Supplemental Figure 1
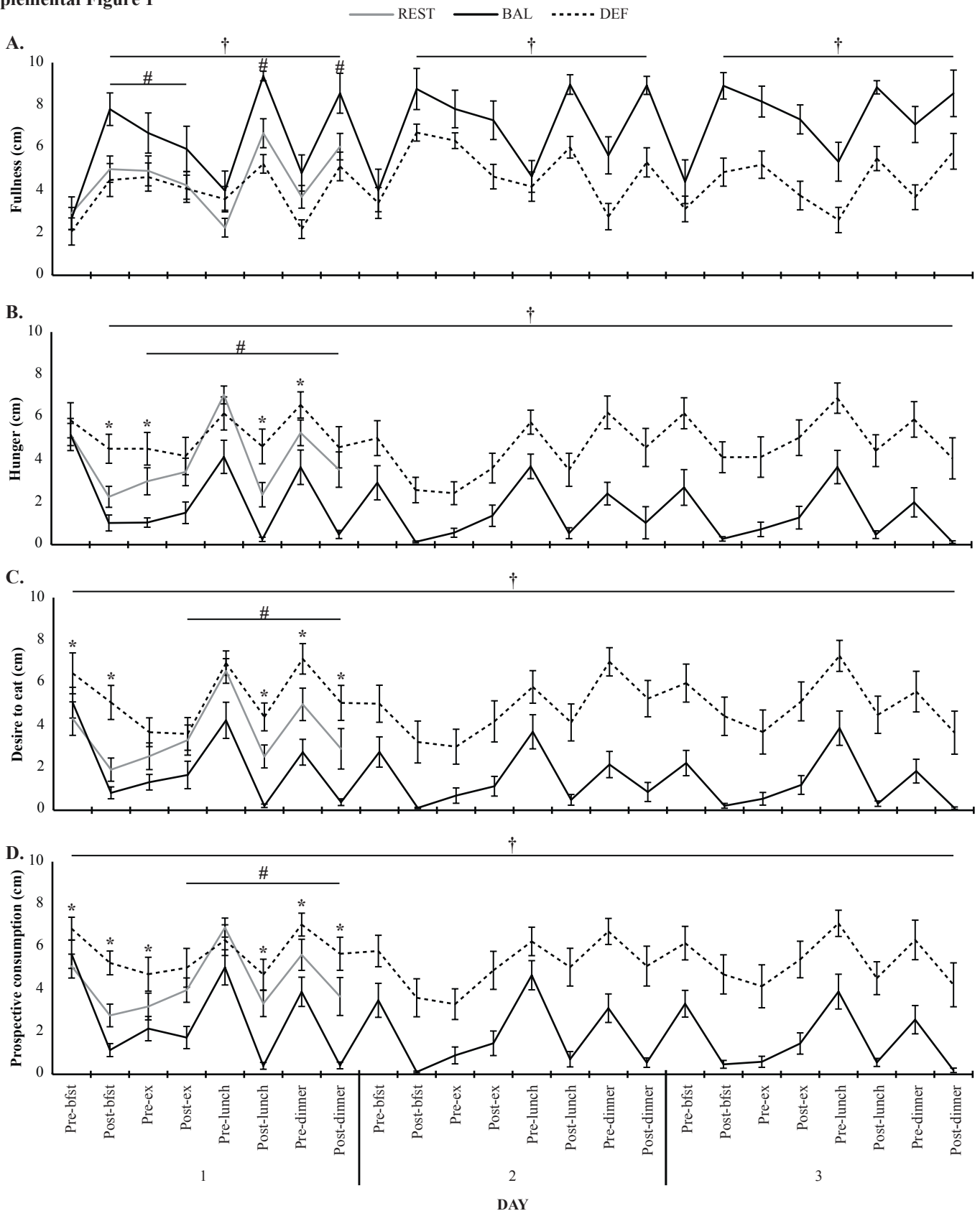

Supplemental Figure 1. Appetite ratings during 72-hr simulated sustained military operation (SUSOPS). Bars are mean ± SEM. Differences from REST on day 1 ($P_{condition*timepoint} \leq 0.06$ for all ratings), and differences between DEF and BAL on days 1-3 ($P_{condition*timepoint} \leq 0.05$ for all ratings) analyzed by general linear model with correlated errors. *DEF different from REST ($P < 0.05$).

