

Supplementary materials

Table S1: Demographic characteristics of dogs.

ID	Working Area	Age (years)	Experience (years)	Body Weight	Sex
1	Trentino	48	17	63	♂
2	Piemonte	54	28	76	♂
3	Piemonte	51	27	70	♂
4	Trentino	49	25	78	♂
5	Veneto	43	10	61	♂
6	Val d’Aosta	54	30	68	♂
7	Trentino	63	32	72	♂
8	Trentino	54	29	95	♂
9	Friuli Venezia Giulia	54	17	72	♂
10	Trentino	52	25	73	♂
11	Trentino	54	15	78	♂
12	Trentino	42	10	78	♂
13	Piemonte	46	10	65	♂

Table S2: Dogs’ demographic characteristics.

ID	Breed	Age (years)	Body weight (Kg)	Sex	Neutering
1	German Shepherd	9	29	♀	No
2	Belgian Malinois	8	34	♂	No
3	Belgian Malinois	8	27	♀	No
4	Belgian Malinois	4	30	♂	No
5	German Shepherd	7	34	♂	No
6	Border collie	3	24	♂	No
7	Mixed bred	3	42	♀	No
8	Border collie	5	27	♂	No
9	German Shepherd	9	35	♂	No
10	German Shepherd	5	38	♂	No
11	Belgian Malinois	5	33	♂	No
12	German Shepherd	7	36	♂	No
13	Border collie	6	29	♂	No

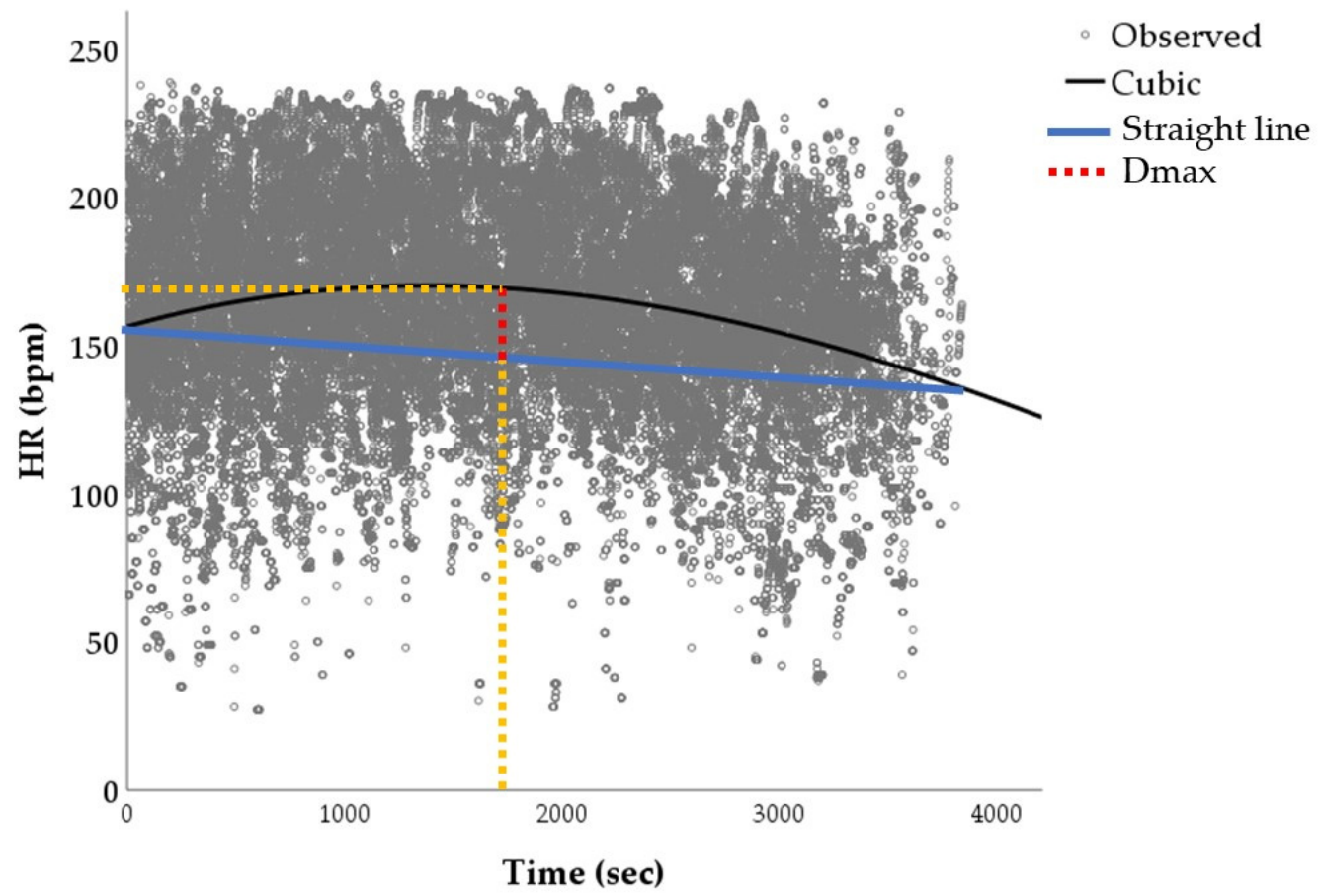


Figure S1. Effect of altitude on $\% \Delta$ HR of handlers. Deflection point (HRdp; dashed line) determined via Dmax method on pooled data. In brief, the third order curvilinear regression curve was calculated from HR values vs time (black line). Then, two end points of the curve were connected by a straight line (blue line) and the most distant point of the curve to the line (Dmax; red dashed line) was considered as the HRdp. The HRdp corresponded to the second 1752-1753 of the Endurance activity and an estimated HR of 170 bpm ($\approx 70\%$ of HR_{\max}).

