

SUPPLEMENTAL MATERIAL

Table S1. Estimated model coefficients for the gravitational dose-response curves displayed in Figures 4 and 5 generated by linear mixed models (LMMs) and generalized linear mixed models (GLMMs). Estimated coefficients are presented as mean \pm SE. Only significant terms were included in the models.

	Model [†]	Link [‡]	Units	Estimated Coefficients [§]			Std Dev of Random Effect ^{††}
				β_0 Intercept	β_1 $\sin(\text{Angle})^{\parallel}$	β_2 Position [¶]	
Hemodynamic Measurements:							
HR	LMM	$\mu = \eta$	bpm	71.4 \pm 2.0	12.4 \pm 1.1	5.6 \pm 0.7	6.6
SV	LMM	$\mu = \eta$	ml	75.3 \pm 3.1	-29.3 \pm 1.6	-8.8 \pm 1.6	9.9
CO	LMM	$\mu = \eta$	l/min	5.20 \pm 0.19	-1.30 \pm 0.10	-0.19 \pm 0.10	0.61
TPR	LMM	$\mu = \eta$	mmHg.s/ml	1.13 \pm 0.04	0.41 \pm 0.03	0.07 \pm 0.03	0.12
SBP	LMM	$\mu = \eta$	mmHg	124.0 \pm 1.9	4.1 \pm 1.5	-	6.0
DBP	LMM	$\mu = \eta$	mmHg	76.7 \pm 1.2	7.8 \pm 1.1	-	3.6
RPP	LMM	$\mu = \eta$	mmHg/min	8477 \pm 239	1638 \pm 145	486 \pm 140	752
VO2	LMM	$\mu = \eta$	l/min	0.23 \pm 0.02	-	0.04 \pm 0.01	0.05
Time-Domain Autonomic Indices:							
SDNN	GLMM	$\ln(\mu) = \eta$	ms	3.928 \pm 0.096	-0.300 \pm 0.037	-	0.148
RMSSD	GLMM	$\ln(\mu) = \eta$	ms	3.399 \pm 0.148	-0.559 \pm 0.044	-0.147 \pm 0.041	0.213
HRVTi	GLMM	$\ln(\mu) = \eta$	-	2.419 \pm 0.083	-0.199 \pm 0.037	-	0.131
BRS	GLMM	$\ln(\mu) = \eta$	ms/mmHg	2.422 \pm 0.104	-0.631 \pm 0.054	-	0.184
Frequency-Domain Autonomic Indices:							
LF	GLMM	$\ln(\mu) = \eta$	ms ²	6.564 \pm 0.125	-0.326 \pm 0.074	-	0.238
HF	GLMM	$\ln(\mu) = \eta$	ms ²	5.470 \pm 0.243	-1.080 \pm 0.100	-	0.490
LFNorm	LMM	$\mu = \eta$	-	73.6 \pm 2.4	13.1 \pm 1.6	-	7.8
HFNorm	LMM	$\mu = \eta$	-	26.4 \pm 2.4	-13.1 \pm 1.6	-	7.8
LF/HF	GLMM	$\ln(\mu) = \eta$	-	1.198 \pm 0.129	0.634 \pm 0.078	-	0.268

Notes:

[†]All models use a linear predictor of the form: $\eta_{ij} = \beta_0 + \beta_1 \sin(\text{Angle}) + \beta_2 (\text{Position}_j) + \gamma_i + \varepsilon_{ij}$ for subjects i ($i = 1 : 12$) and position j ($j = 0 : 1$). All GLMMs have a Gamma distribution.

[‡]Link function between the linear predictor, η , and the expectation of the dependent variable, μ .

[§]For GLMMs, coefficients β are given on the scale of the linear predictor for subject i , $\eta_i = \mathbf{X}\beta + \gamma_i$. The coefficient β_3 corresponding to the interaction effect $\sin(\text{Angle}) \times \text{Position}$ was never significant so was not included in the models or table.

^{||}Sine of tilt angle from -0.707 ($\sin(-45^\circ)$) to 0.707 ($\sin(45^\circ)$), positive angles represent head up tilt, negative angles represent head down tilt.

[¶] Position_j : supine = 0, prone = 1.

^{††}Standard deviation, σ , of random intercept, γ , for subject i . $\gamma_i \sim N(0, \sigma^2)$. Units for σ are the same as the estimated coefficients.