

**Table S1. Average anti-tetanus antibody responses for the primary response (outside of the molt season) and secondary response (during molt) for WD, WR, and Y canaries.**

	Descriptive results			ANOVA results		
	Color type	Sample size	Average response $\pm$ SE (milliOD/min)	Variable	F (df)	P
Primary response (non-molt)	WD	3 F, 1 M	0.51 $\pm$ 0.04	Color type	2.358 (2,26)	0.114
	WR	14 F, 9 M	1.02 $\pm$ 0.12	Sex	1.255 (1,26)	0.273
	Y	3 F, 2 M	0.67 $\pm$ 0.12	Interaction	0.783 (2,26)	0.467
Secondary response (molt)	WD	6 F, 2 M	2.08 $\pm$ 0.26	Color type	1.164 (2,46)	0.321
	WR	10 F, 13 M	1.61 $\pm$ 0.17	Sex	4.190 (1,46)	0.046
	Y	7 F, 14 M	1.60 $\pm$ 0.20	Interaction	1.476 (2,46)	0.239

F = female, M = male; df = degrees of freedom (numerator, denominator).

**Table S2. Average total antioxidant capacity of plasma samples from WD, WR, and Y canaries, inside and outside of molt.**

	Descriptive results			ANOVA results		
	Color type	Sample size	Average response $\pm$ SE (CRE)	Variable	F (df)	P
Non-molt	WD	3 F, 8 M	1595 $\pm$ 221	Color type	0.925 (2,23)	0.411
	WR	2 F, 7 M	1536 $\pm$ 171	Sex	0.541 (1,23)	0.469
	Y	2 F, 7 M	1265 $\pm$ 133	Interaction	1.908 (2,23)	0.171
Molt	WD	2 F, 3 M	1889 $\pm$ 550	Color type	0.516 (2,20)	0.605
	WR	7 F, 4 M	1589 $\pm$ 173	Sex	4.821 (1,20)	0.040
	Y	6 F, 4 M	1471 $\pm$ 240	Interaction	0.346 (2,20)	0.711

CRE = copper reduction equivalents; F = female, M = male; df = degrees of freedom (numerator, denominator).

