

**Weight loss is coupled with improvements to affective state in obese participants engaged in behavior change therapy based on incremental, self-selected “Small Changes”**

PAXMAN, Jenny <<http://orcid.org/0000-0003-3596-489X>>, HALL, Anna <<http://orcid.org/0000-0002-1491-7309>>, HARDEN, Charlotte, O'KEEFFE, Jean and SIMPER, Trevor <<http://orcid.org/0000-0002-4359-705X>>

Available from Sheffield Hallam University Research Archive (SHURA) at:

<http://shura.shu.ac.uk/5724/>

---

This document is the author deposited version. You are advised to consult the publisher's version if you wish to cite from it.

**Published version**

PAXMAN, Jenny, HALL, Anna, HARDEN, Charlotte, O'KEEFFE, Jean and SIMPER, Trevor (2011). Weight loss is coupled with improvements to affective state in obese participants engaged in behavior change therapy based on incremental, self-selected “Small Changes”. *Nutrition Research*, 31 (5), 327-337.

---

**Copyright and re-use policy**

See <http://shura.shu.ac.uk/information.html>

**Table 1 - Participant characteristics**

	<b>N</b>	<b>Baseline Age (y)</b>	<b>Baseline BMI (kg/m<sup>2</sup>)</b>	<b>Baseline Weight (kg)</b>
<b>Males</b>	<b>18</b>	<b>43.78 ± 10.07</b>	<b>37.36 ± 5.85</b>	<b>120.52 ± 16.94</b>
Completers	6	43.83 ± 4.02	35.30 ± 3.51	114.52 ± 8.71
Completers (missing data)	7	40.29 ± 6.53	34.41 ± 4.63	111.41 ± 11.60
Non-completers	5	48.60 ± 17.21	43.96 ± 4.65	140.46 ± 15.04
<b>Females</b>	<b>53</b>	<b>46.26 ± 12.31</b>	<b>37.26 ± 4.82</b>	<b>99.46 ± 15.89</b>
Completers	34	47.47 ± 12.00	37.44 ± 4.41	101.11 ± 15.42
Completers (missing data)	11	46.82 ± 13.05	37.72 ± 6.27	95.93 ± 17.76
Non-completers	8	40.38 ± 12.51	36.36 ± 4.87	98.24 ± 17.35
<b>All Participants</b>	<b>71</b>	<b>45.63 ± 11.76</b>	<b>37.29 ± 5.05</b>	<b>104.80 ± 18.50</b>
Completers	40	46.93 ± 11.21	37.12 ± 4.32	103.12 ± 15.31
Completers (missing data)	18	44.28 ± 11.22	36.43 ± 5.78	101.95 ± 17.13
Non-completers	13	43.54 ± 14.40	39.01 ± 6.05	113.89 ± 26.62

Data are presented as means ± SD.

## Table 2 - Physical measures

Measure	N*	Baseline	6 Wks	12 Wks	F	P
Weight (Kg)	56	102.95 ± 15.47	101.38 ± 15.81	100.09 ± 16.01	46.231	.000 <sup>a</sup>
BMI (Kg/m <sup>2</sup> )	56	36.944 ± 4.78	36.370 ± 4.91	35.897 ± 4.95	47.464	.000 <sup>a</sup>
Lean Weight (Kg)	56	55.72 ± 14.40	56.43 ± 11.52	56.21 ± 12.05	0.420	.549 <sup>a</sup>
Body Fat (%)	56	44.61 ± 7.80	44.18 ± 8.07	43.76 ± 8.56	4.088	.019
Waist Circumference (cm)	56	113.48 ± 11.37	108.14 ± 18.90	108.51 ± 11.97	6.929	.008 <sup>a</sup>
Systolic Blood Pressure (mmHg)	55	132.08 ± 18.73	129.99 ± 15.30	129.52 ± 15.16	1.212	.301
Diastolic Blood Pressure (mmHg)	55	88.97 ± 11.31	88.52 ± 10.72	87.06 ± 10.65	1.157	.318

Data are presented as means ± SD. Data were analysed by one-way repeated measures ANOVA.

