TITLE: Objectively measured physical activity and sedentary behavior in successful weight loss maintainers

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Supporting Information

We have provided supporting information about our sensitivity analysis to examine whether seasonality impacted physical activity (PA) behavior in our study. We categorized March-August into the Spring/Summer season and September-February into the Fall/Winter season based on season categories for Denver, CO (1). Weight loss maintainers (WLM) were more likely to have PA behavior assess in the Spring/Summer seasons versus Fall/Winter as compared to normal weight controls (NC) and controls with overweight/obesity (OC) based on results from a Chi-Square test (p=0.01; see Table S1). However, there was no difference in total MVPA (minutes/day), guideline MVPA (minutes/day), LPA (minutes/day), sedentary time (minutes/day), or steps (count/day) in the Spring/Summer season as compared to the Fall/Winter season within each group, based on a two-samples t-test (p>0.05; see Table S2). In addition, when seasonality was added to the ANOVA model for total MVPA, guideline MVPA, LPA, sedentary time, and steps, results did not change (see Table S3). Therefore, we are not concerned that seasonality impacted PA behavior in this analysis.

Table S1: Comparison of Assessment Season across Subject Group [a]

Season	WLM n (column %)	NC n (column %)	OC n (column %)	Total	p-value
					0.01
Spring/Summer	17 (56.7%)	6 (18.2%)	11 (40.7%)	34	
Fall/Winter	13 (43.3%)	27 (81.8%)	16 (59.3%)	56	
Total	30	33	27	90	

Legend for Table S1

[a] Results from Chi-Square Test. Significant p values (alpha <0.05) indicated in **bold**. Weight Loss Maintainers (WLM); Normal Weight Controls (NC); Controls with Overweight/Obesity (OC).

Table S2: Comparison of Physical Activity Behavior by Season within Subject Group [a]

Subject Group	Spring/Summer Mean ± SD	Fall/Winter Mean ± SD	p-value
Total MVPA (min/day)			
WLM (n=30)	98 ± 41	91 ± 40	0.65
NC (n=33)	63 ± 18	71 ± 20	0.37
OC (n=27)	58 ± 24	54 ± 17	0.69
Guideline MVPA (min/day) [b]			
WLM (n=30)	37 ± 34	41 ± 34	0.62
NC (n=33)	14 ± 11	17 ± 15	0.71
OC (n=27)	9 ± 12	9 ± 10	0.93
LPA (min/day)			
WLM (n=30)	308 ± 95	266 ± 57	0.14
NC (n=33)	281 ± 102	282 ± 83	0.99
OC (n=27)	242 ± 77	229 ± 64	0.65
Sedentary Time (min/day)			
WLM (n=30)	595 ± 119	598 ± 86	0.94
NC (n=33)	588 ± 94	623 ± 104	0.44
OC (n=27)	659 ± 83	651 ± 79	0.81
Steps (count/day)			
WLM (n=30)	12641 ± 5310	11752 ± 4964	0.64
NC (n=33)	8103 ± 2299	9257 ± 2779	0.31
OC (n=27)	7246 ± 2792	6952 ± 2075	0.77

Legend for Table S2

[a] Results from Satterthwaite 2-samples t-test. Significant p values (alpha <0.05) indicated in **bold**. Weight Loss Maintainers (WLM); Normal Weight Controls (NC); Controls with Overweight/Obesity (OC); Moderate-to-Vigorous Intensity Physical Activity (MVPA); Light-Intensity Physical Activity (LPA).
[b] Data analyzed using a square root transformation, but data presented using untransformed mean ± SD.

Table S3: Comparison of activPAL^{TM} Parameters (Mean ± SD) across Subject Group, Controlled for Seasonality

activPAL^{TM} Parameter	WLM (n=30)	NC (n=33)	OC (n=27)	p-value, Omnibus F test	p-value, WLM:NC	p-value, WLM:OC	p-value, NC:OC
Total MVPA (min/day)	95 ± 31	69 ± 29	56 ± 29	**<0.01**	**<0.01**	**<0.01**	0.07
Guideline MVPA (min/day) [b]	39 ± 22	17 ± 23	9 ± 21	**<0.01**	**<0.01**	**0.01**	0.06
LPA (min/day)	290 ± 81	281 ± 79	234 ± 80	**0.02**	0.99	**0.02**	**0.02**
Sedentary Time (min/day)	596 ± 99	617 ± 100	654 ± 98	0.09	0.50	**0.03**	0.13
Steps (count/day)	12,256 ± 3,675	9,047 ± 3,667	7,072 ± 3,674	**<0.01**	**<0.01**	**<0.01**	**0.04**

Legend for Table S3

[a] Results from one-way ANOVA, controlling for seasonality (spring/summer vs. fall/winter). In all models, the p-value for seasonality was >0.05. Significant p values (alpha <0.05) indicated in **bold**. Weight Loss Maintainers (WLM); Normal Weight Controls (NC); Controls with Overweight/Obesity (OC); Moderate-to-Vigorous Intensity Physical Activity (MVPA); Light-Intensity Physical Activity (LPA).

[b] Data analyzed using a square root transformation, but data presented using untransformed mean ± SD.

References

1.   Denver weather Denver CO: Denver.com: A City Guide by Boulevards; 2017 [cited 2017 June 28]. Available from: http://www.denver.com/weather.