**Table S3. Baseline physiological metrics and their LPS-mediated changes in WD, WR, and Y canaries during molt.**

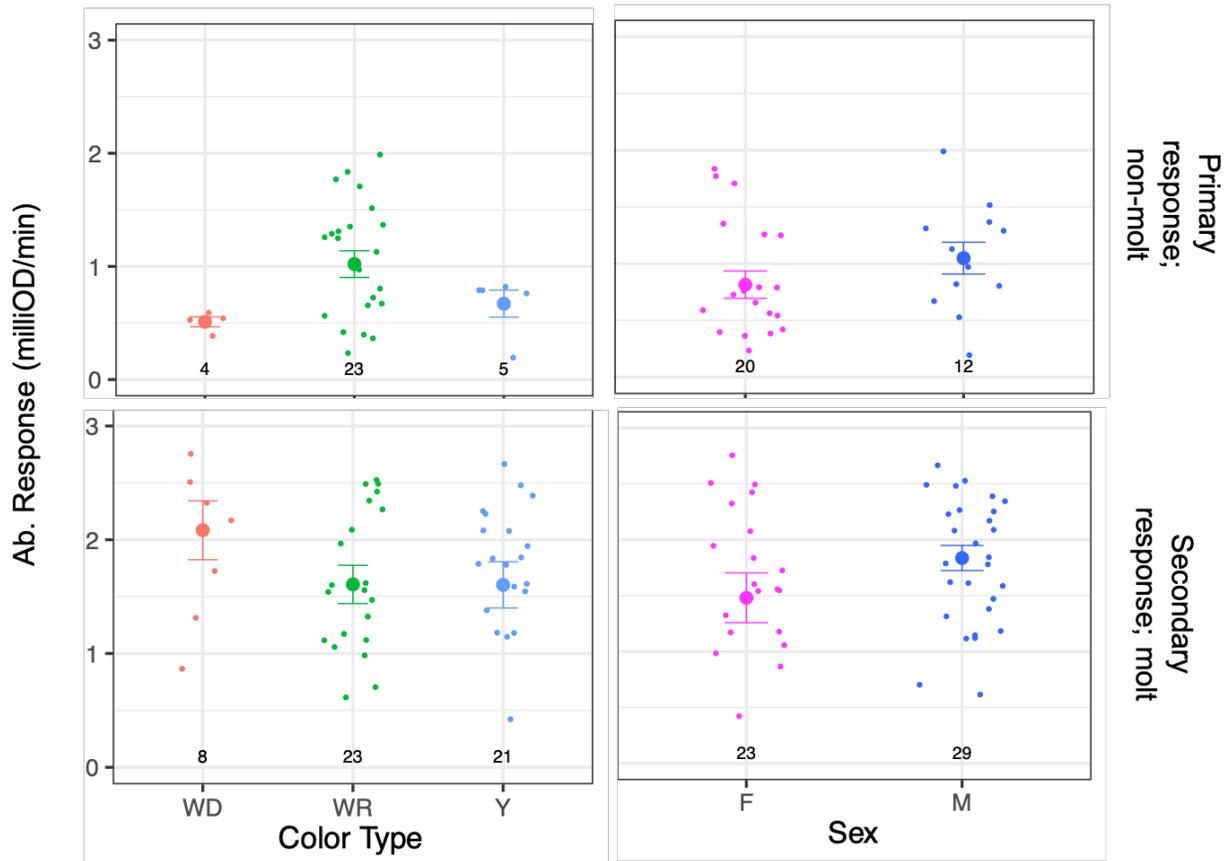
	Descriptive results			ANOVA results		
	Color type	Sample size	Average response $\pm$ SE	Variable	F (df)	P
Initial mass (g)	WD	6 F, 2 M	22.73 $\pm$ 1.26	Color type	2.691 (2,5)	0.078
	WR	10 F, 16 M	25.40 $\pm$ 0.72	Sex	1.008 (1,51)	0.320
	Y	7 F, 16 M	23.60 $\pm$ 0.59	Interaction	0.526 (2,51)	0.594
Change in mass (g)	WD	6 F, 2 M	-0.85 $\pm$ 0.19	Color type	4.421 (2,50)	0.017
	WR	10 F, 16 M	-1.37 $\pm$ 0.01	Sex	0.242 (1,50)	0.625
	Y	7 F, 16 M	-1.14 $\pm$ 0.10	Interaction	2.258 (2,50)	0.115
				Initial value	12.536 (1,50)	<0.001
Initial body temperature ( $^{\circ}$ C)	WD	4 F, 3 M	40.67 $\pm$ 0.20	Color type	4.552 (2,29)	0.019
	WR	8 F, 7 M	41.22 $\pm$ 0.12	Sex	0.007 (1,29)	0.932
	Y	6 F, 7 M	40.97 $\pm$ 0.09	Interaction	0.099 (2,29)	0.906
Change in body temperature ( $^{\circ}$ C)	WD	4 F, 3 M	0.60 $\pm$ 0.11	Color type	0.733 (2,28)	0.490
	WR	8 F, 7 M	0.45 $\pm$ 0.11	Sex	4.109 (1,28)	0.052
	Y	6 F, 7 M	0.41 $\pm$ 0.12	Interaction	0.371 (2,28)	0.693
				Initial value	16.262 (1,28)	<0.001
Initial food consumption (mg consumed / hour / g body mass)	WD	6 F, 2 M	2.79 $\pm$ 0.43	Color type	0.376 (2,55)	0.688
	WR	11 F, 17 M	3.08 $\pm$ 0.26	Sex	3.032 (1,55)	0.087
	Y	8 F, 17 M	2.76 $\pm$ 0.34	Interaction	2.347 (2,55)	0.105
Change in food consumption (g consumed / hour / g body mass)	WD	6 F, 2 M	0.34 $\pm$ 0.51	Color type	0.510 (2,54)	0.603
	WR	11 F, 17 M	-0.19 $\pm$ 0.23	Sex	5.185 (1,54)	0.027
	Y	8 F, 17 M	-0.17 $\pm$ 0.40	Interaction	1.811 (2,54)	0.173
				Initial value	19.724 (1,54)	<0.001
Heterophil to lymphocyte ratio (post-LPS only)	WD	6 F, 3 M	0.17 $\pm$ 0.039	Color type	2.354 (2,45)	0.107
	WR	9 F, 15 M	0.34 $\pm$ 0.039	Sex	0.556 (1,45)	0.460
	Y	6 F, 12 M	0.33 $\pm$ 0.058	Interaction	0.244 (2,45)	0.785

