

Supplemental Table 1. Descriptive statistics for metabolic and exercise traits in progenitor lines

Trait	N	Mean (95% CI)	SD	Minimum	Maximum
Pre-Exercise					
Body weight (g)					
129S1/SlvmJ	10	26.47 (24.56, 28.37)	2.66494	21.93	30.32
A/J	9	22.74 (20.87, 24.62)	2.44266	19.89	26.60
C57BL6/J	11	27.68 (26.60, 28.76)	1.60776	25.22	30.66
CAST/EJ	11	16.95 (16.52, 17.38)	.63594	15.95	17.81
NOD/LtJ	7	27.58 (26.48, 28.68)	1.19141	26.25	29.38
NZO/H1LtJ	9	45.7 (44.84, 46.55)	1.11469	44.00	47.80
PWK/PhJ	10	16.84 (16.43, 17.26)	.57382	16.18	18.02
WSB/EiJ	7	14.57 (13.59, 15.56)	1.06411	13.45	16.40
PreCC	176	23.74 (23.15, 24.33)	3.95	15.01	35.5
Body fat percentage (%)					
129S1/SlvmJ	10	9.49 (7.67, 11.32)	2.54916	5.11	12.96
A/J	9	8.02 (4.51, 11.52)	4.56043	2.36	17.14
C57BL6/J	10	7.42 (5.80, 9.05)	2.26710	4.97	12.43
CAST/EJ	11	5.64 (4.53, 6.75)	1.65085	3.54	8.73
NOD/LtJ	7	8.03 (6.64, 9.42)	1.50156	5.38	9.47
NZO/H1LtJ	9	27.81 (25.18, 30.43)	3.41386	22.00	32.56
PWK/PhJ	9	5.61 (4.58, 6.64)	1.33668	3.42	6.96
WSB/EiJ	7	6.05 (4.11, 7.99)	2.09658	3.20	8.96
PreCC	176	9.23 (8.56, 9.91)	4.91	1.09	31.65
Food intake (kcal/day/BW)					
129S1/SlvmJ	10	0.54 (0.48, 0.59)	0.07691	0.4	0.65
A/J	8	0.55 (0.46, 0.64)	0.10673	0.42	0.72
C57BL6/J	11	0.45 (0.40, 0.49)	0.06831	0.34	0.59
CAST/EJ	11	0.89 (0.67, 1.12)	0.33115	0.5	1.49
NOD/LtJ	7	0.51 (0.46, 0.57)	0.06239	0.42	0.57
NZO/H1LtJ	9	0.56 (0.41, 0.71)	0.20024	0.29	0.92
PWK/PhJ	11	0.67 (0.60, 0.74)	0.10562	0.45	0.82
WSB/EiJ	6	0.74 (0.69, 0.79)	0.04769	0.7	0.83
PreCC	174	0.61 (0.58, 0.64)	0.21	0.29	2.42
Nocturnal RER					
129S1/SlvmJ	7	0.96 (0.91, 1.01)	0.05616	0.91	1.04
A/J	7	0.88 (0.80, 0.96)	0.09037	0.79	1.03
C57BL6/J	8	1.05 (1.02, 1.09)	0.04149	1	1.11
CAST/EJ	8	0.94 (0.89, 0.99)	0.05692	0.86	1.03
NOD/LtJ	7	1.02 (0.97, 1.07)	0.05548	0.93	1.09
NZO/H1LtJ	7	0.86 (0.84, 0.89)	0.02495	0.83	0.91
PWK/PhJ	8	0.92 (0.87, 0.96)	0.05299	0.85	1.01
WSB/EiJ	6	0.92 (0.88, 0.96)	0.03764	0.87	0.97
PreCC	130	0.92 (0.90, 0.93)	0.09	0.69	1.12

Exercise Traits**Running Distances (m)**

Day 1

129S1/SlvmJ	10	2058.50 (662.82, 3454.19)	1951.03	0.37	6427.76
A/J	10	715.16 (23.23, 1407.08)	967.241	0	2758.43
C57BL6/J	11	3763.84 (2766.10, 4761.56)	1485.14	2100.91	6586.98
CAST/EJ	11	7348.85 (6129.76, 8567.94)	1814.64	3711.03	10223.77
NOD/LtJ	7	6575.46 (4841.37, 8309.55)	1875	3272.68	9010.56
NZO/H1LtJ	9	743.14 (375.33, 1110.96)	478.509	22.18	1615.17
PWK/PhJ	11	7232.84 (5503.42, 8962.25)	2574.26	4002.63	12571.53
WSB/EiJ	7	8053.97 (5553.17, 10554.76)	2704.02	4533.01	11895.22
PreCC	176	4096.73 (3632.35, 4561.11)	3121.51	0	14940.84

