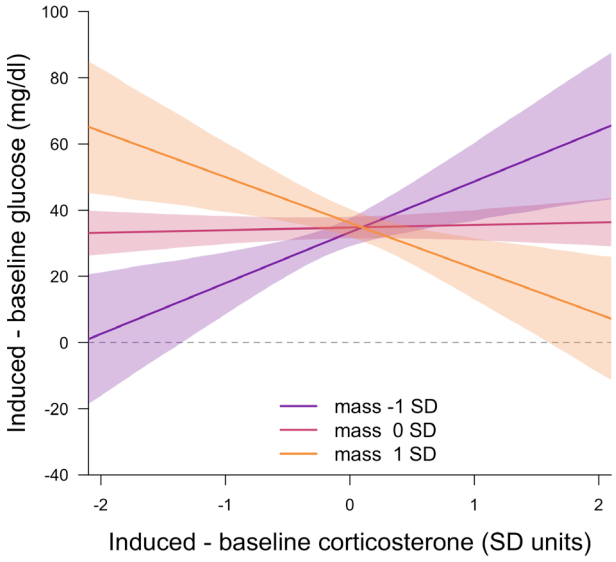

Fig. S1. Illustration of the interaction between adult mass and the change in corticosterone from baseline to stress-induced samples as a predictor of the change in glucose concentration over the same time period. Solid lines and shaded regions show the maximum likelihood estimate and 95% confidence interval for the relationship among adults 1 SD below the mean (purple), at the mean mass (red), or 1 SD above the mean (orange). Confidence intervals were computed based on sampling from the fit model (see text).

Table S1. Total sample sizes for glucose measurements by year, location, and sample type.

		Adults			Nestlings		
State	Year	Base	Induced	Post-Cortrosyn	Base	Induced	Post-Cortrosyn
NY	2016	244	178	-	-	-	-
NY	2017	140	138	-	-	-	-
NY	2018	188	123	-	-	-	-
NY	2019	204	147	45	185	177	159
AK	2016	117	84	-	-	-	-
AK	2017	134	100	-	-	-	-
TN	2018	228	167	-	-	-	-
WY	2018	236	160	-	-	-	-

Table S2. Overall Pearson correlation between measures in New York adults

	Base glucose	Induced glucose	Glucose response	Base cort.	Induced cort.	Cort. response
Base glucose		-	-	-	-	-
Induced glucose	0.26		-	-	-	-
Glucose response	-0.40	0.78		-	-	-
Base corticosterone	0.06	-0.02	-0.06		-	-
Induced corticosterone	-0.03	-0.11	-0.08	0.15		-
Corticosterone response	-0.06	-0.09	-0.05	-0.33	0.89	

Table S3. Results of linear mixed models with glucose or corticosterone as the response and sample type as a categorical predictor.

	Adult Corticosterone		**Adult Glucose**		**Nestling Corticosterone**		**Nestling Glucose**	
Predictors	*Estimates*	*CI*	*Estimates*	*CI*	*Estimates*	*CI*	*Estimates*	*CI*
Intercept (Base / Female)	4.06	2.88 – 5.23	213.38	210.51 – 216.26	6.25	3.14 – 9.37	204.21	194.81 – 213.61
Induced	25.74	24.29 – 27.18	30.71	27.25 – 34.16	18.70	16.07 – 21.33	18.00	10.13 – 25.87
Post-Cortrosyn	37.55	33.41 – 41.69	60.70	50.76 – 70.64	22.99	20.24 – 25.74	14.81	6.67 – 22.95
Sex (Male)	4.61	1.99 – 7.23	-8.20	-14.59 – -1.82				
ICC	0.12		0.14		0.30		0.31	
N	327_{band}		331_{band}		43_{nest}		43_{nest}	
Observations	1401		1407		521		521	
Marginal R^2 / Conditional R^2	0.471 / 0.535		0.201 / 0.310		0.302 / 0.510		0.030 / 0.326	

Table S4. Results of linear mixed models on New York adults (upper) and nestlings (lower) with glucose as the response variable and corticosterone, mass, a corticosterone by mass interaction, and sex as predictors. In each case, the corticosterone measure included spans the same interval as the glucose response variable. Unsupported interactions were dropped. Corticosterone and mass are scaled to a mean of zero and standard deviation of one to make effect sizes easier to interpret.