Negative values for change in mass, temperature, or food consumption indicate that measurements decreased in value after LPS injection. F = female, M = male; df = degrees of freedom (numerator, denominator).

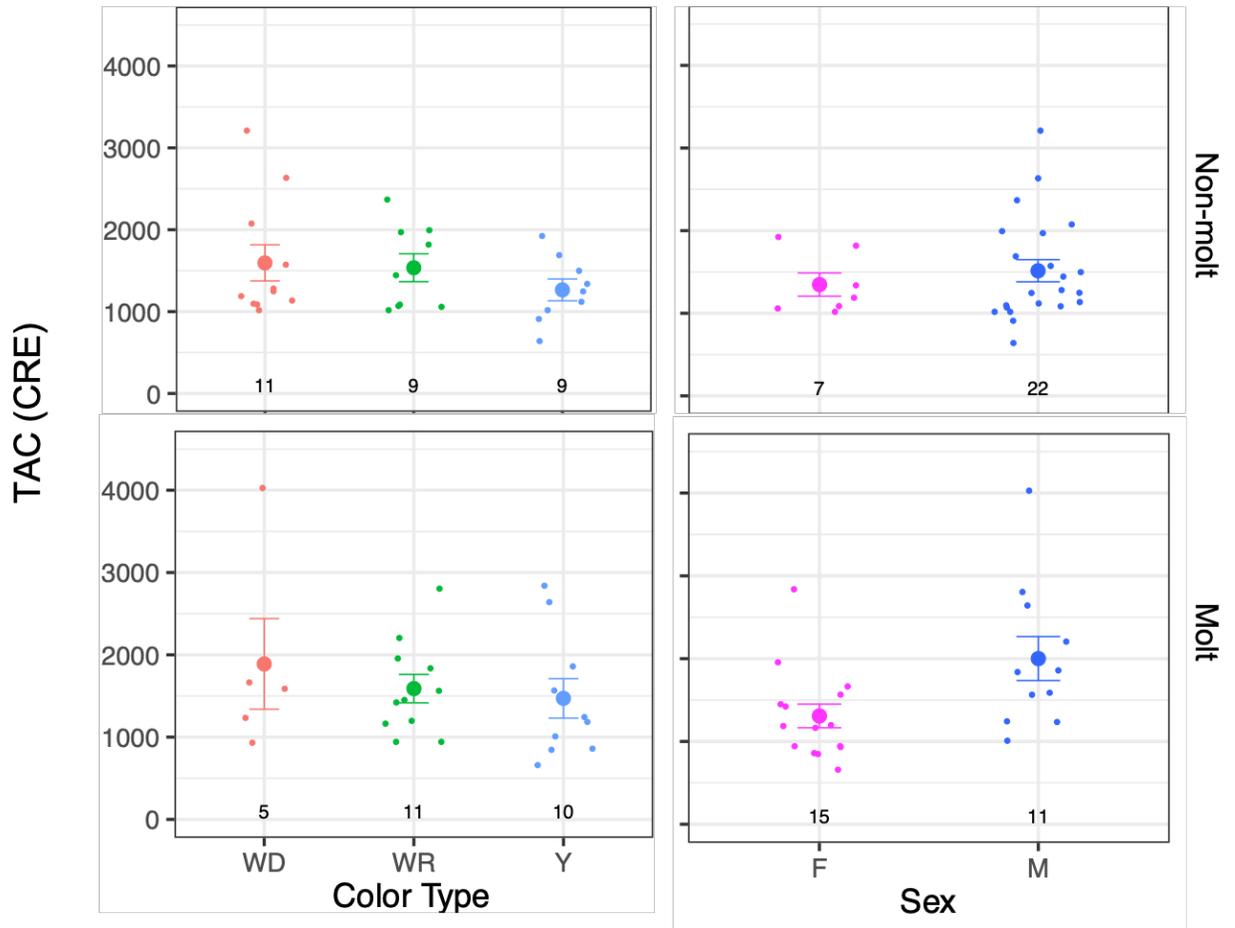
**Table S4. Bacterial killing ability of WD, WR, and Y canaries during molt.**