#BAL different from REST ($P < 0.05$). †DEF different from BAL ($P < 0.05$).

BAL, energy balance condition; DEF, energy deficit condition; Ex, exercise; REST, pre-SUSOPS sedentary condition.

Supplemental Table 1. Effect sizes for between-condition differences in appetite ratings measured during a 72-hr simulated sustained military operation under conditions of energy balance (BAL) and energy deficit (DEF).

	SUSOPS day[1]			Cohen's				P-values[2]				
	1	2	3	f^2	Cond.	Day	Time	C*D	C*T	T*D	C*D*T
Fullness											
BAL v. REST	0.59	0.90	1.05								
DEF v. REST	0.26	0.17	0.13								
DEF v. BAL	0.82	0.78	1.18	0.89	<0.001	<0.001	<0.001	0.10	0.001	0.55	0.90
Hunger											
BAL v. REST	0.75	1.06	1.15								
DEF v. REST	0.43	0.08	0.42								
DEF v. BAL	1.18	1.15	1.56	1.15	<0.001	0.001	<0.001	0.02	0.05	0.31	0.78
Desire to eat											
BAL v. REST	0.61	0.91	1.03								
DEF v. REST	0.65	0.40	0.50								
DEF v. BAL	1.30	1.28	1.50	1.15	<0.001	0.001	<0.001	0.32	0.01	0.06	0.67
Prospective consumption											
BAL v. REST	0.75	1.07	1.25								
DEF v. REST	0.61	0.32	0.39								
DEF v. BAL	1.33	1.30	1.52	1.19	<0.001	0.001	<0.001	0.30	<0.001	0.33	0.92

SUSOPS, simulated sustained military operations; Cond., condition; C, condition; D, day; T, time; REST, pre-SUSOPS sedentary condition.

[1]Values are Cohen's *d* effect size for between-condition comparisons.

[2]P-values are from general linear model with correlated errors which only included BAL and DEF (n=10).

Supplemental Table 2. Effect sizes for between-condition differences in food preferences measured during a 72-hr simulated sustained military operation under conditions of energy balance (BAL) and energy deficit (DEF).

	Comparison[1]			Cohens's f^2	P-value[2]
	BAL v. REST	**DEF v. REST**	**DEF v. BAL**		
Fat (high-fat vs. low-fat)					
Implicit wanting	0.16	0.31	0.41	0.10	0.19
Relative preference	0.24	0.21	0.41	0.10	0.11
Explicit liking	0.42	0.09	0.42	0.09	0.04
Explicit wanting	0.18	0.39	0.49	0.10	0.07
Taste (sweet vs savory)					
Implicit wanting	0.31	0.16	0.11	0.06	0.57
Relative preference	0.33	0.17	0.16	0.02	0.23
Explicit liking	0.29	0.26	0.03	0.06	0.41
Explicit wanting	0.13	0.31	0.20	0.04	0.36

REST, sedentary control condition.

[1]Values are Cohen's *d* effect size for between-condition comparisons.

[2]Between-condition differences between analyzed by general linear model with correlated errors (n=7). P-value is main effect of condition.

Supplemental Table 3. Appetite-mediating hormone concentrations measured during a 72-hr simulated sustained military operation under conditions of energy balance (BAL) and energy deficit (DEF).[1]