Days 5 and 6

129S1/SlvmJ	10	2254.17 (853.49, 3654.84)	1958.01	0	5106.48
A/J	10	1648.37 (484.34, 2812.41)	1627.21	0	4134.72
C57BL6/J	11	6318.43 (5235.09, 7401.77)	1612.57	4133.94	9580.91
CAST/EJ	11	7278.01 (6291.84, 8264.18)	1467.93	4524.81	9599.29
NOD/LtJ	7	7262.53 (5776.83, 8748.23)	1606.43	5443.4	10212.17
NZO/H1LtJ	9	527.00 (281.18, 772.82)	319.797	6.05	937.66
PWK/PhJ	11	8913.05 (6940.63, 10885.47)	2935.98	3234.6	13578.17
WSB/EiJ	6	9493.09 (7167.84, 11818.35)	2215.72	6789.43	13311.65
PreCC	176	4850.18 (4404.45, 5295.91)	2996.16	0.97	16557.57

Days 11 and 12

129S1/SlvmJ	10	2089.21 (730.81, 3447.61)	1898.91	53.31	5768.68
A/J	10	1887.09 (755.26, 3018.91)	1582.19	0	5352.1
C57BL6/J	11	5643.20 (3721.96, 7564.43)	2859.8	2848.55	11248.69
CAST/EJ	11	9226.84 (8431.88, 10021.80)	1183.31	6764	11141.26
NOD/LtJ	7	5956.66 (4955.00, 6958.31)	1083.05	4627.01	7631.94
NZO/H1LtJ	9	425.88 (224.50, 627.27)	261.987	5.6	863.18
PWK/PhJ	11	8993.85 (6997.46, 10990.24)	2971.66	3409.45	13195.79
WSB/EiJ	7	8749.08 (5953.29, 11544.87)	3022.98	4009.64	12915.52
PreCC	175	5610.96 (5047.28, 6174.63)	3778.03	10.91	19333.33

Running Speeds (m/min)

Day 1

129S1/SlvmJ	10	5.97 (3.15, 8.79)	3.94291	0	13.14
A/J	10	2.46 (0.65, 4.28)	2.53808	0	7.45
C57BL6/J	11	8.24 (7.03, 9.46)	1.81242	5.76	11.41
CAST/EJ	11	9.95 (8.90, 11.00)	1.5694	7.02	12.7
NOD/LtJ	7	13.65 (12.02, 15.28)	1.76471	11.22	16.64
NZO/H1LtJ	9	3.68 (2.62, 4.74)	1.37804	0.74	5.28
PWK/PhJ	11	11.15 (9.69, 12.62)	2.18051	7.32	14.05
WSB/EiJ	7	12.52 (10.53, 14.50)	2.14473	8.7	16.03
PreCC	176	8.63 (8.01, 9.24)	4.13	0	17.52

Days 5 and 6

129S1/SlvmJ	10	10.20 (5.50, 14.90)	6.56509	0	20.92
A/J	10	6.35 (2.87, 9.83)	4.8647	0	13.74
C57BL6/J	11	16.48 (15.46, 17.51)	1.52171	13.65	18.56
CAST/EJ	11	14.64 (13.41, 15.86)	1.81993	11.2	17.88
NOD/LtJ	7	18.36 (17.13, 19.59)	1.33164	16.71	20.42
NZO/H1LtJ	9	6.00 (3.76, 8.25)	2.91832	0.43	10.02
PWK/PhJ	11	15.85 (13.71, 18.00)	3.19402	11.98	23.59
WSB/EiJ	6	19.30 (16.12, 22.48)	3.02998	14.95	24.12
PreCC	176	13.66 (12.92, 14.40)	4.95	0.16	28.1

Days 11 and 12

129S1/SlvmJ	10	10.52 (5.25, 15.79)	7.36695	0	23.38
A/J	10	7.34 (4.09, 10.58)	4.53532	0	12.73
C57BL6/J	11	18.23 (16.38, 20.07)	2.748	13.7	22.5
CAST/EJ	11	17.06 (15.46, 18.66)	2.38345	13.39	20.96
NOD/LtJ	7	18.67 (17.56, 19.77)	1.19541	17.6	20.48
NZO/H1LtJ	9	6.54 (3.88, 9.19)	3.44865	0.62	11.79
PWK/PhJ	11	16.11 (14.48, 17.74)	2.42502	12.3	20.98
WSB/EiJ	7	19.17 (15.09, 23.25)	4.41426	14.08	26.91
PreCC	175	15.54 (14.64, 16.43)	6	0.85	33.63