Descriptive results			ANOVA results			Binomial GLM results		
Color type	Sample size	Average response ± SE (Percent bacterial killing), fraction of individuals who fully- killed their challenge	Variable	F (df)	P	Variable	Z	P
WD	5 F, 3 M	39.05 ±17.35, 3/8	Color type	1.845 (2,47)	0.169	Intercept	-0.444	0.657
						Color type (WR vs. WD)	0.365	0.715
						Color type (Y vs. WD)	0.011	0.991
WR	10 F, 10 M	58.22 ±10.56, 12/20	Sex	0.395 (1,47)	0.533	Sex	-0.188	0.851
Y	6 F, 15 M	65.49 ± 9.77, 14/21	Interaction	2.472 (2,47)	0.095	Interaction (WR vs. WD by Sex)	0.634	0.526
						Interaction (Y vs. WD by Sex)	-0.011	0.992

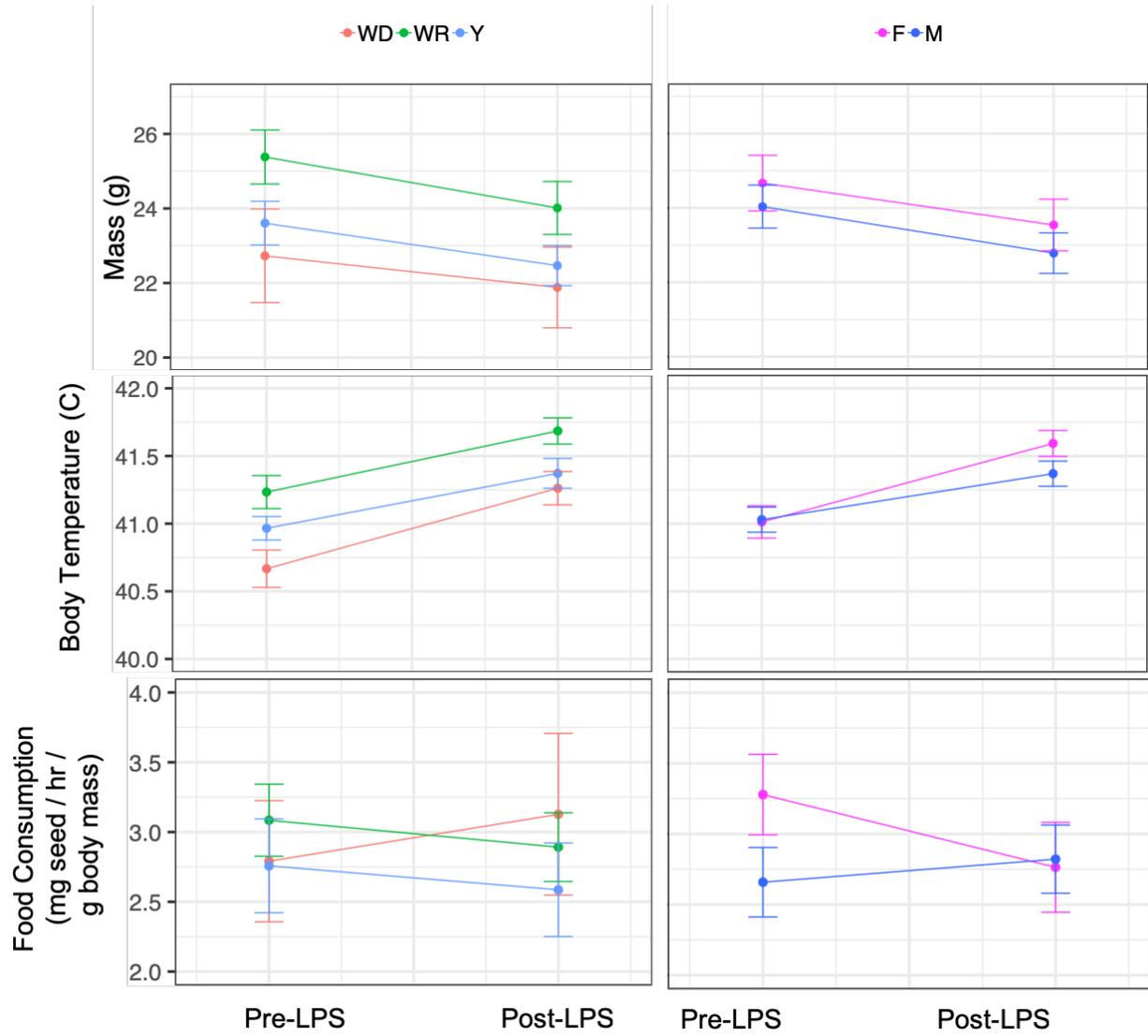
