

SUPPLEMENTARY TABLES

Table S1. ANOVA of acute hypoxia responses in wild and lab-raised deer mice during adulthood with t-tests conducted on body mass to compare mouse populations.

	Population effect		Acute PO ₂ effect		Population×PO ₂	
	F	P	F	P	F	P
Wild mice						
Total ventilation	19.61	0.003	3.534	0.019	2.166	0.099
O ₂ consumption rate	13.44	0.008	14.52	<0.001	3.272	0.025
Air convection requirement	57.94	<0.001	38.51	<0.001	0.989	0.430
Breathing frequency	0.253	0.630	70.28	<0.001	9.459	<0.001
Tidal volume	36.43	<0.001	10.55	<0.001	9.221	<0.001
Body temperature	0.016	0.903	92.11	<0.001	37.17	<0.001
Body mass	1.784	0.118	n.a.		n.a.	
First generation mice						
Total ventilation	9.883	0.007	58.421	<0.001	1.674	0.1510
O ₂ consumption rate	0.431	0.521	3.115	0.013	8.371	<0.001
Air convection requirement	18.268	<0.001	71.91	<0.001	3.713	0.005
Breathing frequency	3.680	0.074	94.05	<0.001	2.847	0.021
Tidal volume	18.08	<0.001	13.08	<0.001	1.704	0.144
Arterial O ₂ saturation	3.988	0.064	250.5	<0.001	1.413	0.229
Body temperature	0.050	0.826	173.8	<0.001	0.151	0.703
Body mass	1.508	0.152	n.a.		n.a.	

Table S2. ANOVA of acute hypoxia responses of lab-raised deer mice during early post-natal development.

		Population effect		Acute PO ₂ effect		Population×PO ₂	
		F	P	F	P	F	P
Total ventilation	P7	4.417	0.046	7.994	0.009	5.019	0.035
	P14	1.586	0.221	10.03	<0.001	0.905	0.481
	P21	0.726	0.404	24.41	<0.001	3.426	0.006
	P30	0.421	0.523	18.70	<0.001	2.209	0.058
O ₂ consumption rate	P7	2.679	0.115	11.57	0.002	3.028	0.095
	P14	15.18	<0.001	76.10	<0.001	1.529	0.186
	P21	40.14	<0.001	41.09	<0.001	1.936	0.094
	P30	9.336	0.006	86.86	<0.001	1.339	0.253
Air convection requirement	P7	0.027	0.872	3.504	0.073	7.314	0.012
	P14	1.690	0.206	34.98	<0.001	1.006	0.417
	P21	5.255	0.032	114.5	<0.001	4.410	0.001
	P30	8.965	0.006	106.3	<0.001	2.282	0.051
Breathing frequency	P7	0.131	0.721	3.736	0.065	1.699	0.205
	P14	12.30	0.002	108.7	<0.001	6.006	<0.001
	P21	26.62	<0.001	166.3	<0.001	5.107	<0.001
	P30	6.443	0.018	72.90	<0.001	3.460	0.006
Tidal volume	P7	9.452	0.005	19.971	<0.001	1.584	0.220
	P14	0.914	0.349	51.08	<0.001	3.174	0.010
	P21	2.233	0.149	86.21	<0.001	4.940	<0.001
	P30	8.608	0.007	74.38	<0.001	1.718	0.136
Arterial O ₂ saturation	P7	-	-	-	-	-	-
	P14	15.64	<0.001	344.9	<0.001	8.536	<0.001
	P21	4.559	0.044	501.2	<0.001	1.104	0.363
	P30	5.569	0.027	390.1	<0.001	1.969	0.089
Body temperature	P7	-	-	-	-	-	-
	P14	8.458	0.008	138.7	<0.001	0.963	0.337
	P21	1.853	0.187	138.3	<0.001	1.661	0.211
	P30	0.145	0.706	129.1	<0.001	14.01	0.001

P, post-natal age (days)

Table S3. Two-way ANOVA of body mass, carotid body morphology, and haematology

	Population effect		Age effect		Population×Age	
	F	P	F	P	F	P
Body mass	8.663	0.004	208.1	<0.001	0.193	0.901
Carotid body volume	0.627	0.434	0.244	0.865	0.795	0.505
Type I cell number	1.858	0.182	19.70	<0.001	4.608	0.008
Type I cell volume	0.157	0.694	3.425	0.028	1.088	0.367
Neural volume	0.652	0.425	1.847	0.158	0.697	0.561
Type II cell volume	1.241	0.274	3.754	0.020	0.983	0.413
TH volume : GFAP volume	0.202	0.656	6.704	0.001	7.097	<0.001
P ₅₀	15.66	<0.001	173.4	<0.001	2.850	0.006
Haemoglobin Concentration	34.06	<0.001	6.665	0.002	1.903	0.063
Haematocrit	42.10	<0.001	7.851	<0.001	3.203	0.002
	IsoHb effect		Age effect		IsoHb×Age	
Highland deer mouse relative isoHb abundance	13.12	<0.001	0.001	0.999	21.07	<0.001
Lowland white-footed mouse isoHb abundance	126.9	<0.001	0.001	0.999	3.635	0.036

P₅₀, haemoglobin-O₂ binding affinity; isoHb, haemoglobin isoform