.013	0.639	0.016	0.019	0.367	0.015	0.046	0.442

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**Control of Eating Questionnaire - Positive Mood**

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	Model 0			Model 1			Model 2			Model 3			Model 4		
	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P	$\beta$	R <sup>2</sup>	P
Sedentary time (min/day)	-0.013	0.005	0.404	-0.016	0.030	0.261	-0.007	0.009	0.731	-0.013	0.017	0.427	-0.10	0.028	0.542
LPA (min/day)	0.012	0.001	0.740	0.027	0.025	0.461	-0.004	0.007	0.940	0.013	0.013	0.729	0.018	0.027	0.640
MPA (min/day)	-0.028	0.005	0.409	-0.021	0.02	0.528	-0.010	0.008	0.817	-0.028	0.017	0.401	-0.040	0.036	0.239
VPA (min/day)	1.216	0.008	0.289	1.335	0.031	0.242	0.844	0.014	0.528	1.261	0.021	0.267	0.257	0.025	0.831
MVPA (min/day)	-0.022	0.003	0.491	-0.016	0.023	0.624	-0.005	0.007	0.904	-0.022	0.015	0.494	-0.036	0.035	0.261
MVPA B <sub>10</sub> (min/day)	-0.476	0.008	0.284	-0.433	0.028	0.327	0.184	0.008	0.764	-0.326	0.016	0.461	-0.795	0.050	0.077
Overall PA (ENMO, mG/5s)	-0.022	0.000	0.857	0.009	0.021	0.940	-0.015	0.007	0.926	-0.015	0.012	0.907	-0.088	0.029	0.499

Linear regression analyses were performed without adjusting for any covariate (model 0), and adjusting for sex (model 1), for sex and energy intake (model 2), for sex and BMI (model 3), and for sex and lean mass (model 4). The unstandardized  $\beta$  coefficient, R<sup>2</sup> and P values are provided. PA physical activity, LPA light-PA, MPA moderate-PA, VPA vigorous-PA, MVPA moderate-to-vigorous-PA, MVPA B<sub>10</sub> moderate-to-vigorous PA in bouts of ten minutes, ENMO Euclidean norm minus one.

**Supplementary Table 2.** Bivariate correlations between eating behaviour traits and body composition in young adults.

	Binge Eating	TFEQ			CoEQ		Positive Mood	
		Cognitive restraint	Uncontrolled eating	Emotional eating	Craving for sweet	Craving for savoury		
BMI (kg/m <sup>2</sup> )	0.259**	0.097	-0.052	0.084	-0.069	-0.098	0.085	0.072
Lean mass (kg)	0.186*	0.001	0.142	0.061	-0.010	-0.105	0.170	0.137
Fat mass (kg)	0.290***	0.174*	-0.073	0.107	-0.071	-0.023	0.046	0.006
Fat mass (%)	0.183*	0.189*	-0.159	0.071	-0.077	0.041	-0.046	-0.008
VAT mass (g)	0.228**	0.128	-0.043	0.057	-0.023	-0.156	0.102	0.110

Values are Pearson correlation coefficients ( $r$ ); \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ . TFEQ Three-Factor Eating Questionnaire; CoEQ Control of Eating Questionnaire; BMI body mass index; LM lean mass; FM fat mass; VAT visceral adipose tissue.

		TFEQ							
		Binge eating		Cognitive restraint		Uncontrolled eating		Emotional eating	
		MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
<i>n</i>		44	95	44	95	44	95	44	95
Sedentary time		-0.140	-0.210*	-0.138	0.074	-0.322*	-0.274**	-0.128	-0.097
LPA		0.262	0.280**	0.190	0.016	0.403**	0.325**	0.285	0.143
MPA		0.351*	0.303**	0.228	0.003	0.347*	0.375***	0.399**	0.170
VPA		0.096	-0.036	-0.064	0.008	0.181	0.008	0.098	-0.079
MVPA		0.334*	0.288**	0.208	0.007	0.346*	0.354***	0.379*	0.153
MVPA B <sub>10</sub>		0.206	0.148	0.285	0.084	0.067	0.181	0.230	0.146
Overall PA (ENMO, mG/5s)		0.247	0.291**	0.169	-0.028	0.329*	0.328**	0.268	0.144

		CoEQ							
		Craving control		Craving for sweet		Craving for savoury		Positive Mood	
		MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
<i>n</i>		44	95	44	95	44	95	44	95
Sedentary time		0.018	0.143	-0.082	-0.007	0.016	-0.087	-0.072	-0.117
LPA		-0.106	-0.11	0.179	-0.035	0.198	0.075	0.086	0.048
MPA		-0.133	-0.199	0.146	0.061	0.124	0.146	-0.118	-0.01
VPA		0.010	0.112	-0.063	-0.086	0.029	-0.075	0.178	0.063
MVPA		-0.117	-0.179	0.129	0.053	0.110	0.134	-0.100	-0.003
MVPA B <sub>10</sub>		0.086	-0.111	-0.014	0.164	-0.119	0.049	-0.219	-0.002

Overall PA (ENMO, mG/5s)	-0.082	-0.163	0.108	0.020	0.072	0.100	-0.007	0.015
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**Supplementary Table 3.** Bivariate correlations between eating behaviour traits and time spent in sedentary behaviour and habitual physical activity of different intensity in young men and women. Values are Pearson correlation coefficients ( $r$ ); \* $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\* $P < 0.001$ . PA physical activity, LPA light-PA, MPA moderate-PA, VPA vigorous-PA, MVPA moderate-to-vigorous-PA, MVPA B<sub>10</sub> moderate-to-vigorous-PA in bouts of ten minutes, ENMO Euclidean norm minus one.