Individuals were considered to have “fully-killed their challenge” if they had a percentage of bacteria killed greater than 90%. Results are presented both for an ANOVA performed on continuous data of percent bacterial killing, and a binomial generalized linear model (GLM) on categorical data indicating whether or not an individual fully-killed their challenge. F = female, M = male; df = degrees of freedom (numerator, denominator).



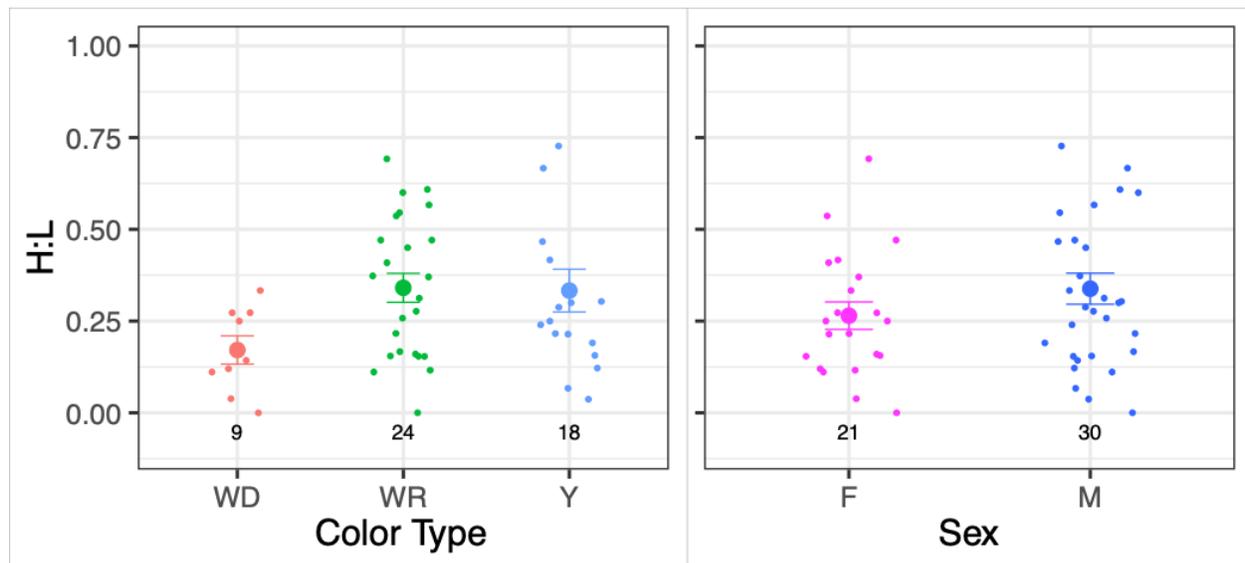
**Figure S1.** Mean  $\pm$  SE anti-tetanus antibody responses of the three color types (left panel) and the two sexes (right panel). Small points represent individual raw data; numbers at the base of each panel represent sample sizes.