Food intake (kcal/day/BW)

129S1/SlvmJ	10	0.54 (0.48, 0.60)	0.08347	0.4	0.65
A/J	9	0.60 (0.52, 0.67)	0.10363	0.43	0.76
C57BL6/J	10	0.56 (0.53, 0.59)	0.04672	0.49	0.64
CAST/EJ	11	0.98 (0.87, 1.08)	0.16099	0.82	1.26
NOD/LtJ	7	0.58 (0.55, 0.60)	0.03168	0.54	0.63
NZO/H1LtJ	7	0.46 (0.39, 0.53)	0.07815	0.36	0.6
PWK/PhJ	10	0.81 (0.76, 0.86)	0.06646	0.7	0.9
WSB/EiJ	7	0.82 (0.74, 0.90)	0.08705	0.72	0.96
PreCC	175	0.65 (0.63, 0.67)	0.12	0.29	1.33

Post Exercise

Body weight (g)

129S1/SlvmJ	10	27.73 (25.21, 30.24)	3.51353	22.7	31.76
A/J	10	23.85 (22.31, 25.39)	2.15414	19.94	27.52
C57BL6/J	11	26.62 (25.45, 27.78)	1.73555	23.64	29.84
CAST/EJ	11	16.36 (15.99, 16.72)	0.5448	15.47	17.38
NOD/LtJ	7	27.81 (27.02, 28.59)	0.84737	27.2	29.57
NZO/H1LtJ	9	43.57 (41.52, 45.26)	2.66652	40.16	48.18
PWK/PhJ	11	18.23 (17.76, 18.70)	0.7019	17.41	19.8
WSB/EiJ	7	15.85 (14.98, 16.73)	0.94841	14.49	17.65
PreCC	176	23.88 (23.32, 24.45)	3.78	14.7	36.34

Body fat percentage (%)

129S1/SlvmJ	10	9.50 (7.07, 11.92)	3.39517	4.17	13.3
A/J	10	10.44 (8.74, 12.13)	2.37339	5.29	13.16
C57BL6/J	11	5.48 (3.73, 7.23)	2.60672	2.22	11.18
CAST/EJ	11	4.92 (4.30, 5.54)	0.92249	3.79	7.04
NOD/LtJ	7	5.21 (4.21, 6.20)	1.07436	3.41	6.54
NZO/H1LtJ	9	25.5 (21.15, 29.86)	5.66523	16.34	32.49
PWK/PhJ	11	6.50 (5.64, 7.36)	1.27798	4.49	8.38
WSB/EiJ	7	2.81 (1.97, 3.64)	0.90344	1.54	3.76
PreCC	176	6.52 (5.92, 7.11)	4.02	0.62	21.71

Change in body weight (g)

129S1/SlvmJ	10	1.26 (0.40, 2.12)	1.2069	-0.74	3.33
A/J	9	1.11 (0.02, 2.20)	1.41658	-1.2	3.24
C57BL6/J	11	-1.06 (-1.54, -0.59)	0.7079	-1.96	0.36
CAST/EJ	11	-0.59 (-0.90, -0.28)	0.45981	-1.34	0.13
NOD/LtJ	7	0.23 (-0.54, 0.99)	0.82865	-1.29	1.17
NZO/H1LtJ	9	-2.12 (-4.31, 0.06)	2.8442	-5.78	1.58
PWK/PhJ	9	1.47 (1.27, 1.66)	0.2535	1.04	1.78
WSB/EiJ	7	1.28 (0.70, 1.85)	0.62189	0.37	2.28
PreCC	176	0.14 (-0.16, 0.45)	2.08	-6.57	8.35

Change in body fat percentage

129S1/SlvmJ	9	0.54 (-0.41, 1.49)	1.23662	-1.4	3.01
A/J	9	2.23 (-0.59, 5.06)	3.68053	-4.34	7.55
C57BL6/J	10	-2.51 (-4.03, -0.99)	2.12668	-6.18	-0.4
CAST/EJ	11	-0.73 (-1.91, 0.46)	1.76149	-4.08	1.7
NOD/LtJ	7	-2.82 (-4.71, -0.93)	2.0427	-5.78	-0.36
NZO/H1LtJ	9	-2.31 (-5.31, 0.70)	3.90924	-9.38	2.26
PWK/PhJ	9	0.56 (-0.97, 2.08)	1.98724	-2.48	3.81
WSB/EiJ	7	-3.24 (-4.80, -1.68)	1.6866	-6.39	-1.2
PreCC	176	-2.67 (-3.14, -2.19)	3.17	-13.95	5.5