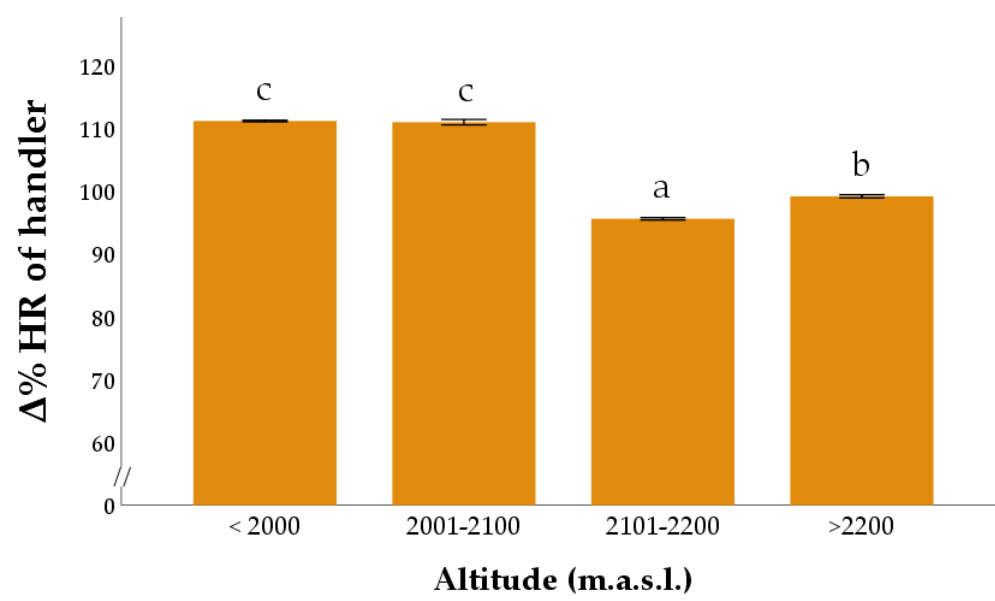


Figure S2. Effect of time intervals of *Endurance* activity on %Δ HR of handlers. Effect of Altitude on the percentage change from baseline (%Δ HR) of handlers. Values are marginal means (\pm standard errors). The model also included Gradient, Speed, and Gradient x Speed. Δ% HR was calculated second by second during the entire period of Endurance activity (mean duration = 56 minutes). Bars not sharing any superscript within each Altitude range are significantly different at $P < 0.05$ (Bonferroni's correction).

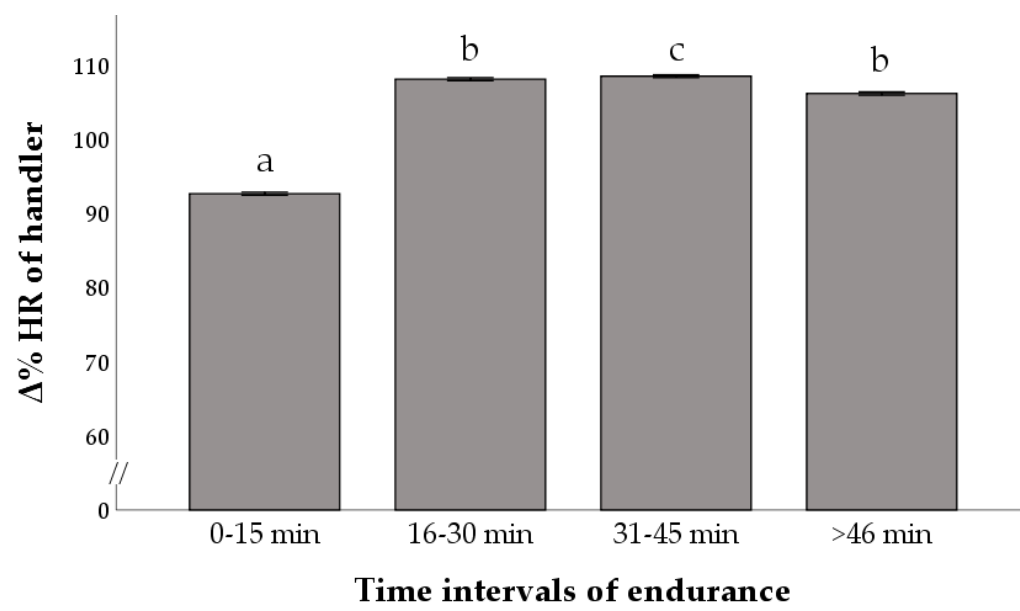


Figure S3: Effect of Time intervals of endurance on the percentage change from baseline (%Δ HR) of handlers. Values are marginal means (\pm standard errors). The model also included Gradient, Speed, and Gradient x Speed. Δ% HR was calculated second by second during the entire period of Endurance activity (mean duration = 56 minutes). Bars not sharing any superscript within each Time interval are significantly different at $P < 0.05$ (Bonferroni's correction).