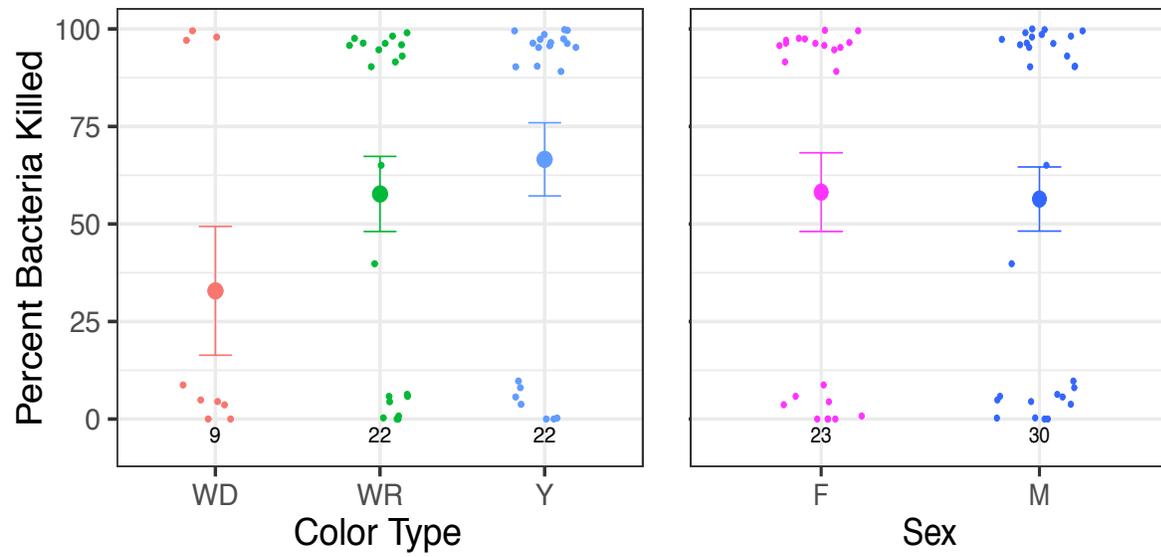
**Figure S2.** Mean  $\pm$  SE total antibody capacity (TAC) of the three color types (left panels) and the two sexes (right panels). Small points represent individual raw data; numbers at the base of each panel represent sample sizes.



**Figure S3.** Mean  $\pm$  SE measurements taken prior to or after bacterial lipopolysaccharide (LPS) injection.



**Figure S4.** Mean  $\pm$  SE heterophil to lymphocyte ratio of the three color types (left panels) and the two sexes (right panels). Small points represent individual raw data; numbers at the base of each panel represent sample sizes.



**Figure S5.** Mean  $\pm$  SE bacterial killing capacity (percent bacteria killed relative to positive controls). Small points represent individual raw data; numbers at the base of each panel represent sample sizes.