| | SUSOPS | | | | Recovery | | | P-values[2] | | |
	Day 1-Fasting	Day 1-PostEx	Day 3-Fasting	Day 3-PostEx	Day 2-Fasting	Day 4-Fasting	Cohen's f^2	Condition	Time point	Condition* Time point
Leptin (ng/mL)							0.02	0.03	0.005	0.02
BAL	11.5 ± 7.0^a	-	9.4 ± 5.3^b	-	$12.5 \pm 8.1^{a,c}$	13.0 ± 7.4^c				
DEF	11.8 ± 6.4^a	-	$\mathbf{6.5 \pm 3.7^{b*}}$	-	$\mathbf{10.3 \pm 6.2^{a*}}$	11.8 ± 7.4^a				
Cohen's d[3]	0.04	-	0.63	-	0.31	0.16				
Acylated ghrelin (pg/mL)[4]							1.00	0.07	<0.001	<0.001
BAL	$104 \pm 18^{a,b}$	58 ± 11^c	$94 \pm 27^{a,d}$	67 ± 14^c	121 ± 29^b	$114 \pm 44^{b,d}$				
DEF	111 ± 38^a	$\mathbf{84 \pm 22^{b*}}$	$\mathbf{83 \pm 31^{b*}}$	$\mathbf{97 \pm 31^{a,b*}}$	140 ± 48^c	103 ± 24^c				
Cohen's d	0.24	1.49	0.38	1.25	0.48	0.31				
PYY (pg/mL)							0.58	0.04	<0.001	0.02
BAL	62 ± 9^a	81 ± 21^b	$52 \pm 10^{a,c}$	76 ± 6^b	48 ± 11^c	50 ± 9^c				
DEF	64 ± 10^a	$\mathbf{62 \pm 21^{a,b*}}$	50 ± 11^c	$\mathbf{62 \pm 17^{a,b*}}$	49 ± 19^c	$53 \pm 19^{b,c}$				
Cohen's d	0.21	0.90	0.19	1.10	0.06	0.20				
GLP-1 (pmol/L)[4]							0.31	0.04	<0.001	0.002
BAL	5.1 ± 1.3^a	8.3 ± 1.3^b	6.4 ± 2.4^c	7.4 ± 1.9^b	$5.5 \pm 1.6^{a,c}$	$5.9 \pm 2.2^{a,c}$				
DEF	5.6 ± 2.5	$\mathbf{6.1 \pm 1.2^*}$	6.2 ± 2.7	$\mathbf{6.0 \pm 1.8^*}$	6.6 ± 2.8	5.5 ± 1.3				
Cohen's d	0.25	1.76	0.08	0.76	0.48	0.22				
PP (pg/mL)[5]							1.10	0.05	<0.001	0.006
BAL	41 ± 31^a	426 ± 319^b	29 ± 24^a	331 ± 250^b	60 ± 68^a	52 ± 67^a				
DEF	43 ± 28^a	$\mathbf{224 \pm 160^{b*}}$	35 ± 23^a	$\mathbf{213 \pm 217^{b*}}$	78 ± 132^a	82 ± 92^a				
Cohen's d	0.07	0.80	0.26	0.50	0.17	0.37				
Insulin (mIU/mL)[4]							0.85	<0.001	<0.001	<0.001
BAL	$10.6 \pm 5.4^{a,b}$	49.8 ± 29.6^c	7.1 ± 2.5^a	20.0 ± 9.1^d	12.0 ± 8.4^b	12.9 ± 7.8^b				
DEF	10.1 ± 4.3^a	$\mathbf{25.9 \pm 14.2^{b*}}$	6.8 ± 3.6^c	$\mathbf{6.5 \pm 4.3^{c*}}$	11.2 ± 6.8^a	15.1 ± 12.2^a				
Cohen's d	0.10	1.03	0.10	1.90	0.10	0.21				

SUSOPS, simulated sustained military operations; PostEx; post-exercise non-fasting time point; PYY, peptide-YY; GLP-1, glucagon-like peptide-1; PP, pancreatic polypeptide.

[1]Values are mean ± SD.

[2]Differences between BAL and DEF analyzed by general linear model with correlated errors (n=10). Within a condition, values sharing a superscript letter are not significantly different (P<0.05). *DEF different from BAL (P<0.05).

[3]Cohen's d effect size for difference between DEF and BAL.

[4]Log$_{10}$-transformed for analysis.

[5]Square root-transformed for analysis.