\*number of participants completing all stages

<sup>a</sup> with Huynh-Feldt correction

### Table 3 - Psychological measures

Measure	N*	Baseline	6 Wks	12 Wks	F	P
<b>General Wellbeing</b>	49	58.92 ± 21.22	71.45 ± 17.90	78.04 ± 14.60	26.873	.000 <sup>a</sup>
<b>TFEQ-18R</b>						
Cognitive Restraint	50	26.67 ± 21.82	52.00 ± 28.70	61.00 ± 27.27	34.961	.000
Uncontrolled Eating	50	48.89 ± 33.67	26.22 ± 27.75	19.56 ± 21.83	23.951	.000 <sup>a</sup>
Emotional Eating	50	75.33 ± 37.38	60.00 ± 41.51	42.67 ± 44.69	18.611	.000
<b>POMS</b>						
Total Mood Disturbance	48	31.19 ± 34.03	8.25 ± 27.41	2.67 ± 24.96	24.272	.000
Tension-anxiety	50	8.70 ± 7.52	5.70 ± 5.84	4.44 ± 4.79	10.471	.000
Depression-dejection	50	13.28 ± 13.12	7.14 ± 9.76	4.48 ± 7.37	14.240	.000 <sup>a</sup>
Anger-hostility	49	7.53 ± 7.80	3.53 ± 4.29	3.90 ± 6.20	10.890	.000
Vigour-activity	50	11.94 ± 7.23	15.90 ± 7.32	17.96 ± 5.95	17.158	.000 <sup>a</sup>
Fatigue-inertia	49	5.27 ± 6.64	3.41 ± 5.55	3.84 ± 3.97	2.458	.107 <sup>a</sup>
Confusion-bewilderment	50	8.18 ± 5.88	5.40 ± 4.73	3.86 ± 3.65	18.663	.000

Data are presented as means ± SD. Data were analysed by one-way repeated measures ANOVA.

\*number of participants completing all stages

<sup>a</sup> with Huynh-Feldt correction

Note: where n=49 or n=48 as opposed to n=50, questionnaires were incomplete and these participants have been excluded from the corresponding part of the analysis.

**Table 4 - Dietary intake measures**

Measure	N*	Baseline	6 Wks	12 Wks	F	P
Energy (kcal)	46	2191.24 ± 577.30	1782.52 ± 435.53	1695.87 ± 628.07	12.551	.000 <sup>a</sup>
(kJ)	46	9.17 ± 2.42	7.46 ± 1.82	7.10 ± 2.63		
Protein (% total energy)	46	17.00 ± 3.52	18.28 ± 4.25	19.07 ± 3.72	5.314	.007
Carbohydrate (% total energy)	46	44.96 ± 7.61	46.38 ± 6.76	48.25 ± 7.95	3.727	.028
Starch (% total energy)	46	26.12 ± 5.63	26.13 ± 5.47	26.90 ± 6.89	0.422	.657
Sugars (% total energy)	46	18.94 ± 6.43	20.34 ± 6.07	21.45 ± 7.24	3.382	.044 <sup>a</sup>
Fat (% total energy)	46	34.52 ± 7.15	32.25 ± 6.61	30.02 ± 6.52	8.940	.000 <sup>a</sup>
SFA (% total energy)	46	11.79 ± 3.84	10.78 ± 3.26	10.29 ± 2.90	3.331	.040
MUFA (% total energy)	46	10.68 ± 2.80	10.50 ± 2.25	10.06 ± 2.68	0.916	.394 <sup>a</sup>
PUFA (% total energy)	46	5.92 ± 2.10	6.06 ± 2.21	5.60 ± 1.89	0.802	.452
Alcohol (% total energy)	46	3.42 ± 4.23	3.08 ± 4.07	2.53 ± 3.75	1.209	.303
Englyst Fibre (g)	46	17.00 ± 5.86	17.27 ± 6.46	17.30 ± 8.37	0.039	.934 <sup>a</sup>

Data are presented as means ± SD. Data were analysed by one-way repeated measures ANOVA.

\*number of participants completing all stages

<sup>a</sup> with Huynh-Feldt correction

**Table 5 - Prevalence of underreporting<sup>a</sup> at each dietary assessment period**

Measurement Period	N*	Underreporters N (%)	Non-underreporters N (%)	X <sup>2</sup>	df	P
Baseline	46	19 (41)	27 (59)	8.788	2	.012
6 Weeks	46	30 (65)	16 (35)			
12 Weeks	46	32 (70)	14 (30)			

Data were analysed by Pearson Chi-square.

\*number of participants completing all stages

<sup>a</sup> Underreporting is defined here as EI:BMR <1.1 based on Schofield equation (revised, DH, 1991).

### Table 6 - Blood measures

Measure	N*	Baseline	6 Wks	12 Wks	F	P
Total Cholesterol (mmol/L)	55	4.67 ± .85	4.62 ± .77	4.64 ± .77	.267	.736 <sup>a</sup>
Triglycerides (mmol/L)	42	1.76 ± .97	1.75 ± .73	1.71 ± .67	.176	.798 <sup>a</sup>
HDL Cholesterol (mmol/L)	53	1.23 ± .36	1.28 ± .45	1.13 ± .32	3.452	.040 <sup>a</sup>
Glucose (mmol/L)	56	5.19 ± .58	5.20 ± .90	5.13 ± .57	.281	.738 <sup>a</sup>

Data are presented as means ± SD. Data were analysed by one-way repeated measures ANOVA.

\*number of participants completing all stages

<sup>a</sup> with Huynh-Feldt correction