Supplemental Table 1. Results of regression analyses examining associations of total EAA and leucine intake with body weight and composition (n=195).

Predictor	BMI			%BF			% Muscle		
	Estimate	95% CI	*p*	Estimate	95% CI	*p*	Estimate	95% CI	*p*
Main Effects:									
EAA intake, mg/kg BW/day	-0.45	-0.57, -0.34	*<0.001*	-0.34	-0.45, -0.22	*<0.001*	0.24	0.18, 0.31	*<0.001*
Average daily steps	-0.32	-0.44, -0.21	*<0.001*	-0.24	-0.36, -0.13	*<0.001*	0.17	0.10, 0.24	*<0.001*
Interaction:									
EAA intake x Average daily steps	0.08	-0.03, 0.18	*0.159*	0.029	-0.08, 0.13	*0.591*	-0.06	0.12, 0.01	*0.078*
Main Effects:									
Leucine intake, mg/kg BW/day	-0.46	-0.58, -0.35	*<0.001*	-0.34	-0.45, -0.22	*<0.001*	0.25	0.18, 0.31	*<0.001*
Average daily steps	-0.32	-0.43, -0.20	*<0.001*	-0.25	-0.36, -0.13	*<0.001*	0.17	0.10, 0.24	*<0.001*
Interaction:									
Leucine intake x Average daily steps	0.09	-0.02, 0.20	*0.098*	0.03	-0.08, 0.13	*0.625*	-0.06	-0.12, 0.01	*0.083*

Model (EAA): Outcomes (BMI/% BF/% Muscle) = EAA intake (mg/kg BW/day) + Average daily step count + covariates (age and sex)

Model (Leucine): Outcomes (BMI/% BF/% Muscle) = Leucine intake (mg/kg BW/day) + Average daily step count + covariates (age and sex)

Continuous variables were mean-centered and scaled for analysis.

One outlier was removed from the analysis.

For interaction results, $p < 0.1$ for significance.

Abbreviation: EAA = essential amino acid; BW = body weight; d = day; BMI = body mass index; % BF = percent body fat; % Muscle = percent muscle mass calculated relative to body weight; CI = confidence interval.

Supplemental Table 2. Predicted marginal slopes between measures of EAA intake and body composition measures across values for average daily step count. Estimates were derived from models with observed significant interactions between EAA intake and average daily steps.

Marginal Slope Effect	Average steps/day (PA category)	Estimate	95% CI	*p*
Total EAA intake (g/kg BW/d) - % Muscle	5,000 steps/day (Physically inactive)	0.274	0.196, 0.351	< *0.001*
	7,500 steps/day (Moderately active)	0.229	0.161, 0.297	< *0.001*
	10,000 steps/day (Physically active)	0.191	0.105, 0.277	< *0.001*
	12,000 steps/day (Very active)	0.164	0.057, 0.271	*0.0028*
Leucine intake (g/kg BW/d) - BMI	5,000 steps/day (Physically inactive)	-0.513	-0.648, -0.377	< *0.001*
	7,500 steps/day (Moderately active)	-0.441	-0.559, -0.323	< *0.001*
	10,000 steps/day (Physically active)	-0.380	-0.526, -0.234	< *0.001*
	12,000 steps/day (Very active)	-0.337	-0.518, -0.155	< *0.001*
Leucine intake (g/kg BW/d) - % Muscle	5,000 steps/day (Physically inactive)	0.276	0.199, 0.353	< *0.001*
	7,500 steps/day (Moderately active)	0.233	0.165, 0.301	< *0.001*
	10,000 steps/day (Physically active)	0.197	0.113, 0.281	< *0.001*
	12,000 steps/day (Very active)	0.171	0.066, 0.275	*0.0015*

Abbreviation: BW = body weight; d = day; BMI = body mass index; CI = confidence interval; % BF = percent body fat; % Muscle = percent muscle mass calculated relative to body weight; CI = confidence interval; EAA = essential amino acids; PA = physical activity.