	Baseline Glucose			**Induced - Base Glucose**			**Post-Cortrosyn - Induced Glucose**		
Predictors	*Estimates*	*CI*	*p*	*Estimates*	*CI*	*p*	*Estimates*	*CI*	*p*
Intercept	213.39	211.14 – 215.64	**<0.001**	34.74	30.76 – 38.71	**<0.001**	17.48	-0.21 – 35.17	0.053
Corticosterone	1.66	-0.38 – 3.70	0.110	0.77	-2.89 – 4.44	0.679	-5.89	-14.83 – 3.06	0.191
Mass	-2.90	-4.95 – -0.85	**0.006**	1.44	-1.86 – 4.73	0.393	3.29	-9.15 – 15.73	0.596
Sex (male)	-2.06	-8.88 – 4.76	0.555	-14.58	-25.47 – -3.70	**0.009**			
Corticosterone * Mass				4.34	0.69 – 8.00	**0.020**			
ICC	0.04			0.13					
N	325 $_{band}$			318 $_{band}$					
Observations	761			568			45		
Marginal R^2 / Conditional R^2	0.014 / 0.057			0.027 / 0.156			0.049 / 0.003		

	Baseline Glucose			**Induced - Base Glucose**			**Post-Cortrosyn - Induced Glucose**		
Predictors	*Estimates*	*CI*	*p*	*Estimates*	*CI*	*p*	*Estimates*	*CI*	*p*
Intercept	206.51	195.22 – 217.80	**<0.001**	17.45	11.08 – 23.81	**<0.001**	-4.24	-19.17 – 10.68	0.577
Corticosterone	-3.61	-10.71 – 3.50	0.320	-5.52	-10.95 – -0.09	**0.046**	-4.05	-14.90 – 6.81	0.465
Mass	-2.48	-9.01 – 4.05	0.456	5.57	-0.19 – 11.33	0.058	9.14	-3.43 – 21.71	0.154
Corticosterone * Mass	6.33	-0.10 – 12.76	0.054						
ICC	0.60			0.16			0.38		
N	43 $_{nest}$			41 $_{nest}$			39 $_{nest}$		
Observations	182			172			151		
Marginal R^2 / Conditional R^2	0.032 / 0.614			0.047 / 0.200			0.025 / 0.392		

Table S5. Results of linear mixed models with baseline glucose or induced – baseline glucose as the response and corticosterone, mass, and their interaction as predictors in each of the four studied populations. Only adult females are included. Predictors are scaled to a mean of zero and standard deviation of one.

	AK Base Glucose			**NY Base Glucose**			**TN Base Glucose**			**WY Base Glucose**		
Predictors	*Estimates*	*CI*	*p*	*Estimates*	*CI*	*p*	*Estimates*	*CI*	*p*	*Estimates*	*CI*	*p*
Intercept	207.69	203.11 – 212.26	**<0.001**	213.40	211.10 – 215.70	**<0.001**	211.45	206.64 – 216.25	**<0.001**	198.71	194.14 – 203.29	**<0.001**
Base Corticosterone	1.53	-2.38 – 5.45	0.443	1.50	-0.69 – 3.70	0.180	-2.18	-6.62 – 2.25	0.335	-2.20	-7.27 – 2.87	0.395
Mass	-4.07	-7.99 – -0.14	**0.042**	-2.99	-5.19 – -0.78	**0.008**	-3.21	-7.22 – 0.80	0.117	-4.75	-9.08 – -0.42	**0.031**
Corticosterone * Mass	-0.85	-4.55 – 2.85	0.654	1.16	-1.17 – 3.50	0.330	2.07	-2.73 – 6.87	0.399	0.67	-5.52 – 6.85	0.833
ICC	0.18			0.04			0.22			0.27		
N	71 $_{band}$			251 $_{band}$			75 $_{band}$			112 $_{band}$		
Observations	198			684			184			203		
Marginal R^2 / Conditional R^2	0.026 / 0.197			0.015 / 0.054			0.023 / 0.239			0.031 / 0.292		

	AK Induced - Base Glucose			**NY Induced - Base Glucose**			**TN Induced - Base Glucose**			**WY Induced - Base Glucose**		
Predictors	*Estimates*	*CI*	*p*	*Estimates*	*CI*	*p*	*Estimates*	*CI*	*p*	*Estimates*	*CI*	*p*
Intercept	35.52	28.41 – 42.62	**<0.001**	34.68	30.71 – 38.65	**<0.001**	28.05	22.21 – 33.90	**<0.001**	47.45	39.58 – 55.33	**<0.001**
Induced - Base Corticosterone	-0.24	-6.99 – 6.50	0.943	0.62	-3.18 – 4.42	0.749	-1.35	-7.40 – 4.69	0.658	1.95	-5.82 – 9.71	0.620
Mass	2.52	-3.89 – 8.93	0.441	0.43	-3.04 – 3.90	0.809	1.88	-3.64 – 7.41	0.501	2.69	-4.78 – 10.16	0.477
Corticosterone * Mass	5.22	-2.38 – 12.82	0.178	3.98	0.07 – 7.89	**0.046**	-2.79	-7.60 – 2.02	0.254	3.82	-2.70 – 10.34	0.248
ICC	0.12			0.13								
N	69 $_{band}$			250 $_{band}$								
Observations	134			500			123			131		
Marginal R^2 / Conditional R^2	0.017 / 0.135			0.008 / 0.139			0.018 / -0.007			0.017 / -0.007		